The Influence of Conditions of Reading on Early Literacy Development

by

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A thesis presented to the Faculty of Graduate Studies and Research, McGill University, in partial fulfillment of the requirements for the degree of Master of Arts, Department of Educational Psychology

November, 1990

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ACKNOWLEDGEMENTS

I would like to thank all the parents, teachers, principals and children who allowed me to work with them, welcomed me into their world and were always disposed to accommodate me into their busy schedule. No study would have been possible without their assistance.

I sincerely wish to thank my advisor, Professor Mark W. Aulls for the constant support, dedication, encouragement and time. His firm direction, insight and knowledge in the world of reading and readiness to share this knowledge have provided me with a thoroughly fulfilling learning experience.

Last but not least, I would like to thank my family, relatives and friends in Malta, England and Canada. Without their constant support and encouragement, this work would not have been completed. I am grateful that they believed in me. They have moulded me into what I am today.

ABSTRACT

This study examines the influence of home, classroom and book-reading conditions on emergent and early readers' developing literacy abilities. The study, done with 60 grade 1 children from the inner-city and more affluent areas of Montreal uses complex multivariate designs to assess how these three conditions influence children's developing literacy abilities. Results indicate that variations in the home environment and children's interactions with print have a significant effect on book and code knowledge and print awareness before school instruction. The combined effect of the classroom and home environments have a significant influence on print awareness and reading fluency. After 4 months of instruction children improve significantly in book and code knowledge, print awareness, accuracy and fluency. Across classrooms, children differ in print awareness, fluency and word-reading accuracy. Assisted and unassisted reading conditions with an unfamiliar, patterned book indicate that use of strategies changes as a function of time and assistance given.

RESUME

Cette étude examine l'influence du foyer, de la classe et des conditions de lecture sur l'aptitude de lecture et d'ecriture parmis les lecteurs emergeants et nouveaux. L'étude, effectuée avec 60 enfants en première année, habitant le centre-ville et les quartiers aisés Montréal utilise différents dessins complexes afin d'établir de quelle façon ces trois influences conditionnent l'aptitude d'alphabétisation des enfants. Les résultats indiquent que les variations du milieu familial et du contact des enfants avec le texte imprime produisent un effet considérable sur les connaissances des enfants du livre et du code bien avant l'instruction scolaire. Les effets combinés des milieux scolaires et familiaux jouent un role important quant à la conscience de l'écrit et l'aisance de lecture. Après quatre mois d'instruction, on note un réel progrès des enfants portant sur leurs connaissances du texte imprimé et du code, ainsi que leur conscience de l'écrit, leur aisance et aptitude de lecture. L'aptitude des enfants varie d'une classe à l'autre quant à leur conscience de l'écrit, leur aisance et leur exactitude de lecture. Les conditions de lecture différentes, assistées et non assistées, utilisant un texte peu familier, indiquent que l'utilisation de stratégie varie en fonction du temps et de l'aide donnés.

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INTRODUCTION

Since 1952, parents, literacy researchers and early childhood educators have been interested in the course of early reading development. In recent years, considerably more research has been done on literacy before formal schooling and this has led to the concept of emerging literacy.

The emergent and early reader is primarily distinguished by the environmental conditions which surround and define a child's opportunity to become and be literate. At the time a child enters grade 1 s/he moves from spending more time at home to spending more time at school where literacy opportunities can be experienced. Overall, the time available for participation in literacy learning opportunities may greatly increase or remain essentially the same. What should not occur is a total decrease in participation in literacy events because the home opportunities should stay about the same and formal schooling can be added to what the home already provides. While some research has supported this portrayal of the young child's changing literacy environment, no previous studies separate the combined influence of home and classroom environments from the home environment alone. Moreover, previous research on teaching reading typically provides no account of how a class of children may systematically differ in their prior-to-school emergent literacy knowledge and literacy experiences. There is no research on how these previously-learnt experiences interact with the grade 1 teacher's beliefs and practices. The interaction between children's experiences and teacher beliefs may influence specific reading abilities but not others which in turn may differentially relate to students' performance on standardized reading achievement tests.

Finally, children's knowledge of reading must be used in reading books to make progress in schools that primarily depend on books to deliver the curriculum content in all subjects. Only a small body of research on emergent and early readers separates out the influence of

the conditions for reading which children experience at home and at school on students' growth in reading ability.

This study is designed to assess the preceding issues in terms of the influences of the home, home and classroom, teacher and students' own perceptions of reading on students' reading knowledge, strategies and development. The second purpose is to determine the relationships of assisted and unassisted conditions for reading a patterned book to students' reading knowledge and use of their reading knowledge as emerging and early readers as well as to performance on end of grade 1 achievement test scores.

LITERATURE REVIEW

Emergent Literacy in the Home

Awareness of print in the environment is triggered off early in life in a process known as emergent literacy. Emergent literacy represents the beginnings of reading and writing and according to Teale (1987) should be thought of as the literacy development and learning which goes on before formal school participation. Hall (1987) summarizes the appropriateness of the term "emergent" because it is a gradual process which takes place over time. Although responsibility for making sense of print rests with the child, literacy development occurs in a context which supports and facilitates enquiry, respects performance and provides opportunities for engagement in real literacy acts. Adult, child and environmental factors play a role in literacy development.

Expert views (Mason & Allen, 1986), ethnographic research (Heath, 1980), observations of literacy activities in different families (Taylor, 1983), case studies of young children (Cohn, 1981; Haussler, 1985) and reviews of research (Teale, 1986a) arrive at compatible conclusions about the importance of literacy experiences in the child's family and community which shape the emergent reader's knowledge of print. There are however, variations in the quality and frequency of literacy activities, the amount of involvement of adults and children with print-related materials and the behaviour patterns shown during literacy activities. Consequently, some environments appear to be more conducive to facilitating and promoting a meaningful understanding and awareness of literacy (Clark, 1976; Durkin, 1966; Hiebert, 1981; Teale, 1986b). Children are at a literacy advantage when they are included in all sorts of family activities (Harste, Woodward & Burke, 1984). Within homes where children are surrounded by literacy activities, children develop concepts about reading and print early in life prior to entry into grade 1 (Brown & Briggs, 1986; Haussler, 1985; Johns, 1980; Lomax &

McGee, 1987; Mason & McCormick, 1981).

Since factors within and outside the home environment as well as child and adult characteristics influence children's literacy knowledge before school participation, it is important to consider what elements in the homes have been studied in previous research and the relationship which these factors have on children's emergent literacy.

The next section deals with the factors within the home which influence emergent literacy and later reading development.

The Home Environment

The Broad Scope of Research Treating Characteristics of the Home Environment

There are a variety of studies that have treated the relationship of home factors to global measures of achievement including reading achievement. It is important to distinguish those studies which directly assess reading in terms of specific skills from those which focus on global achievement measures where it is more difficult to infer what is being influenced.

A review of the literature between 1952 and 1988 shows that there are 32 studies showing relationships between the home and children's abilities and scholastic attainment. Of those 32 studies, 16 evaluate the relationships of the home and specific reading ability in contrast to others which asses other abilities (Blatchford, Burke, Farquhar, Plewis & Tizard, 1985; Briggs & Elkind, 1977; Clark, 1976; Durkin, 1966; Hewison & Tizard, 1980; Lopez & Holmes, 1983; Mason, 1980; Moon & Wells, 1979; Plessas & Oakes, 1964; Price, 1976; Schnur & Lowrey, 1986; Sutton, 1964; Walker & Kuerbitz, 1979; Wells, 1981, 1982, 1985).

There appears to be a broad interest in children's abilities including children's emergent reading abilities and the literature demonstrates that studies have been done in Peru (Barber, 1988), Morocco (Wagner & Spratt, 1988), and with cross-cultural groups (Bacon &

Ichikawa, 1988; Chen & Uttal, 1988).

There also has been a variety of age groups involved in the studies assessing the impact of home on achievement. For example, several studies (Dave, 1963; Dyer, 1967; Marjoribanks, 1972, 1977; Mosychuk, 1969; Wolf, 1964) investigating the relations between family environment and cognitive performance have been done with 11-year old children from Australia, America, Canada and Trinidad. Kifer's (1977) cross-cultural study was done with 10 and 14-year olds. Bradley and Caldwell (1987) examined the relationship between early home scores and cognitive scores of children at 1, 2, 4.5 and 11 years of age. Interestingly, none of these studies have looked at children entering grade 1 and at a later time in grade 1.

Characteristics of the home environment which have been looked into, include socio-economic status, family size, birth order, sibling separation, crowding in the home, ethnic origin, gender, parental literacy and maternal involvement (Blatchford et al., 1985; Nuttall, Nuttall, Polit & Hunter, 1976; Sheldon & Carrillo, 1952).

Parental Education and Socio-economic Status

It is interesting to note that in some studies, socio-economic status and the parents' level of education are reported to be poor predictors of one's reading ability. Harste et al., (1984) believe that knowing the child's sex, race, level of parental income, parental educational level or where the child lives are poor predictors of what the child knows and can do in terms of literacy, especially since some upper-class children have very poor literacy-learning environments. These views appear to be substantiated empirically. From the percentages reported by Durkin (1966) in her findings from parental interviews it appears warranted that there is no simple connection between early reading and the socio-economic status of a family. From her study with British families and their early readers, Clark (1976) concludes that it is crucial to explore the parents' perceptions of

education and the support and experiences they provide by measures far more sensitive and penetrating than social class, father's occupation and education of the parents. Teale (1986b) concludes that his observations of low-income children provide evidence for the contention that virtually all children in a literate society have numerous experiences with written language before they ever get to school. He suggests that these findings should urge a "reconsideration of traditional wisdom", which insists that children from low socio-economic backgrounds come to school with a dearth of literacy experience. The results of naturalistic observations of low-income families (Teale, 1986b) suggest that economic circumstances need not restrict the amount of richness or literacy experiences for preschool children. Taylor (1983) argues that there may be sharp contrasts between middle-class homes where print is noticeably absent and working-class homes "littered" with papers and books. Such findings and beliefs suggest that controlling for variables such as sex, ethnicity or socio-economic status are not as important as the value parents attribute to education, the print available in the home and especially parent and child interactions with the forms of print that are available.

Of particular relevance and interest to the present study are those studies reporting the impact of the home environment on early reading attainment with children from kindergarten through Grade 3 level (Blatchford et al., 1985; Briggs & Elkind, 1977; Clark, 1976; Durkin, 1966; Hewison & Tizard, 1980; Lopez & Holmes, 1983; Mason, 1980; Moon & Wells, 1979; Morrow, 1983; Plessas & Oakes, 1964; Price, 1976; Schnur & Lowrey, 1986; Sutton, 1964; Walker & Kuerbitz, 1979; Wells, 1981, 1982, 1985). The remainder of this section will be devoted to these and other studies which are especially relevant to the influence of the home on literacy.

Factors which Contribute to the Print Environment in the Home

Availability of Print in the Home

The young child develops literacy in the everyday contexts of the home and community. Several studies and reports (McCormick & Mason, 1986; Strickland & Morrow, 1989; Teale, 1986b) have indicated the importance of a print-rich environment and the benefits it will have on attempts at beginning reading, interest in reading, vocabulary development and ability to make sense out of print.

The notion of a print-rich environment includes books as well as other varieties and sources of print. Recipe books, newspapers, TV guides, magazines, mail, letters, cheques, cards, posters, directions for medical prescriptions, the telephone book, instructions for operating devices or setting up games and print on clothes are but some of the diverse forms of printed material which may be found in practically every household.

Based on insights provided by researchers and teachers, Teale (1986b) proposes that one aspect of a positive home environment is the availability of a variety of reading and writing materials and books, including children's magazines. Responses to a questionnaire completed by parents from different socio-economic status (McCormick & Mason, 1986) indicate that parents who strongly support reading activities provide a rich print environment by their daily reading, provision of several alphabet books for the children as well as a vast number of children's books. Strickland & Morrow, (1989) suggest that parents ought to make children aware of surrounding print by pointing out familiar labels, information on food boxes, vitamin bottles and detergent containers. In addition, adults should read newspapers, magazines and novels where they can be seen by children. They could also bring home, work-related materials and inform the youngsters the purpose for reading such work.

Admittedly, the quantity of print available in homes differs and

this is related to the opportunities which children have to interact with print. In our Western culture, print has so subtly permeated our lives that it is virtually impossible to eliminate it from any home environment. While the presence of print cannot be ignored in terms of home characteristics that effect the opportunity for children to be literate, other factors may be equally important or at least interact to moderate the relationship of this condition to children's participation in reading.

Accessibility of Print

Surrounding children with different sources of print is not enough to get youngsters interested in print. Literature and printed material must be placed somewhere where the child can see it and interact with it. To instill in young learners enough curiosity and interest to urge them towards using print or making sense out of it, the printed material must be easily accessible. Teale, Estrada and Anderson (1981) observe that presence and salience of literacy materials are not necessarily synonymous. In one of the families they were studying, the large number of literacy materials available for the target child were kept in a box in the bottom of the closet. In another family, although the target child was exposed to a more limited array of materials, they were "in the child's way" so that in this prominent place, the child was reminded of literacy events in which her participation was possible. This implies that it may not only be the variety of kinds of print in the home which influence children's developing literacy abilities but the frequency with which children interact with this print.

Opportunity to engage in language events is as important as availability of printed material. If parents and children are constantly "tripping" over books, pens and paper, children and adults alike will be involved naturally in print-related activities. On the basis of literacy activities in a number of families, Harste et al., (1984) report that creative and concentrated use of a small quantity of

readily accessible material has greater benefits than stored quantities of little-used literacy materials.

Children's and Home Members' Interactions with Print

In studying the influence of the home on children's developing literacy abilities, it is important to consider children's interactions with print within their immediate environment. This is necessary because the amount of print in the home and accessibility alone do not determine whether children do interact. Factors which may influence children's interactions with print, hence their developing literacy abilities include: (a) the time spent by children in print-related activities; (b) the nature of the activities they participate in; (c) who initiates the activity, children or adults or peers, and (d) whether children participate actively or just observe literacy enactments. A review of studies led Teale and Sulzby (1989) to conclude that children, "construct their knowledge about print and strategies for reading and writing from their independent explorations of written language, from interactions with parents and other literate persons and from their observations of others engaged in literacy activities" (p. 5). Previous research has considered children's interactions with print. Through items on a structured parental interview, Briggs and Elkind (1977) assessed the behaviour of target children on the basis of the child's interest in learning to read, the age when this interest was shown, the frequency with which the child was read to and the time spent by the child in watching television. Moon and Wells (1979) too, refer to the child's interest in literacy. This interest was measured on the basis of parental interviews and transcribed recordings of spontaneous verbal interaction. Parental responses in all sequences of conversation initiated by the child were classified and scored according to inappropriate or null responses and richness of interaction. Children's interest in literacy was not significantly related to early

reading (Briggs & Elkind, 1977) or later reading attainment (Moon & Wells, 1979). These non-significant results may be due to inaccurate parental reports of their child's preferences for certain activities (Briggs et al., 1977; Moon et al., 1979) or to the fact that recordings were stopped at 6:00 p.m. excluding possible pre-bedtime story activities (Moon et al., 1979). The fact that child-interest in Moon et al.'s (1979) study was not significantly correlated to earlier or later reading attainment, including preschool knowledge of literacy, reading accuracy, reading comprehension, and word recognition suggests that this variable is not a useful one.

It may be important for researchers to distinguish between those factors which are related to the children's interactions and interest in print activities and those factors which are related to the home environment. Some studies look at children's interactions with print as an aspect of child interest (Briggs et al., 1977; Moon et al., 1979). Others confound the issue by using it as a factor in the home environment (Mason, 1980). Children's interests in print may commence with the amount and accessibility of print in the home environment but factors such as asking to have books read and reread are closely linked to children's experiences and interactions with print.

The amount and quality of knowledge which children acquire may vary depending on who initiates the activity and the amount of interest and participation shown during the activity.

Story Reading in the Home

Being read to plays a special role in the opportunity for literacy development of the young child (Teale, 1986a). Studies which identify characteristics of early readers or their pre-reading experiences (Durkin, 1966; Morrow, 1983; Plessas & Oakes, 1964; Sutton, 1964) identify being read to as a characteristic feature of home life which distinguishes early readers from non-early readers. The particular quality of the story-reading activity helps children develop interest

and skill in literacy (Teale, 1981). Stein's (1983) review of the literature indicates that during the story-telling process, children acquire functional, structural and goal-structure knowledge. In addition, through stories, children are exposed to different cultural attitudes and values (Teale, 1986a). From this view, other literacy events such as reading the mail or looking at the TV guide are not likely to yield the same benefits as story reading.

Feitelson's and Goldstein's (1986) data with Israeli families confirm that during storybook reading at home, the verbal interaction of the adult and child is a skilful attempt to bridge the gap between the children's experiences and the text. Parents adjust their interaction styles to their children's level of communicative competence. They read books to their children in qualitatively different ways (Teale, 1986a). In this advantageous position of having one adult addressing and interacting with one child, individualized styles of interaction are used. Reading style, questioning techniques and providing information are adapted according to the child's level of competence. In this highly supportive environment, children develop a general idea of the nature of a story (Snow, Nathan & Perlmann, 1985).

In a study on preschoolers' questions during reading aloud at home, Yaden Jr., Smolkin and Conlon (1989) conclude that there is a wide variety of questions asked during story reading. They range from questions about pictures and chapter headings to queries about the bibliographic information on the title page, the story, plot and characters. It therefore seems that reading to children and interacting with children in assisted reading contexts promote children's knowledge about books and story genre. Through child-parent interactions with story-reading it would appear that children are made aware of the story comprehension process.

Through home observations, Holdaway (1979) comes to the position that in the natural setting with significant others, the child develops

"positive associations with the flow of story, language and the physical characteristics of books". By having books read to them, it would appear that children acquire particular forms of knowledge such as the functions and uses of written language and the functional and structural story knowledge. They develop concepts about print, books and reading; learn about forms of language and genre and develop strategies for reading and writing.

Observations of Literacy Enactments

Sources of assistance other than story reading. Children also appear to learn to read just as they learn to talk: by experiencing language in use and having access to people using print in appropriate ways. Hall (1987) suggests that no child would ever learn to read by being locked up in a library. On the contrary children prepare for reading and writing in the same way they pretend or act out many of the adventures they see in the adult world (Smith, 1989). By simply observing their parents, older peers and television role models, children model their early literacy behaviour on what they perceive in their environment and by participation in activities such as story-reading and other sorts of literacy activities.

Activities other than story reading influence children's literacy knowledge. Results from Hiebert's (1980) study with 3 to 5-year olds, show that home teaching activities but not modelling was one of three measures which best accounted for differences in children's performance on a print awareness measure, namely letter discrimination. Hiebert (1980) argues that failure of modelling and teaching to relate significantly to other measures of print awareness (visual and auditory discrimination) may be due to difficulties in designing reliable and valid instruments which assess the effects accurately or "tap all crucial dimensions". Furthermore, the similarity among the parents' own reading and teaching activities in the particular study could have accounted for less variation in children's performance. Therefore

modelling may be an important variable but careful scrutiny is necessary when it is assessed.

Role models. Role models need to involve the developing reader in various activities. Children discover and invent literacy as they participate actively in a literate society (Goodman, 1984). This happens through informal and playful activities such as baking cookies, paying bills, going shopping, being read stories and simply playing. Through natural events involving literacy activities children learn about reading and writing. Through explorations of written language and from observing the literate practices of others, young children construct their understandings of, and skill, in reading and writing. In this process, social interaction with parents and other literate persons plays a key role (Teale, 1986a). Adults and children engage in these interactive processes for mutual pleasure. For the adult it can be an opportunity to get away from the "mundane interactions of running the home", whereas the child feels secure with the complete attention being given to them.

Goodman and Goodman (1979) insist that learning to read is natural. They qualify this statement by adding that learning naturally does not imply that the process of reading will "unfold in an environment free of obstructive intrusions". Teaching children to read is not putting them into a "garden of print leaving them unmolested". Harste et al., (1984) refer to such participation and involvement as "inclusion" arguing that including children in all sorts of sprees, outings, excursions and daily common place activities around the home are all beneficial. In addition to modelling, parents may have a greater influence on their children's interest in literacy if they themselves engage in their own print-related activities.

If children are to make sense out of printed material and see variations in the functions and uses of print, they have to observe activities in their environment that involve reading or writing. They

need role models. As Hiebert (1981) concludes from her study of preschool children's print awareness, youngsters need to see adults engage in reading activities using print for various meaningful purposes. This seems to be a reasonable conclusion especially if parental involvement and their interest in print-related activities is a more important variable than socio-economic status, as has been argued previously (p. 6).

Parents' reading activities. Researchers are in agreement about the role of parental involvement in children's early reading development. Data and personal beliefs concur that parental interest and involvement in literacy activities is one way to foster and encourage interest in children. Children cannot have models if parents do not engage in reading activities for themselves or in activities which involve children's print.

Some sources report that good readers tend to come more often from homes supported by professional and managerial fathers (Briggs & Elkind, 1977; Schnur & Lowrey, 1986; Sheldon & Carrillo, 1952) where parents have attained higher levels of education (Morrow, 1983). This finding has also been reported in studies with subjects from different cultures (Barber, 1988; Wagner & Spratt, 1988). Yet structural variables such as parental education and prestige of father's occupation exert their influence indirectly (Kalinowski & Sloane, 1981). Attitudes, values and literacy objectives held by the parents, both with regard to themselves and their children are more clearly related to educational achievement.

A study of British children (Moon & Wells, 1979) showed that attainment in reading at age 7 was strongly predicted by knowledge of literacy on entry to school, which was in turn predicted by parental interest in literacy. Other studies consistently report significant differences between the reading habits of well-educated and less well-educated parents (Durkin, 1966; Morrow, 1983; Wells, 1985). Parents who value reading and their role in educating their children, read to their

youngsters daily or regularly. Such a significant finding is reported in studies involving white and Afro-Caribbean parents in Britain (Blatchford et al., 1985), American children from urban and suburban areas (Morrow, 1983), in one Peruvian sub-group as compared to two other groups (Barber, 1988), and within Moroccan lower-middle class subjects (Wagner & Spratt, 1988).

Since parents are the first teachers whom children meet, the literacy development of young children depends to a great extent on the literacy environment at home. Thomas' (1985) interviews with parents of early readers led her to conclude that the children in her study did not learn how to read solely by their personal interaction with print but also through social interactions and contexts set up by the parents and grandparents. Strickland and Morrow (1989) suggest that parents ought to be receptive, responsive and supportive about their children's literacy activities. Parental help given in response to children's queries and requests for assistance lead to a child's early reading ability (Durkin, 1966). Responsive adults are accountable for children's success at reading (Clark, 1976). Yet this implies that children also must be responsive to the opportunities parents provide to interact with print.

Because previous research is indirect in the kind of role-modelling that can occur, there appears to be a need to clarify the degrees of parental involvement in role modelling. The many naturally-occurring literacy events provide parents and adults with opportunities to engage themselves in print-related activities and simultaneously act as role models for young children. Parents and adults involve children differently during a literacy activity. The adults may be the only ones engaged in some activity where the children are passive observers. Children become more engaged in a literacy event going on when they are made aware of the print in the environment. This is achieved in the daily, natural setting within the home. When parents and adults choose

reading materials suitable for children and directly model how reading ought to be done, children become more involved. Finally, children become active participants when their role models invite them to cooperate in a shared literacy event.

Child-Initiated Activities

The importance of having adults who act as role models as well as participate actively in literacy activities cannot be undermined. However, literacy learning in early childhood can evolve naturally without adults among children who make deliberate efforts to engage in print-related activities. Children are unconsciously interacting with print during common practices in daily living. Clay (1982) suggests that some children are fascinated by big words on billboard advertisements, on television or on a packet of breakfast cereal. Words in favourite storybooks may be recognized by some children and others spend time trying to write their name or letters to relatives. The importance of assisting children who push their parents, peers or other adults into helping them to read, is supported by the results of a British study with working-class children (Hewison & Tizard, 1980). In this study, the factor which was most strongly associated with reading success was whether or not the mother regularly heard the child read. This result put emphasis on the importance of child-initiated print-related activities.

Based on their observations, Harste et al., (1984) report that it is safer for parents to provide the "key conditions for children to go exploring" and have materials readily accessible, rather than make deliberate attempts to teach children. They conclude that when this natural free-flow type of approach is ignored and deliberate attempts are made to teach some particular aspect of language, "literacy disasters" may occur. This can happen when parents set out to formally teach letter names, the alphabet or similar school-like reading and writing tasks.

Summary

It is evident that the nature of the interaction of children with print during various print-related activities is not determined exclusively by adults or children. Within any home environment, both adults and children have opportunities to initiate various activities. Therefore any study must be able to account for adult and child initiated activities and the interactions which go on between the two parties.

Besides assessing the home-environments and print interactions within these environments, the amount and accessibility of print available in the home must be taken into consideration. The quantity of print sources as well as the use made of the available materials contribute to the richness of the print environment in the home.

Having reviewed the studies which established the importance of child and adult involvement in literacy activities, as well as the necessity of having rich-in-print home environments to assist emergent readers' development of literacy knowledge, it is of equal importance to assess how the studies were conducted. Methodological constraints influence interpretations of research outcomes. The methods used to study the relationship of the home on reading achievement will be discussed in the next section.

Methodology Used to Study the Home Environment

Various methods have been used to study relationships between factors in the home environment and their effect on reading achievement. Naturalistic observations in the presence of an observer (Snow et al., 1985; Teale et al., 1981; Teale, 1986b) have been analyzed. Even naturalistic observations without any observer present have yielded significant data (Wells, 1982) although the limitations of such a method have been acknowledged. Use of questionnaires and interviews seems to be a more widely spread approach.

Twenty-one studies which assessed literacy in the home used some

type of questionnaire, or structured interview, with one or both parents of the primary caregiver of the target children in the study, to obtain information about characteristics of the family, demographic information, parental education, the parents' view of their role in education and their literacy habits. Appendix A summarizes the use made of questionnaires and interviews as a variable in studies of children's emergent literacy ability.

The studies in Appendix A deal almost exclusively with the influence of the home environment on reading achievement. Children's interactions with this environment within the home setting are either neglected completely (Bacon & Ichikawa, 1988; Barber, 1988; Blatchford et al., 1985; Dolan, 1983; Lopez & Holmes, 1983; Morrow, 1983; Schnur & Lowrey, 1986; Sheldon & Carrillo, 1952) or treated as an issue independent of the home environment (Moon & Wells, 1979; Plessas & Oakes, 1964; Price, 1976; Wells, 1981, 1982). In other studies an unbalanced reference is made to the home environment and children's interactions (Briggs & Elkind, 1977; Sutton, 1964) in favour of the former.

There seem to be conflicting views in deciding whether children's requests for storybook reading and children's interest in literacy are characteristics of the home environment (Durkin, 1966; Mason, 1980) or of children's self-motivating interactions with print (Briggs & Elkind, 1977; Moon & Wells, 1979). Indeed, reading books to children is a contributory factor of a rich print environment. As Wells (1985) argues, parents' ways of interacting with children in relation to books seems likely to be influenced by their own attitudes to reading and writing. Secondly, the form and content of interactions between children and parents change over the course of the child's development. Possibly, even the quality of the process or the parents' motivations for specific interactions and feelings for their children will change over time. Consequently some questionnaire items may be sensitive to

certain abilities and home-related issues but not to others (Kalinowski & Sloane, 1981). Indeed there appears to be a need for more precise measures to look at specific home environment and literacy knowledge relationships.

Appendix B shows how previous researchers, from 1952 to 1988, have classified factors as being either indicative of a child and a significant other's interactions during a literacy event or of the print environment in the home. None of these studies have looked at the combined effect of the home environment and children's interactions within it, on specific multiple measures of literacy knowledge.

Assessment of reading. In dealing with the influence of the home on educational achievement, ten out of twenty studies assessed reading using a standardized reading test (Bacon & Ichikawa, 1988; Barber, 1988; Dolan, 1983; Durkin, 1966; Hewison & Tizard, 1980; Morrow, 1983; Sheldon & Carrillo, 1952). Generally these tests assessed children's knowledge of letters, words and reading comprehension. Other skills and abilities which have been assessed (Blatchford et al., 1985; Wagner & Spratt, 1988) include word matching, sentence, paragraph and maze comprehension. Standardized achievement tests were also used in studies which were directed at determining characteristics of early readers. In such studies (Briggs & Elkind, 1977; Durkin, 1966; Schnur & Lowrey, 1986; Sutton, 1964) the early readers were identified from non-early readers on the basis of an achievement test score. Some studies made use of a battery of tests in order to identify (a) characteristics of early readers (Briggs et al., 1977), (b) the influence of the home on learning to read (Moon et al., 1979), as well as (c) the antecedents of early educational attainment (Wells, 1981, 1982). Within this series of studies, some specific abilities were studied such as children's knowledge about literacy, reading accuracy and word recognition, auditory closure and sound blending.

There is an apparent absence in the existing research on studies

which focus on specific developing literacy abilities of children and how the home environment and children's interactions within this environment influence children's literacy abilities prior to formal instruction. Serious attention must be given specifically to those abilities which are required of children for participation in formal schooling. The drawback of using reading achievement test scores lies primarily in the global and gross estimates provided. First, they do not indicate what span of literacy knowledge is entailed in literacy development; secondly, achievement measures are not sensitive to how literacy knowledge is used strategically in explaining how literacy development occurs.

Outcomes of the studies. Most of the results reported in the studies (shown in Appendix C) are strictly related to factors in the home which made some contribution to the children's performance on reading tests. There are only two studies (Moon et al., 1979; Wells, 1981, 1982) which directly correlate factors in the home to student literacy ability and, the factors in home and students' literacy ability to subsequent literacy achievement. Therefore these studies will be looked at in some detail.

In a study with British children (Moon & Wells, 1979), preschool knowledge about literacy as assessed by Clay's (1972) concepts about print and letter identification, was significantly related to parental verbal interaction (r.51, p<.01) and parental interest in literacy as derived from an interview (r.77, p<.01) and as derived from transcribed recordings (r.70, p<.01). The correlations of preschool knowledge of literacy to children's interest in literacy were lower (from the parents interview r.27 was not significant; from the transcribed recordings r.43, p<.05). However, preschool knowledge about literacy correlated significantly to reading tests administered 2 years later (r.79 with a test for reading accuracy; r.78 with a reading comprehension test and r.70 with a word recognition test). There were no significant

correlations between these reading tests and children's interest in literacy (range from r.20 to r.40) although significant correlations were obtained between these reading tests and parental interest (r.56 to r.69).

Thus, from the preceding study one can conclude that parental interest in literacy intercorrelates highly with all of the tests of children's reading ability. That the children's own interest in literacy did not correlate significantly to later reading attainment was an unexpected result. What is also important to the present study, is the highly significant relationship between children's preschool knowledge of literacy and tests for accuracy, word recognition and comprehension. In fact, it appears that knowledge is more important than observations for interest and participation through surveys and qualitative day-to-day observations of parent-child interactions. This suggests that there is a need to look at developing abilities such as book and code knowledge and word accuracy as they are influenced by the home and how they interrelate to each other and to other abilities.

In another study with British children (Wells, 1981, 1982), the children's interest in literacy, as reported by the parents just before the children started school at the age of 5, correlated significantly with a set of tests (English Picture Vocabulary test; Neale Analysis of reading ability including accuracy and comprehension, and a test of number operations) administered 2 years later (r.49, $p<.01$). The children's interest in literacy just before entering school was also significantly correlated with teacher assessments (on social adjustment; oral and written language ability; number work and logical concepts; physical development) when the children were 7 years old (r.63, $p<.001$). The span of the child's concentration in literacy activities as reported by parents prior to the children beginning school was also significantly correlated to the tests administered at age 7 (r.69, $p<.001$). Therefore, contrary to Moon's and Wells' (1979) study, children's interactions with literacy were significantly correlated to their

achievement. In addition, environmental characteristics such as the number of books owned by the child, parental interest shown in literacy in a preschool interview and the amount of parents' reading (as reported by parents after children had been in school for 2 years) were all significantly correlated to the set of tests administered at age 7. Of greater interest to the present study was the significant correlation between the knowledge of literacy test administered on entry to school (derived from tests constructed by Clay, 1972) and the tests administered at age 7 (r.79, p<.001). This finding highlights the importance of looking at book and code knowledge as a developing literacy ability prior to entry into school. What is lacking in these studies is the interactive effects of environmental characteristics, parent-child interaction with texts and children's literacy knowledge as they apply to independent literacy activities.

In yet another study (Wells, 1985) with the same subjects but with data collected from naturalistic observations in the absence of a researcher, listening to stories at home as they were read or told from a book, was significantly associated to knowledge of literacy (using the Mann-Whitney test and calculated with the combined scores on concepts about print and letter identification, from Clay, 1972) (p<.025) as well as to reading comprehension (using the comprehension subscore from the Neale test) at age 9 (p<.05). It is interesting to note that looking at books was not significantly associated either to knowledge of literacy or to reading comprehension.

Two other studies with British children indicate significant positive correlations between parental characteristics and children's achievement in reading. In one study (Blatchford et al., 1985) parental teaching of reading correlated significantly (r.22, p<.01) to a set of reading tests. (The total score was derived from the sum of the concepts-about-print test, adapted from Clay, as well as word-matching, letter identification and word reading tests). These were administered

to children before they left the nursery class and prior to entering the infant school. In the second study with 7 and 8-year old children from working-class environments (Hewison & Tizard, 1980), the factor which was most strongly associated with reading success, was whether or not the mother heard the child read. This was identified in the study as the "coaching" factor. It is reported that 36% of the variance in reading scores (r = .61) was accounted for statistically by the factor of "coaching".

Several conclusions can be drawn from the results of previous studies. First, book and code knowledge referred to as knowledge of literacy appears to be the only developing literacy ability which has received some attention. But as will be discussed later, the influence of the home environment combined with children's interactions on other developing literacy abilities needs to be conceptually distinguished and researched. Second, these studies (Blatchford et al., 1985; Hewison & Tizard, 1980; Moon & Wells, 1979; Wells, 1981, 1985) all indicate that several parental factors and aspects of the home environment are correlated to reading achievement. This suggests that it is desirable to look at factors in the home. Third, the conflicting results between the two studies which looked at children's interest in literacy (Moon & Wells, 1979; Wells, 1981) suggest that how interest is defined may lead to different interpretations of its relationship to emergent literacy ability. Finally, none of these studies looked at the home environment and the children's and adults' interactions with print as two interactive variables developing along a continuum. All prior studies clearly have separated the two, or only focused on some aspect of the home. Thus, there is an apparent need for more studies with entering school children to clarify the influence that home environmental factors and children's interaction with print have on developing literacy abilities.

