Research on the Effectiveness of Different Kinds of Phonics

The phonics research reviewed in *The Great Debate* permitted only comparisons of amount and timing of phonics instruction. There were too few studies comparing the kind of phonics taught to permit conclusions with regard to their relative effectiveness.

Beginning with the 1970s, the importance of phonics teaching seemed to have become generally accepted, and the research question turned to which kind of phonics was the more effective. Among the characteristics differentiating the phonics program are whether letter-sound relations are taught directly or inferred from the words, whether instruction is given in blending the separate letter sounds, or whether phonic elements are analyzed from larger units.

Three types of comparative research studies are available on these issues—laboratory-type comparisons, classroom comparisons, and comparisons on exceptional students.

The laboratory-type studies have made comparisons of specific characteristics such as teaching letter-sounds, blending, or spelling.

The classroom studies, including those of exceptional children generally compared direct-synthetic with indirect-analytic phonics. These are very old distinctions, and although there is seldom complete agreement on what each includes, there is some agreement that direct-synthetic programs usually imply direct teaching of letter-sound associations, and the teaching of sound blending. Indirect-analytic programs do not usually teach the letter sounds directly nor is sound blending usually taught. Indirect-analytic programs usually teach letter sounds through analysis and inference from whole words. The traditional distinction of synthetic/analytic has been replaced somewhat by the distinction of direct/indirect, and I shall use both categories in the following discussion.

A trend was found that seemed to favor direct-phonics and "direct" teaching of various aspects of phonics in the three kinds of studies reviewed. The evidence was by no means clear cut, but some confirmation was found also from the correlational study of Keane et al. (1979) and the metaanalysis of Pflaum et al., 1980.

LABORATORY-TYPE STUDIES

I use "laboratory" to label these studies because their procedures resemble those in verbal-learning studies in psychological laboratories. Most of the laboratory-type studies reported here, however, have been carried out in classrooms.

Richardson and DiBennedetto (1977), who reviewed most of these stud-

ies, divided them into two groups—"paired associate studies" and "beginning reading studies." In both, students were trained to read monosyllabic, nonsense words, usually written in an artificial orthography. After their training, the subjects were given a second set of nonsense words containing the same letters as those used in the training. In the "paired associate" studies, the criterion was the number of trials needed to learn the second list. In the "beginning reading" studies, the criterion was the number of words correctly identified on the second list in one trial. I have combined these two types because their methodologies and results are essentially similar.

Table I-1 presents the results from the laboratory-type experiments. These studies compared different methods of teaching word identification (teaching letter sounds, letter names, or whole words) with or without "process" training (blending or spelling training). The criterion in all cases was the child's ability to transfer such training to the decoding of novel words.

We can draw several generalizations from the studies presented in Table I-1. First, a letter-sound approach produced significantly better results on the transfer tests than a whole-word method (Jeffrey and Samuels, 1967; Yawkey, 1973; Carnine, 1977; Vandever and Neville, 1976). This was found for a wide age range—from 4–5-year-olds (Carnine, 1977) to 6- and 7-year-olds (Vandever and Neville, 1976) and for intermediate, educable mentally retarded students as well (Vandever and Neville, 1976).

It also appears that training in blending adds further to the effectiveness of letter-sound or letter-name training. The blending training produced significantly better results in the studies of Muller, (1973), Haddock (1976, 1978), and Jenkins, Bausell, and Jenkins (1972). This is particularly clear in Muller's (1973) two experiments with first graders. In the first experiment, the two code-oriented treatment groups (letter-sound training and letter-name training) did not differ significantly from the control groups. In the second experiment, when blending training was added to the letter-sound and letter-name groups, both produced significantly better results than the control. Similar results were found by Haddock (1976, 1978) for five-year-olds. With both mono- and bilingual children, she found that letter-sound training plus blending produced higher transfer scores than letter-sound training alone. Jenkins et al. (1973) also found blending training to help in the learning of first graders. Letter-sound training plus blending produced better transfer results than letter-name training plus spelling.