Before concluding this section on methodological approaches used

to study the home, three caveats are worth mentioning. Since surveys, interviews and questionnaires are a common feature of studies which yield data related to the home, in analyzing parental responses, it ought to be remembered that analysis is based on what parents were able to report and even on what they were willing to report (Durkin, 1966). This is especially relevant when interviews are done and parents may detect some desirable way of responding to the researcher. Second, caution has to be exercised when interpreting research findings based on parental reports and natural observations. Results could be restricted to specific samples or cultures under study; hence generalization is not always warranted. Third, correlational studies are most commonly used to establish relationships between the home and achievement. As Teale (1984, 1986b) suggests, the survey studies are limiting in this respect because links between the environment and children's growth in literacy knowledge are interpreted to exist but are not specifically tested. More importantly, to be able to attribute the progress in reading development to factors in the home environment, one must look into the effect which school participation has had on the developing reader. Moon et al., (1979) and Wells (1981, 1982) demonstrate that a relationship between home factors and some aspects of literacy knowledge of emergent readers exists. However, one must be cautious of these results because the investigators did not separate the effect of school participation from home participation on students' literacy knowledge. Looking into homes and parent-child interactions require detailed examination.

Thus, most studies in Appendix C have ignored the influence of the classroom on reading development, treating the classroom as though it has no influence on ability growth when in fact it seems likely that it does. When children start attending school, the home does not stop having an influence on attainment. Children's academic attainment may in fact be a result of the combined influence of the home and classroom

environments. In this view, both environments continue to effect the child's literacy growth simultaneously. Therefore, it would clearly appear to be valuable for researchers to look at (a) the influence of the home environment including children's interactions with print on emergent and early reading abilities, (b) the combined influence of the home and classroom on these abilities, and (c) the extent to which the classroom environment contributes more than the home to various aspects of literacy knowledge. Moreover, both quantitative and qualitative differences which are observed have to be related in some meaningful way.

Developing Literacy Abilities

The developmental theoretical perspective (Brown, Bransford, Ferrara & Campione, 1983) suggests that reading is a multidimensional construct in which readers make use of a number of processes simultaneously, and changes occurring in one dimension may be jointly related to changes in other dimensions. Hence, developmental reading models (Aulls, 1982: Holdaway, 1979) propose that there is a need to look at an array of basic literacy knowledge such as book knowledge, print awareness and code knowledge, as they develop and gradually interact to change the literacy ability of early readers. Children's strategicness and fluency are interrelated knowledge resources which start developing immediately as children are exposed to varied reading contexts.

Print Awareness

In previous studies (Moon & Wells, 1979; Wells, 1981; 1982, 1985) book and code knowledge has been selected as a primary literacy ability upon which the home has an influence. Print awareness has also been identified as an early developing literacy ability but the influence which the home environment may exert on children's environmental print awareness has been a neglected feature of the environmental print

studies. Several studies have been done with American children (Goodman, 1983; Goodman & Altwerger, 1981; Harste et al., 1984; Hiebert, 1978; Masonheimer, Drum & Ehri, 1984) as well as Australian subjects (Goodall, 1984). The studies were directed towards the amount and/or type of context cues children make use of in trying to read print as well as the nature of the miscues. In all but one study (Masonheimer et al., 1984) age is reported as the factor which contributes to developmental changes in children's print awareness. Goodman's & Altwerger's, (1981) study with 3, 4 and 5-year old preschoolers revealed that the older the child, the greater the frequency of appropriate responses given when identifying the printed names of various items. Three-year olds had fewer exact responses and they made use of non-print information more often than the older groups when this was available. In the absence of supportive context, 5-year olds made more print-related responses than the two younger groups. In Hiebert's (1978) study, the 3-year olds made more errors than the 4-year olds in identifying stimulus words.

In one study (Masonheimer et al., 1984) reading skill rather than age was seen as the determining factor which reduces children's dependence on context cues. Hence, the most salient issue raised in these studies deals with whether children focus their attention on the print itself or the surrounding, available cues. None of the studies has tried to record or establish empirically whether the home environment and children's print awareness are related in any way. Several informal activities within the home may be expected to contribute favourably to children's increased print awareness. Examples of these activities include encouraging children to read signs in the external environment, going to the grocery stores, reading advertisements on magazines and newspapers and directing children's attention to print on bottles, packets and cartons.

Indeed, since differences on preschoolers' knowledge of print

awareness have shown up as a result of age or reading ability, there is evidently a need to include print awareness as a developing literacy ability in the multidimensional process of reading. If, as has been claimed and empirically shown, the home environment has an influence on reading skills, it will be useful to determine whether different categories of home environments coupled with children's interactions with print, will differentially influence children's print awareness. Moreover, it would appear to be a valuable contribution to the existing research base to test whether the combined home and classroom environments have a significant influence on print awareness when children reach school age and are being exposed to formal instruction for the first time.

Fluency

Children at the initial stage of reading development are not reading consistently in word groups but primarily focus on word-by-word reading (Aulls, 1982). Readers who slowly build up a body of words they can accurately and automatically recognize in varied print contexts also may be concentrating on grapheme-phoneme correspondences without integrating semantic or syntactic information. They may or may not have to be taught strategies which help them break away from word-by-word reading in order to get access to higher levels of syntactic and semantic cues. As they learn to focus on phrase groupings, and with reading material where most of the words are accurately read, children may become consciously aware of the active search for meaning involved in the reading process.

Fluency is trainable (Allington, 1983a) and it can be improved by allowing children to read and reread familiar material (Clay, 1978). If the reading material includes vocabulary and phrase structures which represent children's own natural language (Aulls, 1978; Clay, 1978), it allows children to use a rich language context from which to predict the information that follows.

Strategies

As children increase their awareness that reading is a meaning-making process, they may instruct themselves or require instruction in the use of strategies which improve word reading accuracy and comprehension. Results of the studies indicate that some reading behaviours of poor readers appear to be comparable to those of beginning readers (Leslie, 1980; Myers & Paris, 1978; Paris, Lipson & Wixson, 1983; Paris & Myers, 1981). Therefore, it seems reasonable to infer that if poor readers can be taught how to compensate for the comprehension disruptions that occur during reading by being taught strategies (Aulls & Graves, 1986) then, young readers too would benefit from such strategy instruction. On the other hand, there is no existing research which has demonstrated that prior to formal schooling, young readers do not begin to develop their own strategies for dealing with unknown words, filling up meaning gaps or going beyond word-by-word reading.

Few studies have examined possible use of strategies which young children might adopt on their own initiative as they gain reading proficiency. Two studies (Biemiller, 1970; Weber, 1970) analyzed the type of miscues which first grade children made throughout their first school year. Biemiller (1970) observed a shift in children's miscues as they gained reading proficiency. Initially, first graders were likely to substitute words that fit the sentence contexts. Later, children were more likely to omit words or substitute words that were graphically similar. At the end of the year children's miscues included substitutions that were graphically similar and compatible with sentence meaning. Weber (1970) observed a shift in substitution miscues from dependency on contextual appropriateness to confusions based on graphic similarity.

Studies with a New Zealand population have led Clay (1978, 1979, 1982) to recommend actions on the part of teachers as they monitor

closely children's knowledge and strategic action. Clay (1982) argues that in the first two years of instruction, the child learns strategies that maintain fluency, others that explore detail, some strategies which increase understanding and others to detect and correct errors. She believes that it is desirable to alter the child's reading behaviour from less adequate to more adequate responding by training them on reading tasks rather than training visual perception or auditory discrimination as separate activities. In her diagnostic survey, she recommends using books where children are initially 90% accurate in pronouncing words. This result ought to improve with rereadings. This assists children's predictions and self-correction strategies. Clay (1982) also observes the relationship between children's initial fluency in reading to the child's strategy of creatively reconstructing and recreating text. However, this "fluency" gives way to word-by-word reading as the child integrates grapho-phonic skills to read words, point to them and move across the page in a conventional way.

Holdaway's (1979) informal observations with young children at home and at school as well as his developmental reading model support Clay's (1982) conclusions. He argues that there are essential strategies necessary for handling language. These include self-correction and confirmation, the ability to use the context, the ability to understand language sequences, logical arrangements, and the ability to understand language without any assistance from immediate sensory context. Holdaway (1979) agrees with Clay (1982) that some involvement of memory for text seems necessary in the development of automatic functioning. This allows rapid predictions as deliberate attention is given only to a few verbal items. A child needs to feel assured of his/her success in dealing with a familiar text which has been read several times. In this literacy context, self-correction becomes a meaningful strategy.

Reading is not merely made up of independent sets of knowledge.

Literacy knowledge has to be integrated into strategic action to result in efficient reading (Aulls, 1982; Holdaway, 1979). Developmental models of reading, the beliefs and recommendations expressed by researchers and a few studies done with grade 1 children indicate that:

(1) Accuracy, strategicness and fluency are interrelated reading abilities.

(2) An integrated use of strategies, where children focus on combined contextual, grapho-phonic, syntactic and semantic cues, increases word accuracy.

(3) An increase in word accuracy assists fluency as children learn to focus on phrases and groups of words rather than individual words. This can be achieved if children are reading meaningful and familiar texts where they are not burdened with the frustrations of decoding new words.

(4) Fluent reading increases with repeated exposure to the same text and material which draws on the children's existing vocabulary knowledge.

(5) Fluent reading is achieved when strategies have been properly used. As fluency increases the need to rely heavily on strategies decreases. This is not to say that fluent readers stop reading strategically but because of higher level of strategic processing, strategies are used unconsciously.

(6) Although children appear to make use of some strategies on their own certain strategic routines may have to be formally taught.

There clearly exists a need for studies to look into these literacy abilities (fluency, accuracy, and strategicness) as they develop prior to formal instruction. It will be useful to find out whether various combinations of the opportunity to experience print and parent-child interactions with print resources have a significant and differential influence on any of these abilities; how individual children's use of, or performance on, these abilities changes when the classroom environment is combined with their home environment, and the

degree to which the classroom environment alone is responsible for any literacy knowledge and strategic changes which occur. In addition, there may be a relationship between these three abilities and the extent of book, code and print knowledge, which children already have.

To date studies which have dealt with early reading development either focused on the development patterns and interrelationships of a single literacy ability, such as concepts about print (Johns, 1980; Lomax & McGee, 1987) or print awareness (Hiebert, 1981) or on several abilities such as print awareness and concepts about print (Goodman & Altwerger, 1981). However, in Goodman & Altwerger (1981), print awareness and concepts about print were treated separately rather than components of a multiple construct. Only a general reference was made to the nature of their relationship. No quantitative data were reported but it was stated that "in general, the more print aware children are, the greater their understanding of book handling" (p. 27).

None of the studies which investigate how the home predicts school performance assess reading as a set of multiple dependent variables. Only two studies look at how children's knowledge, specifically book and code knowledge, is related to their reading comprehension and word accuracy (Moon & Wells, 1979; Wells, 1981). Moreover, there is generally a striking poverty of studies which report empirical data describing how young children's initially developing literacy abilities are related to their reading comprehension and the meaning which they make out of the reading process.

Summary

The research and conclusions about emergent literacy as it is related to the home environment and the influence it has on early scholastic attainment, indicate that literacy and reading develop:

(1) in the presence of print;

(2) when print is easily accessible and used constantly;

(3) where role models are available. (They use print for their own needs as well as provide opportunities to involve beginning readers in meaningful interaction with print);

(4) where stories are frequently read and reread;

(5) where adults are responsive to children's questions and growing interest in various print and reading contexts;

(6) where literacy activities evolve naturally without any external pressure.

Evidently the potential for variation within homes on any one of these factors is a very realistic consideration and undoubtedly one which cannot be ignored. Therefore, rather than strictly discuss dichotomies in the environments, it is more sensible to look into variations along a continuum.

Clearly, the type of home environment and children's interactions with the environment are not independent factors. From a review of the research of the issues related to home influences on young children's print-related development, Hiebert (1986a) argues that there is a need to look at the contributions of both parents and children in creating print-related experiences in the home. Due to the interactive nature of this process the exact contribution of both parents cannot be singled out. Studies on print-related experiences in the home, "need to be guided by an interactive model in which both parent and child are seen to influence the interaction" (p. 149). To have as complete a picture as possible of how growth in literacy develops, it is essential to focus on the combined effect of both dimensions. Given the complexity and interrelatedness of both dimensions it is quite naive to look at strict dichotomies. Studying different combinations of home environments and children's varying interactions within these homes is a sensible approach since each dimension influences the other.

As Teale argues (as reported in Teale et al., 1981) print which surrounds the child, the way it is organized by people other than the

children and the realization that children actively process this print, are all matters of equal importance. Thus, looking into children's literacy development within the home, prior to and during the initial stages of formal instruction, implies looking into the children's interactions with the opportunities available. Children within any type of home environment have a choice: they can either respond enthusiastically to print material and literacy-related activities or they can show a more subdued and moderate interest. Here too lies a continuum along which children's interactions can vary.

Some aspects of emergent literacy seem to have obtained little or no attention in previous research studies: (a) how the home environment influences specific reading outcomes or even knowledge leading to reading, such as knowledge and use of strategies which children may be developing in their informal and natural involvement with print, and (b) the extent to which the home environment contributes to children's print awareness and book and code knowledge has not been a major concern of previous research, in spite of several studies conceptually describing children's development of print awareness and concepts about print. There clearly appears to be a need for studies to separate out the influence of the home environment on

(1) reading strategies,

(2) increased awareness of print in the environment;

(3) the growth in word accuracy;

(4) the development of book handling and code knowledge, and

(5) the onset of fluent reading as children are helped to shift their attention from word-by-word reading to reading in phrases.

The Classroom Environment and Its Influence on Early Reading

The second most influential environment in the emergent reader's development is provided by the primary school in particular, and the individual teacher's classroom. Based on the conclusions and findings of previous research on the continuity and discontinuity between home and early childhood education environments, Silvern (1988) suggests that it is impossible to deal with environments in terms of a dichotomy, such as a good or bad environment. Defining characteristics in the home environment which can be enhanced in the school to iron out inconsistencies between the two environments, has a positive influence on children's development. Bond and Dykstra (1966-1967); Hiebert (1988); Morrow (1982, 1983); Morrow and Weinstein (1982); Slaughter (1988); Stahl and Miller (1989) and Taylor, Blum and Logsdon (1986) have looked into various environmental characteristics in the classrooms and the effects which these characteristics have on beginning reading.

Bond and Dykstra (1966-67) gave emphasis to the importance of instructional methods which combine positive features o different approaches. From their study comparing basal, phonic and i.t.a. programmes, they conclude that irrespective of the programme utilized some students experienced difficulty. Hence, no one programme is seen as distinctly better in all situations that it should be used exclusively. Stahl and Miller (1989) support these conclusions by the research synthesis they carried out comparing the whole language/ language experience approach to the basal method in kindergarten and first grade classrooms. They conclude that whole language/language experience approaches and basal reader approaches have almost equal effects on beginning reading achievement. The former may be better for teaching functional aspects of reading such as print concepts and expectations about reading. More direct approaches might be more adequate for students to master word recognition skills essential for effective comprehension.

Slaughter's (1988) study was designed to find out the how and extent to which remedial, supplementary and regular classroom teachers used a whole language model rather than a conventional skills model for instruction in reading and writing. Her ethnographic study of the oral and written language development of high risk children in kindergarten, first and second grades led to the conclusion that conventional and whole language classrooms can contain elements of whole language instruction or of direct teaching.

Morrow (1982, 1983) and Morrow and Weinstein (1982) focused on the physical arrangement of the class library and how design changes in this setting encourage children to take a greater interest in literature and hence interact with books more frequently. The studies were carried out in kindergarten classrooms (Morrow, 1983; Morrow et al., 1982) as well as in a sample of nursery rooms through grade 2 classrooms (Morrow, 1982). The results indicate that exposing children to rich literary settings in class increases their use of literature at all ages.

Taylor et al., (1986) designed their study to discern and describe the language and print-rich characteristics of kindergarten classrooms which made use of a specifically designed curriculum as well as to determine the effect of implementation of this curriculum on children's reading-related achievement. Children who had been exposed to a language and print-rich environment performed significantly better on written language awareness tests and three of its subtests (the aural word boundaries test, the metalinguistic interview test and the rye-rhinoceros test) than children who had not been exposed to similar environments. A language and print-rich environment was characterized by (a) use of language units larger than a word, including language that was child composed; (b) print which was prominently displayed and integrated in the curriculum; (c) print which was accessible and clearly visible to the child; and (4) print which served to generate later activities or relate to earlier activities.

Hiebert's (1988) review of previous research focuses on the discrepancy which exists between formal reading instruction in kindergarten programmes and children's literacy accomplishments and mechanisms for literacy acquisition prior to instruction. She concludes that within the school framework, instruction fails to capitalize on children's prior knowledge. Since children are not required to make use of their knowledge of written language which they have previously acquired from signs and storybooks, they appear to be unknowledgeable about reading and writing. Therefore, Taylor et al's., (1986) results appear to be important in light of the review done by Hiebert (1988).

Teaching programmes, teachers' individual practices, their teaching materials and the physical design of the classroom are all major factors which influence children's learning. There are variations and differences within each of these factors. The various characteristic features of each factor affects children differently depending on the children's prior knowledge and the use they make of this knowledge. Certain programmes, materials and practices may be effective for some children but not for others. Therefore, rather than identifying the optimal characteristics of the ideal environment, researchers might do well to determine how well the approach, materials and programme that teachers enact fit the population they have to work with.

The Teacher's Role

A review of the literature led Anderson, Hiebert, Scott and Wilkinson (1985) to report that factors relating to the skill and effectiveness of the teacher are accountable for about 15% of the variation among children in reading achievement at the end of the school year. Roehler, Duffy and Meloth (1984) support other studies which conclude that what the teacher does to directly instruct makes a difference in student reading achievement. Goodman (1977), McKenzie (1977), Duffy and Roehler (1986) believe that effective teachers are

those who in their instructional decision-making are led by their professional knowledge rather than let themselves be "dominated by the classroom environment" or follow directions like a "trained technician". From their study on different reading programmes, Bond and Dykstra (1966-67) conclude that rather than expect a panacea in materials it is more realistic to train better teachers of reading. Such a conclusion came about as a result of the amount of variability in student learning obtained among classrooms using the same reading materials. However, this result is not unexpected because teachers are constantly dealing with students whose prior knowledge varies; hence the likelihood of variation among student learning in spite of the same reading materials. Research still has to investigate the influence of different home environments on children's prior knowledge. This is important especially in the early months of grade 1 because what each child makes of any one lesson does not depend entirely on the teacher's skill and effectiveness in dealing with different knowledge distributions but also on the child's prior knowledge and the use made of this knowledge.

Several studies (Rupley & Logan, 1985; Wing, 1989; Bawden, Buike & Duffy, 1979; Buike & Duffy, 1979) report and indicate how differences in teachers' conceptions of reading influence their teaching practices and instructional decisions which in turn affect students' reading perceptions and achievement. In Wing's (1989) study, classroom observations and interviews with directors and children of two nursery schools were conducted. In the school which associated reading and writing to individual skills that children had to master, where reading tasks focused on letter sounds and writing tasks on formation of shapes and letters; where the director of the school believed that children were ready to read and write "when they [could] hold a pencil correctly, hear differences between sounds and show an interest in language" (p. 65), there was a tendency for children to consider reading and writing as figuring out letters and forming letters and words. In

addition, the children described that people learn to read and write by direct instruction, practising and copying.

In the nursery school where the policy was one of children learning through discovery and self-construction of knowledge, where opportunities were provided for exploration, experimentation and manipulation of materials, where the director believed that children learnt to read and write "in much the same ways as they learn to speak - by playing around...experimenting...discovering rules and developing complexities" (p. 66), the reports of the children's interviews showed that these children were more likely to describe reading as reading stories or looking at books. They tended to see writing as making up stories or drawing.

Rupley and Logan (1985) conducted a study about elementary teachers' beliefs about reading. Teachers who held content-centered reading beliefs, which are related to basal readers and linear types of approaches for reading instruction, had significant positive correlations with reading behaviours which were decoding oriented, focusing on sounds represented by vowel and consonant combinations. Student-centered teachers whose reading beliefs were associated with natural language or whole language approaches obtained negative correlations with decoding oriented outcomes. Teachers whose reading beliefs were student-centered had significant positive correlations with reading behaviours which reflected comprehension as well as auditory recognition of word-meaning. These findings suggest that teacher beliefs may be reflected in their classroom practice and the type of reading experiences they provide for their students. Research in grade 1 classrooms has yet to consistently determine whether teacher beliefs and their philosophy about reading coincide with their classroom teaching and how these beliefs and their enactments influence students' growth in developing literacy abilities. The results of surveys with teachers and field studies in elementary classrooms (Bawden et al., 1979) led the

authors to conclude that although the instructional practices of most teachers reflected their reading conceptions, it was not possible to state that the instructional decision-making in reading is exclusively guided by reading conceptions.

Research indicates that teachers should draw on both student- and content-centered belief systems. They ought to tailor their method of instruction to suit the needs of the students and the particular concept being taught. However, in the daily management of the classroom, teachers appear to oversimplify their approach and adopt one belief system or teaching method. However, research has yet to demonstrate whether different beliefs and teaching methods have a different impact on specific reading outcomes such as print awareness, book and code knowledge and children's use of strategies in their development as readers. Research is also needed to evaluate the differential effects of teaching on combinations of these variables used to describe patterns of literacy knowledge growth. Studies are needed to deal explicitly with the extent of variance of a teacher's influence on different reading abilities. Finally, although teachers may put emphasis on different abilities or combinations of abilities, similar results could still be obtained by their students on achievement tests. This is also a critical issue since changes in individual reading knowledge measures may be far less important than the fact that sets of knowledge change and these sets may best account for performance on achievement tests.

Characteristics of the Rich-in-Print Classroom Environment

The Class Library

Creating and setting up an effective print environment in class has been shown to have its merits. In dealing with home and school correlates of early interest in literature (Morrow, 1983), the classroom's understudy were rated for their literary environment. The teacher's daily literature activities and the physical design

characteristics of the library corner within the classroom were taken into consideration. Statistically significant differences are reported concerning the class environment of children having high interest in literature as opposed to low-interest children. Eighty-one percent of the high-interest children came from classrooms where literature programmes were rated as good or excellent. Teachers in these classes emphasized regular planned literature activities and provided space for well-designed library corners. Eighty-two percent of the low-interest children came from classrooms where the literature environment had been rated as fair or poor.

Morrow and Weinstein (1982) provide data from 13 kindergarten classes to report a significant increase in use of literature when books and physical props used in the literature programme were made accessible to children. The researchers conclude that in spite of agreement among educators, that early exposure to literature is beneficial, apparently many kindergarten classes do not have a regular literature programme or well designed library corner.

Morrow's (1982) study in 30 nursery rooms, 37 kindergartens, 32 first grade and 35 second grade classrooms, observations and interviews revealed that nursery and kindergarten classes had library corners with physical characteristics more closely matching the recommendations of educators, such as Huck (1976), than first and second grade classes. In addition, an "unexpected finding" was reported: teachers did not read to children daily. This result has also been reported in an earlier study (Hall, 1971) dealing with the literature experiences provided by cooperating teachers. From the 84 student teachers' responses to a 38-item questionnaire, it was concluded that 52.4% of teachers did not read daily to children. In addition, 76.2% of the teacher selections for reading aloud did not reflect a planned literature programme and time for independent reading was provided only when assigned work had been completed in 50% of the classes. Daily reading to children as well as

independent silent reading have been highly recommended (Teale, 1986a) as these activities assist children in increasing functional and structural knowledge of stories (Stein, 1983). In addition, by being read to, children are exposed to print-related concepts and book-handling rules. Their attention is focused on the print, and through teacher modelling they can be assisted in becoming strategic readers.

The results of a study with second, fourth and sixth graders (Fisher & Hiebert, 1990; Hiebert & Fisher, 1990) in literacy-based and skills-oriented programmes, have shown that students in whole-language classrooms spend more time on literacy tasks which are more cognitively complex. Students in the integrated literacy programme had a role in shaping their tasks as well as shared interpretations of text materials and literacy experiences. Children in the whole language classes had an influence in deciding what literacy task to work on. The positive effect of such decisions is seen in the time spent by students selecting a book for personal reading and in the number of books which children in the integrated literacy programme read as compared to the children in basal programmes.

Story Reading in the Classroom

Classroom observation (Rhodes, 1981) and a review of previous research (Bridge, 1986) have underlined the importance of story telling and book reading to young children as a beneficial way for children to sort out important features of stories and written language. Both Rhodes (1981) and Bridge (1986) have suggested the use of predictable books as part of the beginning reading instruction. Such books attract children to reading and at the same time facilitate the teacher's work in achieving a number of goals.

Rhodes (1981) believes in the natural language of predictable books as well as the content and vocabulary used. Such books reflect what children know about their world and language. Children can use this knowledge to develop word recognition strategies while reading.

Predictable books are helpful in building sight vocabulary and assisting fluent reading (Bridge, 1986). As children get hooked on the rhythmic pattern of the stories, they take an interest in the books and engage in several rereadings. This induces active involvement and the notion of success in each child as they feel good about their ability to read a book from cover to cover. They also develop a familiarity with book language and learn to use the strategy of content clues to figure out unfamiliar words. Consequently, emphasis is on meaning rather than sounding out words.

Meaningful Language and Print Activities

The results of a study with 124 kindergarten students from six classrooms (Taylor et al., 1986) indicate that young children, even those from homes where exposure to a literate environment is not likely to occur, can develop important pre-literacy skills when the right environment is provided in the classroom. The results further indicate that children learn best in a language- and print-rich environment, characterized by many opportunities to observe, try out and practice literacy skills in genuine communicative situations. Thus, these characteristics appear to correspond to those found to be conducive to emergent literacy in the home environment.

Based on several research findings related to early reading acquisition, Taylor (1986) makes several suggestions concerning the setting up of a print-rich environment in class. A rich body of written-language examples and facilities for children to encounter print in many different contexts ought to be available. She further suggests that print should be meaningful to the child. In order to achieve this meaningfulness, print has to be functional for children. This implies setting up an environment where one must get information from print in order to know or do something. The way teachers structure children's interaction within the print-rich environment has a marked influence on the acquisition of literacy concepts. The environment set up by the

teacher needs to be flexible and fluid enough for children to discover knowledge about written language, help children integrate literacy experiences into their existing conceptual frameworks and allow frequent and independent interactive access to meaningful written language.

Research and Practice - A Dichotomy

Most suggestions and advice concerning an ideal classroom environment and the changes which are brought about in children's reading and writing experiences are not based on empirical research. Hemming (1985) and Avery (1985) report how they encouraged and fostered "exploration with language" and "group-sharing activities" respectively in their grade 1 classrooms. Goodman and Goodman (1983) suggest that teachers can transform the classroom into a literate place, richer than a supermarket, home or gas station. In such an environment, children know that they are constantly involved in reading and writing. Vellender's (1989) observations of her grade 1 students show how children can discover ways of pursuing literacy when given a chance to build on and re-organize what they already know. Furnas (1985) explains how her kindergarten children were able to benefit from reading and writing because their participation in adult processes gave the children control over their own learning. Yet, none of these five articles include data to support teachers' claims about what environmental characteristics lead to what changes in children's literacy development.

Hiebert's (1988) review of studies of children's literacy accomplishments and the mechanisms for literacy prior to formal reading instruction, and literacy experiences in early childhood settings led her to conclude that contexts of formal reading instruction emphasize forms of literacy (such as letter naming practice and letter-sound matching exercises) whereas preschool literacy acquisition emphasizes functions (writing messages, listening to stories and direct involvement of children). Evidence provided by analyses of textbook materials and

classroom observation indicates that the majority of kindergarten children's school-reading experiences are more likely to consist of practising letter naming and letter-sound matching on worksheets than listening to stories and writing messages. Consequently, because the teacher's demands in class do not require children to use their prior knowledge acquired during their pre-literacy experiences, children appear to lack knowledge about print. This is a clear example of Silvern's (1988) notion of discontinuity between the home and classroom environments. Research on emergent literacy shows that young children, "avidly learn about written language in their home environments" (Hiebert, 1988). This led Hiebert to recommend that these home experiences ought to be extended to the classroom environment in order to allow the classroom experiences to build on children's prior knowledge.

Data collected in Durkin's (1987) classroom observation study of reading instruction in 42 kindergarten classrooms indicate that 70.9% of the time spent on reading activities went to topics related to phonics. Behaviours such as "explaining what it means to read" and "showing or discussing usefulness of reading ability" were never observed in 233 class observation hours of reading and reading-related activities. Other behaviours such as explaining language of instruction, showing the relationship between the spoken and written word and showing left-to-right, top-to-bottom orientation of the text were observed for 3 or 2 minutes - a mere 0.02% or 0.01% of the total time in classrooms. These results clearly indicate that teachers do not put much emphasis on developing literacy abilities. They are more concerned with the mechanics of reading rather than with children's growth and understanding of the functions of reading. It appears that kindergarten teachers may fail to find out what prior knowledge children have; and therefore, they do not provide the children with relevant experiences where they can make use of their available literacy knowledge.

The studies where the classroom environment has been observed, primarily involve kindergarten classrooms. In addition, Hiebert (1988) reports that although studies are being undertaken to study classrooms in which curriculum and instruction are derived from emergent literacy research, only one (Taylor et al., 1986) has been described comprehensively so far. This clearly suggests the need for more studies with grade 1 children which look at what the home environment has contributed to children's developing literacy knowledge and how the classroom environment relates to or makes an impact on changes in children's reading growth, particularly the growth of multiple literacy abilities. It is important for research to establish how the grade 1 classroom environment can influence and alter children's multiple developing literacy abilities because reading books and print in the environment is not an activity which can be carried out without using multiple knowledge resources. The onset of a particular knowledge resource does not depend on the complete development of other resources. Reading is meaningful because it is the product of the use of combined literacy knowledge resources which are used simultaneously (Aulls, 1982; Stanovitch, 1990).

Summary

There appears to be a dichotomy between the empirical data provided by large scale research findings and opinion, beliefs or suggestions brought forward by educators and researchers as a result of observations of individual children or single classrooms. Teacher educators and researchers of emergent and early readers are in agreement about the benefits of a rich-print environment, the informal yet meaningful acquisition of literacy in preschool years and the need for teachers to acknowledge and utilize this preschool knowledge before leading children into more formal methods of reading instruction (Bissex, 1984; 1985; Clark, 1976; Harste et al., 1984; Hiebert, 1986b;

Teale, 1986a; Watson, 1985). Yet classroom research consistently indicates that many teachers generally disregard children's prior literacy knowledge and, from the time children are registered in kindergarten programmes, conventional and skills-oriented reading programmes are most often implemented (Durkin, 1987; Hiebert, 1988). In spite of the assumed and researched benefits of daily reading at home (Snow et al., 1985; Teale, 1981; Yaden Jr. et al., 1989) and in school (Bridge, 1986; Johns, 1984; Rhodes, 1981), classroom observational research shows it typically is not a daily event in the classroom (Hall, 1971; Morrow, 1982). In addition, although research indicates that attractive arrangements of class libraries would stimulate children to use different sources of literature these arrangements appear not to be widely implemented in many of the classrooms observed (Morrow, 1982, 1983; Morrow & Weinstein, 1982).

Research is needed to assess the effects of variations in the teaching programmes, approaches and materials on literacy abilities of grade 1 children. There is an absence of studies describing the correspondences among characteristics of classroom environments in grade 1 and what reading outcomes may be influenced by them over time. To date, only one study (Taylor et al., 1986) has looked into the effects of language- and print-rich classrooms on reading achievement. In the study, with kindergarten children, literacy ability was described by using three separate measures of literacy knowledge:

(1) A written language awareness test made up of four subtests measuring children's linguistic awareness and concepts about print.

(2) Boehm test of basic concepts which measures beginning school children's knowledge of frequently needed basic concepts.

(3) Metropolitan readiness tests which measure basic prereading skills (auditory, visual and language).

There does not appear to be any classroom instructional research which describes the relationship of conditions of instruction to changes in literacy ability, or growth, on the basis of multiple categories of literacy knowledge which are analyzed simultaneously. The absence of multiple criteria prevents a close look at potential differences in grade 1 classroom environments that correspond to changes in some aspects of students' reading ability but not others. The following reading knowledge would appear to provide a valid description of the range of knowledge categories useful to emergent and early readers: (a) prior literacy knowledge (Hiebert, 1988; Taylor et al., 1986); (b) book handling, knowledge of code and print awareness (Clay, 1978); (c) reading fluency (Aulls, 1982; Allington, 1983a); (d) the strategies which children need and adopt to make sense out of text and move towards fluent and accurate reading (Myers & Paris, 1978); and (e) global reading comprehension. Equally important is the necessity for classroom research which attempts to make some assessment of the combined influence of the home and classroom environment on children's literacy growth. Studies are needed to explicitly highlight those changes in grade 1 children's multiple literacy abilities which result from the interaction between the classroom environment as set up by the teacher and the home environment and children's interactions within it. This research is necessary to define (a) what literacy abilities are influenced by the home environment prior to school entry, (b) what characteristics of the home environment may be adopted and used effectively in the classroom, and (c) where teachers can be most effective with changes in the literacy abilities of the developing reader.

Research and reports which attend to preschool literacy within the home environment (Clark, 1984; Doake, 1985; Haussler, 1985; Smith, 1989; Strickland & Morrow, 1989; Taylor, 1983) mostly conclude with recommendations and suggestions for a print-rich environment in class.

They describe what could constitute such an environment without providing details about how teachers actually go about creating, implementing and maintaining such an environment. Teachers are advised to provide all sorts of printed material in the school classrooms to extend children's existing literary knowledge. On the other hand, studies which do look into the classroom environment in some detail, simply acknowledge that when literacy-related experiences are lacking in the home environment, the school can provide experiences which assist children in their acquisition of literacy (Taylor et al., 1986). In one study (Morrow et al., 1982), the influence of the home environment on children's preschool literacy knowledge as well as how the teacher and children can capitalize on this existing knowledge to construct a literacy environment in a classroom are ignored completely. This implies the need for further studies which look at the combined effects of the home and classroom environments on changes in literacy abilities of the emergent and developing reader.

Conditions of Reading

One aspect of reading which cuts across both home and classroom environments is the child's interaction with books. Of particular importance are the conditions under which this reading and interaction take place because these conditions may influence not only the child's motivation to read but also the child's ability to generate strategies and make use of his/her prior knowledge.

Assisted Reading Prior to Formal Instruction

The benefits of parents reading and rereading books in the home with their children have been dealt with by several researchers (Doake, 1985; Holdaway, 1979; Taylor & Strickland, 1986; Teale, 1981, 1986a; Wells, 1985).

In highly assisted reading conditions where the adult reads

stories to a child, and where adult and child engage in repeated readings, the child is becoming equipped with an immense amount of knowledge. As Taylor and Strickland (1986) conclude from their observations of shared family readings, through these experiences children develop a sense of how stories are constructed and written. They broaden their own view of the world and increase their vocabulary. They engage in language play that centers on the sounds of language as well as become sensitive and aware of language patterns which are not part of everyday speech. Holdaway's (1979) observations with children in homes lead to the conclusion that the reading-like play which the children engage in, subtly develops into picture-stimulated, page matched and story complete attempts of reading. As a result of this reading-like behaviour children begin to self-direct, self-monitor and self-correct their own learning-to-read strategies. Doake (1985) observed in his research that four participatory strategies seem to develop as children increase their familiarity with certain stories.

Indecipherable mumble reading used to accompany the adult reader, develops into cooperative reading which is done partly in unison, partly with one reader's voice slightly ahead of the other and partly with one reader reproducing the story alone. The third and most frequently adopted strategy is completion reading where the adult reader pauses at various parts of the story, inviting the child to complete the sentence or phrase. The fourth strategy, referred to as echo reading, is demonstrated when children repeat a phrase or sentence immediately after it has been read to them. In such highly cued and assisted reading conditions, children are actively involved in learning-to-read strategies. As they listen to stories, participate in their reproduction, retrieve them in a reading-like behaviour and focus on the print, children are preparing the foundations for prediction and self-correcting strategies. They are also learning how to group words and phrases rather than insist on reading individual words. Hence, they are

progressing toward more fluent unassisted reading.

Unassisted Reading Prior to Formal Instruction

Children appear to make use of some strategies even when placed in unassisted reading conditions. In Sulzby's (1985) study with 24 kindergarten, American children who were invited to read one favourite or familiar book at the beginning and at the end of the year, of the children who were able to engage in the holistic print-governed attempts at storybook reading where the child "seems to have it all together and [is] reading from print" (p. 472), there was a distinction between those who read with 'strategies imbalanced' and those who 'read independently'. The former type of reading was characterized by insufficient integration or strategic flexibility. This was demonstrated if the reader had a tendency to ignore unknown words excessively, made substitutions from his/her repertoire, sounded out words excessively, often left "nonsense" words uncorrected or relied on the predicted or remembered text, rather than the written text. Sulzby (1985) argues that a child who reads with imbalanced strategies seems to "know about all the parts of reading", but is over dependent upon the use of a preferred strategy and less likely to try other strategies.

The amount of self-regulation exhibited by a child and the flexibility with which s/he could make self-corrections were the two features which distinguished children who read independently from those who had imbalanced strategies. According to Sulzby (1985), independent readers can either read word perfectly or make several miscues. However, they have a wider range of literacy knowledge. Children who read independently, utilized substitutions for words which were not recognized or which the child decided not to bother with, were less text-bound and yet more accurate in reproducing the wording and the author's intended meaning. These knowledge resources show evidence of predicting and confirming strategies. In Sulzby's (1985) sample, of 24

children, only one child was reading independently at the beginning of the kindergarten year and one child was reading with imbalanced strategies. By the end of the kindergarten year, three children were reading independently and two were reading with imbalanced strategies. During the year at school, the children had received no formal instruction in reading and writing. By the end of the school year, 10 of the 24 children's favourite storybook reading attempts were governed by print; 12 children formed stories which were picture governed. Of these 12, 7 children used written language-like renderings and 5 used an oral language-like style to read the story. It is interesting to note that at the beginning of the year, 4 children did not form stories although their attempts were picture governed. There were no children in this category at the end of the year. Two children refused to read or depended on assistance.

Clearly children who are reading in assisted and unassisted reading conditions have the potential to develop one or more reading strategies. However, there still has to be empirical research to look into the strategies which children use to cope with reading in different reading conditions. In Sulzby's (1985) study, the children were asked to "read" to an adult from familiar or favourite books. Therefore, the variance in each child's degree of familiarity with their text may have differentially affected the observable strategies. Sulzby's (1985) criteria make sense for the emergent reader who has no social obligation to read but is likely to do so with well-rehearsed books. However, for the child who enters grade 1 these criteria will not satisfy the new social expectations set for the children by teachers' decisions about what to read.

Hence, studies that look into the strategies which children use in their attempts to read an unfamiliar text when they are not given any adult assistance are also needed. It is also sensible to study the strategies which children use when they are repeatedly reading the same

text and have been given adult assistance. Clearly then there is a need for studies designed to investigate emergent and early readers' use of the different strategies under both of these different reading conditions. To do so would require studying the same children prior to and after formal school instruction in order to find out how and when they are likely to acquire their knowledge and use of book reading strategies.

Assisted Reading as Part of Formal Instruction

Repeated reading in classrooms has been suggested to be an essential aspect of class instruction (Allington, 1983a; Aulls, 1982; Herman, 1985) as it is one technique which enables readers to segment written discourse into meaningful "chunks" or phrases for optimal processing. However, before children can go beyond word-by-word reading, they have to be taught prediction strategies, strategies which confirm these predictions and active sampling strategies which assist the children to decide whether they should dwell on an unknown word or ignore it and still preserve the meaning or syntax of the entire sentence (Aulls, 1982).

Once children are familiar with the preceding sentence level processing strategies, they appear to begin to go beyond word reading. In the classroom, this can be facilitated by frequent rereading of material where the majority of words are known (Allington, 1983a; Aulls, 1982). As Herman (1985) has shown in her study with eight, less-able, non-fluent, intermediate-grade students, who were asked to choose five stories to practice repeatedly, accuracy and the number of acceptable miscues improved significantly between the initial reading of Story 1 and the initial reading of Story 5.

One study with third graders (O'Shea, Sindelar & O'Shea, 1985) showed significant increases in fluency as the number of repeated readings increased. The researchers suggest that there is an optimal

number of rereadings because after four readings, 83% of the fluency increase between one and seven readings is achieved. What is interesting to note in the O'Shea et al., (1985) study, is that although the readers who had been cued to fluency read faster, they comprehended less than those readers who had been cued to comprehension. O'Shea et al., (1985) thus conclude that increasing fluency is a less efficient means of assisting comprehension than formally telling children to read passages carefully. This suggests that in addition to repeated readings, techniques such as cueing are useful to help children improve fluency and comprehension simultaneously.

In a study (Dowhower, 1987) designed to investigate the effect of two repeated reading procedures (read along or independent practice) with familiar and unfamiliar passages, rate, accuracy, comprehension and prosodic reading, that is reading in meaningful phrases, were significantly improved by repeated reading practice regardless of the training procedures with second-grade children who had a good decoding ability but below-average reading rate. Gains made with repeated readings on familiar passages were transferred to the unfamiliar, similar passages. Prosodic reading was most facilitated by the read-along procedure. These results support not only the importance of repeated readings, with young children but also the provision for assistance and support of an adult.

Studies which have dealt specifically with grade 1 children and their changing patterns in their reading miscues did not provide repeated reading opportunities (Biemiller, 1970; Weber, 1970). In Weber's (1970)) study, which took note of changes in performance over time, both good and poor readers used their knowledge of linguistic structures to bear on the identification of words. Although there was a slight decrease in grammatical appropriateness throughout the year, many of the substituted miscues that were appropriate to the preceding grammatical context were also graphically similar to the written word.

There was an increase in omission miscues and a decrease in insertion miscues over time. Two further strategies, regressions and failure to respond to a word without prompting were not included in the study.

Similar strategies were observed in Biemiller's (1970) study. Non-response errors, where the child stopped reading before a word which was presumably unknown, substitutions, insertions, omissions and self-correction were observed over the first year. By the end of grade 1, there was an increase in the number of miscues which were both graphically and contextually constrained.

Although the early Weber (1970) and Biemiller (1970) studies have made a contribution by describing how grade 1 children's attention typically changes from using purely contextual knowledge to making use of the contextual and grammatical constraints to identify words in reading passages, neither study was designed to describe how variations in reading conditions contribute to emerging readers' use of different strategies. In Weber's (1970) study, data were collected from different pre-primers, basal series and supplementary materials while observers were present for each small group lesson between December and June. Thus, there is no evidence of repeated readings with material which is familiar to the children. In Biemiller's (1970) study data were collected from observations of oral reading in classroom settings and observations of oral reading in an individual test given at the end of the year. The individual test consisted of four reading passages of varying difficulty which children had to go through successively. Thus children's changes in strategy-use over repeated readings of the same text over time was not an issue. In addition, both studies focused on a specific behaviour and ignored several other strategies such as use of phonetic cues/sounding out words, attempts at recreating a text, rereading of previous words or phrases, children's look backs or look forwards to try and identify unknown words and any use made of pictures.

If repeated reading has a differential influence on (a) the

knowledge and strategies that children develop as is suggested by observations done with children prior to their attending school (Doake, 1985; Holdaway, 1979), and (b) their reading fluency (Allington, 1983a, 1983b; Aulls, 1982; Dowhower, 1987; O'Shea et al., 1985) and accuracy (Dowhower, 1987; Herman, 1985), there is clearly a need for studies to investigate how children's strategies and word accuracy change with formal instruction in grade 1 when assisted reading conditions are provided. It would appear to be of special value to parents and grade 1 teachers to find out whether children adapt their use of strategies according to the amount of help given and whether changes in this assistance alters the children's reading performance.

Conclusion

The emergence of literacy and the development of literacy abilities in the beginning reader are influenced by several conditions, namely the home, classroom and assistance given during book-reading activities.

Research on emergent readers and early readers in grade 1 and later primary grades, provides evidence that various home environmental characteristics correlate to reading abilities or reading achievement test scores. Empirical research has little to say about the relationship between home environmental conditions and the reading growth of emergent or early readers. Previous research has not attempted to separate the relationship of home characteristics on the reading ability of emergent readers before entering grade 1 and for the same early readers as they progress through formal instruction in grade 1. Research on emergent readers prior to entry into grade 1 has seldom assessed the correlation between home environmental factors and the emergent reader's literacy knowledge of print in the environment, books and other typical printed material in the home. Existing research suggests that emergent readers' literacy knowledge is more highly

correlated to subsequent reading achievement in grade 1 and some home environmental characteristics. Thus, there is reason to question the influence of home factors on grade 1 reading growth and children's literacy knowledge.

The influence of home characteristics on grade 1 children's reading ability is a joint function of both the home and the classroom environments. Without accounting for the home and classroom factors which influence children's emergent literacy knowledge upon entering grade 1 and how literacy knowledge changes in grade 1, it is not possible to separate what literacy knowledge the child brings to the classroom and what new knowledge the child acquires from the classroom.

Although considerable research has been reported on the kindergarten and grade 1 classroom environment and its relationship to children's reading achievement, with some reference to specific reading abilities, no research has used multivariate analyses of the effects of the classroom environment on reading ability as a complex construct. Such studies are necessary to discern which factors in classrooms are associated with particular kinds of reading ability and whether these factors interact with specific types of home environmental factors.

Prior research has shown that the teacher has a larger effect on grade 1 reading ability than does any particular reading programme or reading approach. In addition, some dimensions of classroom environments related to teaching ability appear to be unaffected by a reading programme or specific approaches to teaching reading. It is important then to treat the teacher as a primary independent variable in the classroom environment who effects the kinds of literacy opportunities which children experience in grade 1. The teacher is responsible for integrating resource materials, the classroom activities and the children's interactions and participation in rich and meaningful experiences. These classroom characteristics can only be derived from qualitative observations of classroom lessons, teacher interviews and

descriptions of the physical environment in the classrooms as has been done by Taylor et al., (1986).

At home and at school, children's opportunity to read books and their participation in reading books or other materials depends upon their own efforts and the assistance they are given by an adult or peer. Classroom observations have assessed the positive influence of patterned books and children's literature. Yet, no studies have been done to assess variance in students' observed reading abilities as they attempt to read alone and when given adult assistance. Since previous research in the home and classroom environment show positive correlations between children's daily opportunities to read, write and engage in other literacy acts and their reading ability, it follows that differences in students' reading performance in assisted and unassisted conditions will enable educators to determine what assistance is most beneficial for students' reading growth.

This study attempts to contribute to our understanding of conditions related to emergent and early reading development by studying the influence of home, teacher and classroom factors as well as the type of book-reading situations. The study is designed to bridge several of the gaps currently existing in the research literature related to understanding how these factors correlate with the reading growth of the emergent reader and the transition from the home to the school, on the way to becoming an early reader by the end of grade 1.

PURPOSE OF STUDY

The purposes of the study were derived from a thorough review of the research and expert opinion regarding the environmental conditions that nurture emergent and early reading. The study focused on the influence of the home and the combined effects of the home and classroom on literacy abilities related to school achievement. The primary focus of the study was to find out how (a) the home alone, (b) the combined effects of the home and classroom environment and (c) the classroom environment alone influence developing literacy abilities of children in grade 1. The secondary focus of the study explored the differential influence of book reading conditions on children's use of strategies and word reading accuracy upon entering grade 1 and 4 months later. It was of particular interest to see how children responded to assisted and unassisted reading conditions when attempts were made to read an unfamiliar, patterned book.

The broad purpose of this study is to examine stable conditions in emerging readers' lives. The home, the classroom and book-reading conditions appear to influence children's opportunity to acquire literacy knowledge and use it.

While researchers have studied the home environment or the classroom environment's influence on the emergence of reading ability, the methods used and the measures of reading prevent a clear description of what sorts and range of knowledge are fostered due to different home conditions and how children with different sorts of knowledge actually change during grade 1. This requires a multivariate approach within a developmental framework. The point here is not how much home and classroom conditions independently influence the emergent reader but how different combinations of home and classroom environments jointly influence the typical child's development in reading ability.

Finally, every child must cope on his/her own to become a reader. Some children are more fortunate than others in the type and amount of

assistance given to them as emerging readers. Therefore, assisted and unassisted book-reading opportunities play a significant role in what changes reading ability and in assessing the zone of potential growth as a reader. Few studies of emerging readers have closely analyzed how the typical emerging reader, sampled from a broad distribution of SES, linguistic and ethnic groups fare in assisted and unassisted book-reading settings. Doing so offers a more precise description of what knowledge changes by specifying when it can be used and who can use it under assisted and unassisted conditions.

The following specific research questions flow from the primary and secondary foci of the study and are based on the quantitative or qualitative methods described in the methodology chapter.

Home

To what extent do the combination of home environmental context and children's interactions with print have a differential influence on their literacy ability prior to formal instruction in grade 1?

To what extent do children's views on reading have an influence on their performance on literacy abilities as a set, prior to formal instruction?

Home and Classrooms

To what extent do the child's preschool literacy experiences in combination with formal instruction in grade 1 influence their growth in literacy ability?

To what extent do children's views on reading have an influence on their performance on literacy abilities as a set, following school participation?

For children with a Code+ perception of reading, is there a significant relationship between children's literacy abilities 4 months after formal instruction and the Gates-MacGinitie Reading Achievement Test scores obtained at the end of grade 1?

School Classrooms

Do teachers' classrooms have a differential influence on literacy as measured by five literacy abilities?

Conditions of Reading

Before formal instruction, is there a significant difference in the frequency of strategies used and word accuracy as a result of students reading in an unassisted or assisted reading condition?

After school participation, is there a significant difference in the frequency of strategies used and word accuracy in an unassisted and assisted reading condition?

Does a significant and stable relationship exist between the number of words read accurately and the use made of strategies?

Does the variation in the amount of help given in the assisted and unassisted reading conditions influence word accuracy and strategy use to the same degree?

Does a significant relationship exist between children's use of strategies and accuracy of words read (a) when students enter grade 1, and (b) after they have been exposed to 4 months of school instruction?

Strategies and Word Accuracy in an Unassisted Reading Condition

To what extent does the home environmental context in combination with children's interactions with print have a differential influence on children's use of strategies and word accuracy in an unassisted reading condition, prior to school participation?

To what extent does the home environment, combined with the classroom environment, have a differential influence on children's use of strategies and word accuracy in an unassisted reading condition?

Is there a significant change in children's use of strategies and word accuracy in an unassisted reading condition over the first 4 months of school?

Strategies and Word Accuracy in an Assisted Reading Condition

To what extent do the home environmental context and children's interactions with print have a differential influence on children's use of strategies and word accuracy in an assisted reading condition prior to formal school participation?

To what extent does the home environment combined with the classroom environment have a differential influence on children's use of strategies and word accuracy in an assisted reading condition?

Is there a significant change in children's use of strategies and word accuracy in an assisted reading condition over the first 4 months of school?

METHODOLOGY

Design of the Study

In order to address the hypotheses associated with the primary purpose of the study, multivariate factorial analyses were used. Here the independent variables were the home environment combined with the children's interactions with this print prior to formal instruction, the combined influence of home and classroom environments, individual teacher beliefs and practices and children's beliefs about the reading process. The dependent variables were book and code knowledge, print awareness, use of strategies, accuracy, fluency and reading achievement scores. In order to contextualize individual teacher effects on early readers qualitative methods were used to interview teachers about their beliefs and to describe their enactment of curriculum as process through which children experience literacy opportunities.

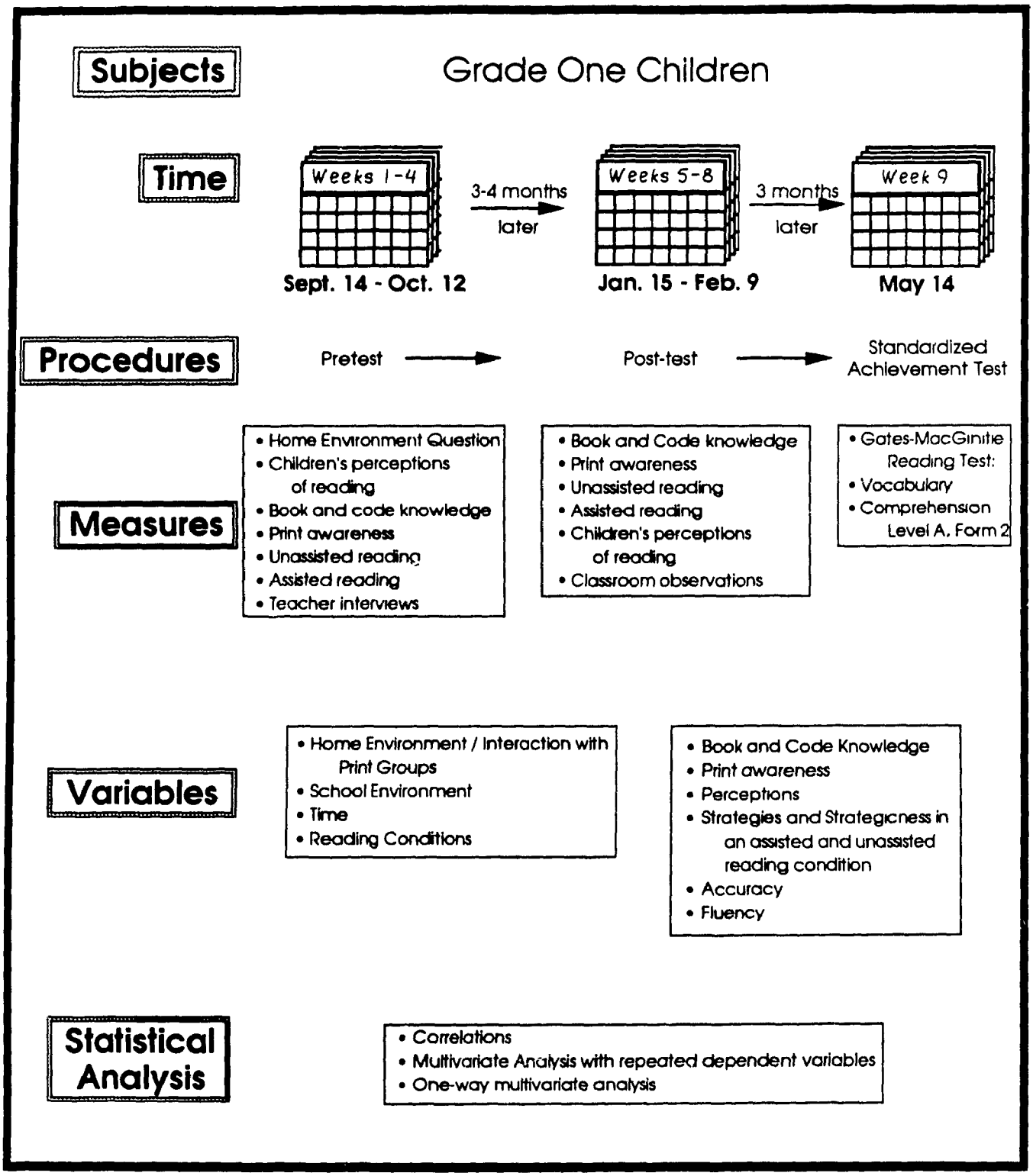
The secondary purpose of the study was to test the influence of assisted and unassisted reading conditions on emerging and early readers' literacy ability. Multivariate and correlational analyses were used to test the differential effects of reading conditions. The dependent variables were the different strategies such as use of phonetic cues, ignoring words, rereadings, and pictorial use. Details of the overall design are shown in Figure 1.

Subjects

The participants in this study came from an available sample. A letter briefly explaining the study and requesting parental consent was sent to parents of grade 1 children in six classrooms, attending four different schools which had agreed to participate in the study. These letters were given by each teacher to their children. The children were instructed to pass them on to their parents.

Of the 65 consent forms which were returned, 60 children were allowed to participate in the study. Five children who had been allowed

FIGURE 1: The Overall Design of the Study



to participate were excluded because they were repeating grade 1. They were excluded because they had already been exposed to formal instruction in reading. One classroom was a split grade 1 and 2. Although seven Grade 2 children and their parents showed an interest in the study, they were not included in the research. The final sample for the study was made up of 32 boys and 28 girls. At the beginning of the study, in mid-September, their ages ranged from 6 years, 0 months to 6 years, 11 months with a mode of 6:1 and a mean of 6:5. In four of the six classrooms, less than 50% of the class population participated. Table 1 shows the number of children participating from each class and school as well as the percentage represented from each class population.

Since the number of children participating from each class was rather small, the teachers were asked to complete some information about all their students to find out whether the sample was representative of its class population. Teachers rated every student on a 5-point scale for each of the following categories: range of vocabulary, co-operativeness, willingness to work, global ability and positive attitude. A score of 1 indicated poor performance whereas a score of 5 showed excellent performance on the behaviour to which the score had been assigned. A total score for each child was obtained by adding the scores for the five categories. Thus, the minimum total score possible was 5 and the maximum was 25. Table 2 shows the means of the total scores for each classroom, the range of total scores and the number of children participating in the study, who scored above, at, or below the average in their respective classes.

These data indicate that the average child participating in the study was rated by the teacher as being above or just above the class mean in the five attitudes and abilities mentioned earlier. To this extent, the sample of children represented in this study are representative of the complete population available in each of the six classrooms.

Table 1

Number and Percentage of Children Participating in the Study from Each Classroom

		Boys	Girls	Total	% of Class
School A	Class 1	7	4	11	68.8%
	Class 2	6	4	10	37.0%
School B	Class 3	5	6	11	47.8%
	Class 4	4	1	5	21.7%
School C	Class 5	5	5	10	37.0%
School D	Class 6	5	8	13	68.4%
Total		32	28	60	

Table 2

Teacher Ratings of Children's Attitudes and Abilities

	Means	Range	Above(& just above average)	Average	Below(& just below average)
Class 1	22.0	16-25	3 (1)	2	2 (3)
Class 2	14.85	9-18	5 (3)	0	2
Class 3	17.09	12-25	7	0	3 (1)
Class 4	15.95	9-25	2	0	3
Class 5	16.81	12-22	5 (2)	0	3
Class 6	17.95	13-24	6 (1)	0	5 (1)
			28 (7)	2	18 (5)

Measures and Procedures

Several measures were used in the study to assess the independent and dependent variables. An overview will be provided here which will be elaborated on subsequently.

Overview of Measures Used in the Study

The home environment was assessed through a questionnaire which was to be completed by the parents or guardians of the children. Clay's (1978) Sand test was chosen to measure the children's book and code knowledge. An environmental print awareness test as used by Harste et al., (1984) was administered to establish children's print awareness. Children's strategicness, use of strategies and frequency of strategy use, were assessed under two different reading conditions (a) an unassisted condition, and (b) an assisted condition with a predictable text. A semi-structured interview was held with each child concerning the children's perceptions about reading. This interview was modelled on work done by Goodman and Altwerger (1981). Interviews with the teachers as well as classroom observations were used to obtain information about the classroom environment. Observations usually lasted for at least 1.5 hours. These observations were done in the second phase of the study, after all the literacy ability data had been collected. Finally, the Gates-MacGinitie reading tests were administered at the end of the school year to find out which of the preceding dependent measures would best correlate to reading achievement.

Overview of the General Procedures Followed in the Study

Data for the study were collected at three different stages over the scholastic year. Phase 1, or the pre-test stage was undertaken between mid-September and mid-October. It was essential to start early in the school year to prevent the school environment and classroom

instruction from confounding children's preschool perceptions and knowledge of reading acquired at home. Every school was visited once every four days so that the same tests were being administered to the children in each of the six classrooms at approximately the same time.

During this phase, the tests were administered in the following sequence:

(1) The semi-structured interview - children's perceptions about reading;

(2) book and code knowledge - Sand test;

(3) environmental print awareness test;

(4) reading in an unassisted condition;

(5) reading in an assisted condition with a predictable text.

The second phase of the study or post-test stage was done four months after the pre-test between mid-January and the first week in February. The same procedures and sequence of measures applied at the pre-test phase for administering the tests were adhered to in the post-testing period. The only exception was the semi-structured interview with the children, which, in the post-test phase was administered as the last measure. Since children's perceptions of reading are those most likely to change gradually, it was measured last.

The schools were visited for the third time during the third and fourth week in May when the standardized achievement test was administered. This was the only measure done with groups of children rather than individuals.

A random procedure was used in each phase of data collection to select individual children to be assessed. By using a random selection procedure for testing students, no child was always the first or last to do a test. In this way, the influence of test order was controlled.

Depending on the availability of space in the four schools, tests with individual children were done in (a) a room adjacent to the classroom, (b) the hallway, or (c) a corner of the classroom away from

the centre of activity. Whenever audio-tape recordings were necessary, they were always done in rooms other than the class.

The following subsections provide details of each measure and the procedures which were used in their administration.

The Home Environment Questionnaire Measure

To assess the availability and richness of print in the home as well as children's interaction with print, a 34-item questionnaire was devised for this study based on surveys used in previous work (Mason, 1980). Twenty-six questions were related to the type of printed material available in the home as well as parental activities involving the use of print. Items dealt with the availability of newspapers, books and magazines, visits to the library, access to books and accompanying tapes, and whether reading is a past-time of the adults in the family. The remaining eight items dealt with the parents' perception of their children' nteraction with print. Evidence of interaction with print was ed by questions which reflected children's direct involvement with printed material. These included questions about the child's interest in books; whether the child asks to be read to as well as whether s/he asks to have favourite books re-read and the behaviours s/he shows while being read to. Attempts made by the child at reading labels, packages and brand names or comments about the mail were also questioned.

Several items required yes/no answers. Some questions had three or more alternative answers. For several items it was possible to circle a combination of responses and parents were instructed about this. A copy of the questionnaire is included in Appendix D.

Scores of 0, 1 or 2 were assigned for each item. The responses to the items classified as 'yes' or 'no' received a score of 2 or 0. For those items with categories such as 'often', 'sometimes', 'never', or 'regularly', 'occasionally' and 'rarely', scores of 2, 1 or 0 were

assigned. These scores were summed and the total reflected a moderate or rich print environment and a moderate or rich (active) interaction with print. The highest score for the "richness of print" measure was 52. Scores at or above 35 were considered to indicate a rich print environment. Scores of 33 or less made up the moderate print environment. The maximum score on the "interaction with print" items was 16. Scores which ranged from 11 to 16 were considered as indicating a rich or active interaction with print. Scores of 10 or lower were classified as an indication of moderate interaction with print. The upper and lower limits for the "richness of print" and "interaction with print" items were 35 to 51 and 33 to 10 for the "richness of print" items and between 11 to 16 and 5 to 10 for the "interaction with print" items.

To establish face validity of this measure, the questionnaire was given to a class of research methods students in Graduate school. They were asked to complete the questionnaire and note the time it took them to do so. They also were then instructed to re-read the questions and indicate whether any items were syntactically unclear or semantically ambiguous. One of the items was ambiguous and had to be reworded. Minor changes were suggested to improve the syntax of some items. This included changes such as referring to the target child as "your child" rather than "the child". The questionnaire was also given to some parents with young children. No changes were suggested by these parents. Most respondents took about 10 minutes to answer the questionnaire. Inter-rater reliability was established at .81 for scoring the richness of print in the environment items and .75 for scoring the children's interaction with print items.

To establish content validity of the items on the questionnaire, a Pearson's correlation coefficient was calculated between a child's score on the 26 items dealing with the richness of print in the home environment and the score on the eight items related to the children's

interaction with print. The obtained correlation (r = .23, p<.04) suggests that the two measures are measuring different dimensions of the home environment but are not entirely independent.

Procedure for the Administration of the Home Environment Questionnaire

Fifty-seven children participating in the study were given a copy of the questionnaire to give to their parents. Three parents had indicated in the consent form, their unwillingness to fill out the questionnaire although they gave permission for their children to participate in the study. Of the 57 questionnaires sent to parents, 56 were returned.

The 56 questionnaires were categorized into one of four groups. The groups were created out of the possible score combinations for the interaction with print and the print environment test score. The four groups are:

(1) Rich environment-rich interaction for children whose print environment score was at or above 35 and whose interaction score was at or above 22.

(2) Rich environment-moderate interaction for children whose print environment score was at or above 35 and whose interaction score was 10 or less.

(3) Moderate environment-rich interaction for children whose print environment score was at or below 33 and whose interaction score was at or above 11.

(4) Moderate environment-moderate interaction for children whose print environment score was at or below 33 and whose interaction score was 10 or less.

The number of children in each group was 22, 14, 10 and 10 respectively.

Book and Code Knowledge Measure

To examine first grade children's knowledge of print-related concepts, Clay's (1978) test, entitled Sand was selected. In this

concepts-about-print test, the researcher reads an illustrated book to each child individually.

The test consists of 24 items which determine if the child understands print-related concepts such as rules of directionality, differences between letters and words, use of punctuation, identification of word and letter ordering in sentences and words, and so on. Each question is scored right or wrong giving a range between 0 and 24. These raw scores can be converted to stanine scores with a range of 1 to 9.

Clay (1978) reports a reliability of .95 with 5- to 7-year olds and concurrent validity of .79 with 6-year old New Zealand children. With American subjects, Johns (1980) reports a reliability of .82 using the KR formula 20 and an odd-even split of items. Day and Day (1979) report a test-retest reliability of .86 and .89 for kindergarten boys and girls respectively. In a further administration of the test when the children were at the beginning of first grade, the test-retest reliability coefficient was .75.

Procedure for the Administration of the 'Sand' Test

Children were told that their assistance would be required in reading the story. The book was then presented and the researcher started reading the text. The items which make up the test were asked immediately as the relevant part of the story was read. No child had any difficulty in understanding the instructions. The same presentation of the Sand test was maintained during the pre-test and post-test sessions of the data collection.

The Environmental-Print-Awareness Test Measure

This test was based on work done by Harste et al., (1984). Four products were selected to assess children's knowledge of print in the environment. The products were a 2% Sealtest milk carton, a box of

Cheerios cereal, a McDonald's cup and a Crest toothpaste box. These products were selected because of their availability in the home (milk, cereal and toothpaste), in the environment outside the homes (restaurants, logos), on the shelves of grocery stores as well as on TV adverts. Thus all products were assumed to be within children's experiences.

A scoring system was devised to identify whether children (a) have prior knowledge relevant to print, (b) use this prior knowledge to make sense out of print, (c) use prior knowledge to make sense out of the object. Depending on whether children demonstrated prior knowledge their responses were scored as '1' or '0'. When children referred to the initial letters of a word or mentioned letters and words, their responses received a score of '1', as they indicated that children have prior knowledge relevant to print. If children spelt the whole word or part of it, a score of '1' was also assigned for their use of prior knowledge. Evidence that children used prior knowledge to make sense out of the object was provided by references made to colour cues, shapes of boxes, physical properties of the packages and references to the pictures on the package. This scoring procedure was applied to the responses given to the two sets of questions in Condition 1 and 2. A maximum of 12 points could be obtained - three features of prior knowledge for each of the four products.

To score responses in Condition 3, scores of '1' of '0' were assigned depending on whether a child could:

(1) read print as a sensible whole word,

(2) read letter/sound correspondences to produce a sensible word, or

(3) read print producing the correct whole word,

(4) read letters and sound out the correct word.

A maximum of 8 points could be obtained. Categories (1) and (2) and (3) and (4) are mutually exclusive. If a child read the word

correctly for any product, scores were assigned to the latter two parts of the scoring system. If words were not precisely read, scores could be assigned only depending on the sensibility of the word produced or the letter/sound correspondences made. For example, reading "crest" as "crist" received a score of 2 for reading print as a sensible whole word and for reading letter/sound correspondences to produce a sensible word. A response of "cat" for "crest" got a score of 1, just for reading print as a sensible whole word. No score was given for reading letter/sound correspondences.

The total maximum score which could be obtained on this measure was 20. The inter-rater reliability for the scoring procedure of this measure was established at .95.

Procedure for the Administration of the Environmental-Print-Awareness Test

This task was administered under three conditions. In Condition 1, the children were shown the actual package. Three questions accompanied this first condition: (a) What do you think this says? (b) What things help you to know what it says? (c) Tell me some of the things you know about this.

In Condition 2, the graphics were detached from the package, retaining only the name of the product in its typical coloured context. The children were shown cards, about 11cm by 6.5cm on which the graphics had been pasted. Two questions were asked in the second condition: (a) What do you think this says? (b) What things help you to know what it says?