The Fox and Routh (1976) experiments with four-year-olds proved to be one exception. In a previous experiment, these four-year-olds had been classified as either able or unable to segment a word into its constituent phonemes. For those who could segment, blending training helped. But for the nonsegmenters, blending training did not appear to have an effect on their transfer scores. Thus it would appear that the ability to segment words

Table I-1 Laboratory-Type Experiments

Study	*Ages*	*Training Groups*	*Results on Transfer Test*
Jeffrey and Samuels (1967)	6-year-olds	LS + B, WW	*LS + B* > WW
Jenkins, Bausell, and Jenkins (1972) 3 experiments	– Grade 1 (May)	LS + B, LN + B, CD + B	*LS + B = LN + B* > CD + B
	– Grade 1 (Oct.)	LS + B, LN + Sp, CD + Sp	*LS + B* > LN + Sp = CD + Sp
	– Grade 1 (Oct.)	LS + B, LN + Sp	*LS + B* > LN + Sp
Muller (1973) 2 experiments	– Grade 1	LN, LS, CO, CD, C	No significant differences
	– Grade 1	LS + B, LN + B, CD + B	*LS + B = LN + B* > CD + B
Yawkey (1973)	5-year-olds	LN + B, WW	LN + B > WW
Haddock (1976)	5-year-olds	LS + B, LS	*LS + B* > LS
Vandever and Neville (1976)	Grades 1 and 2	WW + Sp, LS + B	*LS + B* > WW + Sp
	Intermediate educable mentally retarded	WW + Sp, LS + B	*LS + B* > WW + Sp
Fox and Routh (1976)	4-year-old segmenters	LS, LS + B	*LS + B* > LS
	4-year-old nonsegmenters	LS, LS + B	No significant difference
Carnine (1977)	4- and 5-year-olds	LS + B, WW	*LS + B* > WW
Haddock (1978) (replication of Haddock, 1976)	bilingual 5-year-olds	LS + B, LS	*LS + B* > LS

Key

Treatment conditions
- LN = Letter-name training
- LS = Letter-sound training
- WW = Whole-word training
- B = Blending training
- Sp = Spelling training

Control conditions
- CD = Training on different letters
- CO = Observation of letter forms
- C = No program control

Results
- > = Significantly better than

into phonemes may be a prerequisite for the effectiveness of the blending instruction, as had been suggested by Wallach and Wallach (1979).

These "laboratory" studies also seem to suggest that when blending training is provided (and the student is able to benefit from it) letter-sound and letter-name training may be equally effective (Jenkins et al., 1972; Muller, 1973), and that blending training with letter-sound training appears superior to letter and spelling training (Jenkins et al., 1972; Vandever and Neville, 1976). This latter conclusion appears especially important since spelling train-

ing is often provided in "linguistic" programs in place of the letter-sound and blending training provided by most direct-synthetic phonics programs.

These studies appear to indicate that code-oriented training programs with blending have a significant effect on decoding achievement.

CLASSROOM COMPARISONS OF DIRECT VERSUS INDIRECT PHONICS

These studies were conducted during the last decade, and although the number of studies appear small, they compare favorably with the numbers analyzed for the 50-year period covered in *The Great Debate*. Greater number of studies done in the early grades is found in the more recent as in the earlier studies. As in the earlier studies, these later ones are mostly at Grade 1, and half are at Grade 2, and half again at Grade 3. Only one study goes to Grade 4.

We analyzed each of the studies using the same schedules as for those in *The Great Debate*, tabulating separately the results on the different components of reading and related abilities, e.g., word recognition, decoding, spelling, word meaning, and silent reading comprehension. We were concerned not only with the overall results for the two kinds of phonics on the ultimate goal of reading—silent reading comprehension—but on the various components of reading at tbe different grades.

Table I-2 presents the results of the classroom comparisons by advantages either for direct-synthetic or indirect-analytic phonics programs on each of several reading components and by grades. Generally, Table I-2 indicates that the scores tend to favor the direct-synthetic groups, but some comparisons show equal results. It is important to note, however, that advantages for indirect-analytic phonics was reported for only one study.