In the third condition, the children were shown the word 'milk', 'Cheerios', 'Crest', and 'McDonalds' written on four separate cards of equal measurement. The words were handwritten. The only question asked in this condition was, "What do you think this says?"

This individually administered test lasted between 10 and 15

minutes. Each child was shown one package at a time and asked the first set of questions. This was followed by presenting each card with the graphics and the questions accompanying Condition 2. Ultimately the handwritten cards with the last question were asked. The products and cards were presented in random order to reduce the possibility of the child memorizing the names across conditions.

Strategies and Strategicness in an Unassisted and in an Assisted Reading Condition

The purpose of the unassisted and assisted reading condition was to find out whether children use strategies in reading a text, which strategies they make use of, the frequency with which each strategy is used and whether children adapt their strategies according to the reading condition. An unfamiliar text was deliberately chosen. The text selected was Wind by R. Bacon (1984). Only 3 out of the sample of 60 children participating in the study said they had seen the book in the school library or had a copy of it at home.

The book was selected because it had a long enough sentence on every two pages. This enabled the researcher to score the children's reading fluency. Secondly, the story had a repetitive pattern and a rhyming couplet. Such predictable books encourage children to participate in reading (Rhodes, 1981). The same text was used in both reading conditions. The unassisted reading exercise preceded the assisted reading measure.

Scoring Procedures for the Two Reading Conditions

The scoring system used for the unassisted and assisted reading conditions was identical although procedures for administration differed. These procedures will be explained subsequently. There are differences in the type of strategies which could be used in each measure. Some strategies were relevant to the unassisted exercise only.

Others, such as pictorial use, could be used solely in the assisted condition.

Use made of the following strategies in the unassisted reading condition was coded and analyzed:

(1) reread previous sentence/looked back;
(2) wait and see/looked forward;
(3) ignored words and read on;
(4) reread first few words on same page;
(5) predicted accurately (deleted words);
(6) predicted sensible alternative (deleted words);
(7) phonetic cues;
(8) self-correction;
(9) memorized text or parts of it;
(10) recreated text.

The rationale underlying the importance of the strategies observed during this study are described in Aulls and Graves (1986). Two types of scores were obtained on these ten strategies. Irrespective of the number of times each strategy was used, a score of '1' or '0' was assigned depending on whether a child used a particular strategy. The second score gave a number from '0' to '10' which indicated how many of the strategies were used. Again, this composite score did not take frequency of occurrence into consideration.

A score for use of 'memorized text' could be assigned only for children who attempted a deleted word after the assisted reading exercise. Evidence for using such a strategy was provided if children went through the manuscript turning the pages properly but "reading" parts of the story which occurred elsewhere in the book. The strategy whereby text was "recreated" (Clay, 1978) was evident when children went through the manuscript "reading" an entirely different story which they made up as they turned the pages of the book.

With the exception of these two strategies, the preceding eight

strategies were also scored for frequency of use. "Looking back" and "looking forward" were scored if the child actually turned the page backwards or forwards. In scoring the frequency of ignored words, the number of words which were not read were added. An "accurate" and "sensible alternative prediction" could only yield a maximum score of 8 because these two strategies were related directly to the deleted words in the manuscript version of the text. Use of phonetic cues was considered valid for any attempts made at reading any word in the book using the same initial letter as the printed word. The total score for frequency of use of phonetic cues was combined from two sub-scores:

(1) single attempts for a word using initial letter/sound symbol correspondence, such as 'see' for 'sand';

(2) repeated trials for the same word, such as, 'thr-th-thrug' for 'through'.

The number and percentage of words read accurately in the unassisted reading exercise were also calculated.

The same procedures were applied to score the assisted and unassisted readings. However, there were some differences in the strategies observed. Use of the following six strategies was only observable in the assisted reading condition:

(1) pictorial use;
(2) phonetic cues;
(3) rereads previous phrase or words;
(4) look back;
(5) look forward;
(6) ignored words.

Evidence that a child was making use of pictures to read a story was clearly provided when reference was made to some illustration on a particular page which did not have its corresponding referent in print. A score from '0' to '6' indicated the number of strategies used during the assisted reading. Scores of '1' or '0' indicated whether the

strategy was used. Frequency of use of each strategy theoretically could yield an unrestricted score. Since the look back and look forward strategy categories were never observed during the assisted reading condition they had to be eliminated from later analysis. The number and percentage of words read accurately in the assisted reading condition also were calculated. A modified version of the Aulls (1978) fluency scale was used to rate children's reading fluency. Children's readings were classified into one of three categories depending on whether they were reading in phrases, reading in some phrases and some word-by-word reading, or reading word by word.

Some scores were generated from the ones which have been described. A total score for children's overall strategicness was computed by adding the frequencies of all the strategies used in both reading conditions. This was done separately for the pre- and post-test phase of the study. A total score was also obtained for the strategies which were common to both reading conditions. The combined frequency of use for the 'rereadings', 'phonetic cues' and 'ignored words' strategies from the unassisted and assisted reading conditions yielded common pre-test and post-test total scores. In addition by collapsing over time and/or reading condition, more derived scores were obtained for these three strategies.

Scores for accuracy of word reading were also derived by taking into account (a) time (pre and post) irrespective of the reading condition, (b) condition of reading (assisted and unassisted) irrespective of time, and (c) time and condition simultaneously, to generate a global accuracy score.

Procedures for the Unassisted and Assisted Reading Condition

The Unassisted Reading Condition

In the unassisted reading condition specific words were deleted (Arrocha, 1985; Aulls & Graves, 1986) and children were presented with a

handwritten version of Wind. There were no illustrations and every sentence was written on an individual page. The seven separate pages and title page were bound together. Therefore children were told that this was a book with a story about wind.

Eight words were deleted in all. Two verbs, two adverbs, a common noun, a preposition, an adjective and a definite article were omitted. No words were deleted from the first page. One word was deleted on each of four pages and two words were deleted on the other two pages. The position of the deleted word changed on each page. The first and only deletion on page 2 was at the very end of the sentence. The children were thus assisted by having all the text on page 1 and 2 before attempting to complete the first deletion. In addition they were helped by a consonant cluster, "bl..." with which the word commenced. Four deletions between pages 3 and 6 made up a repetitive phrase, "Feel the wind blowing...". This phrase occurred at the beginning of every sentence on each page. The four words were deleted in succession over pages 3 to 6 so that words had to be filled in the first, second, third or fourth position. In addition, on pages 4 and 5, the last word in the sentence was deleted. These two missing words rhymed with the last word on the first line of the text. The final and only deletion occurring on page 7 came at the end of the first line, immediately following the repeated phrase (See Appendix E).

Prior to the unassisted reading task, children were involved in a practice example to ensure that they understood what was expected of them. A simple story had been made up and written in the same way as the Wind text. Children were told that this book was a story which had some words missing. The researcher then proceeded to read the title of the made-up story, read the first page and modelled how the deleted words on the second and third pages could be completed. When it was clear that children understood that they had to insert a word where there was a blank, the manuscript version of Wind was presented.

The title and two readings of the first page were read to each child. From the second page onwards, the children were not given any assistance. If help were requested, the children were told to pretend that they had got the book from the library and were trying to read it by themselves. When children found page 2 difficult, they were instructed to try the next page. In instances where a child showed signs of frustration or anxiety, or even suggested that they wanted to stop, the session was terminated and the session using the original, unmutilated, predictable text was introduced.

Those children who failed to complete the unassisted condition session in their first attempt were offered the possibility of trying it a second time following the assisted reading measure Once again, the first page was read twice to the child and then they continued to read unassisted by the researcher. Some children who found this task beyond them, accepted to complete the deletions on the condition that the researcher read the text. If a child refused to attempt a deleted word, even when the researcher read the text, the session was concluded.

While children were reading, the researcher took down detailed notes of all that was said and read, noting the behaviour and comments made by the child.

The Assisted Reading Condition

Reading in an assisted condition was done in three stages. A first reading was done by the researcher alone followed by a reading by the researcher and child together. Finally, the child had to try reading the text alone. During this last reading every child was audio-tape recorded. The children were therefore led from a cued to an uncued situation. Use of the illustrated text was made in this condition. The children were informed about the procedures for this session prior to any reading. Most children wanted to hear themselves after the recording and the researcher complied with this. If the task became overwhelming or a child expressed the desire to stop, the session was

terminated immediately.

Children's Perceptions-of-Reading Measure

Children's perceptions of reading were obtained from individual interviews. A list of the questions asked during the interview is found in Appendix F. Operational definitions of beliefs about reading categories were derived post-hoc by the constant comparison method (Glaser & Strauss, 1980) to enable classification of children's beliefs about reading. Resulting categories of beliefs about what reading is were *code, meaning, content* or *situation oriented.* In the majority of cases, children's beliefs were made of a combination of these categories.

Code-oriented beliefs are those where responses included references to letters, sounds of letters, words, word order, mention of the alphabet and pictures. A *meaning-oriented* definition is one where children specified the importance of reading and understanding the words, reading with a purpose, generally to acquire information and improving one's knowledge. In a *content-oriented* belief, children specified titles of books, referred to stories and other printed material such as papers, newspapers, name tags, names on buildings such as churches and schools, graffiti and so on. A *situation-oriented* belief was one which specified instances when, where or why reading was engaged in, such as reading for fun, before going to bed or when playing school.

Having classified the children's beliefs under one of the four categories generated by the constant comparison method, the responses were then grouped according to whether they were (a) code oriented - C, (b) non-code oriented - NC, or (c) a combined orientation which brought together code and non-code perceptions - C+. Children's beliefs were not classified depending on the response to one particular question. By reading through the entire interview the emphasis of each child's orientation was judged to be a more reliable estimate of their reading

beliefs.

Inter-rater reliability for the classification of children's perceptions was established at .80. Frequencies for questions which required yes/no answers were also calculated.

Procedures for the Administration of Children's Perceptions-of-Reading Questionnaire

A semi-structured interview based on Goodman and Altwerger (1981) was carried out with each child to assess children's concepts of reading. In the first session of data collection this measure was the first one to be administered in order to get accurate and reliable responses of children's perceptions of the reading process before the classroom environment would have any influence. Secondly, by having it as the first measure, there was no possibility of the children's responses being influenced by questions asked in other measures. In the second part of the study, this interview was done at the end to gain on time and maximize on any changes in children's perceptions of reading and print.

Nine questions were asked during the pre-testing phase and 14 questions made up the interview at the post-test phase of the study. The questions asked at both stages of the study were considered as important in assessing children's concepts of reading and more susceptible to change. Any changes which would have occurred in these perceptions over 4 months would be identified.

Responses to questions were recorded while the child was talking. When a vague response was given, probe questions were used to assist children clarify their answers. For example, when children failed to respond to, "What do you think reading is? What is reading?" they were asked to pretend that this question was being asked by a spaceman who had never seen anyone read. In this way they were in a position where they could explain how or what reading is all about.

The Gates-MacGinitie Reading Test

This standardized reading test was selected as a measure to indicate which of the dependent variables used to assess children's knowledge about reading, would correlate with their reading achievement at the end of grade 1. It has not been used to promote or encourage use of standardized tests because such tests do not provide a complete or accurate result of the real knowledge which children have about reading. However, at present, standardized tests provide the only available norms against which children's achievement can be rated. This test was selected over other similar tests because test validity and reliability have been established on Canadian populations.

The Canadian version of Level A, Form 2 of the Gates-MacGinitie (1980) was administered to 35 children of the original sample of 60. Two teachers found objections to subjecting their children to such a test hence, their classrooms were not revisited. Three children were absent on the day of the test from two of the four classrooms revisited.

The test has two components: a vocabulary and a comprehension test. The former consists of 45 multiple-choice items. Children are required to find the word that names the picture. The comprehension test, which is made up of 40 items involves choosing the picture that goes with the text. Kuder-Richardson formula 20 reliability coefficient is reported at .91 for the vocabulary test and .92 for the comprehension test. Test validity is claimed on the basis of the appropriateness of the vocabulary selected for the particular grade level, avoidance of nonsense words and avoidance of homonyms as distracters. The passages for the comprehension test were specially written to maintain a high level of children's interest while providing a range of difficulty in vocabulary and structure particularly appropriate to children in early grades.

The test may be administered to groups of 10 to 15 children. In this study, the group size for test administration ranged from 7 to 13,

depending on the classroom. Directions and instructions suggested in the Teacher's Manual were strictly adhered to.

Teacher Interviews and Classroom Observations

Teacher Interviews

Teacher interviews, as well as classroom observations yielded information concerning the classroom environment. Structured interviews were carried out with a provision for topics or issues raised by the teachers. All teachers were administered the same set of questions but additional information was obtained depending on how teachers responded. Interviews with the teachers were recorded at a time which was convenient for them, usually during lunch break. Teachers were asked questions related to their teaching of language arts, how they introduce reading to children at the beginning of the year as well as the modifications made during the year. Questions concerning use of the school and class libraries, books and other sources of printed material were also included. Teachers were asked to identify the type of environment which, in their opinion, helps children become better readers. Methods which they frequently use to promote reading growth in their classroom were also identified. A list of the questions asked during the interview is found in Appendix G.

Classroom Observations

Classroom observations were included in the study to provide evidence of the classroom environment and the reading instruction which children were exposed to. Long hours of observation were not possible owing to the timetables of each classroom. A rotating five day schedule, lessons for music, art, gym and French, having only half the class with the regular teacher while the other children were engaged in another part of the school building, were all constraints which restricted observations. Each of the six classrooms was observed for a minimum of 1.5 hours during a reading/language lesson. Detailed field

notes were taken of conversations, explanations and activities which went on during the lesson. The duration and changes in activities were also recorded. Finally, the physical arrangement of the room as well as available teaching aids were described.

Data from interview responses and field notes were analyzed according to the categories devised by Stahl and Miller (1989). For the purpose of the study the classrooms have been identified as following a traditional approach or a whole language method. All six classrooms could be categorized on the basis of characteristics observed in each room. Classrooms rated as following a whole language approach are those which (a) emphasize the children's own language through experience charts or through invented spelling, (b) are child-centered rather than teacher-centered, (c) emphasize use of trade books rather than basals, (d) teach phonics/decoding lessons as the need arises rather than in isolation. Of the six classrooms observed, five could be categorized as following a whole language approach according to the above-mentioned specifications. In one classroom, there was greater emphasis on teacher-centered activities, basal readers were widely used and phonics lessons were regularly done. Thus, the classroom followed a traditional approach.

RESULTS

This chapter introduces the results which are organized according to the general rationale of the study, as addressed in the literature review and the specific questions outlined in the purpose of the study.

Home

In order to test the hypothesis that the combination of home environmental context and children's interactions with print have a differential influence on five literacy abilities prior to formal instruction in grade 1, a 1 X 4 multivariate analysis of variance was conducted. Table e shows the means and standard deviations for the literacy abilities dependent variables. An overall multivariate Hotellings test at .4956 showed no significance $F(3, 140 = 1.54, p<.098)$.

As the literacy abilities under study are not likely to have developed equally by the time children are about to start formal reading, further analyses were conducted on combinations of the five literacy abilities of interest in order to identify those which are sensitive to the home environment and print interaction at this point in time. This approach is necessary to fit a developmental framework of reading. Within such a framework, reading cannot be conceived of as a unidimensional construct.

To test the hypothesis that the combination of home environmental context and children's interactions with print have a differential influence on book and code knowledge and print awareness prior to formal instruction, a 1 X 4 multivariate analysis of variance was conducted. The means and standard deviations for the two literacy variables are indicated in Table 3. An overall multivariate Hotellings test at .4185 was significant $F(2, 100 = 3.49, p<.004)$. Univariate tests (Table 4) indicate a significant effect for book and code knowledge $F(3, 52 =$

Table 3

Means and Standard Deviations for the Literacy Abilities Prior to Formal Instruction

	Rich-Rich		Rich-Moderate		Moderate-Rich		Moderate-Moderate	
Literacy Abilities	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Book and Code	15.96	3.05	14.21	2.12	14.30	2.36	11.80	2.44
Print Awareness	14.46	3.16	14.43	4.24	11.80	4.73	10.70	4.08
Strategicness	33.50	17.01	33.64	22.44	33.90	22.69	26.50	15.49
Accuracy	62.00	32.60	51.64	32.15	43.40	21.49	39.00	29.29
Fluency	1.27	0.83	0.86	0.54	0.90	0.32	0.80	0.42

Note: Rich-Rich = Rich environment-Rich interaction
Rich-Moderate = Rich environment-Moderate interaction
Moderate-Rich = Moderate environment-Rich interaction
Moderate-Moderate = Moderate environment-Moderate Interaction

Table 4

Univariate Analysis for Two Literacy Abilities for the Home Group Main Effect Prior to School Instruction

		Univariate Analysis of Variance				
Source of Variation	Variables	DF	MSHyp	MSError	F	P
Home Environment	Book & code	3,52	40.32	6.87	5.87	.002
Interaction Groups	Print awareness	3,52	45.75	15.28	2.99	.039

5.87, $p<.002$) and for print awareness $F(3, 52 = 2.99, p<.039)$. This result indicates that there is a statistically significant difference between one or more home groups and children's performance on both book and code knowledge and print awareness. In order to determine which group was significantly different, a Scheffé post-hoc test was done (Table 5).

For the book and code knowledge variable there was a significant difference between the performance of children from a rich environment-rich interaction group as compared to the children in a moderate environment-moderate interaction group (critical difference value 2.69, F3, 52). There are no other significant differences among any other groups on this variable. A Scheffé post-hoc text for print awareness (Table 6) showed no significant difference between any two groups (critical difference value 4.02, F3, 52). However, the difference in means between the rich environment groups of children and the moderate environment-moderate interaction children approach statistical significance.

In order to test the hypothesis that the combination of home environmental context and children's interactions with print have a differential influence on book and code knowledge, print awareness and accuracy prior to formal instruction in grade 1, a 1 X 4 multivariate analysis of variance was conducted. The means and standard deviations are shown in Table 3. An overall multivariate Hotellings test at .4381 $F(3, 146 = 2.37, p<.016)$ was significant. Univariate tests (Table 7) indicate significance for book and code knowledge $F(3, 52 = 5.87, p<.002)$ and print awareness $F(3, 52 = 2.99, p<.039)$. There was no significance for accuracy.

Table 5

Book and Code Knowledge: Absolute Value of Differences Among Means (MSerror = 6.87, p = 4, n = 22, 14, 10 10).

			$\bar{X}$ Rich-Rich	$\bar{X}$ Rich-Moderate	$\bar{X}$ Moderate-Rich	$\bar{X}$ Moderate-Moderate
Rich-Rich	$\bar{X}$	15.96	-	1.75	1.66	4.16*
Rich-Mod	$\bar{X}$	14.21		-	0.09	2.41
Mod-Rich	$\bar{X}$	14.30			-	2.50
Mod-Mod	$\bar{X}$	11.80				-

*p<.05

Note: Rich-Rich = Rich environment-Rich interaction
Rich-Moderate = Rich environment-Moderate interaction
Moderate-Rich = Moderate environment-Rich interaction
Moderate-Moderate = Moderate environment-Moderate interaction

Table 6

Print Awareness: Absolute Value for Differences Among Means (MSerror = 15.28, p = 4, n = 22, 14, 10, 10).

			$\bar{X}$ Rich-Rich	$\bar{X}$ Rich-Moderate	$\bar{X}$ Moderate-Rich	$\bar{X}$ Moderate-Moderate
Rich-Rich	$\bar{X}$	14.46	-	0.03	2.66	3.76
Rich-Mod	$\bar{X}$	14.43		-	2.63	3.73
Mod-Rich	$\bar{X}$	11.80			-	1.10
Mod-Mod	$\bar{X}$	10.76				-

Note: Rich-Rich = Rich environment-Rich interaction
Rich-Moderate = Rich environment-Moderate interaction
Moderate-Rich = Moderate environment-Rich interaction
Moderate-Moderate = Moderate environment-Moderate interaction

Table 7

Univariate Analysis for Three Literacy Abilities for the Home Group Main Effect Prior to School Instruction

		Univariate Analysis of Variance				
Source of Variation	Variables	DF	MSHyp	MSError	F	P
Home Environment Interaction Groups	Book & code	3,52	40.32	6.87	5.81	.002
	Print awareness	3,52	45.75	15.28	2.99	.039
	Accuracy	3,52	1543.79	915.99	1.69	.182

In order to test the hypothesis that the combination of home environmental context and children's interactions with print have a differential influence on book and code knowledge, print awareness and fluency prior to formal instruction in grade 1, a 1 X 4 multivariate analysis of variance was conducted. Means and standard deviations are shown in Table 3. An overall multivariate Hotellings test at .4537 $F(3, 146 = 2.45, p<.012)$ was significant. Univariate tests (Table 8) indicate significance for book and code knowledge $F(3, 52 = 5.87, p<.002)$ and print awareness $F(3, 52 = 2.99, p<.039)$. There was no significance on the fluency measure.

In order to test the hypothesis that the combination of home environmental context and children's interactions with print have a differential influence on book and code knowledge, print awareness and fluency prior to formal instruction in grade 1, a 1 X 4 multivariate analysis of variance was conducted. Means and standard deviations are shown in Table 3. An overall multivariate Hotellings test at .4780 $F(3, 143 = 1.90, p<.039)$ was significant. Univariate tests (Table 9) indicate that book and code knowledge $F(3. 52 = 5.87, p<.002$ and print awareness $F(3, 52 = 2.99, p<.039)$ were significant.

This series of hypothesis on literacy abilities confirms that at the beginning of grade 1, prior to formal instruction, the combined home environment and children's interaction with print have an influence on two of the five developing literacy abilities. While accepting that reading growth is a multidimensional construct, as is to be expected, not all abilities are sufficiently developed at the time children are about to start school.

In order to test the hypothesis that children's views on reading have an influence on their performance on five literacy abilities prior to formal instruction a 1 X 3 multivariate analysis of variance was done. An overall muitivariate Hotellings test at .2169 $F(2, 104 = 1.13, p<.349)$ was not significant.

Table 8

Univariate Analysis for Three Literacy Abilities for the Home Group Main Effect Prior to School Instruction

		Univariate Analysis of Variance				
Source of Variation	Variables	DF	MSHyp	MSError	F	P
Home Environment Interaction Groups	Book & code	3,52	40.32	6.87	5.87	.002
	Print awareness	3,52	45.75	15.28	2.99	.039
	Fluency	3,52	0.80	0.40	2.03	.122

Table 9

Univariate Analysis for Four Literacy Abilities for the Home Group Main Effect Prior to School Instruction

		Univariate Analysis of Variance				
Source of Variation	Variables	DF	MSHyp	MSError	F	P
Home Environment Interaction Groups	Book & Code	3,52	40.32	6.87	5.87	.002
	Print awareness	3,52	45.75	15.28	2.99	.039
	Accuracy	3,52	1543.79	915.99	1.69	.182
	Fluency	3.52	0.80	0.40	2.03	.122

Home and Classrooms

In order to test the hypothesis that children's preschool experiences in combination with formal instruction in grade 1 influence their growth in literacy ability, a 2 X 4 repeated measures multivariate analysis of variance was done. Mean differences and standard deviations for a group main effect are in Table 10. An overall multivariate Hotellings test at .5825 $F(3, 140 = 1.81, p<.038)$ indicates a significant group effect for the difference in children's performance on literacy abilities prior to and following formal instruction. Univariate tests (Table 11) indicate a significant group effect for print awareness $F(3, 52 = 3.92, p<.013)$ and fluency $F(3, 52 = 3.54, p<.021)$.

In an overall multivariate analysis for the effect of time, school participation collapsed across groups shows significance at Hotellings 3.62 $F(1, 48 = 34.77, p<.000)$. Pre- and post-test means and standard deviations for the entire sample for the set of literacy variables are in Table 12. Univariate tests indicate that the difference in time is associated with four abilities: book and code knowledge $F(1, 52 = 102.19, p<.000)$, print awareness $F(1, 52 = 13.13, p<.001)$, accuracy $F(1, 52 = 119.86, p<.000)$ and fluency $F(1, 52 = 16.13, p<.000)$. These results are recorded in Table 13.

In order to determine whether the correlations are not related or to establish their independence from one another, correlations were done among each of the measures of literacy ability for the whole population (Table 14). These correlations indicate that the dependent variables are reasonably independent of one another and in most cases significantly related. The table also indicates that all variables are significantly correlated to accuracy. Strategicness is significantly correlated to accuracy only. The remaining variables - fluency, book

Table 10

Mean Difference and Standard Deviation for the Set of Literacy Abilities Prior to and Following Instruction

Literacy Abilities	Rich-Rich		Rich-Moderate		Moderate-Rich		Moderate-Moderate	
	$\bar{X}$ Diff	SD	$\bar{X}$ Diff	SD	$\bar{X}$ Diff	SD	$\bar{X}$ Diff	SD
Book & Code	2.23	1.82	2.00	2.39	3.40	2.59	5.30	2.67
Print awareness	1.96	3.86	1.43	3.23	2.40	4.48	1.60	2.46
Accuracy	30.23	19.47	37.21	21.95	36.50	25.10	24.50	17.30
Fluency	0.55	0.86	0.64	0.75	0.30	0.48	0.10	0.32
Strategicness	0.68	19.04	-2.57	24.75	-2.10	24.76	-1.40	10.50

Note: Rich-Rich = Rich environment-Rich interaction
Rich-Moderate = Rich environment-Moderate interaction
Moderate-Rich = Moderate environment-Rich interaction
Moderate-Moderate = Moderate environment-Moderate interaction

Table 11

Univariate Analysis for the Set of Literacy Abilities for the Home Group Main Effect Prior to and Following Instruction

		Univariate Analysis of Variance				
Source of Variation	Variables	DF	MSHyp	MSError	F	P
Home Environment Groups (Post/Pre)	Book & code	3,52	38.41	14.84	2.59	.063
	Print awareness	3,52	88.73	22.63	3.92	.013
	Strategicness	3,52	311.22	319.14	0.98	.412
	Accuracy	3,52	3404.66	1469.73	2.32	.086
	Fluency	3,52	2.66	0.75	3.54	.021

Table 12

Pre- and Post-Test Means and Standard Deviations of the Literacy Abilities for the Entire Sample

	Pre-Test		Post-Test	
	$\bar{X}$	SD	$\bar{X}$	SD
Book & Code	14.48	2.95	17.41	3.26
Print Awareness	13.30	4.12	15.14	3.94
Accuracy	51.98	30.83	84.05	29.01
Fluency	1.02	0.65	1.46	0.83
Strategicness	32.36	18.99	31.36	12.65

Table 13

Univariate Analysis for the Set of Literacy Abilities with Time as a Main Effect

			Univariate Analysis of Variance			
Source of Variation	Variables	DF	MSHyp	MSError	F	P
Time	Book & code	1,52	263.68	2.58	102.19	.000
	Print awareness	1,52	86.01	6.55	13.13	.001
	Accuracy	1,52	26030.47	212.17	119.86	.000
	Fluency	1,52	3.98	0.25	16.13	.000
	Strategicness	1,52	45.83	212.38	0.22	.644

Table 14

Correlation Matrix for the Set of Literacy Abilities Prior to Formal Instruction

	Book & Code Knowledge	Print Awareness	Strate-gicness	Accuracy	Fluency
Book & Code	-	0.56***	0.18	0.60***	0.49***
Print Awareness		-	0.17	0.49***	0.24*
Strate-gicness			-	0.41**	0.14
Accuracy				-	0.70***
Fluency					-

*p<.03 **p<.001 ***p<.000

and code knowledge and print awareness are correlated with one another but the correlations are somewhat lower than those with accuracy.

For the total population, correlations among the five literacy variables 4 months after formal instruction (Table 15) show a similar pattern to the correlations obtained prior to instruction in that the variables are still relatively independent of one another or not related. There are also some noteworthy relationships which appear to be related to participation in schooling.

Print awareness is correlated to all the other variables. It is especially noteworthy in these patterns that there is a significant correlation between print awareness and strategicness (r .25). There is a notable pre- and post-test increase in the magnitude of the correlation between print awareness and accuracy (r .49 to r .68). Strategicness is no longer significantly correlated to accuracy but it is significantly correlated to print awareness. The correlations of book and code knowledge as well as the correlations of fluency to the other variables have remained stable. These patterns will be returned to in the discussion section.

An overall multivariate Hotellings test (.6119) for the interaction effect between school participation and home group indicates significance $F(3, 140 = 1.90, p<.027)$. Table 16 shows the pre- and post-test means and standard deviations for the four environment-interaction groups.

Univariate tests (Table 17) indicate a significant interaction effect associated with book and code knowledge $F(3, 52 = 5.25, p<.003)$. This indicates that there is a statistically significant difference in the means of one or more of the home environment-interaction groups from the beginning of the school year and after instruction over 4 months.

Table 15

Correlation Matrix for the Set of Literacy Abilities After Formal Instruction

	Book & Code Knowledge	Print Awareness	Strategic-ness	Accuracy	Fluency
Book & Code	-	0.48***	0.04	0.74***	0.54***
Print Awareness		-	0.25*	0.68***	0.40**
Strategicness			-	0.17	-0.11
Accuracy				-	0.67***
Fluency					-
		*p<.03	**p<.001	***p<.000	

Table 16

Pre- and Post-Test Means and Standard Deviations of the Set of Literacy Abilities for the Four Environment-Interaction Groups

Literacy Abilities	Rich-Rich				Rich-Moderate				Moderate-Rich				Moderate-Moderate			
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Book & Code	15.96	3.05	18.18	3.03	14.21	2.12	16.21	3.64	14.30	2.36	17.70	3.71	11.80	2.44	17.10	2.47
Print Awareness	14.46	3.16	16.41	3.10	14.43	4.24	15.86	3.28	11.80	4.73	14.20	4.39	10.70	4.08	12.30	4.81
Strategicness	33.50	17.01	34.18	14.49	33.64	22.44	31.07	12.47	33.90	22.69	31.80	9.66	26.50	15.49	25.10	10.31
Accuracy	62.00	32.60	92.23	26.13	51.64	32.15	88.86	30.24	43.40	21.49	79.90	28.05	39.00	29.29	63.50	27.48
Fluency	1.27	0.83	1.82	0.91	0.86	0.54	1.50	0.94	0.90	0.32	1.20	0.42	0.80	0.42	0.90	0.32

Note: Rich-Rich = Rich environment-rich interaction
Rich-Moderate = Rich environment-moderate interaction
Moderate-Rich = Moderate environment-rich interaction
Moderate-Moderate = Moderate environment-moderate interaction

Table 17

Univariate Tests for the Set of Literacy Abilities for Group X Time Interaction Effect

			Univariate Analysis of Variance			
Source of Variables	Variable	DF	MSHyp	MSError	F	P
Group X Time	Book & code	3,52	13.56	2.58	5.25	.003
	Print Awareness	3,52	1.06	6.55	0.16	.921
	Strategic-ness	3,52	18.42	212.38	0.09	.967
	Accuracy	3,52	202.42	217.17	0.93	.432
	Fluency	3,52	0.36	0.25	1.47	.235

In order to determine which of the different group means was significantly different, a Scheffé post-hoc test was computed on the mean difference scores (Table 18). The moderate environment-moderate interaction group was significantly different from the other three groups (critical difference value 1.24, $F3$, 52). Also, the moderate environment-rich interaction group was significantly different from the rich environment-moderate interaction group. This pattern of results suggests that children with moderate home environments show greater improvement in book and code knowledge when school participation interacts with the home environment.

To test the hypothesis that children's views on reading have an influence on their performance on five literacy abilities after formal instruction a 1 X 3 multivariate analysis of variance was done. An overall multivariate Hotellings test at .3142 $F(2, 104 = 1.63, p<.107)$ was not significant.

In order to test the hypothesis that literacy ability scores, after 4 months of formal instruction for children with a Code+ perception of reading, are correlated to their end of the year scores on an achievement test, Pearson's coefficient correlations were computed (Table 19).

Strategicness has no significant correlation to either the vocabulary, the comprehension or the combined score on these two tests. The remaining four literacy abilities are all significantly correlated to the vocabulary, comprehension and total score. Of these four literacy abilities, fluency has the lowest correlations with the achievement test and its components. The magnitude of the correlations between the achievement test scores and print awareness are greater than the correlations obtained with the fluency variable. The magnitude of the correlations between book and code knowledge and the achievement scores are greater than the correlations obtained with word accuracy, more specifically between the comprehension scores and word accuracy.

Table 18

Book and Code Knowledge (Interaction: Group X Time): Absolute Value for Differences Among Mean Differences (MSerror = 2.58, p = 4, n = 22, 14, 10, 10)

	$\bar{X}$ Rich-Rich	$\bar{X}$ Rich-Moderate	$\bar{X}$ Moderate-Rich	$\bar{X}$ Moderate-Moderate
Rich-Rich $\bar{X}$ Diff 2.23	-	0.23	1.17	2.97*
Rich-Mod $\bar{X}$ Diff 2.00		-	1.40*	3.30*
Mod-Rich $\bar{X}$ Diff 3.40			-	1.90*
Mod-Mod $\bar{X}$ Diff 5.30				-

*p<.05

Note: Rich-Rich = Rich environment-Rich interaction
Rich-Moderate = Rich environment-Moderate interaction
Moderate-Rich = Moderate environment-Rich interaction
Moderate-Moderate = Moderate environment-Moderate interaction

Table 19

Correlations between the Set of Literacy Abilities after Formal Instruction and Scores on an End-of-year Achievement Test for Children with a Code+ Perception of Reading

	Vocabulary	Comprehension	Total
Book & Code	0.72**	0.77**	0.77**
Print Awareness	0.60**	0.64**	0.64**
Strategicness	-0.10	0.09	-0.01
Accuracy	0.76**	0.84**	0.83**
Fluency	0.57*	0.57*	0.59*

*$p < .001$ **$p < .000$

Classrooms

In order to test the hypothesis that teachers have a differential influence on literacy as it is measured by the five literacy abilities, a 1 X 6 multivariate analysis of variance was done. The means and standard deviations for the five variables for children in six classrooms are in Table 20. An overall multivariate Hotellings at .8866 $F(5, 242 = 1.72, p<.021)$ was significant.

The univariate analyses (Table 21) indicate that significance is associated with print awareness $F(5, 54 = 3.30, p<.011)$, accuracy $F(5, 54 = 3.98, p<.004)$ and fluency $F(5, 54 = 3.11, p<.015)$. A Scheffé post-hoc test was computed to find out which classroom/s differed from the others in the children's performance on print awareness (Table 22). On the print awareness ability (critical difference value 4.18, F5, 54) Class 1 was significantly different from Class 6. Class 2 was significantly different from Class 6. Class 3 was significantly different from Class 6. A second Scheffé post-hoc test was computed (Table 23) to find out which classroom/s differed from the others in children's accuracy of word reading. On the accuracy variable (critical difference value 27.97, F5, 54) Class 1 differed from Class 5. Class 1 was also significantly different from Class 6. Class 3 was significantly different from both Class 5 and Class 6.

The third Scheffé post-hoc test (Table 24) was computed to find out which classroom/s differed significantly from the others in children's fluency in reading in an assisted condition. On the fluency measure (critical difference value .83, F5, 54) Class 5 differed significantly from both Class 1 and Class 3. In addition Class 3 was significantly different from Class 6.

It is interesting to note that Class 1 and Class 3 are consistently and significantly different from Class 5 and Class 6 on these three literacy abilities. This pattern will be taken up in the discussion section.

Table 20

Means and Standard Deviations for the Set of Literacy Abilities by Classroom Performance After Instruction

Literacy Abilities		Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
Book & Code Knowledge	$\bar{X}$	18.27	15.90	18.64	17.60	17.80	15.38
	SD	3.26	3.38	3.14	3.51	2.66	3.66
Print Awareness	$\bar{X}$	17.09	16.30	16.46	15.60	13.30	12.00
	SD	3.08	3.62	2.42	3.65	4.67	4.56
Strategic-ness	$\bar{X}$	36.36	30.70	30.45	29.80	26.90	29.77
	SD	11.27	12.79	15.15	9.52	10.42	14.94
Accuracy	$\bar{X}$	101.10	80.40	101.00	82.60	71.00	63.54
	SD	12.86	30.49	24.11	38.32	31.05	23.33
Fluency	$\bar{X}$	1.82	1.50	1.91	1.40	0.90	1.08
	SD	0.87	0.97	0.94	0.89	0.32	0.28

Table 21

Univariate Analysis for the Set of Literacy Abilities for Classroom Main Effect After Formal Instruction

Univariate Analysis of Variance

Source of Variation	Variables	DF	MSHyp	MSError	F	P
Classroom	Book & Code	5,54	19.90	10.77	1.85	.119
	Print Awareness	5,54	47.19	14.28	3.30	.011
	Strategic-ness	5,54	102.56	167.69	0.61	.691
	Accuracy	5,54	2719.20	683.62	3.98	.004
	Fluency	5,54	1.73	0.56	3.11	.015

Table 22

Print Awareness: Absolute Value for Differences Among Means After Formal Instruction (MS error = 14.28; p = 6; n = 11, 10, 11, 5, 10, 13)

	$\bar{X}$ Cl. 1	$\bar{X}$ Cl. 2	$\bar{X}$ Cl. 3	$\bar{X}$ Cl. 4	$\bar{X}$ Cl. 5	$\bar{X}$ Cl. 6
Cl. 1 $\bar{X}$ 17.09	-	0.79	0.63	1.49	3.79	5.09*
Cl. 2 $\bar{X}$ 16.30		-	0.16	0.70	3.00	4.30*
Cl. 3 $\bar{X}$ 16.46			-	0.86	3.16	4.45*
Cl. 4 $\bar{X}$ 15.60				-	2.30	3.60
Cl. 5 $\bar{X}$ 13.30					-	1.30
Cl. 6 $\bar{X}$ 12.00						-

*$p < .05$

Table 23

Accuracy: Absolute Value for Differences among Means after Formal Instruction (MS error = 683.62, p. = 6, n = 11, 10, 11, 5, 10, 13)

	$\bar{X}$ Cl. 1	$\bar{X}$ Cl. 2	$\bar{X}$ Cl. 3	$\bar{X}$ Cl. 4	$\bar{X}$ Cl. 5	$\bar{X}$ Cl. 6
Cl. 1 $\bar{X}$ 101.10	-	20.70	0.10	18.50	30.10*	37.56*
Cl. 2 $\bar{X}$ 80.40		-	20.60	2.20	9.40	16.86
Cl. 3 $\bar{X}$ 101.00			-	18.40	30.00*	37.46*
Cl. 4 $\bar{X}$ 82.60				-	11.60	19.06
Cl. 5 $\bar{X}$ 71.00					-	7.46
Cl. 6 $\bar{X}$ 63.54						-

*$p < .05$

Table 24

Fluency: Absolute Value for Differences Among Means After Formal Instruction (MS error = .5568, p = 6, n = 11, 10, 11, 5, 10, 13)

	$\bar{X}$ Cl. 1	$\bar{X}$ Cl. 2	$\bar{X}$ Cl. 3	$\bar{X}$ Cl. 4	$\bar{X}$ Cl. 5	$\bar{X}$ Cl. 6
Cl. 1 $\bar{X}$ 1.82	-	0.32	0.09	0.42	0.92*	0.74
Cl. 2 $\bar{X}$ 1.50		-	0.41	0.10	0.60	0.42
Cl. 3 $\bar{X}$ 1.91			-	0.51	1.01*	0.83*
Cl. 4 $\bar{X}$ 1.40				-	0.50	0.32
Cl. 5 $\bar{X}$ 0.90					-	0.18
Cl. 6 $\bar{X}$ 1.08						-

*p <.05

Conditions of Reading

In order to test the hypothesis that children's use of strategies differs according to the reading condition prior to formal instruction, a 1 X 2 multivariate analysis of variance was done. An overall multivariate Hotellings test at 2.2198 $F(1, 56 = 29.82, p<.000)$ was significant. Table 25 shows the means and standard deviations for three strategies and accuracy of words read in an assisted and unassisted reading condition. Univariate tests (Table 26) indicate a significant difference in the frequency of words ignored $F(1, 59 = 13.37, p<.000)$, frequency of phonetic cues used $F(1, 59 = 10.99, p <.002)$ and in the number of words read accurately $F(1, 59 = 109.58, p <.000)$.

In order to test the hypothesis that children's use of strategies differs according to the reading condition after formal instruction, a 1 x 2 multivariate analysis of variance was done. An overall multivariate Hotellings test at 7.3275 $F(1, 56 = 102.59, p <.000)$ was significant. Table 27 shows the means and standard deviations for three strategies and accuracy of words read in an assisted and in an unassisted reading condition, following formal instruction. Univariate tests (Table 28) indicate a significant difference in the frequency of rereadings $F(1, 59 = 6.23, p <.015)$, phonetic cues used $F(1, 59 = 58.53, p <.000)$ and number of words read accurately $F(1, 59 = 386.93, p <.000)$.

In order to determine whether students make adaptations in the use they make of strategies and change in the number of words which they read accurately, correlations were carried out, collapsed over time and conditions. It would be expected that the correlations would be high if children were unaffected or did not adapt to the condition under which reading takes place. Correlations among the three strategies and word accuracy used in both reading conditions at two points in time are shown in Table 29. As shown in Table 29, there are moderate or low correlations between the use made of several strategies and word

Table 25

Means and Standard Deviations for Accuracy and Strategies Used in Both Reading Conditions Prior to Formal Instruction

	Ignores Words		Rereads		Uses Phonetic Cues		Accuracy	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Condition 1 Unassisted Reading	3.97	6.09	0.77	1.13	7.87	9.65	16.18	13.91
Condition 2 Assisted Reading	8.15	7.86	0.48	1.05	4.77	7.38	34.28	18.84

Table 26

Univariate Analysis for Strategies and Word Accuracy for the Reading Condition Main Effect Prior to School Participation

Univariate Analysis of Variance

Source of Variation	Variables	DF	MSHyp	MSError	F	P
Condition	Ignores Words	1,59	525.01	38.25	13.73	.000
	Rereads	1,59	2.41	1.12	2.15	.148
	Uses Phonetic Cues	1,59	288.30	26.23	10.99	.002
	# of Words Read Accurately	1,59	9828.30	89.69	109.58	.000

Table 27

Means and Standard Deviations for Accuracy and Strategies Used in Both Reading Conditions After Formal Instruction

	Ignores Words		Rereads		Uses Phonetic Cues		Accuracy	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Condition 1 Unassisted Reading	3.37	3.96	0.80	1.30	12.60	9.69	31.53	14.72
Condition 2 Assisted Reading	3.83	4.38	0.38	1.04	4.23	3.66	51.40	15.56

Table 28

Univariate Analysis for Strategies and Word Accuracy for the Reading Condition Main Effect after School Participation

Univariate Analysis of Variance

Source of Variation	Variables	DF	MSHyp	MSError	F	P
Condition	Ignores words	1,59	6.53	13.23	.49	.435
	Rereads	1,59	5.21	0.84	6.23	.015
	Uses phonetic cues	1,59	2100.03	35.88	58.53	.000
	# of words read accurately	1,59	11840.53	30.60	386.93	.000

Table 29

Correlation Matrix for the Total Use of Three Strategies and Accuracy

	Accuracy (Pre-Post) C_1, C_2	Uses Phonetic Cues(Pre,Post) C_1, C_2	Ignores Words (Pre, Post) C_1, C_2	Rereads (Pre,Post) C_1, C_2
Accuracy	-	0.41****	-0.21*	0.31**
Uses Phonetic Cues		-	-0.10	0.33***
Ignores Words			-	0.11
Rereads				-

*p <.054 **p <.008 ***p <.005 ****p <.000

accuracy and between pairs of strategies. Accuracy is significantly correlated to phonetic cue use and rereading. It is significantly but negatively correlated to words ignored. Phonetic cue use is also significantly correlated to rereadings. It is interesting to note that the strategy of ignoring words is not significantly correlated to other strategies. The pattern in this set of correlations suggests that children's use of strategies and accuracy of word reading are sensitive to the reading condition.

In order to determine the relationship between the use of strategies and accuracy of word reading in an assisted as well as in an unassisted reading condition, correlations were done, collapsed over time (Table 30 and Table 31 for the unassisted and assisted conditions respectively).

In an unassisted reading condition, the ignored words strategy is not significantly correlated to any other strategy or to word accuracy. In the same reading condition, the rereading strategy is significantly correlated to the number of words read accurately and to phonetic cue use.

In an assisted reading condition, rereading is not significantly correlated to accuracy of words read or phonetic cue use. Thus, with more context available, children need less rereadings. While there is no correlation between phonetic cue use and words ignored in an unassisted reading condition, there is a significant but negative correlation between these two strategies in an assisted reading condition. Phonetic cue use is significantly correlated to accuracy of words read in both the unassisted and assisted reading conditions. The negative correlation between phonetic cue use and ignored words and the positive correlation between phonetic cue use and accuracy in the assisted reading condition suggest a tendency for children to make use of either phonetic cues or to ignore words. This concurs with Sulzby's (1985) definition of the "strategy-imbalanced" reader who sporadically

Table 30

Correlation Matrix for the Three Strategies and Accuracy in an Unassisted Reading Condition

	Accuracy (Unassisted Reading)	Uses Phonetic Cues (Unassisted Reading)	Ignores Words (Unassisted Reading)	Rereads (Unassisted Reading)
Accuracy	-	0.35*	-0.03	0.37**
Uses Phonetic Cues		-	0.11	0.43***
Ignores Words			-	0.01
Rereads				-

* $p < .003$ ** $p < .002$ ***$p < .000$

Table 31

Correlation Matrix for the Three Strategies and Accuracy in an Assisted Reading Condition

	Accuracy (Assisted Reading)	Uses Phonetic Cues (Assisted Reading)	Ignores Words (Assisted Reading)	Rereads (Assisted Reading)
Accuracy	-	0.30**	-0.18	0.11
Uses Phonetic Cues		-	-0.32**	0.01
Ignores Words			-	0.19
Rereads				-

*p <.011 **p <.007

shows that s/he has some control over neglected strategies. These patterns will be discussed further in the discussion section.

To determine the consistency of students' use of strategies and word accuracy in an unassisted and assisted reading condition (Table 32) their performance on each variable across conditions were correlated. The highest correlation was obtained for the number or words read accurately in an assisted and in an unassisted reading condition (r .85). The lowest correlation was obtained between ignored words in an assisted reading condition and the ignored words in an unassisted reading condition (r .27). Highly significant but moderate correlations were obtained for phonetic cues used in assisted and unassisted reading conditions (r .53) and rereading in both reading conditions (r .46). Thus, the number of words read accurately appears to be more stable over conditions of reading. There is greater variability among the magnitude of the correlations for the three strategies. The low correlations obtained for phonetic cue use (r .53), rereadings (r .46) and words ignored (r .27) suggest that these strategies are related to the rereading condition with the ignoring words strategy being most sensitive to changes in reading conditions.

To determine if children's word accuracy and use of strategies at the beginning of school is generalizable to their word accuracy and use of strategies after school participation, correlations for the three strategies and word accuracy prior to and following formal instruction (Table 33 and Table 34 respectively) were done.

Prior to formal instruction, there is no significant correlation for the ignored words strategy and any of the other strategies. Nor does the ignored words strategy correlate with accuracy of words read. Rereading correlates significantly with phonetic cue use and accuracy of

Table 32

Correlations Between Unassisted and Assisted Reading Performance in Word Accuracy, Use of Phonetic Cues, Words Ignored and Rereading

	Accuracy (C_1 to C_2)	Uses Phonetic Cues (C_1 to C_2)	Ignores Words (C_1 to C_2)	Rereads (C_1 to C_2)
Accuracy	0.85**			
Uses Phonetic Cues		0.53**		
Ignores Words			0.27*	
Rereads				0.46**

*p < .018 **p < .000

Table 33

Correlation Matrix for the Three Strategies and Accuracy at the Pre-Test Stage

	Accuracy (Pre-test)	Uses Phonetic Cues (Pre-test)	Ignores Words (Pre-test)	Rereads (Pre-test)
Accuracy	-	0.45***	-0.03	0.33**
Uses Phonetic Cues		-	-0.08	0.27*
Ignores Words			-	0.19
Rereads				-

*p <.017 **p <.005 ***p <.000

Table 34

Correlation Matrix for the Three Strategies and Accuracy at the Post-Test Stage

	Accuracy (Post-test)	Uses Phonetic Cues(Post-test)	Ignores Words (Post-test)	Rereads (Post-test)
Accuracy	-	0.27**	-0.27***	0.21*
Uses Phonetic Cues		-	-0.13	0.36****
Ignores Words			-	-0.11
Rereads				-

*p <.05 **p <.019 ***p <.018 ****p <.002

word reading. Phonetic cue use correlates significantly with both accuracy of words read and rereading. There is no significant correlation between phonetic cue use and ignored words. The number of words read accurately correlates significantly to phonetic cue use and rereading. It does not correlate significantly with ignored words.

This pattern of correlations prior to formal instruction is very similar to the pattern of correlations obtained among the same three strategies and accuracy of word reading after school participation (Table 34). There are however some exceptions.

There is a significant negative correlation between words ignored and the number of words read accurately. Ignored words do not correlate significantly either with phonetic cues or with rereading. Although other significant correlations after formal instruction are the same as the significant correlations prior to schooling, the magnitude and significance of the correlations are different. There is a decrease in the significance and magnitude of the correlations between accuracy and phonetic cue use as well as accuracy and rereading. The magnitude and significance of the correlation between the phonetic cues and rereading increases. These results suggest that as children increase their accuracy, they tend to rely on these three strategies less often. Secondly, over time, children who reread more tend to make more use of phonetic cues.

Strategies and Word-Accuracy in an Unassisted Reading Condition

In order to test the hypothesis that there is a differential influence of the levels of home environment and children's interactions on children's use of strategies and word accuracy in an unassisted reading condition, a 1 X 4 multivariate analysis of variance was done. An overall multivariate Hotellings test at .7120 $F(3, 128 = 1.13, p < .322)$ showed no significance. Thus, the combination of home environment and children's interactions do not have a significant

influence on word accuracy or the strategies which children use in an unassisted reading condition prior to formal instruction.

In order to test the hypothesis that the home environmental context and participation in school have a differential influence on children's use of strategies and word accuracy in an unassisted reading condition, a 1 X 4 multivariate analysis of variance was done. An overall multivariate Hotellings test at .7421 $F(3, 128 = 1.17, p < .273)$ was not significant. This suggests that the home and classroom environment combined do not have a significant effect on children's word accuracy or on strategies in an unassisted reading condition after 4 months of school participation.

In order to test the hypothesis that there is a differential influence on word accuracy and the strategies which children use in an unassisted reading condition before and after formal instruction, a 2 X 4 repeated measures multivariate analysis of variance was done. In an overall multivariate analysis for the home environment-interaction group main effect a Hotellings of .7135 $F(3, 128 = 1.13, p < .319)$ was not significant.

An overall multivariate analysis for the main effect of time, school participation collapsed across home environment-interaction groups shows significance at Hotellings 2.4559 $F(1, 44 = 12.01, p < .000)$. Table 35 indicates the means and standard deviations for the pre- and post-test scores of the eight strategies and word accuracy in an unassisted reading condition. Univariate tests (Table 36) indicate that there are significant changes in accurate prediction $F(1, 52 = 10.68, p < .002)$, phonetic cue use $F(1, 52 = 6.04, p < .017)$ and the number of words which children read accurately $F(1, 52 = 111.79, p < .000)$.

As has been explained in the procedures section, some children were able to predict accurately after repeated readings of the text or when assisted by the researcher. Therefore a biserial correlation was

Table 35

Means and Standard Deviations for Strategies and Word Accuracy in an Unassisted Reading Condition

	Pre-Test		Post-Test	
	$\bar{X}$	SD	$\bar{X}$	SD
Predicts Accurately	2.57	1.75	3.36	1.78
Uses Phonetic Cues	8.34	9.81	13.16	9.73
# of Words Read Accurately	17.09	13.95	32.32	14.19
Looks Back	0.11	0.37	0.07	0.32
Looks Forward	0.09	0.35	0.09	0.35
Ignores Words	4.00	6.09	3.50	4.01
Rereads	0.75	1.12	0.79	1.26
Predicts Sensible Alternative	1.30	1.09	0.89	0.85
Self Corrects	0.07	0.26	0.16	0.46

Table 36

Univariate Analysis for Strategies Used in an Unassisted Reading Condition for the Main Effect of Time

Univariate Analysis of Variance

Source of Variation	Variables	DF	MSHyp	MSError	F	P
Time	Looks Back	1,52	0.02	0.13	0.16	.687
	Looks Forward	1,52	0.001	0.10	0.01	.916
	Ignores Words	1,52	1.14	29.21	0.04	.844
	Rereads	1,52	0.02	1.31	0.02	.892
	Predicts Accurately	1,52	18.10	1.69	10.68	.002
	Predicts Sensible Alternatives	1,52	2.93	1.10	2.65	.109
	Uses Phonetic Cues	1,52	421.70	69.82	6.04	.017
	Self Corrects	1,52	0.10	0.14	0.74	.393
	# of Words Read Accurately	1,52	5636.40	50.42	111.79	.000

done on the scores obtained on accurate prediction and the child's attempt at reading in the unassisted condition. No significance resulted between the number of words accurately predicted and the method of presentation (r .53, p <.10 for children who tried reading text alone immediately or gave up altogether; r -.02, p <.10 for children who tried the unassisted attempt after the assisted reading or who requested researcher's help). This implies that the significant change in the particular strategy of accurate prediction is a true significant effect of time and it is not confounded by the interactions between the researcher and the individual students in the unassisted reading condition.

Table 37 indicates the mean difference and standard deviations for the two strategies and word accuracy which changed significantly over time. The greatest change occurred in the number of words read accurately.

An overall multivariate test for the interaction of the home environment groups with time, at Hotellings .7287 $F(3, 128 = 1.15, p$ <.294) was not significant. This result as well as the non-significant group main effect suggest that the home environment has no influence on strategies which children use in an unassisted reading condition.

Strategies and Word-Accuracy in an Assisted Reading Condition

In order to test the hypothesis that the home environment in combination with the children's interaction has an influence on children's use of strategies and word accuracy in reading a predictable text in an assisted reading condition prior to formal instruction, a 1 X 4 multivariate analysis of variance was done. An overall multivariate Hotellings test at .4364 $F(3, 140 = 1.36, p$ <.177) was not significant. This implies that no home environment-interaction group has any significant effect on word accuracy or on the use of any one or more strategies which were observed in the assisted reading condition.

Table 37

Mean Differences (Post-Pre) and Standard Deviations for Significantly Changed Strategies and Accuracy in an Unassisted Reading Condition

Variables	Pre-Test		Post Test		$\bar{X}$ Diff	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$ Diff	SD
Accurate Prediction	2.57	1.75	3.36	1.78	0.85	1.96
Phonetic Cues	8.34	9.81	13.16	9.73	4.73	11.59
Word Accuracy	17.09	13.95	32.32	14.19	15.35	10.90

In order to test the hypothesis that the home environment and school participation have a significant influence on children's use of strategies and word accuracy in reading a predictable text in an assisted reading condition, a 1 X 4 multivariate analysis of variance was done. An overall multivariate Hotellings test at .5249 $F(3, 140 = 1.63, p < .072)$ was not significant.

In order to test the hypothesis that there is a differential influence on the word accuracy and strategies which children use in an assisted reading condition before and after formal instruction, a 2 X 4 repeated measures multivariate analysis of variance was done. An overall multivariate analysis for the effect of group, home environment-interaction collapsed over time was significant with Hotellings .6100 $F(3, 140 = 1.90, p < .028)$. Table 38 shows the mean differences and standard deviations for the four observable strategies and accuracy in word reading for each home environment-interaction group. Univariate tests (Table 39) indicate significance for pictorial use $F(3, 52 = 4.90, p < .004)$. The mean difference (post-pre) and standard deviations for the pictorial use strategy in each home environment-interaction group are in Table 40. It is interesting to note that in three groups, there was a reduction in the use made of pictorial cues. The moderate environment-moderate interaction group remained stable over time.

To determine which group was significantly different on its use of pictorial cue use, a Scheffé post-hoc test was done with the mean differences for each group (Table 41). No significant difference (critical difference value 1.87, $F3, 52$) was found between any two groups. This implies that although school participation reduced the frequency of pictorial use for three of the four groups (rich environment-rich interaction; rich environment-moderate interaction; moderate environment-rich interaction) the magnitude of the difference was not great enough to show up significantly between any two groups.

Table 38

Mean Differences (Post-Pre) and Standard Deviations for Four Home Environment-Interaction Groups for the Strategies and Word Accuracy in an Assisted Reading Condition

Variables	Rich-Rich		Rich-Moderate		Moderate-Rich		Moderate-Moderate	
	$\bar{X}$ Diff	SD	$\bar{X}$ Diff	SD	$\bar{X}$ Diff	SD	$\bar{X}$ Diff	SD
Pictorial Use	-1.93	1.63	-0.71	1.49	-1.20	2.04	0.00	2.00
Uses Phonetic Cues	0.73	6.11	-1.07	9.56	-2.50	10.86	-0.30	2.63
Rereads	-0.05	2.24	-0.07	0.62	0.00	1.33	0.10	0.32
Ignored Words	-5.14	7.83	-4.71	8.02	-4.10	9.88	-2.60	6.75
# of Words Read Accurately	15.05	13.87	19.14	16.21	18.60	16.75	16.10	12.48

Note: Rich-Rich = Rich environment-Rich interaction
Rich-Moderate = Rich environment-Moderate interaction
Moderate-Rich = Moderate environment-Rich interaction
Moderate-Moderate = Moderate environment-Moderate interaction

Table 39

Univariate Analysis for the Home Group Main Effect in an Assisted Reading Condition

Univariate Analysis of Variance

Source of Variation	Variables	DF	MSHyp	MSError	F	P
Home, Home & Classroom (Post/Pre)	Pictorial Use	3,52	16.25	3.31	4.90	.004
	Uses Phonetic Cues	3,52	48.46	41.20	1.66	.18
	Rereads	3,52	2.37	1.01	2.34	.084
	Ignores Words	3,52	22.91	44.62	0.51	.675
	# of Words Read Accurately	3,52	1056.83	479.78	2.20	.099

Table 40

Mean Differences and Standard Deviations for the Pictorial Use Strategy for Each Home Environment-Interaction Group

Pictorial Cues	Pre-test $\bar{X}$	Pre-test SD	Post-test $\bar{X}$	Post-test SD	Difference $\bar{X}$ Diff	Difference SD
Rich-Rich	1.91	1.63	0.68	1.17	-1.23	1.63
Rich-Mod	0.93	1.64	0.21	0.43	-0.71	1.49
Mod-Rich	2.50	1.65	1.30	1.57	-1.20	2.04
Mod-Mod	2.50	2.12	2.50	2.17	0.00	2.00

Note: Rich-Rich = Rich environment-Rich interaction
Rich-Moderate = Rich environment-Moderate interaction
Moderate-Rich = Moderate environment-Rich interaction
Moderate-Moderate = Moderate environment-Moderate interaction

Table 41

Pictorial Use: Absolute Value for Differences Among Mean Differences (MS error = 3.31, p = 4, n = 22, 14, 10, 10)

			$\bar{X}$ Rich-Rich	$\bar{X}$ Rich-Moderate	$\bar{X}$ Moderate-Rich	$\bar{X}$ Moderate-Moderate
Rich-Rich	$\bar{X}$ Diff	-1.23	-	-0.52	-0.03	1.23
Rich-Mod	$\bar{X}$ Diff	-0.71		-	-0.49	0.71
Mod-Rich	$\bar{X}$ Diff	-1.20			-	1.20
Mod-Mod	$\bar{X}$ Diff	0.00				-

Note: Rich-Rich = Rich environment-Rich interaction
Rich-Moderate = Rich environment-Moderate interaction
Moderate-Rich = Moderate environment-Rich interaction
Moderate-Moderate = Moderate environment-Moderate interaction

In an overall multivariate analysis for the effect of time, school participation collapsed across groups indicates significance, with Hotellings 1.9333 $F(1, 48 = 18.56, p < .000)$. The means and standard deviations for the pre- and post-test scores for accuracy and the four observable strategies in the assisted reading condition are shown in Table 42. Univariate tests (Table 43) indicate significant effects for pictorial use $F(1, 52 = 10.23, p < .002)$, words ignored $F(1, 52 = 13.16, p < .001)$ and number of words read accurately $F(1, 52 = 68.42, p < .000)$.

Table 44 indicates the mean difference and standard deviations for the two strategies and word accuracy which changed over time. As was the case in the unassisted reading condition, the greatest change in the assisted reading condition from the pre-test to the post-test phase of the study occurred with the number of words which were accurately read.

An overall multivariate test for the interaction for the home environment-interaction group with time, at Hotellings .1355 $F(3, 140 = .42, p < .971)$ was not significant.

Table 42

Pre-and Post-test Means and Standard Deviations for the Four Strategies and Word Accuracy in an Assisted Reading Condition

	Pre-test		Post-test	
	$\bar{X}$	SD	$\bar{X}$	SD
Pictorial Use	1.88	1.79	1.00	1.54
Uses Phonetic Cues	4.86	7.60	4.38	3.72
Rereads	0.43	1.04	0.41	1.08
Ignores Words	7.96	7.56	3.57	4.22
# of Words Read Accurately	34.84	19.17	51.73	15.77

Table 43

Univariate Analysis for Strategies and Word Accuracy in an Assisted Reading Condition for the Main Effect of Time

Univariate Analysis of Variance

Source of Variation	Variables	DF	MSHyp	MSError	F	P
Time	Pictorial Use	1,52	15.57	1.52	10.23	.002
	Uses Phonetic Cues	1,52	15.60	29.75	0.52	.472
	Rereads	1,52	0.0005	1.22	0.0004	.985
	Ignores Words	1,52	432.22	32.83	13.16	.001
	# of Words Read Accurately	1,52	7487.93	109.44	68.42	.000

Table 44

Pre-test Means, Post-test Means, Mean Differences and Standard Deviations for Significantly Changed Strategies and Accuracy in an Assisted Reading Condition

	Pre-test		Post-test		Difference	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$ Diff	SD
Pictorial Use	1.88	1.79	1.00	1.54	-0.87	1.73
Ignores Words	7.96	7.56	3.57	4.22	-4.32	8.19
# of Words Read Accurately	34.84	19.17	51.73	15.77	17.12	14.89

DISCUSSION

The discussion will deal with the findings related to (a) the influence of the home environment on emerging literacy abilities, (b) the cumulative effect of the home and classroom on the developing abilities of early readers, (c) the effects of the classroom environment, and (d) the effects of unassisted and assisted book-reading conditions on children's use of strategies.

The Influence of the Home Environment

As previous investigators have assumed, the home does have an influence on some early literacy abilities which are relevant to formal instruction in grade 1. Results indicate that prior to formal instruction, interactions with print in the home differentially influence book and code knowledge and print awareness. These findings concur with previous research. Print awareness has been reported (Harste et al., 1984) as being influenced by parent-child interactions with print within the home. Factors in the home such as parental interest, promotion of literacy and parental provision of resources for development of literacy influence children's book and code knowledge (Moon & Wells, 1979; Wells, 1981, 1982, 1985). However, the results of the present study extend the findings of previous research because the home environment was not assumed to be a function of either the characteristics within the home or the parent-child interactions with print but as a function of both factors. This result supports this assumption and previous suggestions (Hiebert, 1986a; Teale, 1981) that children learn from the print in the home environment when it is used in activities by significant others as well as when children interact with and process print on their own. Therefore, emergent readers who actively interact with print and are immersed in a rich print environment perform significantly better on book and code knowledge and print awareness than children who interact moderately with a moderate

print environment.

To further explore what particular features of the home environment are associated with the book and code knowledge and print awareness differences, an item by item post hoc analysis of the parent survey was done. All items were used for this description. What follows is a specific comparison of the features of the home environment for the rich print-rich interaction group of children and the moderate environment-moderate interaction group of children. Availability of print sources, parental and child reading activities, parental and child enrolments in public libraries and involvement with environmental print will be discussed.

There are differences in the accessibility and availability of print sources in the rich-rich homes and moderate-moderate homes. Newspapers are bought daily in 10% of the moderate home environments and 20% of the parents report buying magazines regularly. In rich-print environments, 54.5% of the parents report buying newspapers daily and 63.6% buy magazines regularly. Availability of books is a further distinguishing factor between the two groups of children. Eighty-two percent of the rich-rich group have access to tapes and accompanying books, 30% of the moderate-moderate group have these resources. About 54.5% of the former group have a subscription to a child's magazine in comparison to 10% of the moderate-moderate group. Parents of children in a rich-rich group report that they buy books for both adults and children (81.8%). In addition, 95.5% of their children own alphabet books; 68.2% own three or more such books. An equal number (40%) of parents of children in a moderate-moderate group report buying books for children only or for both adults and children. The remaining 20% never buy books. Although 80% of parents in the moderate-moderate group report that their children have alphabet books, only 10% own three or more such books; 50% of these children have two alphabet books and 20% do not have any.

Parental and child reading activities in rich-rich homes differ from those of parents and children in moderate-moderate families. Fifty percent of the parents who provide a moderate print environment report that reading is one of their pastimes. Eighty-six percent of parents in rich-print environments report reading as a pastime. Of this group of parents, 54.5% report that they read everyday whereas 31.8% read three to four times a week. The moderate-moderate group of parents engage in reading twice or less every week (70%) or three to four times a week (30%). In response to the frequency with which children are read to, 68.2% of children in rich-print environments are read to five times or more per week; 80% of the children in moderate environments are read to occasionally, once or twice a week. Within these families 40% of the mothers read to the children. In the rich environment group 90.9% of the answers indicate that both parents read to the children. Parents who surround their families with a rich-print environment are more likely to spend time listening to their children read and 50% do so "sometimes" whereas 45.5% do so "often". In the moderate-print environment families, 40% of the parents never listen to their children read and 50% do so "sometimes". While being read to, 27.3% of children in the rich-rich group just sit back and listen; 60% of the moderate-moderate group demonstrate this behaviour. Only 20% of the latter group take a more active role of pointing to pictures or words and turning pages. Children with a rich-rich background are more likely to engage in multiple behaviours (59.1%) while being read to. Differences in children's interest in literature are apparent in their requests to have books read and reread. Children in rich-print environments with which they interact actively are reported as asking to be read to often (72.7%) as well as request to hear the same stories reread often (72.7%). Twenty-seven percent make these requests sometimes but none of the parents report that their children never ask to be read to or hear favourite stories again. Of the moderate-moderate group of children 20%

never make a request either to be read to or to hear their favourite story reread; 60% and 50% respectively do so sometimes whereas 20% often ask to be read to and 30% ask for rereadings often.

There is a sharp difference in parental enrolments at public libraries: 100% of the rich-rich group of parents report that they are members. Twenty-three percent go every week and 27.3% go every two weeks. Eighty percent of the parents of the moderate-moderate group are not members of a public library. Ten percent go every two weeks and 20% report going irregularly. Not surprisingly, these differences are reflected in whether or not a child has a library membership. Eighty-six percent of the rich-rich group of children but only 10% of the moderate-moderate group are members of libraries.

Finally, parental activity and children involvement with print at grocery stores varies too. Parents of the rich-rich group of children report that they often write up a shopping list (72.7%) and their children often help with selecting products (59.1%). They often try to read brand names aloud (45.5%). Some parents of the moderate-moderate group never write a shopping list (50%). They report that 80% of their children sometimes help to pick and choose products but 50% of the children never try to read brand names aloud. Forty percent do so sometimes.

To discern the consistency and extensiveness of the differences between rich environment-rich interaction children and moderate environment-moderate interaction children and to explore further differences in the book and code knowledge and print awareness of emergent readers, items were selected from the concepts-about-print measure and environmental print-awareness measure.

The results of the book and code measure indicate that children coming from a rich home environment with which they interact actively perform better on a number of items than children from a moderate home environment with which they interact moderately. Initial consideration

has been given to differences on items relevant to book knowledge. All children in the rich-rich interaction group knew that print and not pictures convey the message. They were able to point to the starting word on the top left side of the page and accurately reported or showed left to right movement when asked for directionality. Almost all the children in this group (95.5%) knew where to point to when the first line of text was read. In comparison 20% of children in a moderate-moderate environment failed to distinguish that print and not pictures conveys the message; 20% of the children in this group failed to show knowledge of directionality and 30% were unable to show the researcher where to start reading. Word-by-word pointing was not achieved by 90% of the moderate-moderate group of children and by 59% of the rich-rich group. Whereas 95.5% of the rich-rich group succeeded in indicating the first and last part of the story, only 50% of the moderate-moderate group could respond correctly to this item. Comparisons of the results of code-knowledge items revealed differences between the two groups of children. Differences arise in children's knowledge of punctuation marks. When questioned about the function, name or use of a question mark, 63.6% of the rich-rich group of children and 10% of the moderate-moderate group gave a satisfactory reply. Children with rich environments and rich interactions were better informed about the full-stop (77.3%) and comma (31.8%) in comparison to children from moderate-moderate backgrounds (full-stop, 30%) and (comma, 0%). There are also differences in children's letter concepts. When asked to show one letter and two letters, 95.5% of the rich-rich group did so successfully in comparison to 80% in the moderate-moderate group. Similarly, 86.4% of the better children were able to point to a first and last letter in any word as compared to 60% of the moderate group of children.