The comments of Putnam and Youtz (1972) reveal some of the differences for those two kinds of phonics for urban disadvantaged pupils. In comparing the children's test scores, they found the indirect phonics group scored higher than the direct group in Grade 1. However, by Grade 2, the indirect group fell behind the national norms, while the direct phonics group gained on comprehension. The authors noted that this trend may indicate the ultimate advantage for these children of the more thorough approach and mastery of basic skills afforded by the direct phonics program.

The results from three of the classroom comparisons, the three early studies (Hayes and Wuerst; 1967, 1969; Wyatt, 1967; Potts and Savino, 1967), may have been disadvantageous for analytic phonics because they used analytic phonics programs that were published prior to 1967, when most basal readers had lighter phonics than in the 1970s. The synthetic programs might have had a greater advantage both in amount of phonics taught and in the kind of phonics. Since we found from the research analyzed in *The Great*

Debate that the earlier and more intensive the phonics program, whether direct or indirect, the more effective it was, the findings from these studies may not have given sufficient benefit to the analytic phonics programs.

Further, the Lym (1973) and Pittsburgh LRDC (undated) studies were learner verification studies in which the experimenter either devised the program (Pittsburgh) or was commissioned to determine the effectiveness of a program (Lym). Although we have no evidence that they were in any way less objective because of the experiments' involvement in the outcomes, it is well to consider it in the overall evaluation of the research evidence.

The studies in Table I-2 appear to be confirmed by the study of Kean, Summers, Raivetz, and Farber (1979) of fourth-grade reading achievement scores in the Philadelphia Public Schools. Kean et al. and his associates used a large random sample of students in 25 schools and gathered a wide range of information about them. This information, covering matters as diverse as reading program, social class, number of absenses, and so on, was cast into a multiple regression format. One strong finding was that students in a "phonic-linguistic basal" reading program (direct-synthetic) outperformed students in other types of programs, including basals with analytic phonics. This was true for a wide range of social classes, but only significant for children placed in high and middle reading groups, that is, middle and high achievers for their grades. No program, apparently, was superior to another for the low achievers (Raivetz, personal communication, 1981). This study is especially compelling because of the large number of subjects (over 1,000 students) and the comprehensive number of variables examined.

Another correlational study which seems to suggest an advantage for direct phonics is that of Talmage and Walberg (1978). They analyzed characteristics of classrooms in grade 1 through 6 (in Chicago schools) in relation to reading achievement. Four reading programs were included, one direct/synthetic, two indirect-analytic, and one meaning-emphasis program. Of these programs, only the direct-synthetic had a positive correlation with reading achievement. Because this correlation was significant only at the .10 level, the authors concluded that "reading series, per se, did not affect achievement differentially" (p. 194). Indeed, classroom environmental factors such as competitiveness, difficulty of materials, and classroom friction all had stronger effects.

A more recent comparison of direct versus indirect phonics was made by Juel and Roper/Schneider (1982). They compared a popular basal series (Houghton Mifflin) with one that contained a more direct phonics program (Economy), and found that the two differed in several ways. The direct phonics series contained more different words, more repititions of words, and more regularly spelled words. The direct phonics series appeared to "induce earlier use of a phonic (or "sounding out") strategy based on letter-sounds correspondences . . ." p. 14. The indirect-analytic phonics series,

however, appeared to induce a sight word strategy more frequently. Both appeared to do equally well for teaching letter-sound knowledge by the end of Grade 1, although the direct phonics groups did it better at the beginning on the pre-primer and primer levels. Those using the direct phonics series also appeared to use it more in recognizing words not identified immediately. Regardless of type of phonics stressed, children who developed strong letter-sound correspondence knowledge in first grade performed better on all tests—reading words from their own basals, reading words not in their basals, and on a test of the Iowa silent reading comprehension test.