Responses to the environmental print-awareness test indicate that there are differences in children's knowledge of print environment at the emergent literacy stage. Ten percent of children in the moderate

environment-moderate interaction group were able to read print and letters accurately for all four words in the context-free condition of the environmental print-awareness test. In contrast, more children from the rich environment and rich interaction group were able to read words accurately in a context-free situation. Twenty-three percent read all four words correctly and 9.1% read three words. Whereas 13.6% of the children in the rich-rich group failed to read print correctly for any word, 50% of the children in the moderate-moderate group did not succeed in reading any word accurately.

There are also differences in children's prior knowledge relevant to print and the use they make of this prior knowledge to make sense out of print. Children from a rich environment-rich interaction group showed evidence of having prior knowledge more often than children from a moderate-moderate background. Fifty percent of children in the rich-rich environment had prior knowledge for all four names of the products used in this measure; 22.7% of the children in this group had prior knowledge for three brand names. In contrast, 40% of children in the moderate group had prior knowledge for all four names but none (0%) scored accurately for three products. Whereas 10% of children in the moderate-moderate group failed to show that they had prior knowledge for any brand name, only 4.5% of children in the rich-rich group fall into the same category.

There is an even bigger difference in the use which children from different groups make of their prior knowledge relevant to print. Nine percent of children in the rich-rich group use their print knowledge for all four brand names. Eighteen percent use their knowledge for three of the four products. None of the children in the moderate-moderate group use their prior knowledge for three or four brand names. In fact, 50% of the children in this group do not use prior knowledge relevant to print for any of the brand names. On the other hand, 22.7% of children in the rich-rich group never used their prior knowledge. All children

in both groups used their prior knowledge to explain the functional use of the packaged products. For example, all children knew that the Cheerios box is a cereal box although not everyone was able to read the specific brand name.

Evidently, there are differences between the two groups of children in their book and code knowledge as well as their print awareness. These differences appear to be related to environmental characteristics in the home and children's interactions with the available print. More children from a moderate environment-moderate interaction group had difficulty in locating the beginning of the story, the first word at the top left side of the page, the first and last part of the story and identifying letters. They also lacked the ability to point to words while the researcher read the story. These results are not surprising given the limited opportunities provided in their homes. The moderate-moderate group of children are not read to frequently and are not likely to ask for stories to be read or favourite ones to be reread. They are less likely to participate actively in story-reading activities with an adult than the children in the rich-rich group.

The inability of children from moderate-moderate groups to use their prior knowledge relevant to print in the print-awareness measure, appears to be related to the children's lack of involvement with environmental print in grocery stores as well as the absence of activities such as making up grocery lists. In addition, homes with less print resources available for children to interact with appear to contribute to a limited knowledge of print. Although these inferences cannot be confirmed by previous empirical research, the data from the parent survey appear to reinforce the expectations that a rich environment with which children interact actively assists children in their emerging literacy abilities.

The overall results follow the developmental theory of reading which views reading as a multidimensional construct. Moreover, it has

implications for what knowledge children bring to formal instruction in grade 1 from different home environments. At the beginning of the school year, when children must rely on the prior knowledge which they have acquired from their home experiences, their set of literacy abilities are not equally developed. Book and code knowledge and print awareness were found to be most advanced abilities due to the availability of different sources of printed material and the interactions which parents and children engage in when utilising the available print. Before participation in grade 1 instruction, there does not seem to be a significant variance among the children on the other abilities (strategicness, fluency and accuracy). This suggests that typically the home literacy experiences in which children have been involved are not adequate enough to result in notable differences. However, one must not infer that children do not possess strategicness, fluency and accuracy before starting school. All the children participating in the study used some strategic behaviour and all children read some words accurately during the assisted and/or unassisted reading condition. Most children's reading was word-by-word reading (76.7%) and some children (13.3%) could not be classified at all because they merely recognized some words. Five percent of the children were already reading fluently and a further 5% were reading partly in phrases and partly words. Hiebert (1988) has inferred from a review of studies that there is a gap between what teachers emphasize and what children know. This led her to conclude that teachers should capitalise on children's prior knowledge. The data in this study suggest that prior to instruction children vary on book and code knowledge and print awareness as a result of differences in their home environment. Therefore teachers ought to build on these forms of knowledge.

The Cumulative Effect of the Home and Classroom Environment

When the effects of school participation are combined with the influence of the home environment, there are some significant differences in the performance of the four home environment-interaction groups on some of the children's developing abilities. The home and classroom environment in combination influence the development of two dependent variables - print awareness and fluency. The greatest change in the performance on print awareness occurred within the group of children who had a moderate print environment at home with which they interact actively. This suggests that the classroom may only extend the range of print experiences for those children who were ready to and did make the most of the moderate print environment they were offered at home.

The fact that the fluency of reading increases for all four groups of children following 4 months of participation in grade 1, concurs with Allington's (1983a) hypothesis that children with a varied background of reading experiences can understand for themselves that fluent reading is a major goal. In all six classrooms participating in the study there is evidence from field notes and teacher interviews of (a) teachers either modelling syntactic and intonation cues to indicate how words are grouped during reading, or (b) teachers allowing the children to simultaneously listen and follow along while the teacher read aloud. Both methods have been recommended (Aulls, 1982) to improve fluency. Also all six teachers encouraged daily book reading or studying of vocabulary. Thus, there appears to be a meaningful and sensible change in fluency ability when the classroom provides these conditions regardless of home conditions.

The largest fluency gains were made with the two groups which had a rich home environment. This supports Durkin's (1974-1975) assertion that children who have been read to, primarily by parents, have a distinct advantage when learning to read. In the present study, data

obtained from parental responses to the item on the questionnaire related to frequency of reading indicate that 42.9% of children from a rich environment were read to five times or more a week and 17.9% of children in this type of environment were read to three or four times a week. In comparison, only 5.36% of children in moderate environments are read to five times or more a week and a further 5.36% are read to three or four times a week. Some 25% of the children in moderate print environments are read to occasionally, once or twice a week.

Irrespective of the type of home environment or amount of interaction with the print available, school participation has a significant effect on most of the developing literacy abilities measured in this study between the time children enter grade 1 and the fourth month of school. Over this time, emergent readers' print awareness, book and code knowledge, accuracy and fluency significantly change. These changes concur with previous researchers' findings who report differences in the print awareness responses of children at the ages of 3, 4 and 5 years (Goodman & Altwerger, 1981; Hiebert, 1978); age-related increases in knowledge of print-related concepts (Clay, 1979), and an increase in word accuracy as more time is spent in reading (Dowhower, 1987; Herman, 1985) coupled with a change from word-by-word processing to grouping of words in phrases (Aulls, 1982). In previous research, the increase in word accuracy was observed after 7 weeks for second-grade transitional readers (Dowhower, 1987) and over 3 months for eight, less-able, nonfluent intermediate-grade students (Herman, 1985). Thus, the results of the present study extend the previous findings, related to word accuracy and fluency, to grade 1 children who have been in school for 4 months.

The preceding results further indicate that preschool development is not the only time span when children show truly significant literacy growth. The initial months of formal grade 1 instruction appear to be at least equally formative in terms of children's development of

literacy abilities as a multivariate construct. This puts a greater onus on teachers, school administrators and educators to ensure that facilities for a print-rich environment are provided with multiple opportunities for children to interact regularly with print in the environment. Children's growing awareness of print has its roots in home and community preschool experiences. However, equally important developmental changes are going on in the classroom in children's use of old knowledge and rapid acquisition of new knowledge. This growth in literacy knowledge assists optimal and efficient use of different abilities in order to facilitate the meaning-making process of reading.

As was mentioned in the results chapter on p. 102, there are significant and somewhat different patterns of correlations among literacy abilities prior to and following formal instruction. Following instruction, print awareness is significantly correlated to all other abilities including strategicness. Over time, there is an increase only in the magnitude of the correlations between print awareness and fluency and print awareness and word accuracy. The greatest change occurred in the relationship of print awareness to accuracy of word reading. After school participation, 49% (r .68) of the variance in children's word accuracy is accounted for by their print awareness knowledge. Prior to instruction only 25% of the variance (r .49) in children's accuracy in word reading was accounted for by print awareness knowledge. These results suggest that a sustained exposure to a wide variety of print-related experiences in different contexts affects children's awareness of the availability of strategies which they can use, their accuracy of word-reading and their fluency in reading a text.

The significant correlation between print awareness and strategicness suggests that, as a result of their improvement in print awareness, children tend to increase their use of strategies. However, this increase in strategicness does not have a significant relationship to word accuracy. In fact the significant relationship which exists

between accuracy and strategicness when children begin school, is lost 4 months later. This relationship was brought about by a small proportion of children who were already more accurate and consequently were more strategic. The non-significant relationship between strategicness and word accuracy after instruction implies that an increase in word, letter and sound knowledge enables some children to predict accurately and read on. Hence as children grow in their code knowledge, use made of strategies to break the code is less needed and to some extent restricted. As children become more aware of the full meaning context available, they appear to make more efficient use of strategies in making meaning beyond decoding.

The relationship between word accuracy and fluency accounts for 49% of the variance both before (r .70) and after instruction (r .67). This result, suggests that accuracy and fluency are stable reading factors for the emergent and the early reader. As children become more accurate in word reading, their fluency increases. This result supports the findings of research done with second-grade children (Dowhower, 1987) and intermediate-grade students (Herman, 1985). Children who are not constrained to direct their attention on word-by-word deciphering, probably focus on groups of words and phrases, thus improving the rate of fluent processing (Aulls, 1982).

The higher correlations obtained between book and code knowledge and fluency, as compared to the relationship between print awareness and fluency, imply that the availability of meaningful and whole books is a more powerful environment for promoting fluency in reading books than is responding to print in the environment. Unlike accuracy of word reading, fluency depends on children's unique auditory and visual experiences with meaningful, whole text. Accuracy, unlike fluency, can be achieved when reading isolated words as well as with words in a context. This explains the highly significant correlations between accuracy and print awareness and accuracy and book and code knowledge,

both before and after school participation.

As predicted by Aulls' (1982) developmental model of reading acquisition, over time there is an increase in the magnitude of the correlations among the literacy abilities. This is due to the integration among the set of developing variables. This integration of abilities implies that formal instruction should create a balance between teaching words in isolation and providing entire contexts for the children to obtain meaning out of reading. Since fluency is related to word accuracy, texts which contain words with which children are familiar ought to be widely used. Word-reading accuracy is increased by the availability of both familiar text and words in isolation which are brought to children's attention as a means of enhancing their environmental print awareness. Thus, as Hiebert (1988) argues, children should be required to make use of the functional knowledge they have acquired prior to formal instruction in functionally meaningful situations.

Book and code knowledge was the only ability which changed significantly as a result of the interaction of the home environment and classroom participation. The children in the moderate environment-moderate interaction group were significantly different from the other three groups in their book and code knowledge after 4 months of grade 1 instruction. The book and code knowledge of the moderate environment-rich interaction group was also significantly different from the rich environment-moderate interaction children. This suggests that children who have been exposed to fewer book handling experiences at home make up for these deficiencies within the classroom environment. Children in home environments with moderate print facilities have limited exposure to book and code knowledge. Based on the parent responses about activities in the home, there is clear evidence that children in moderate print environments lack essential experiences with books. There are 5.36% of children in moderate environments who are never read

to. There is no similar case for children in a rich environment. Of the parents who provide a rich-print environment, 60.7% report that both parents read to their children. Within the moderate environments, 16.1% of parents report that both adults read to their children. In homes which support rich-print environments, 25.0% of the children often read to their parents. In contrast, only 3.57% of children in moderate home environments often engage in reading when their parents are nearby. Similarly, availability of tapes with accompanying books are predominantly found in rich home environments (48.2%) but are not as accessible in moderate environments (19.6%). In rich home environments 35.7% of the children have a subscription to a child's magazine as compared to 3.57% of children from a moderate environment who have similar subscriptions. Of the books bought in the homes, 51.8% of parents in rich home environments and 19.6% of parents in moderate environments report buying books for both adults and children; 3.57% of parents who provide moderate print environments never buy any books. Of the child-owned books, 42.9% of children in rich-print environments have three or more alphabet books. Within moderate home environments, 7.24% of children have three or more alphabet books. More parents in rich home environments report that their child is a member of a library (55.4%). Within the moderate environment, only 7.14% of children are members of a library.

Clearly, children coming to school from rich-in-print home environments have had more opportunities to interact with print and become knowledgeable about concepts of print and book handling procedures. Thus, it is not surprising that the greatest changes on the book and code knowledge ability show up with children from moderate home environments after 4 months of school instruction. Access to the school library, opportunities to read to teachers and other children, reading along with the teacher, providing supplies of interesting books in the classroom and encouraging children and their parents to buy books are

all activities which were observed in the classrooms under study. Such activities (a) compensated for the dearth of experiences which some children missed out on at home and (b) reinforced the literacy experiences and extended the literacy knowledge of those children who had opportunities to interact with a varied array of sources of print.

Differences Among Classroom Environments

As has been discussed, the different combinations of the home environments and print interactions, the combined effects of the home and classroom environments and the effect of time all have a significant influence on the development of literacy abilities. When home conditions are collapsed over all analyses there also are significant differences in the children's performance on some literacy abilities due to the individual classroom environments set up by each teacher.

On the six classrooms in the study, Class 5 would be categorized as following a traditional approach whereas Class 1, Class 3 and Class 6 could be rated as following a whole language approach (according to Stahl & Miller, 1989) as outlined in the methodology chapter. Class 2 would also fall into the whole language category.

Differences in children's print awareness, accuracy of word reading and fluency are associated to specific classrooms. The children in Classes 1, 2 and 3 are significantly better on the print awareness measure than children in Class 6. On the accuracy measure, the children in Class 1 and Class 3 are significantly better than the children in Class 5 and Class 6. On the fluency measure, children in Class 5 are significantly poorer than the children in Class 1 and Class 3. In addition, children in Class 6 are significantly poorer than children in Class 3 in fluency performance. Children in Class 6 perform more poorly on three literacy abilities than children in other classes. Word accuracy and reading fluency appear to be more closely associated to differences among classrooms than other literacy abilities. More

specifically, Class 1 and Class 3 children are higher in word accuracy than children in Class 5 and Class 6. Class 3 children are higher than Class 5 and Class 6 children on fluency. Class 1 children are higher than Class 5 children but not significantly different from Class 6 children on fluency. Therefore we might expect that the conditions in Class 1 and Class 3 are more alike in terms of promoting fluency and word accuracy than Class 5 and Class 6.

It is interesting to note that in this study whereas the home environment groups differed significantly on book and code knowledge, teachers have a differential influence on children's environmental print awareness. In Classes 1, 2, 3 and 6, the children's attention is directed to captions, signs and logos, just as it would be in the environment outside the home and school. Daily written directions for the day's schedule (Class 1 and Class 2), putting up theme-related captions such as, "Bears, bears, bears" (Class 3), having messages with instructions such as "No empty milk cartons in the garbage bin" or "The Reader's Special Chair" (Class 6), or getting the children to think of "places where reading can be done" and "objects where print can be found" (Class 1 and Class 2) are all activities and messages which alert the children's attention and help them to focus on print. The wide range of print-related experiences offered in these classrooms as referred to by the teachers during interviews include:

> stories, poems, songs, calendars, newspapers. All kinds of books - picture puzzles with words...word puzzles, crossword puzzles, computer writing..Just about everything there is.
>
> (Teacher Class 3)

> ...the stencil for Math, anything...well, to me anything that they've written...the calendar is printed material, charts are printed material, they're being bombarded with it continuously. ...newspaper cuttings can be a homework assignment...to find something that they'd like to share.
>
> (Teacher Class 1)

> magazines, newspapers, they have the videos, film, words on film strips; stencils, they have blackboards charts, a

variety.

(Teacher Class 2)

> Well, they have those books, they have the names all over, they learn each other's names and how to spell them and all the other things which I hang up all over the place...and I cut out things that I see on The Gazette, mostly the fridge door page...all of that (points to nursery rhyme charts) is from the math books because each new unit has a nursery rhyme...the directions for them to follow in the math books...the science book...the religion book...the social studies, the calendar...they read things even on their pencils.
>
> (Teacher Class 6)

From the teacher responses given in these four classrooms, as well as the rich-print environment which was actually observed, it seems that the significant difference on the print awareness variable could be attributed to some characteristic beyond the teacher's control. Earlier in the discussion (p. 151) it was reported that when the home and classroom environments were combined, children from a moderate home environment but active interaction were the ones who improved most significantly on print awareness. Of the children who make up this moderate environment-rich interaction group, 60% were in Class 6. On the other hand 72.7% of the children with a rich-print environment at home and rich interaction were in Class 1, 2 or 3. In addition, 92.9% of children with a rich home environment but moderate interaction were in Class 1, 2 or 3. These data suggest that although teachers try to provide as rich an environment as they possibly can, they are constrained by the home background of their students in the degree to which they can influence the children.

Even though research (Bond & Dykstra, 1966-67; Stahl & Miller, 1989) has proved otherwise, people persist in claiming that certain approaches will lead to more uniform results in children's literacy and reading development. However, these expectations are not substantiated by the data in this study because children's literacy and reading

development are not solely influenced by the reading programme used in the classroom. Given the findings of the present study, it appears that the development of early reading with reference to specific literacy abilities is influenced by the prior knowledge which children acquire from the opportunities provided within their homes, their interaction with print in the home environment and the environment which teachers create for the students in the classroom. The children in Class 1, 2 and 3 were surrounded by a rich-print environment at home. The teachers' contribution to these pre-existing experiences created significant differences between these children and the children who had moderate environments at home, with which they interacted actively and who were steadily accumulating new print experiences from their classroom environment in Class 6.

The preceding differences in the home environments may also restrict teachers in the type of reading material they provide children when they start school or even constrain them to use specific teaching methods. Such differences in sources of material provided, or the emphasis given in the classroom, may contribute to differences in children's accuracy of word-reading and fluency. The teacher in Class 6 reported that at the beginning of the school year, her children are:

> reading only from the stuff that they are writing...I'm reading other things from authors but they're usually reading their own stories and then like little rhymes... that is the first kind of material that is written by somebody else that they would really ... 'cos I find it's hard for them to pick up something that they're not familiar with at all, you know, and to just read it like that and I mean the population that I get here, unless, they've been taught at home, which you know, some of them are, you know, but the majority is just mostly what they get from school.
>
> (Teacher Class 6)

Similarly, the teacher in Class 5 (where 50% of the participating sample came from moderate home environments and moderate interaction) believes that her group of children, "don't have too much background". Thus, she

uses basal readers because "some parents don't read to their children at home. So some children's parents depend on a basal reader". When asked about the kinds of materials from which children read at the beginning of the year, she explains:

> In September, not very much...I have a picture about say a leaf and inside there's written, "the leaves turn yellow, red" and all that...So I make them read that, ...then I write the same thing down on the board and then I give them a leaf to write on and they write that, copy that down...
>
> (Teacher Class 5)

There was a significant difference in the observed and reported introductory approaches of these two teachers. The former makes children use their own written materials. So children are actively involved in adult-like processes of reading and writing (Hemming, 1985). They are also using their prior knowledge. The teacher in Class 5 does not immerse children in such a meaningful situation and prefers beginning reading by isolated vocabulary instruction.

Children in Class 3 were reading "almost exclusively" from books from the first day of school. They are given one book a day, every day all year round. Children in Class 1 are exposed to a variety of materials. However, they too predominantly read from what they write. In response to the question about the kinds of materials children read from at the beginning of the year, the teacher in Class 1 replied:

> Everything, the reading books, library books, papers. Mostly, what they write 'cos I find until you actually start writing...reading is done by writing. They go hand in hand; you cannot divorce them.
>
> (Teacher Class 1)

These different approaches used by teachers in their attempts to immerse children in literacy arise partly from environmental constraints outside the class and are partly due to the teacher's beliefs about her students. Such variation may be accountable for significant differences in children's performance and achievement on both the accuracy and

fluency abilities.

There are other notable qualitative differences in classroom environments of the four teachers which contribute to different levels of achievement in these two abilities. Given the conclusions thus far, the development of both accuracy and fluency is highly dependent on the amount of reading material which children are exposed to, the diversity of print and the opportunities which children have to interact with these sources. In response to the question of how reading is introduced to the children all teachers referred to books. However, there was a distinction among the teachers on how books were used and what aspects were focused on. The teachers in Class 1 and Class 3 immediately provide books for the children to start reading. The teacher in Class 1 said she tries:

> to immerse them in a literate environment, pictures, books, stories, labelling; all that represents their world. I break down each one; you become conscious of listening, speaking, reading and writing, trying to keep a balance between the four modalities; always keeping it whole, keeping it relevant and meaningful to their own world as much as possible.
>
> (Teacher Class 1)

The teacher in Class 3 starts with books:

> a very simple book with the same sentence on each page with one word different and the word that's different would be represented by the pictures, for example, the book might be called "Fruit", I have an orange, I have an apple...Then the next day, they would get another book, all year round and I give it to them on the very first day of school.
>
> (Teacher Class 3)

The teacher in Class 5 provides a more limited exposure by choosing to focus on a limited number of words.

> First we show the book and we discuss the pictures in the book and then... I choose certain vocabulary from the book ... I write them on the board and we read them, we sound them out, the first sound, the last sound, what they hear in the middle and so on ... two words, three words a day and then they practise it at home and then we use it in a sentence...
>
> (Teacher class 5)

The teacher in Class 6 starts off by reading to the children but encourages children to experiment with written and spoken language:

> Most of the time I have been reading to them like everyday, a few times a day and I always... if I say things, I write the word on the board and ... let them associate the word, the spoken word with print ... and I try to let them do a lot of scribbling you know, experimenting with print so that they will sort of transfer back and forth ... I just sort of try to get them into listening to the stories first. First, I just tell stories.
>
> (Teacher Class 6)

The children in Class 1 and Class 3 initially are provided with richer experiences as well as more opportunities to interact with print. This may account for their children's greater achievement on accuracy of word reading and fluency compared to the children in Class 5 and Class 6. In addition, the way teachers conduct the reading lesson at the beginning of the year, the degree to which children are involved and the methods used to promote reading growth differ among these classes.

In Class 1, the teacher draws on the four components of reading, listening, speaking and writing during a typical reading lesson. There are no drastic modifications to this pattern but as the teacher explains:

> You really do more or less the same - writing increases, reading increases, ability to sit still and listen to one another increases and as they (children) become more confident and know what the expectations are, they know they're writing for a purpose.
>
> (Teacher Class 1)

In Class 3, the teacher's typical reading lesson consists of a varied range of activities. The children, individually read aloud the book that they had taken home to a mother that comes in daily to help the teacher. While this is being done, the class is engaged in reading a selection or selections of poetry, songs, chants or bits of prose.

> I would say, "Who can find me a space between words?; who can find me a letter? who can find me a word that ends in a letter or that they know how to read?; or who can find me a

> word that ends in a letter or that begins with the letter?; or a selection of letters in the middle?" Anything, also punctuation we talk about and then another part of the reading lesson would be writing where they would write either an event that happened to them or they would try to write words underneath the pictures; I give them a selection of pictures and just write the word underneath.
>
> (Teacher Class 3)

Both these teachers believe that there is nothing in particular which they emphasize more than anything else to make children aware of print. In fact they argue that children make sense of different concepts of print when they are ready for it. Hence they acknowledge variation among the development of the children in class.

A sharp contrast is provided in the way the teacher in Class 5 conducts her reading lesson. Her focus is vocabulary.

> I do very limited vocabulary, just enough. I don't want to force them down with too many. I do just a limited... then we use it in a sentence on a flashcard. I use flashcards for vocabulary; first I do the vocabulary with the flashcards, then I pick up sentences from the reader ... We also have little ... eh the vocabulary all cut up and then they have to put it in a sentence, then they read their sentence.
>
> (Teacher Class 5)

The teacher admits that of the things she does in class to make children aware of print, she believes that the vocabulary, the emphasis on initial letters and sounds and pointing to and sounding every word so children become aware of each word, are the most important features of print awareness. One of the methods used frequently to promote reading growth in this classroom is a matching exercise involving pictures and words or phrases that go with the illustrations.

The teacher in Class 6 encourages a read along method, "like an oral cloze ... letting them predict what the cover ... the title is and then what they expect in that story from the title". This teacher promotes reading growth through a combination of reading and writing:

> It's kind of two-way thing. The writing is helping the

> reading, the reading helping the writing and I never can figure out,... I can't have it separated .. it sort of just flows in and out ... or through.
>
> (Teacher Class 6)

The teacher in Class 1 sees an opportunity to promote reading growth through any activity. She emphasizes that she "capitalises on the children's experience, both vicarious and primary" and this leads to their talking about or sharing an experience. She insists on taking the children's world into account:

> taking where they're at and taking their own experience and relating literature ... you read a story to feel ... you don't read a story because you want to check comprehension or because you want to find the main idea or you don't want the sequence ... You want to use it as a relation to an experience.
>
> (Teacher Class 1)

The teacher in Class 3 encourages reading growth by reading itself, because as she explains, her philosophy is that children learn to read by reading. She acknowledges that children at this young age may not find reading "enthralling". Therefore she encourages them to participate in a reading activity by rewarding them with a sticker every time they read a book. Eventually they get a prize after reading a determined number of books.

It seems then that several factors in the classrooms of the teachers of Class 1 and Class 3 influence their students' accuracy and fluency. Their philosophy of immediately involving children in meaningful reading, capitalizing of children's prior world knowledge and making use of literature to assist children to relate and share their experiences, putting emphasis on skills such as word knowledge, letter identification, sounds of letters and other concepts about print in a casual manner while reading selections of poetry, prose or songs, encouraging them to read books and other printed material daily are all factors which help children improve their accuracy and fluency.

Children are also exposed to a range of materials which increases their vocabulary and their opportunities to identify words in different contexts. In addition, there is evidence, from observations and from the teacher interviews that the teachers in both these classrooms read to their children daily.

The atmosphere in Class 3 is one which naturally draws children into literacy activities. The day begins with the children and teacher discussing and reading a book selected by one of the children. The teacher reads the book at this time. Later, one child is chosen to be reader of the day. S/he has to read a book of her/his choice to the class. Mothers come in daily to hear the whole class individually read a book that had been taken home the day before. Children co-operate at the computer, writing up their own stories without any assistance from the teacher. Creative writing is encouraged by the work children do in their journals.

In Class 1, children are exposed to story-reading by the teacher; they are engaged in journal writing about twice a week; they are given a varied range of assignments which involve looking up information in different sources (such as newspapers), questioning and filling out information about different topics such as their parents' favourite books as children; brain-storming sessions about particular topics where children contribute their own ideas; and having to read notices and sign-up if they are interested in joining in an activity, such as using the computer during lunch time. Children in this classroom are also allowed to visit the library freely aside from the scheduled time on the timetable, when they have completed their school work.

In Class 6, the children are exposed daily to journal writing which encourages their invented spelling. They are read to by the teacher daily, several times a day. The books are discussed and children are given the opportunity to predict both the title and development of the story. Predictable texts are used initially to

encourage children to participate and read along with the teacher. They are encouraged to choose several books from the class library to take home and read. These books are not a substitute for books from the school library. Children collaborate in pairs or groups of three and write stories on the computer. At least once a week, all children are given an opportunity to read a book of their own choice to the class. In addition, they all read their journal story to the teacher daily. The teacher responds in writing and in this manner children respond back. When children are reading books, the teacher places no emphasis on accurate decoding of each word and possibly this explains why the children in Class 6 are significantly different in fluency only when compared to the children in Class 3.

The differences between Class 6 children and the children in Class 1 and Class 3, on the accuracy measure may be due to a greater concern by the children themselves with an exact reading of what is printed. There are differences in children's level of confidence in their own abilities and the way the teacher deals with the children in giving them confidence in themselves as readers affects what children think of the reading process.

It is not surprising that in Class 6, where the teacher provides opportunities for children to predict and where she praises these efforts by telling the children that they are already reading, even on the first day of school, after 4 months of school instruction, 76.9% of the children in this class believe (as estimated from the reading-perceptions interview) that everyone in their class is a good reader. In contrast, 90.3% of the children in Class 1 and 63.6% of the children in Class 3 believe that not everyone in their class is a good reader. (Secondary data related to the classroom practices and how they influence children's beliefs about reading are provided in Appendix H).

The teacher in Class 3 explained that her goal in language arts in grade 1 was to make children feel positive about themselves irrespective

of their level of reading ability. It is interesting to note that during the children's interview about their perceptions of reading, some children in this class identified whether other children were better readers than themselves by referring to the level at which they were reading.

Since the children in these three classrooms are provided with a stimulating and rich reading programme, it seems that the significant differences which arise on their performance in the print awareness, fluency and accuracy abilities are due to the different home environments which they experience before coming to school. The characteristics of rich-in-print home environments and the time factor are interactive features which affect the development of literacy abilities and reading achievement.

The lower standard of achievement in Class 5 on the accuracy and fluency abilities may be due to both the home environment and the experiences which the teacher provides. The teacher in this class insists on providing children with limited vocabulary, limiting the number of books they can take from the library (only one book a week is allowed) and making use of basal readers to encourage parent-child interaction at home. The activities in the class are almost exclusively conducted with the whole group. Thus, all the children are engaged in doing the same thing at the same time. Individual attention is given when the teacher goes round the class to correct the children's work. Reading activities generally follow the modelling patterns provided by the teacher. Whether reading poems, rhymes or from theme-related charts, the teacher generally reads a sentence or phrase and then asks the children to repeat it several times. Children's independent reading between activities was not observed in this classroom. This activity was especially noted in Class 6.

It therefore seems reasonable to conclude that what the teacher does to promote reading growth as well as the type of population which

constitutes the class are both factors which contribute to between classroom differences in children's performance on various literacy abilities. These results suggest that teachers should be aware of the children's home environment as well as the range of experiences they have been exposed to. By knowing what children already know about literacy and literacy contexts, teachers can be in a better position to select activities which are relevant to the child's world and which direct the children to reinforce previous learning, modify it where necessary and accommodate new information which extends her/his developing abilities. Indeed, as has been reported in previous research (Anderson et al., 1985) and in pedagogical books (Duffy & Roehler, 1986), the teacher's decision-making and planning influence children's reading achievement. Of equal importance, this study shows that given the distribution of home environments in a class, the teacher's decisions about what to teach and through what experiences, will not be equally beneficial to all children. Ideally the teacher's decisions should optimize the fit between the classroom and the range of children's prior home experiences and literacy knowledge.

Changes in Children's Perceptions of Reading

As documented in a previous study (Robinson, Lazarus & Costello, 1983) children's perceptions about reading which are formulated before children come to school, can be and are modified through the teacher's instruction.

In the present study, children's perceptions of reading did not have a significant influence on their literacy abilities either at the beginning of the school year or 4 months later. However, about 50% of the children had changed their perception of reading over the first 4 months at school. In five classes, there were approximately the same proportion of changes: 60% of the children changed their perception in Class 2, Class 4 and Class 5. In Class 3 and Class 6, 45.5% and 53.8%

respectively of the children participating changed their perception of reading. The least number of children who altered their perception were in Class 1 (27.3%). Most of the changes were from a code to a code+ perception of reading. The least number of changes occurred from a code to a non-code perception. None of the perceptions were specific to any home grouping and chi-square analysis of the relationship between children's home environment interaction and their perceptions of reading prior to and following school participation were not significant ($F2, 3 = 10.46$, $p < .10$ and $F2, 3 = 3.07$, $p < .80$). Tables indicating the children's perceptions of reading before and after school participation for different home groups as well as for the combined home and classroom group are shown in Appendix I. A commentary of the children's perceptions of reading for each orientation is in Appendix J.

For the children who had a code+ orientation in January and were in the four classrooms revisited for the achievement test in May, there were highly significant correlations between their literacy abilities in January and their end-of-the-year scores on the achievement test measuring their vocabulary and comprehension. This implies that children with a broader perception of reading have developed substantially in their literacy abilities to influence their end-of-the-year achievement scores. Although the result must be interpreted cautiously because of the small sample number, it suggests that children should be assisted in developing a wide rather than narrow perspective of the reading process. Their definition of reading should not merely be restricted to the code. Nor should they be encouraged to pay attention solely to the functions and purposes of reading as perceived by children in the non-code group. Teachers should provide opportunities for children to increase their awareness of both aspects of reading trying to establish a balance between their knowledge of letters, sound-symbol correspondences, conventions of reading and the meaning-making process which is essential to use reading in different

contexts.

The correlation of the greatest magnitude was between the word accuracy and the comprehension subscore of the Gates-MacGinitie achievement test. This supports the notion that children whose perception of reading constitutes both code and non-code orientations focus on word decoding, the related grapho-phonic, semantic and syntactic constraints as well as full use of supporting context cues. The highly significant correlations between four of the literacy abilities (print awareness, book and code knowledge, accuracy and fluency) and the scores on the achievement subtests imply that it is meaningful to look at children's developing literacy abilities to get an accurate estimate of the knowledge needed to perform tests traditionally designed to place children along a normal distribution of vocabulary and comprehension performance scores which reflect achievement of reading competency. Assessing reading only on the basis of an achievement test masks changes in reading knowledge or literacy growth and differences in children's individual abilities prior to and during formal schooling. Teachers need to find out about children's abilities and their progress in sets of knowledge which reflect the integration of their developing literacy ability which ultimately become the development of a mature reader.

Use of Strategies and Accuracy of Word-Reading in Unassisted and Assisted Reading Conditions

In this study, strategicness was measured as an index of the number of kinds and use of all strategies. Although strategicness does not correlate significantly to the vocabulary and comprehension subscores of the achievement test, this is not to be taken as an indication that strategicness is not an important ability. It is essential to take into consideration the demands required by the tests. In the vocabulary exercise, children had to identify the correct word

out of a set of four to match a picture. In the comprehension test, children had to read two sentences or a sentence and a question related to either one specific picture, a set of four or a series of four pictures. Thus, children had a limited context and too short a text to make use of several reading strategies. This result suggests that strategicness and use made of strategies rely on task demands and the conditions of reading. Since strategic reading is a characteristic which distinguishes good and poor readers as early as grade 2 (Paris & Myers II, 1978; Paris et al., 1983) and poor readers like young readers need to be taught strategies, it was the purpose of this part of the study to focus on children's developing reading strategies as they are influenced by the reading condition, and their association with experiences in the home environment and the classroom environment on children's development of strategies.

Overall Influences of Reading Conditions

Prior to formal instruction, children appear to be able to adapt the strategies they use in reading according to the amount of assistance they are given. Children perform significantly differently on the amount of words ignored, the use they make of phonetic cues and their accuracy in word reading in an unassisted and in an assisted reading condition. In an unassisted reading condition children appear to focus their attention more intently on every word. In this situation, when they are not assisted by an illustrated text or by an adult's reading of the text, children get the meaning of the story primarily by focusing on the words and using phonetic cues. Since they are unassisted, they expect that they have to read every word to find out what the story is about. In spite of the fact that they do not ignore many words and they make use of phonetic cues, they do not have a high level of reading accuracy. On the contrary, in a highly assisted reading condition, when children have a predictable text to read and they are assisted by

pictures, a repetitive phrase as well as opportunities to hear the text reread, they can afford to ignore more words, make use of less phonetic cues and be more accurate in their word reading. Following 4 months of formal instruction, they make use of more phonetic cues in an unassisted reading condition but still read more words accurately in an assisted condition.

These findings suggest that over 4 months, with exposure to reading at school and at home as well as to opportunities for assisted and repeated readings, children become more accurate readers, they ignore fewer words than they did prior to instruction and they rely on their own resourcefulness to sound out words when little help is available.

Irrespective of the assistance given during reading, the number of words read accurately is dependent on both the use made of phonetic cues and rereadings. If children ignore words, results indicate that they are not as accurate at word reading. In an unassisted reading condition, the number of rereadings and phonetic cues used are both influential on the number of words which are accurately read. In comparison, because children have had the opportunity to hear the text being reread, the reading strategy is no longer necessary and the data show it is not significantly correlated to accuracy of word reading in an assisted condition. Similarly, in this reading condition there is a tendency for children who use phonetic cues not to ignore words. If words are ignored, phonetic cues are not being made use of.

Accuracy of word reading is a stable feature of both the emergent and early readers' literacy knowledge. Therefore it is not dependent on the assistance given during reading. Conditions of reading have a greater influence on strategies than accuracy. There is greater variability in the relationship of each strategy across conditions. The ignored words strategy is most affected by the condition of reading. The low correlation between ignored words in an ass sted and in an

unassisted reading condition (r .27) implies that use made of this strategy is altered and adapted according to reading condition. There is less variability in the use of phonetic cues and number of rereadings across conditions, which suggests that although these two strategies are sensitive to changes in the reading condition, they are more stable than the ignored words strategy.

Prior to formal instruction accuracy of word reading is significantly related to phonetic cue use and number of rereadings. These same significant correlations are found after school participation. However, following instruction, children who ignore words when reading are not likely to be reading words accurately. This is reasonable to expect as accuracy of word reading can only be attained if attempts at decoding are made by rereading previous sentences or using phonetic cues.

The overall pattern of relationships between accuracy of word reading and the three strategies (phonetic cue use, rereading, ignoring words) suggest that accuracy of word reading, which is stable across reading conditions, is dependent on phonetic cues and rereadings. Ignoring words does not positively influence accuracy of word reading. Only after 4 months of formal instruction do children in an unassisted reading condition significantly make different use of rereadings. This strategy helps students focus on the possibility that an immediately preceding sentence might contain a familiar word that anticipates one whose form is unfamiliar in the current sentence (Aulls & Graves, 1986). This strategy is accompanied by decoding with the aid of phonetic cues. Rereadings are not required in an assisted reading condition in which a predictable book is used. Children who have heard the book being read twice and who have participated in one of these two readings, can easily learn some phrases of the book. In this condition the language of the text is more familiar to the children. Consequently their word accuracy appears to increase.

The Association of Reading Conditions with Home and Classroom Environments

The different home environments, and the experiences which children have within them, have no significant influence on children's use of strategies or accuracy of word reading in an unassisted reading condition prior to and following instruction. This implies that strategicness and use of different strategies in these conditions is not developing as a result of specific environmental-interaction experiences. Secondly, at the beginning of the school year, children from every home environment make use of some strategies which they consider suitable for the particular demands of the task. The combined effect of the home and classroom environments does not have a significant influence on children's use of strategies in an unassisted reading condition. This suggests that school participation combined with the variations in home experiences will have no effect on children's use of strategies because children who are unassisted in their reading, still have to rely on the effectiveness of the strategies they themselves adopt. Since there were no significant differences attributable to the home environment or the combined home and classroom environment, it appears that children improve their use of some strategies in an unassisted reading condition as a function of development rather than as a consequence of a specific environment.

In an unassisted reading condition time has an influence on two strategies: (a) accurate prediction, and (b) phonetic cues used, as well as word accuracy. Prediction has been claimed to be one of the basic strategies which has to be developed early (Aulls, 1982) if children are to decide for themselves whether the words they predicted make sense in a given context. Through an increase in their participation of reading activities, children increase their accuracy in syntactic ordering of words and phrases. Consequently, they increase their ability to make accurate predictions. The use of phonetic cues appears to increase as

children learn to focus their attention on the grapho-phonic elements to try and pronounce a word. They make more attempts at sounding out the words, matching the letters and their corresponding sounds. They can use one trial for a word or several repeated trials until they either give up completely or feel satisfied with their attempts. Finally, the increase in accuracy of word reading over time appears to be best explained by the greater awareness of print which children in this study developed and their immersion in a print environment.

In an assisted reading condition, over time there are significant reductions in the pictorial cues strategy and number of ignored words. There is a significant increase in the number of words read accurately. These results suggest that as children receive assistance in reading from a predictable text, as well as from an adult, they learn to focus their attention on print and not the pictures. In addition, as they increase their vocabulary knowledge, thus improving their accuracy of word reading, they do not have to ignore words.

Although in an assisted reading condition, the different home environments and the experiences of the children in these homes alone do not have any significant influence on the strategies which children use, the combined classroom and home environments have a positive effect on the use children make of pictorial cues. Three groups of children (rich environment-rich interaction, rich environment-moderate interaction, moderate environment-rich interaction) reduce their dependency on this strategy. The moderate environment-moderate interaction group of children remain stable in their use of picture cues. This result would suggest that for these children with a deficit in their experiences and limited interaction with print, pictorial cues are still important even after 4 months of school instruction. This result concurs with previous research findings (Samuels, Begy & Chen, 1975-1976) about word-recognition speed and strategies of less skilled and highly skilled fourth grade readers. The more fluent readers were faster in word

recognition, superior in ability to generate a target word given context and minimal cues from the target. The results of the earlier and the present study suggest that children who have different knowledge and experiences depend on context cues to a different degree. The result of the study with grade 1 children suggests that teachers may need to put more emphasis on the print as the salient factor which relays the author's intended message.

Post-Hoc Results

Several findings warrant consideration that are outside the developmental framework used to analyze the children's reading strategies in this study. These results were not statistically tested but emerged during the process of observing children's behaviours in the unassisted reading condition. Children's confidence and readiness to read a patterned book without any assistance appear to change over the first 4 months in grade 1. These results are developmental and are related to results reported by Sulzby (1985) with kindergarten children.

At the beginning of the school year, when children were presented the task of reading an unfamiliar, patterned book, 45% agreed to do so without hesitation; 18.3% read through the text without assistance from the researcher after they had completed the assisted reading task whereas 31.7% accepted to complete the deleted words in the unassisted reading condition when the researcher read the remaining text. Five percent of the children refused to try reading the book. When this activity was presented after 4 months of instruction, 91.7% of the children attempted to read the book immediately; 1.7% read the text following the assisted reading activity and 6.7% completed the deleted words while the researcher read the text.

Children's efforts at completing the text without assistance do appear to vary in other ways as well. At the beginning of the school year 63.3% were able to read through the entire text; 21.7% started

reading but gave up and 15% could not read at all. In their reading attempts, some children showed evidence of memorizing the text or parts of it (16.7%) and others recreated the text making up a story as they went through the pages (40%). After 4 months of school instruction, 86.7% of the children in the study read through all the text; 1.7% started reading but gave up and 11.7% could not read at all. Whereas none of the children memorized the text, 25% recreated their own story while reading. These results also extend Sulzby's (1985) findings. In Sulzby's (1985) data, changes in children's reading from the beginning to the end of the year included more print-governed reading attempts, more independent reading, a reduction in the picture-governed stories and a decrease in refusals and/or dependent reading. One important difference between Sulzby's results (1985) and those in this study was the choice of the text which children read. Whereas the kindergarten children were allowed to read from a book of their own choice, the children in the present study were all given the same unfamiliar, patterned book. Children who are constrained to read a particular text might be more wary in their attempts at reading when compared to children who are free to read any text.

Summary of Findings

The primary and secondary hypotheses of this study were supported by the results. The home environment and children's print interactions within it have a significant influence on two developing literacy abilities namely book and code knowledge and print awareness. The home and classroom environment make significant contributions to one of these two literacy abilities and one new one: print awareness and fluency. Over time, all children develop significantly in four of the set of five developmentally-based literacy abilities (print awareness, book and code knowledge, accuracy and fluency) after collapsing over the home and classroom environments. Within the classroom environment, variations in

classrooms due to the teacher's choice of curriculum content and enactments of this curriculum, coupled with differences in children's prior knowledge and its use, differentially influence the children's performance on various literacy abilities, namely, print awareness, fluency and word accuracy. However, in looking at differences across classrooms, it seems that the teachers are somewhat constrained by the family background of the children. Although children's perceptions of the reading process, as operationally defined in this study, do not influence their own literacy abilities, the teacher has an influence on their perceptions. There is no fixed pattern revealing how children alter their perceptions. Changes in perceptions of reading do not appear to be limited to one of the two classroom approaches to reading instruction observed in this study or to a specific teacher.

Finally, assisted and unassisted reading conditions have an influence on children's use of strategies and accuracy of word reading. Although accuracy of word reading is facilitated and improved in assisted reading conditions, it is a stable ability in children's performance on tasks when they are assisted and when they are not assisted. The use made of different strategies tends to vary more with changes in the reading condition than does accuracy of word reading.

These findings as a whole suggest the importance of environments in the home and in the classroom which (a) encourage children's interaction and participation in meaningful literacy activities, (b) make use of different sources of printed material, (c) provide opportunities for active involvement and interaction between adults and children in literate activities, and (d) acknowledge and make use of children's prior knowledge by treating children as individuals who all have the potential to develop literacy abilities but who show variations in the rate at which these abilities develop.

Limitations of this Study

There are some limitations in the study which ought to be mentioned. This was an exploratory study which looked at the complex factors which make up the home and children's interactions with print within these homes. Although the parental responses to the various items on the questionnaire were quite consistent, in future, a more refined item categorization ought to be developed to provide more accurate distinctions between children who interact actively with print and those who interact moderately. Parental perceptions of what events a child participated in "often" or "sometimes" may vary greatly.

Probably, the biggest limitation in this study is the sample size especially when broken down into the four home environment-interaction groups. The sample number in the four groups ranges from 22 to 10. It would have been desirable to have had an equal number of children in all the groups and a larger overall sample size. However, because recruiting subjects depended on parental consent, the size of the sample in the study could not be controlled by the researcher. In five of the classrooms visited there was a good proportion of parents who did not even return the permission form. To ensure that this had not been due to factors such as their inadvertently misplacing the letter, or the child's forgetting to take the letter home, a second letter was sent out to the parents of children in two classrooms but there was still no significant change in the response of the parents. Teachers mentioned several reasons for this low response. It could have been due to (a) lack of interest, (b) parents not checking their child's school bag, (c) the child may have forgotten to give the letter to his/her parents, (d) the parents themselves were illiterate or had a limited working knowledge of English, hence their unwillingness to participate, and (e) the overwhelming number of letters, circulars and messages sent to the parents from school. Some of these letters simply get tossed aside especially if taken home by two or more children in the same household.

Whereas none of these valid justifications can be controlled for by the researcher, it still remains ideal to have a greater sample to ensure reliable generalization.

Overall Conclusion

The overall conclusion of this study clearly suggests that (a) opportunities within the home and classroom for children to interact and get involved with print and (b) the assistance, encouragement and support given to children when reading whole and meaningful books are necessary and powerful conditions that influence both a child's emergent and early literacy development.

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APPENDICES

APPENDIX A

Use Made of Questionnaires in Studies Done Between 1952 and 1988

Author/	Sheldon & Carrillo (1952)	Sutton (1964)	Plessas & Oakes (1964)
Study	Relation of parents, home and certain developmental characteristics to children's reading ability.	Readiness for reading at the kindergarten level.	Prereading experiences of selected early readers.
Sample	New York - 1st to 12th graders. 10% of all students in 8 participating schools 521 questionnaires returned of 844 sent.	134 KG children - Muncie, Indiana White population, reading readiness - 46 achieved reading level, 88 did not.	20 1st graders from a district adjacent to Sacramento, California Subjects chosen on basis of scores.
Data (1) Interview/ Questionnaire	Environmental history, developmental history, emotional development, educational history, physical growth, health.	Home environment, personality characteristics of kids (Returned by all 46 parents of readers, returned by 60 parents of non-readers).	Pre 1st grade reading activities Children's personal interest in reading Early teaching of reading.
Data (2) Other source	Progressive Reading Test Reading Vocab Reading Comprehen Total Reading Score	Teachers' observations of children's qualities Teachers' estimation of parental attitude and involvement.	California Reading Test to determine reading achievement and identify sample for study.
Evidence Provided	Results from Questionnaire which was sent home (free response type) (Parents' meeting prior to receiving questionnaire).	Article reported as "digest of graduate studies" Therefore it seems some observations of children in class were done as well as reports of teacher's observations.	Answers reported in questionnaire.
Design and Analysis	Descriptive statistics (means, range, frequencies, percentages).	Descriptive statistics (percentages and raw scores).	Raw Scores - # of responses to each item on the questionnaire.
Important findings related to home	As position of child in family moves from 1st to 5th child, good readers decrease Good readers increase with an increase in the number of books at home Good readers had parents with higher level of parental education attainment Good readers had fathers who were professionals or had a managerial position.	Readers enjoyed an adult reading to them They were read to at earlier age Classified as more conscious and able to concentrate Had better memories, were more self-reliant There were positive correlations between a child's success in the beginning reading and parental interest in school progress	All early readers were read to extensively They were read to at kindergarten, 19 children were read to daily, 5 children were read to several times daily All were reported as having a personal interest in reading All paid attention to signs on trips, asked questions about letters, words and numbers

[illegible]	Durkin (1958-1961)	Durkin (1961-1964)	Price (1976)
[illegible]	Children who Read Early, 1958	Children who Read Early (1966)	How thirty-seven gifted children learned to read
[illegible]	49 subject identified early readers California (Oakland) 2[illegible] Caucasians, 11 Negroes, 11 Orientals.	156 identified early readers. For interview purposes 30 selected i.e., 20 early and 30 non-early readers 28 Caucasians, 2 Negroes New York City.	Palm Beach Florida 27 6th graders, 18 5th graders, 11 4th graders - in gifted programme 76% (37) questionnaire were returned by parents.
[illegible] Interview Questions	Handwritten interviews - family background - early readers' characteristics - early reading ability	Data reported considered important if there was a 20% difference or more between response frequencies given by parents of early vs. non-early readers.	Questionnaires sent to parents to gain information about pre-school experiences of children - method used to teach child - where child learned to read
[illegible] Other [illegible]	Gates Primary Reading Test Gates Advanced Primary Reading Test Gates Reading Survey	Teacher Rating Scale -Bender Visual Motor Gestalt Test -Minnesota Tests for Creative Thinking	
[illegible] [illegible]	Interview, Reported.	Reports made up with researcher's impressions. Interview Reported.	Responses of questionnaire as reported by parents.
[illegible] and [illegible]	Median, range, correlation between reading achievement and intelligence Frequencies, Percentages.	Median, range, correlation between reading achievement and intelligence % differences between parents of early and non-early readers.	Raw scores.
Important Findings Related to Home	Source of direct help for 21 children was a parent. For 24 others it was combination of people. Direct help included talking about sounds of letters, identifying words, playing school. Indirect help was more varied. Sibling help was part of a combination of sources of direct help.	More mothers of early readers were college graduates, read more often than the average adult. More early readers were read to at home before school. Mothers of early readers thought parents should help with skills like reading, early readers participated in quiet games and liked to play alone. From TV they developed curiosity about written word.	Gifted children were taught by (1) phonics (2) sight words or (3) a combination. Almost all were read to from birth. By age 6 they could write the alphabet from memory, read sight words, read preprimer level books. Most of the children (28) were reading when they entered 1st grade.

Author	Briggs and Elkind (1977)	Walker and Huerbitz (1979)	Moon and Wells (1979)
Study	Characteristics of Early Readers.	Reading to preschoolers as an aid to successful beginning reading.	The influence of home on learning to read.
Sample	66 (33 each in experim and control group) Entering kindergarten City school district and smaller suburban district.	Midland-Michigan available sample Total n = 36 Selected from Grade 1 and 3 (Gr 1 chosen from 4 scholastic years) on basis of scores on SAT.	Bristol-England From 18 schools 20 made up the experimental group 91 made up the control group (5 children entering same school class at same time as each experimental child Selected according to teacher's assessment of class ability range
Data (1) Interview/ Question naire	Questionnaire made up of 47 items parents' occupation, education, reading to children, direct teaching, # of children in family Child behaviour assessed by play, preference, and interest.	Information about story-time experiences of children prior to kindergarten.	2 Interviews, (a) at age 5 - concerned with child's interest in literacy during 2 yrs prior to school entry (3 to 5 yrs) (b) at age 7 - Home influences during first 2 yrs of schooling (5-7), Provision of resources, teaching of literacy, parental attitude to education.
Data (2) other Source	Battery of tests Picture ambiguity, picture integration, picture exploration, creativity test, self-concept scale, Bender visual motor Gestalt Kansans Reflective Impulsivity Draw a person, WISC mazes, concept assessment kit, Illinois test of Psycholinguistic Ability.		Tape recordings & Transcripts for 2 yrs before school. - Parent/child verbal interaction.
Evidence Provided	Testing of children "Administered" questionnaire to parents.	Results on questionnaire.	Interviews with parents when children were 5 and 7 yrs old Regular recordings of spontaneous conversation at home between 3 1/4 5 yrs Assessments of reading at 5 yr & 7 yrs.
Design and Analysis	Factor Analysis ANOVA for individual items which did not load on any of 5 major factors in the questionnaire - ANOVA for each test with reader/control, sex and location as independent variables.	Classified children into 3 groups based on questionnaire responses, %s from frequency responses, Chi square, T-test for non-independent means.	Correlational.

[illegible] of [illegible] reading [illegible] [illegible] in [illegible] providing reading and writing material [illegible] children [illegible] the library more [illegible] family showed an interest in language. Help was given to the children with writing, spelling and word meaning. There was more reading material in [illegible] in suburban home.

[illegible] children read to daily, [illegible] of [illegible] [illegible] wanted [illegible] in both [illegible] time for [illegible] reading [illegible] grade point [illegible] highest for [illegible] who were read to daily.

Attainment in reading [illegible] age [illegible] [illegible] predicted by knowledge of literacy on entry to school. This in turn was predicted by parental interest in literacy and quality of verbal interaction with child in pre-school yr. [illegible] child [illegible] interest in literacy not [illegible] associated with later [illegible]

Author	Hewison and Tizard (1980)	Mason (1980)	Wells (1981, 1982)
Study	Parental Involvement and Reading Attainment.	When do children begin to read? An exploration of four-year-old children's letter and word reading competencies.	Some antecedents of early educational attainment.
Sample	100 British 7 and 8-year-old working class.	American mid-western city, 38 children at University-operated preschool Middle and upper-middle class. Second sample 30 children.	Britain (Bristol) 32 children (15 months old at beginning of study up to 7 years) Longitudinal study.
Data (1) Interview Questionnaire	Structured interview - Home background Attitudes to school Parental help with reading at home	Sample 1 filled questionnaire twice (Sept, May) Sample 2 - once 27 items What children knew about letters and words, use in play, support to children's interest in reading.	Interviews with parents when children were approximately 5 and 7 years old.
Data (2) Other Source	(1) Assessed mother's willingness to chat to child in different physical circumstances (2) Mother's willingness to answer difficult awkward questions. (3) Scores on standardized reading test (NFER) and WISC.	Children's tests measuring word and letter knowledge, word-learning ability, interest in reading, recall of previously-learned words, ability to verbalize distinction between class & subclass of objects (e.g. flower and rose).	Teacher assessments. Tests administered in first and sixth terms at school.
Evidence Provided	Standardized Tests. Parental interviews.	Responses of questionnaire sent to parents. Children individually tested in room other than playroom.	Retrospective analysis of longitudinal data - observations - recordings of spontaneous conversation in homes - recordings in classroom - administration of tests at University

[illegible] correlations [illegible] home environment and reading performance [illegible] teaching [illegible] [illegible] mother [illegible] language [illegible] to children [illegible] reading ability.

[illegible] children who were read to had mother who [illegible] with reading [illegible]

[illegible]

[illegible] in home [illegible] change in learning [illegible] Behaviour that [illegible] parent [illegible] early [illegible] correlation between [illegible]-reading and home-influence [illegible] help [illegible] this group of parents.

correlational [illegible] Marn [illegible] predictors of educational attainment

Parents who read are more likely to have [illegible] children [illegible] parent knowledge [illegible] what children [illegible] at school, amount of help they [illegible] with school work [illegible] of later achievement [illegible] to have their own interest in literacy with children.

Author	Lope and Holmes (1983)	Dolan (1983)	Morrow (1983)
Study	Maternal involvement and academic ucce for kindergarten pupil .	Prediction of reading achievement and elf-esteem from an index of home education environment.	Home and school correlates of early interest in literature.
ample	Mothers and teachers of 115 entering kindergarten children Predominantly white, affluent suburb of Cleveland, Ohio.	253 (2nd, 4th, 6th graders) Mostly black, disadvantaged, American children.	21 kindergarten classes in urban and suburban areas Total 116 children, 58 each in high- and low-interest groups.
Data (1) Interview/ questionnaire	Interview done twice, second time to check mother's intentions and involvement over school year.	Home education environment 39 questions with 4 dimensions (a) Parents' knowledge and interest in school-related activities, (b) Parents' support of academic achievement, (c) Opportunities for & quality of interaction between parent & child on school-related activities, (d) Parents' belief in use of schooling for children's future.	Questionnaire to determine children' activities at home. Characteristics of parent and family life.
Data (2) Other source	Family school social project data for educational level of mother. Classroom behaviour inventory (CBI) Ichi graded each child (A-F) on language kills, # concept, reading or readiness, health, teacher's perception of academic success.	Relative class standing. Standardized achievement in reading. 3 self-esteem measures. Index of student' positive affective resources.	Rating of literature in class. TOBE 2 language tests for children. Diagnostic form filled by teacher regarding social, emotional physical, general school behaviour, language arts skill development.
Evidence provided	Data derived from interviews with mothers and teacher .	Questionnaire read to parents in their homes, could read and respond privately Teacher's ratings.	Parent questionnaire. Teacher evaluation. Class observations. Tests.

[illegible]	[illegible]relational [illegible] between maternal involvement [illegible] and grade. [illegible]relation between comp[illegible] [illegible] questionnaire item [illegible] and [illegible] items.	[illegible]relational.	T-test. Chi Square
[illegible]	For girls only [illegible] right reading negatively correlated with * grade and reading grade assigned by teacher. Data do not confirm previous research that maternal involvement bears relationship to superior academic performance.	Strong correlation between standardized achievement in reading and the Home Education Environment Index	High interest kids watched less TV, looked at books more often, were read to daily, more likely to have library cards, crayon paper play activities, more books in home. Books found in all parts of house. Parents had higher education, had reading as pastime, read more novels and magazines

Author	Wells (1985)	Schnur & Lowrey (1986)	Blatchford, Burke, Farquhar, Plewis, & Tizard (1985)
Study	Preschool literacy-related activities and success in school.	Some characteristics of precocious readers.	Educational achievement in the infant school the influence of ethnic origin, gender and home on entry skills.
Sample	Britain - 32 children observed at 3 month intervals between 1 1/4 - 3 1/2 yrs - English was the first language of all participants. All of the children were brought up at home.	American (South Western US) Sample chosen from volunteers responding to newspaper advertisement 24 children (1 black, 1 hispanic) Socio economic environment Heavily industrialized.	British (277 children) 106 whose parents were of Afro-caribbean origin 71 had white parents Entering reception class from nursery.
Data (1) Interview questionnaire	Interview with parents just before children started attending school.	55 items developed by investigators.	Subsample used measures of current parental teaching at home, parental theories about educational success, socio-demographic factors.
Data (2) Other measures	Recordings of child at home.	TERA (Test of Early Reading Ability to ensure subjects could read before formal instruction).	Preschool tests: Early Reading Skills (1) adaptation of Clay concepts-about-print, (2) Word matching, (3) letter identification, (4) word reading Early mathematical skill (4 subtests) Writing (2 subtests).
Procedure & Variables	Recordings of child no observer present Parent supplied contextual details later.	Questionnaire responses.	Homes visited for interview Testing done by 4 author and 3 psychologists.

[illegible]	[illegible] Hiebert, [illegible] Whitney, [illegible]	[c]entral tendencies of quantifiable items and responses to open ended items.	Chi square - T-test - Correlations Multiple Regre[ss]ion Analysi[s]
[illegible]	[L]istening to [s]tories [s]ignificantly [c]orrelated to knowledge [o]f literacy at [illegible] [illegible] reading comprehension [illegible] [illegible] reading stories significantly associated with (1) mother[']s education, (2) both parent[s'] education combined (3) well educated parent[s] engage in reading (4) listening to stories distinguishing characteristics of children judged a[s] competent in oral language in classroom, [illegible] trend toward positive relationship of talk accompanying book reading and looking at books at school	Frequently provided help with identification of written words meaning, Occasionally provided help with printing [&] sound of letters, never provided help with names of letter[s]. Fathers tend to work in professions or skilled occupation. Mother primarily housewife. Children preferred indoor activities, reading-related activities. Had a wide variety of reading material	Strong association of [sc]ore with mother's qualification. Parental teaching in language, reading and writing were all related to [sc]ore on subtest; Parental [v]iew on education role of family reflected in children's skill on the [i]dentity. Parents who identified certain families with [illegible] characteristics had children with higher total test score

Author	Wagner and Spratt (1988)	Bacon and Ichikawa (1988)	Barber (1988)
Study	Intergenerational literacy effect of parental literacy and attitude on children's reading achievement in Morocco.	Maternal expectations, classroom experiences, and achievement among kindergarten children in the United States and Japan.	The influence of family demographics and parental teaching practices on Peruvian children's academic achievement.
Sample	Moroccan - 350, 6-7year olds, lower-middle class. Urban and rural field site.	Sendai (Japan) Minneapolis, St Paul Metropolitan area (U S) 288 children from each city 12 subjects from each of 24 kindergarten classes.	1201 Peruvian children (6-8 yrs) (9-12 yrs) Coast Highlands Jungle
Data (1) Interview/ questionnaire	Sociodemographic factors Attitudinal survey - 30 questions regarding attitudes about development and education of children Also 6 metacognitive questions.	Expectation & beliefs about kindergarten experience. Various teachings in preparation for school. Interviews with mother.	- Family demographics - Descriptions of home - Daily life of child - Parental expectation for child - Parental teaching practice
Data (2) other measure	Test of children' reading abilities during 5 years of primary school (letter knowledge, word decoding, word picture matching, sentence maze, paragraph completion) Assessment in yr 1 of children's metacognitive beliefs.	Math test. Reading test.	Reading test/math Achievement test based on Peruvian curricula.
Evidence provided	hour interview (usually with mother). Reading score (standardized 'Z' scores of overall tests of reading skill).	Interviews - On site observations to assess characteristics of classrooms - Activities of both teachers and children	-Physical aspects of child's home environment - Parental teaching style - Interview with parents - Observation/# of target item available in home - Parental teaching style rated by interviewer according to parent's description of teaching situation

[illegible]	[illegible]	- Correlational - Chi-square analysis - Hierarchical Regression Analyses	[illegible]
[illegible]	increase in educational level across generations. Urban parents expected higher levels of education. Children's reading levels were significantly related to parental education level in 1st, 3rd and 5th year. Parents' role in child education associated with child's characteristics of a good reader. Mother's educational aspiration for the child was significantly related to the child's characteristics-of-a-good-reader score.	Percentages (Proportions)	Japanese kindergarten children achieve better in math test than American children. No differences in reading.
[illegible]		- Correlational - Columnwise multiple regression to generate path coefficient	More resources available in urban than rural homes. Children in more enriched environments obtained higher test scores (math & reading). Children with literate parent obtained higher test scores. Parents in Lima (children did better here) spent more time with children, helped with work, read more frequently to them, taught children letter

APPENDIX B

Aspects of Home Environment and/or Child Interest Studied in Previous Research

Study/Author	Home Environment	Child's Interest	Pre-Selected By Researchers or Derived from Results
Sheldon & Carrillo (1952)	Number of books in home. Education level of father. Occupational status of father.		Factors selected by researchers.
Sutton (1964) Study with Kindergarten children	SES; Parental interest in school Brothers and sisters who read to target children; adult reading to target children.	Early readers in the habit of asking questions about words.	Home factors selected by researcher. Child's interest derived from questionnaire responses.
Plessas & Oakes (1964) 1st grade children	Reading to child and attempts to teach child to read	Use of books in play. Attention to signs, Questions about words, letters, numbers. Pretends to read. Liked reading in grade 1.	Factors derived from reports of parents.
Durkin (1966)	Direct help by parents: talked about sounds of letters, identified words for children, played school with subjects. Indirect help: read to child, bought books, basal readers, reading workbooks. Helped subject with printing, spelling, word meanings.	Eager to keep up with older siblings Interested in learning to print. Curious about TV adverts Interested in learning to spell. Curious about outdoor signs Desire to read correspondence from out of town relatives.	Factors derived from response during interviews.
Price (1976) Special population "gifted children"	Methods used to teach children.	Knowledge of alphabet by sight. Wrote alphabet from memory; read sight words, read pre-primer level books.	Items on questionnaire pre-selected by researcher.

Study, Author	Home Environment	Child Interest	Pre-Selected or Derived Factors
Briggs & Elkind (1977) Entering kindergarten children	Parent occupation. Number of children in family. Direct teaching. Reading to children by siblings. Parental education. Family interest in language - dealt with child's interest in words, parental help with writing, spelling, word meaning	Child interest in learning to read age of showing this interest; frequency with which child was read to.	Pre-selected factor by researcher. Home factors and child interest factors were treated separately.
Walker & Kuerbitz (1979) Pre-schoolers' experience	Story reading. - Frequency of reading - Talk related to stories, pictures explanations	Frequency of child requests for story-reading.	Factors pre-selected for questionnaire.
Moon & Wells (1979) Subject from pre-schooling age followed up until age 7	Parental interest and promotion of literacy. Parental provision of resources for development of literacy. Parental teaching of literacy. General parental attitude to education.	Child interest in literacy.	Pre-selected items discussed over two interviews and spontaneous verbal interaction.
Hewison & Tizard (1980) 7-8 year old children	Mother hearing child read. Coaching children. Parental help with reading. Attitudes to school.		Pre-selected for research purpose.
Mason (1980) Children at a pre-school centre	<u>Support for reading</u> Number of alphabet books available, library visits; frequency of reading to child, subscription to child magazine, story records, asks to have books reread; asks to be read to, outings with parents; TV activity.	Naming of letters, printing letters; reading and decoding words.	Pre-selected for research purpose.

Study/Author	Home Environment	Child Interest	Pre-Selected or Derived Factors
Well (1981, 1982) Children followed from pre choool to age 7	From 1st interview amount of mother talk pre-speech, mother working, number of books owned by child, parent-child talk about school, parents' expectations about school, parents' interest in literacy, prefer informal instruction 2nd interview. amount of parents' reading, parents' views on importance of literacy, knowledge of child's activities in school, parents' visits to school; parents' views on own role in education; amount of help given; satisfaction with child's progress; child's position in family; class of family background.	Child's interest in adult activities, TV, literacy, concentration in literacy.	Pre-selected for research purpose.
Lope & Holmes (1983) Kindergarten children	Mothers' interest, participation and involvement in kindergarten programme, help given with phonics or sight words.		Pre-selected for research.
Nolan (1983) 2nd, 4th, 6th graders.	Home Fnvironment Education Index (a) parents' knowledge and interest in school-related activities, (b) parental support for academic activities, (c) opportunity for and quality of interaction between parent and child on school-related issues, (d) parents' belief in use of schooling.		Pre-selected for research.

Study, Author	Home Environment	Child's Interest	Pre-selected or Derived Factor
Parson & Ishikawa (1988) Japanese & American kindergarten children	Expectations, beliefs and maternal involvement.		Pre-selected for research.
Farber (1988) Peruvian children 6 years, 9 12 year	Parent teaching practices, family demographics, descriptions of home, daily life of the child, parental expectations for the child, SES, physical aspects of the home environment, home quality measured by availability of objects such as books, electricity, toys and newspapers.		Pre-selected for research.

APPENDIX C

Purpose, Results and Assessment of Reading Done Between 1952 and 1988

Study/Author	Purpose of Study and Results Obtained	Assessment of Reading
Sheldon & Carrillo (1952)	Relationship of parents, home and some developmental characteristics to children's reading ability Describe homes of good readers.	Progressive Reading Test (reading vocabulary, reading comprehension, total reading score).
Sutton (1964)	Reading readiness. Characteristics of early readers described.	Gates Test after 4 months of school to distinguish early from non-early readers.
Plessas & Oakes (1964)	Prereading experiences of selected early readers.	Early readers assessed by California Reading Test.
Durkin (1966)	Characteristics of early readers. Descriptions of home factors for early and non-early readers, statistically significant difference achieved and maintained by early readers over 3 years. Advanced achievement specially pronounced for early readers who were doubly promoted.	Gates primary reading tests, Gates advanced primary reading tests (word recognition, paragraph reading), Gates reading survey (reading vocabulary, level of comprehension).
Price (1976)	Gifted children's learning-to-read procedure. Describes features as obtained from questionnaire frequencies, children taught through phonics, sight words or a combination.	Giftedness judged on IQ and whether they were reading 2 years above grade level.
Briggs & Elkind (1977)	Identification of early readers' characteristics, early readers were superior on auditory closure and sound blending (subtests of psycholinguistic ability test), child interest in learning to read failed to discriminate between early and non-early readers.	Gates vocabulary and comprehension tests used to identify early readers.
Walker & Huerbit (1979)	Influence of reading to pre-schoolers on beginning reading; story reading at home positively contributes to reading success.	Picked scores from Standard Achievement Tests for third grade scores and Stanford Achievement Tests for first grade scores.