CLASSROOM COMPARISONS OF EXCEPTIONAL POPULATIONS

Table I-3 presents the results of the effects of direct versus indirect phonics for exceptional children (severe reading and learning disability, mentally retarded, etc.) taught in classrooms. From Table I-3 we note that results are generally similar to those for regular classroom groups—a trend toward better results for direct phonics as compared to indirect.

I analyze each of these studies separately because it is particularly for exceptional pupils, those who are behind and who find it difficult to learn to read, that the benefits of one procedure over another are of special importance.

Biggins and Uhler (1979) studied the reading achievement of children in residential schools using two phonics programs: a direct phonics program developed by the senior author, and an indirect, analytic program using speech-to-print phonics, phonics workbooks, and phonics kits. Basal readers were used in conjunction with both phonics programs. For the second graders, the direct phonics program was significantly more effective for comprehension and approached significance for vocabulary. At the end of Grade 3, the results were equal on vocabulary and comprehension for both phonics programs.

Richardson, Winsberg, and Bialer (1973) also tested a synthetic phonics program developed by the senior author for neurologically impaired students (aged 8–17) reading between 1.0 and 3.0. The indirect-analytic program contrast was a programmed linguistic series. The results were better for the direct/synthetic group on two of the decoding tests—a letter-sound test and a nonsense syllables test. In a test of reading CVC words, the groups were equal.

Sabatino and Dorfman's (1974) study of mentally retarded readers aged 7–13 compared a direct phonics procedure with one that was less direct. The results were equal for word recognition, and the analytic group was ahead in spelling. On a criterion-referenced test of words actually taught by both approaches, no differences were found between the treatments.

Table I-2 Results of Classroom Studies Using Different Kinds of Phonics Programs: Direct-Synthetic/Indirect-Analytic

Study	Word Recognition (Oral)	Text Reading (Oral)	Silent Comprehension	Vocabulary	Decoding	Spelling	Total Reading
			Grade 1				
Hayes and Wuerst* (1967, 1969)							
Jan.			Equal	D/S	Equal	D/S	
Apr.	D/S	D/S (High IQ only)	Equal	D/S		Equal	
Wyatt (1967)			Equal	Equal	D/S		
Potts and Savino (1967)							D/S
Putnam and Youtzt (1972)			I-A	I-A		D/S	
Lym (1973)							D/S
							Equal
Pittsburgh LRDC (undated)			D/S	D/S	Equal		
			Grade 2				
Hayes and Wuerst* (1967, 1969)							
Jan.			D/S	Equal	D/S	Equal	
May	D/S	Equal	Equal	Equal	D/S	Equal	

Putnam and Youtz (1972)			Equal	Equal		D/S
Lym (1973)						
Low						D/S
Middle						D/S
High						Equal
Grant (1973)	D/S				D/S	
			Grade 3			
Hayes and Wuerst* (1967, 1969)						
			Equal	D/S	D/S	Equal
June	Equal	Equal	D/S	D/S	Equal	D/S
						D/S

*These studies were part of the USOE Cooperative First Grade Research Project discussed earlier (pp. 6–8). Because these studies used many treatments, only the clear direct-synthetic/indirect-analytic comparisons were used for this table. The Hayes and Wuerst study compared Lippincott (D-S)) and Basal plus supplementary phonics (I-A).

In the Wyatt study, the Lippincott (D-S) was compared with Houghton Mifflin (I-A). The results shown are only for boys because it was difficult to determine what program was given to the girls.

†Urban, low SES.