[illegible]	Purpose of Study and Results Obtained	Assessment of Reading
[illegible]	Influence of home on learning to read. Significant correlations between pre-school knowledge of literacy and reading accuracy, reading comprehension, word recognition. Child interest in literacy not correlated significantly to preschool knowledge of literacy, home parental related factors correlated significantly to children's results on reading ability.	Preschool knowledge of literacy measured by concepts about print (Clay), letter identification, word recognition test (Carver), Neale Accuracy & Comprehension Test.
[illegible]	Coaching children and effect of mother hearing kids read 36% of variance in reading score accounted for statistically by coaching.	Standardised tests - Southgate Reading Test I.
[illegible]	Developmental perspective of pre-reading instruction Letter knowledge, naming, alphabet recitation, recognition of letters, printing letters, spelling, sounding out letters **all significantly correlated to word-reading level in Sept. and May; asking for words to be read correlated to word-reading level in Sept. only.**	Word reading level.
Wells (1981, 1985)	Language development and antecedents of early educational attainment. Significant correlation between tests at age 7 and range of child activities, child interest in literacy, child concentration in literacy, number of books owned by child, child range of language function. Significant correlations between entering school tests and tests at age 7. Amount of parent reading, their knowledge of child's activities at school, amount of help given, class of family background all significantly correlated to tests at age 7.	<u>On child entry to school</u> 'acting-out'; test for oral comprehension, question and answer test based on an orally presented story, English picture vocabulary test, knowledge of literacy, visual and motor coordination test. <u>At age 7</u> English picture vocabulary test, Neale Analysis of Reading Ability (Accuracy & Comprehension).
Topping & Wolfendale (1985)	Potential impact of several different maternal involvement behaviours on teachers' perceptions of academic performance. Helping with sight words negatively associated with reading ability.	Mother helping child with phonics or sight words, teacher grades on language skill, reading or readiness.
Nolan (1983)	Prediction of reading achievement from the home educational environment. The home educational index was a significant predictor of relative and standardised achievement.	Stanford Achievement Test.

Study/Author	Purpose of Study and Results Obtained	Assessment of Reading
Morrow (1983)	Assessing children's interest in literature and home and school environments and behaviours of kindergarten children of high-or low-interest in literature; descriptions of home characteristics for both groups of children. Significant difference on scores of high-interest/low-interest children.	TOBE 2 Language Test, Percentile score on Standardized reading readiness test.
Well (1985)	Which activities are strongly associated with progress in early stages of learning to read in school? Which activities help child cope with oral language demands in school? Listening to stories significantly associated to knowledge of literacy, reading comprehension and teacher assessment of oral language.	Concepts about print. Letter identification Comprehension subscore (from Neale test).
Schnur & Lowrey (1986)	To identify common environmental and/or developmental characteristics in a sample of early readers Strong interaction between precocious reader and his/her mother. Home-based mothers Onset of some developmental events lightly accelerated for precocious readers.	Test of Early Reading Ability (TERA) given to ensure children read prior to formal instruction.
Blatchford, Burke, Farquhar, Plewis, Tizard (1985)	Influence of parents on children's skills in literacy and numeracy on entry to infant school, parental teaching of reading (that is specific or incidental frequency of reading with children) was signficiantly correlated to reading subtests.	Adaptation of Clay's concepts about print, word matching, word reading, letter identification.
Wagner & Spratt (1988)	Effects of parental attitudes and values on children's literacy acquisition and school achievement, overall test scores significantly related to parental education level across grades 1, 3, 5, parental attitudes (positive attitude re parental teaching reported involvements of parents, progressive views of family) related to reading achievement.	Letter knowledge, word decoding, word-picture matching, sentence, maze, paragraph comprehension.
Ricon & Ichikawa (1988)	Differences in maternal expectations and classroom experiences of Japanese and American kindergarten children, no significant differences on reading scores between Japanese and American children, parental expectations of kindergarten experiences differed.	Letter and word recognition, reading comprehension.

[illegible]	Purpose of Study and Results Obtained	Assessment of Reading
Parker 19[illegible]	Are relation between demographic characteristics, parental practices and achievement outcome manifested in indigenous families in three different location in Peru? Positive correlation between home quality and reading achievement score, children with literate parents obtained higher scores, parental teaching style; verbal method of teaching new skills resulted in higher scores on achievement tests, home quality had direct effect on parent teaching behaviour and parental help with school work and with achievement In one of the 3 groups parental teaching style and parental help with home work were both independent and positive predictors of achievement.	Reading test (1) letters and words, (2) selecting a picture described by a word, (3) reading comprehension.

APPENDIX D

The following is the questionnaire which was sent to the parents at the beginning of the school year. These questionnaire items look into (a) the type of print available and opportunities which parents provide in the various homes and (b) the children's interactions with print.

Print in the home environment

1a	Do you buy/receive newspapers?	Yes No Sometimes
1b	How often do you buy/receive them?	once or twice a week 3 or 4 times a week everyday
2a	Do you receive/buy any magazines?	Yes No
2b	If answer to (2a) is yes, is it:	rarely occasionally regularly
3a	Is reading one of your pastimes?	Yes No
3b	If answer to (3a) is yes, do you read:	twice or less a week 3 to 4 times a week everyday
3c	If answer to (3a) is yes, who reads at home?	mother only father only both parents
4	Do you bring 'paper work' from office/ job-location to complete/review at home?	never rarely often everyday
5a	Do you read to your child?	Yes No
5b	How often is your child read to?	occasionally once or twice a week 3 to 4 times a week 5 times or more
5c	If answer to (5a) is yes, who reads to your child	mother only father only both parents others
6a*	If answer to (5a) is yes, does your child ask questions when read to?	very few some constantly

6b*	If answer to (5a) is yes, when you read to your child, does s/he	sit back and listen help to turn pages point to pictures point to words
7	Do you read <u>with</u> your child? (Child does the reading while you are nearby)	never sometimes often
8	Does your child have access to tapes and books with accompanying tapes?	Yes No
9*	Does your child show an interest in books? (Child goes to books without being told to.)	Yes No
10a*	Does your child ask to be read to?	never sometimes often
10b*	Does your child ask to have favourite books reread?	never sometimes often
11	Does your child have a subscription to a child's magazine?	Yes No
12	Does your child bring books home from school?	never sometimes often
13a	Do you buy books?	Yes No
13b	If (13a) is yes, are they for adults, children or for both?	books for adults books for children books for both
13c	If (13a) is yes, do you buy them	occasionally often
14a	Does your child own alphabet books?	Yes No
14b	If (14a) is yes, how many does s/he have?	1 2 3 or more
15a	Are you (adults) members of a public library?	Yes No

15b	If (15a) is yes, how often do you go?	once a week every 2 weeks every 3 weeks once a month irregularly
15c	Is your child a member of this or any library?	Yes No
16a	Do you take your child with you when you do the shopping?	never sometimes often
16b	Do you usually make up a shopping list?	never sometimes often
16c*	If (16c) is 'sometimes' or 'often', how does your child know what to choose?	
16e	Does your child try to read aloud labels, packages, brand names?	never sometimes often
	Please state one example.	
17a	Does your child watch television?	Yes No
17b	In an average week, how much time does your child spend watching TV?	1-2 hours daily 2-3 hours daily 3 or more hours daily
	Are you concerned about how many hours your child spends watching TV?	Yes No
18a	Is mail opened in your child's presence?	Yes No Sometimes
18b*	Does your child comment about the mail - bills, letters, cards?	Yes No Sometimes
	If yes, please state an example.	

Items marked with an asterisk (*) denote the items which are related to children's interactions with print in the home environment

APPENDIX E

Deleted version of Wind (R. Bacon, 1984).

1. Feel the wind blowing by
   Lifting kites up to the sky.

2. Feel the wind blowing through
   chasing clouds across the bl_____ (1)

3. _____(2) the wind blowing free
   stirring white caps on the sea.

4. Feel _____ (3) wind blowing fast
   whipping sand and papers _____(4)

5. Feel the _____(5) blowing strong
   tossing leaves and grass _____(6)

6. Feel the wind _____(7) hard
   flinging rubbish round the yard.

7. Feel the wind blowing _____(8)
   soft, then softer till it's gone.

Deleted words: (1) blue (2) Feel (3) the (4) past (5) wind (6) along (7) blowing (8) on

DLLLILD VLRSION OF WIND USED IN AN UNASSISTED READING CONDITION

Wind

by Ron Bacon

Feel the wind blowing by
Lifting kites up to the sky.

Feel the wind blowing through
chasing clouds across the bl

_____ the wind blowing free
stirring white caps on the sea.

3.

Feel _____ wind blowing fast
whipping sand and papers _____.

4.

Feel the _____ blowing strong
tossing leaves and grass _____

5.

Feel the wind _____ hard
flinging rubbish round the yard.

6.

Feel the wind blowing _____
soft, then softer, till it's gone.

7.

APPENDIX F

The following questions made up the interview which was carried out with children to look into their perceptions of reading. The nine items marked with an asterisk (*) were asked at the beginning of the school year, that is at the pre-test stage of the study as well as four months later, at the post-test phase of the study. The five unmarked items were only asked at the post-test phase of the study.

1	Are there some things you like about reading? What are they?	Yes No
2	Are there some things you do not like about reading? If yes, what are they?	Yes No
3*	Is reading hard for you? Why?	Yes No
4*	Do you think you are a good reader? Why?	Yes No
5	Do you see your parents reading at home? Why do they read?	Yes No
6	Do mummy and daddy read to you? Did they read to you last year?	Yes No Yes No
7*	Do you read at home?	Yes No
8*	Do you have to have a book to read? Explain.	Yes No
9	Do you think reading is important? Why?	Yes No
10*	What things does a person have to learn to be a good reader?	
11*	Is everyone a good reader? Who is a good reader in your class? (Name child) _____ How do you know _____ is a good reader?	Yes No
12*	Why do you think some children have trouble in reading?	
13*	What do you need to learn to be a better reader than you are now?	

14* Many people think reading is one of the most important things in school. What do you think reading is?

APPENDIX G

Teacher Interview

The following list of questions made up the teacher interview.

1. How do you introduce reading to beginners?

2. How would you typically conduct a reading lesson at this time of year? Do you make modifications to this as the year goes along? What are they? Please tell me about a few that come to mind.

3. (Use as probe not as a question)
What are the different forms of reading that children do? For example: reading in small groups with you directing, or reading aloud together, or having children read in pairs or silently to themselves.

4. Is it possible for you to monitor what each child is reading? How often? In what ways?

5a. What kinds of materials do your children read from at the beginning of the year?

5b. Does this change as the year goes along?

6. Does the school board require you to use certain school books? How do you meet the requirement?

7. How do you usually manage the class during a typical week in the language arts? For example, do you put children in small groups or paired work or do you usually just work with the group as a whole?

8. Depending on whether teacher relies on basal or not:
(No basals used) - Where do you get the books for kids from? Is it a problem getting books during the year?
(Basals used) - Other than using a basal, do kids read from other books? Where do you get books from?

9. Do your children use the school library? When (during the year)? How often?

10. Do you encourage children to: a) take books home?
b) bring books?

11. What forms of printed material are children exposed to over the year? Could you list specifically a whole array that is used?

12. Of the things you do, what do you think are the most important in helping children become aware of print? (If teacher asks for clarification of print awareness, interpret it as: words, letters, sound-symbol correspondence, differences between white spaces and typed print that make up letters on a page.)

13. What kind of environment do you create across the year which helps your children be better readers?

    Or

    What elements in your class environment help your children become better readers?

14. What methods do you use frequently to promote reading growth in this class? (For example, language experience or reading through writing.)

15. Do you have a personal view of what reading is? Would you tell me about it if you do? (If they don't respond at all: Would you define what reading is? Or: What is your own definition of reading?)

16. What are your most important goals for children in language arts in grade 1?
    Is there anything else you feel I should know to understand your teaching?

APPENDIX H

Children's responses to items on the perceptions-about-reading interview before and after formal instruction.

Table H-1

Children's Perceptions of the Difficulty of Reading Prior to Formal Instruction

Class	Yes			No			A little, Sometimes, not very			TOTAL
	Raw Score	% of class	% of cat.	Raw Score	% of class	% of cat.	Raw Score	% of class	% of cat.	
1	0	0	0	6	54.5	20.7	5	45.5	25	11	100%
2	3	30	27.3	3	30	10.3	4	40	20	10	100%
3	1	9.1	9.1	6	54.5	20.7	4	36.4	20	11	100%
4	0	0	0	2	40	6.9	3	60	15	5	100%
5	3	30	27.3	4	40	13.8	3	30	15	10	100%
6	4	30.8	36.4	8	61.5	27.6	1	7.7	5	13	100%
TOTAL	11		100%	29		100%	20		100%	60	

Table H-2

Children's Perceptions of the Difficulty of Reading Following Formal Instruction

Class	Yes			No			A little, sometimes, not very			TOTAL	
	Raw Score	% of class	% of cat.	Raw Score	% of class	% of cat.	Raw Score	% or class	% of cat.		
1	4	36.4	23.5	2	18.2	7.7	5	45.5	29.4	11	100%
2	4	40	23.5	3	30	11.5	3	30	17.6	10	100%
3	1	9.1	5.9	7	63.6	26.9	3	27.3	17.6	11	100%
4	2	40	11.8	1	20	3.8	2	40	11.8	5	100%
5	3	30	17.6	5	50	19.2	2	20	11.8	10	100%
6	2	15.4	11.8	8	61.5	30.8	3	23.1	17.6	13	100%
TOTAL	16		100%	26		100%	18		100%	60	

Table H-3

Children's Perceptions of Themselves as Readers Prior to Formal Instruction

Class	Yes			No			A little bit, sometimes, don't know			TOTAL	
	Raw Score	% of class	% of cat.	Raw Score	% of class	% of cat.	Raw Score	% of class	% of cat.		
1	8	72.7	17	2	18.2	33.3	1	9.1	14.3	11	100%
2	7	70	14.9	1	10	16.7	2	20	28.6	10	100%
3	11	100	23.4	0	0	0	0	0	0	11	100%
4	4	80	8.5	0	0	0	1	20	14.3	5	100%
5	7	70	14.9	2	20	33.3	1	10	14.3	10	100%
6	10	76.9	21.3	1	7.69	16.7	2	15.4	28.6	13	100%
TOTAL	47		100%	6		100%	7		100%	60	

Table H-4

Children's Perceptions of Themselves as Readers Following Instruction

Class	Yes			No			Sometimes, Sort of, Don't know			TOTAL
	Raw Score	% of class	% of cat	Raw Score	% of class	% of cat.	Raw Score	% or class	% of cat.	
1	5	45.5	11.4	3	27.3	37.5	3	27.3	37.5	11
2	7	70	15.9	2	20	25	1	10	12.5	10
3	10	90.9	22.7	0	0	0	1	9.1	12.5	11
4	3	60	6.8	1	20	12.5	1	20	12.5	5
5	7	70	15.9	2	20	25	1	10	12.5	10
6	12	92.3	27.3	0	0	0	1	7.7	12.5	13
TOTAL	44		100%	8		100%	8		100%	60

Table H-5

Children's Responses to the Question "Do you have to have a book to read?"

Prior to Formal Instruction

Class	Yes			No			Uncertain			TOTAL
	Raw Score	% or class	% of cat.	Raw Score	% of class	% of cat.	Raw Score	% of class	% of cat.	
1	4	36.4	12.50	5	45.5	25	2	18.2	25	11
2	1	10	3.13	7	70	35	2	20	25	10
3	6	54.5	18.75	4	36.4	20	1	9.1	12.5	11
4	3	60	9.38	1	20	5	1	20	12.5	5
5	8	80	25	2	20	10	0	0	0	10
6	10	76.9	31.25	1	7.69	5	2	15.38	25	13
TOTAL	32		100%	20		100%	8		100%	60

Table H-6

Children's Responses to the Question "Do you have to have a book to read?"

Following Formal Instruction

Class	Yes			No			Uncertain			TOTAL
	Raw Score	% of class	% of cat.	Raw Score	% of class	% of cat.	Raw Score	% of class	% of cat.	
1	0	0	0	8	72.73	29.63	3	27.3	30	11
2	0	0	0	8	80	29.63	2	20	20	10
3	3	27.3	13.04	8	72.73	29.63	0	0	0	11
4	3	60	13.04	1	20	3.70	1	20	10	5
5	8	80	34.8	0	0	0	2	20	20	10
6	9	69.2	39.1	2	15.38	7.41	2	15.38	20	13
TOTAL	23		100%	27		100%	10		100%	60

Table H-7

Children's Responses to the Question, "Is everyone a good reader?' Prior to Formal Instruction

Class	Yes			No			Don't Know			TOTAL
	Raw Score	% of class	% of cat.	Raw Score	% of class	% of cat.	Raw Score	% of class	% of cat.	
1	4	36.4	13.3	5	45.5	20	2	18.2	40	11
2	5	50	16.7	4	40	16	1	10	20	10
3	5	45.5	16.7	5	45.5	20	1	9.1	20	11
4	5	100	16.7	0	0	0	0	0	0	5
5	4	40	13.3	5	50	20	1	10	20	10
6	7	53.85	23.3	6	46.15	24	0	0	0	13
TOTAL	30		100%	25		100%	5		100%	

Table H-8

Children's Responses to the Question "Is everyone a good reader?" Following Formal Instruction

Class	Yes			No			Don't Know			TOTAL
	Raw Score	% of class	% of cat.	Raw Score	% of class	% of cat.	Raw Score	% of class	% of cat.	
1	1	9.1	5.26	10	90.9	27.03	0	0	0	11
2	3	30	15.8	6	60	16.22	1	10	25	10
3	2	18.2	10.5	7	63.6	18.92	2	18.2	50	11
4	2	40	10.5	3	60	8.11	0	0	0	5
5	1	10	5.26	8	80	21.62	1	10	25	10
6	10	76.9	52.63	3	23.1	8.11	0	0	0	13
TOTAL	19		100%	37		100%	4		100%	60

APPENDIX I

Table I-1

Relationship Between Children's Home Environment Interaction and Their Perceptions of Reading Prior to Formal Instruction

	Rich Env. Rich Int.	Rich Env. Mod. Int.	Mod. Env. Rich Int.	Mod. Env. Mod. Int.	TOTAL
Code	6	4	2	2	14
Code+	13	9	7	4	33
Non-Code	3	1	1	4	9
TOTALS	22	14	10	10	56

Note: Rich Env. = Rich environment
Rich Int. = Rich interaction
Mod. Env. = Moderate environment
Mod. Int. = Moderate interaction

Table I-2

Relationship Between Children's Home Environment Interaction and Their Perceptions of Reading Following School Instruction

	Rich Env. Rich Int.	Rich Env. Mod. Int.	Mod. Env. Rich Int.	Mod. Env. Mod. Int.	TOTAL
Code	1	0	2	3	6
Code+	18	11	7	6	42
Non-Code	3	3	1	1	8
TOTALS	22	14	10	10	56

Note: Rich Env. = Rich environment
Rich Int. = Rich interaction
Mod. Env. = Moderate environment
Mod. Int. = Moderate interaction

Table I-3

Distribution of Children's Perceptions of Reading Prior to Formal Instruction by Home Environment-Interaction Group and Class

	Non-Code						Code						Code+					
	Class						Class						Class					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Rich Env. Rich Int.	0	1	1	1	0	0	0	1	2	0	1	2	5	2	4	2	0	0
Rich Env. Mod. Int.	0	0	1	0	0	0	1	2	0	1	0	0	2	4	3	0	0	0
Mod. Env. Rich Int.	0	0	0	0	0	1	1	0	0	0	1	0	1	0	0	0	1	5
Mod. Env. Mod. Int.	0	0	0	0	3	1	0	0	0	1	0	1	1	0	0	0	3	0

Note: Rich Env. = Rich environment
Rich Int. = Rich interaction
Mod. Env. = Moderate environment
Mod. Int. = Moderate interaction

Table I-4

Distribution of Children's Perceptions of Reading Following Formal Instruction by Home Environment-Interaction Group and Class

	Non-Code						Code						Code+					
	Class						Class						Class					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Rich Env. Rich Int.	1	1	1	0	0	0	0	0	1	0	0	0	4	3	5	3	1	2
Rich Env. Mod. Int.	0	2	1	0	0	0	0	0	0	0	0	0	3	4	3	1	0	0
Mod. Env. Rich Int.	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	1	4
Mod. Env. Mod. Int.	0	0	0	0	1	0	0	0	0	0	3	0	1	0	0	1	2	2

Note: Rich Env. = Rich environment
Rich Int. = Rich interaction
Mod. Env. = Moderate environment
Mod. Int. = Moderate interaction

APPENDIX J

The following are excerpts from the children's interviews which indicate code, non-code and code+ perceptions of reading The examples are taken from the responses given prior to formal instruction at the beginning of the school year and after formal instruction, four months later.

Code perceptions in September

Class 1

R: What things does a person have to learn to be a good reader?
C: To read something - sound out words.

R: What do you think reading is?
C: Reading is words and some are good words and some are bad.
(Child ID 10)

Class 2

R: What things does a person have to learn to be a good reader?
C: I don't know.

R: What do you think reading is?
C: We're putting all the words together.
(Child ID 16)

Class 3

R: What things does a person have to learn to be a good reader?
C: You have to learn that you know your letters and stuff like that. You have to know letters and... like... ah ... the words.

R: What is reading?
C: It's like if you like get a book and you like start reading. You can read it.
R: But what is reading?
C: It's a pretty hard thing to answer, you can't really answer that because reading is that if you like I can't really answer that.
(Child ID 23)

Class 4

R: What do you think reading is?
C: You say the words and reading the letters and you could spell and talking to somebody and reading the a, b, c's.
(Child ID 34)

Class 5

R: What do you think reading is?
C: If you don't know how to read you have to get more books.
R: But what is reading?
C: Read.
R: How?
C: Know some letters.
R: What do you do when you read?
C: You put them together and you make a word like you put j-e-t and it spells 'jet'.

(Child ID 40)

Class 6

R: What do you think reading is?
C: Reading is something that you read to somebody. You read out loud to a person. We read in our normal voice.
R: What would a spaceman who has never seen anyone read before, look at when reading?
C: Look at the letters.
R: Why are the letters important?
C: So you can look at them and know what words say.

(Child ID 48)

Code+ perceptions in September

Class 1

R: What things does a person have to learn to be a good reader?
C: Have to know what it says, what you're reading. You have to spell it out to read it, what it says. You have to know what the book is called and you have to know what the book is about.

R: Why do you think some children have trouble in reading?
C: Because they don't know what the letters are and they don't know what it says.

R: What do you need to learn to be a better reader than you are now?
C: The rest of the things, the things that I'm trying to read, example if it's a street sign. The only street sign I can read is 'Stop', it's red and it has white letters.

R: What is reading?
C: It's something so you know what it's supposed to mean; you have to know what the letters mean.

(Child ID 1)

Class 2

R: What things does a person have to learn to be a good reader?
C: Learn how to read.
R: But how did you learn?
C: Someone told me the story and then I keep on reading.

R: Why do you think some children have trouble in reading?
C: 'Cos they don't know how. Sometimes they don't get stories very often. Usually they get stories and don't know how to read.

R: What is reading?
C: ... Well, looking at the book, looking at the letters and the words ...

(Child ID 18)

Class 3

R: Why do you think some children have trouble in reading?
C: Well, sometimes they never, there's a word there and they never heard it before so they need help in reading it ... Sometimes it's very hard to read and write.

R: What do you need to learn to be a better reader than you are now?
C: I think I have to look on when walking, look at the words on stores and then at books which sometimes have the same words, to remember them.

R: What do you think reading is?
C: I think reading is something that has lots of words and you have to try to get them both stuck to... if there's a whole word you don't know, cut off one word, if you know that word say it, then cut off the other, put them together and then you stick them together and you get it right, then you get to know the word.

(Child ID 27)

Class 4

R: What things does a person have to learn to be a good reader?
C: To be a good reader you have to have no pictures.

R: What do you need to learn to be a better reader than you are now?
C: I have to have no pictures and you have to spell out to be a good reader instead of looking at pictures.

R: What do you think reading is?
C: Looking at a book and instead of having picture books ... It's like you read to yourself sometimes, and sometimes you read to someone else when you don't know how to read ... Sometimes you could look at picture books and sometimes you could look at reading books. Sometimes they have pictures and reading and some

only pictures but some grown-up books have only writing instead of pictures.

(Child ID 35)

Class 5

R: What things does a person have to learn to be a good reader?
C: Be listening at the teacher and we make what the teacher say.

R: What do you need to learn to be a better reader than you are now?
C: We listen to teacher what her say, then we read at the book.

R: What do you think reading is?
C: Reading is to read the words and listen to teacher and ask her to say words we don't know and after we read it and read it all the time and after we listen to teacher again and then we go to lunch.

(Child ID 39)

Class 6

R: What things does a person have to learn to be a good reader?
C: You have to read books; look inside them, learn the words and you have to think how to read like when I read a book and I forget something I think and I say it back; I know it and I can say it.

R: What is reading?
C: Reading is you say words that's in a book and you look at the pictures and you think how to say and you think what the words say. Even if you get a book you always have to start reading it at home or at school and I read with my mother and I learn how to read it and my brother he reads with me too and my brother tells me to read the whole book by myself.

(Child ID 55)

Non-Code Perceptions in September

Class 2

R: What things does a person have to learn to be a good reader?
C: They have to practise a lot and try to remember the things in case the book was thrown out and ripped.

R: What do you need to learn to be a better reader than you are now?
C: Read a lot of days and practise a lot, practise reading more days not just 3 days like 4, 5, 6 or the whole week and you keep the next week. Like you take one week the whole week reading. Maybe read everyday or practise on the globe - read letters on the globe and read different words like Manitoba and Packland.

R: What do you think reading is?

C: You could get better every day, you read every day or if you read a magazine or something or if you read in your head or just sitting quiet and reading a story. You don't always have to talk and read, you can just read it in your head and you could play football and read about football and get better that way.

R: What things does a person have to learn to be a good reader?
C: To read books ... They go on practising ... When my papa comes he reads stories to me too.

R: What do you need to learn to be a better reader than you are now?
C: I keep on practising, take my books and reading and reading 'Stop' signs and other signs.

R: What do you think reading is?
C: It's reading a book; learning how to read.
R: How?
C: We take a book and read it.

(Child ID 31)

Class 4

R: What things does a person have to learn to be a good reader?
C: The people that are reading the books to the children then it will be a good thing to do, know how to read.

R: What do you think reading is?
C: Reading books by yourself and reading it with your mum. We read the books.
R: How?
C: In your memory you can start reading. On the first day of school you pick up a reader and then you know how to read.

(Child ID 37)

Class 5

R: What things does a person have to learn to be a good reader?
C: School.

R: What do you need to learn to be a better reader than you are now?
C: Sometimes I read Cinderella. I look at Cinderella and Snow White. I love Snow White.

R: What do you think reading is?
C: Like reading a book. We read (moves head from side to side) it.
R: How would you explain reading to someone who has never seen a book?
C: That's funny.
R: What do you do with it?
C: Read it and (moves head in direction from left to right).

(Child ID 44)

Class 6

R: What things does a person have to learn to be a good reader?
C: Need to learn from some people, our brothers every day to be a good reader. Reading or writing and make good pictures and make a line without how do you say that ... make straight lines.

R: What do you need to learn to be a better reader than you are now?
C: Mothers learn us to read and brothers and fathers and when we get big if we have a brother we can tell the brother to one day can learn you how to read I'll tell some people to help me read.

R: What do you think reading is?
C: Reading it's good and to learn people how to read.
R: How would you explain reading to a Martian?
C: I'll learn him how to read.
R: How?
C: Like tell my brother how to read and explain it in yard.

Code Perceptions in January/February

Class 3

R: What things does a person have to learn to be a good reader?
C: Well, they have to know what the words are and they have to concentrate and they need quiet.

R: What do you need to learn to be a better reader than you are now?
C: Well, I should sound out the letters and do them the proper way, like not fool around.

R: What do you think reading is?
C: I don't know. Well, I will say reading is when somebody opens up a book and they have to sound the words out if you want to know how to read.

(Child ID 22)

Class 5

R: What things does a person have to learn to be a good reader?
C: To know words; to say the sounds.

R: Why do you think some children have trouble in reading?
C: Because they don't know the sounds of letters.

R: What do you need to learn to be a better reader than you are now?
C: To see the sounds of the letters.

R: What do you think reading is?
C: I don't know.

R: How would you explain it to someone who has never seen reading?
C: Words.

(Child ID 45)

Class 6

R: Why do you think some children have trouble in reading?
C: Because maybe they don't know some words and the teacher could tell them.

R: What do you need to learn to be a better reader than you are now?
C: Reading words and very good.

R: What do you think reading is?
C: Learning to read very good.
R: What do we do when we read?
C: We read like we are good readers 'cos when we learn you can explain some words to the people and when we learn better you can read to the people that are poor.

(Child ID 57)

Code+ Perceptions in January/February

Class 1

R: Why do you think some children have trouble in reading?
C: I don't know. I don't have an idea. ...Well, you don't know what the word is, they don't know how to ... they know how to spell it but when they put the word together they don't know what it means I guess.

R: What do you think reading is?
C: Smart, I guess important, good for you.
R: How would you explain reading to a spaceman who has never seen anyone reading before?
C: This is a hard one. Well, you see reading is letters. Guess he'll say what letters are. They're marks on paper that look like and I'll have a piece of paper that shows all of them and then between these two fat pieces of cardboard there are these pieces of white paper that have letters on them, letters make words; words make sentences; sentences make stories, I guess. No, sentences make chapters; chapters make stories and so on.

(Child ID 4)

Class 2

R: Do you have to have a book to read?
C: No because you can read on a street, you can read in a magazine, you can read in a book, you can read cards.

R. What things does a person have to know to be a good reader?
C: Your a, b, c's.

R: What do you need to learn to be a better reader than you are now?
C: Sound out the words as best as you can.

R: What do you think reading is?
C: When you read books when you sound out letters.

(Child ID 13)

Class 3

R: Do you have to have a book to read?
C: No.
R: What can you read without a book?
C: A newspaper, a catalogue, a magazine.

R: What things does a person have to learn to be a better reader?
C: They have to learn how to read the words, they have to practise.

R: What do you think reading is?
C: It's important.
R: How would you explain reading to a spaceman?
C: Like you could give him a book and he could try reading. You could explain it to him. ... Talk to him about reading... I don't know.

(Child ID 24)

Class 4

R: Do you think reading is important? Why?
C: Yeah. If there's something written on a medicine jar and you couldn't read it you wouldn't know what to do.

R: Why do you think some children have trouble in reading?
C: Because they don't know their alphabet very well.

R: What do you think reading is?
C: One of the most important things in school. ...A book, a book and your mind, brain.
R: How would you explain reading to a spaceman?
C: Show him a book and tell him to read it.
R: What if he doesn't know?
C: Ask someone to read it for him.
R: How do <u>you</u> read?
C: I basically just look at a book and read the words.

(Child ID 36)

Class 5

R: What things does a person have to learn to be a good reader?

C: To practise reading.

R: Why do you think some children have trouble in reading?
C: Because they're learning.

R: What do you need to learn to be a better reader than you are now?
C: How to read with my sister helping.

R: What do you think reading is?
C: Learning.
R: About what?
C: Words.

(Child ID 43)

Class 6

R: Do you have to have a book to read?
C: No. We could use paper or a letter or a piece of paper with some writing on.

R: Do you think reading is important? Why?
C: Yeah. The commercials think it's important but I don't think it's really important. If you can't read a crossing guard and a sign you don't know what it said maybe if ... reading is little bit important because if grandma sends you a letter and you grow up and you don't know how to read and you have to go all the way to someone's house to know what this word is. But if you go to school and learn how to read we don't need to go to all that trouble.

R: What things does a person have to learn to be a good reader?
C: He has to learn how spellings are and how to read it.

R: What do you need to learn to be a better reader than you are now?
C: I don't know. You have to read every day and you don't know any words and your father reads them for you and then you recognize the words If your father reads "all you can do" then you recognize it and you read it. (The child got up and went to get a book from the class library to show the researcher how she would recognize a word "by" in two places).

R: What do you think reading is?
C: Well, when I was young, I used to think it's a piece of garbage but now I recognize that you don't know how to read, it's really hard for you to try to read.

(Child ID 54)

Non-code Perceptions in January/February

Class 1

R: What things does a person have to learn to be a good reader?
C: What words meant and stuff; how to read words.

R: Why do you think some children have trouble in reading?
C: 'Cos they don't know the words, so they wouldn't think it made sense.

R: What do you think reading is?
C: Something to do ... I don't know what I mean by that.
(Child ID 9)

Class 2

R: What things does a person have to learn to be a good reader?
C: To learn how to read books.

R: What things do you have to learn to be a better reader than you are now?
C: To read a lot.

R: What do you think reading is?
C: Good to learn.
(Child ID 21)

Class 3

R: What things do you have to learn to be a good reader?
C: Starting on easy books, you have to practise them and then some time when you finish practising them you get really good.

R: Why do you think some children have trouble in reading?
C: Because they didn't practise it very hard and because they just didn't read the whole story.

R: What do you think reading is?
C: Because if you didn't know how to read it means you couldn't drive because you wouldn't know what signs meant on the street.
(Child ID 18)

Class 6

R: What do you think reading is?
C: Yeah, it is important. Some things are sad and things are happy and the books are around us.
R: If someone came in a spaceship and asked you, "What are you doing?" how do you explain reading to him?
C: I'd say, "You have to, if you have a book, you have to bring it

home and practise it everyday".
R: What are we doing when we are reading?
C: We put feelings in it that's sad or happy.

(Child ID 54)