Key

D/S Significant difference favoring Direct-Synthetic Programs

I/A Significant difference favoring Indirect-Analytic Programs

Equal No significant differences

Table I-3 Classroom Studies Using Exceptional or Nontypical Populations: Direct-Synthetic Versus Indirect-Analytic

Study	*Population*	*Grade or Age*	*Silent Comprehension*	*Vocabulary*	*Word Recognition*	*Decoding*	*Spelling*
Richardson, Winsberg, and Bialer (1973)	Neurologically handicapped	Ages 8–17 (Rdg. 1. 1.0–3.0)			Equal	D/S	
Sabatino and Dorfman (1974)	Educable M.R.	Ages 7–13			Equal		I/A
Enfield (1976)	Lower 25% in readiness	Grade 1	D/S		D/S		D/S
Biggins and Uhler (1979)	Children in residential schools	Grade 2	D/S	D/S			
Williams (1980)	Children with Learning Disabilities	Ages 7–12				D/S	

Key
D/S Significant difference favoring Direct-Synthetic program
I/A Significant difference favoring Indirect-Analytic program
Equal No significant differences between groups

Enfield's (1976) study was concerned with a group below average in reading readiness tests, scoring below the 25th percentile. In her pilot study, she compared 15 children receiving an experimenter-designed synthetic phonics program with a matched sample receiving an analytic phonics program in a popular basal-reading series. In all comparisons—reading comprehension, word recognition, and spelling—the direct-synthetic group was significantly ahead. She extended this study with 192 first graders, comparing their progress with similar children the year before. The results also favored the direct-synthetic on all three measures.

Williams (1980) studied the effects of a supplementary direct/synthetic type program on the decoding ability of learning disabled students. The program first taught the students to segment words into phonemes, using procedures adapted from Elkonin (1973). Once this was mastered, the children then learned to associate the phonemes with letters and to blend these letters into words. This program was used as a supplement to their regular, eclectic basal reading program. Compared to similar students, who received only instruction from their basals, the experimental group scored significantly higher on measures of phonemic analysis, phoneme blending, and decoding. The superiority of the experimental group on the decoding measures was found on both words that had been used in the training program and new words containing the trained phonemes. The experimental program was thus able to promote general decoding strategies in these learning disabled students.

It appears, then, that for exceptional students in classrooms, direct phonics seems also to be more effective than indirect-analytic phonics.

Why do many children seem to find direct phonics instruction more profitable? It would seem that one aspect may concern the direct teaching of letter-sound relations. For many learners, an inductive approach may be more difficult than a direct one. The laboratory studies of Bishop (1964) and Carnine (1977) found that both adults and children do not ordinarily analyze words that have been learned as wholes into constituant sounds. They seem to need to have their attention directed away from the whole words and their meanings toward processing of sounds (Craik and Tulving, 1975). Because the meaning level of words is generally more salient than the phonemic level, this shift in attention may be more difficult. And because most analytic phonics programs put stress on the meaning of words, even during the phonics teaching, and usually teach the phonic elements, often the words are taught as wholes and the story is read (Beck and McCaslin, 1977), the difficulty in shifting attention may be intensified. Also, because the words are pretaught before the story is read in most basal reading programs, phonic analysis may not be necessary to decode words in the stories. In most direct synthetic phonics programs, according to Beck and McCaslin (1977), the

letter sounds are taught more directly before the stories are read. The decoding of words, therefore, takes the form of a means to an end, leading to a more complete learning of the phonics.

Another distinction between direct and indirect phonics programs lies in blending. Direct phonics programs tend to teach sound blending. Most analytic phonics programs do not teach blending. In fact, the instruction to teachers is often not to teach or encourage this lest the child insert extraneous sounds. Yet sound blending has been found to be important in early reading, particularly in the learning of phonics. Ability to blend sounds correlates highly with early reading achievement (Chall, Roswell, and Blumenthal, 1967; Richardson, DiBenedetto, and Bradley, 1977), and training in blending appears to benefit the learning of letter names and sounds as well as of decoding (Muller, 1973). In addition, Pflaum, Walberg, Karagianes, and Rasher (1980), in their recent meta-analysis of reading research, found that of the many factors studied, sound-blending training seemed to have a significant effect on later reading achievement.

Direct phonics programs are also more deliberate in style. This tends to clarify what is to be learned and how it is to be learned. Direct teaching has been found generally beneficial for learning in the primary grades (Rosenshine, 1976), particularly for those with low readiness because of more limited experience and academic stimulation or those with low readiness because of reading and learning disabilities.

Recent analyses of analytic phonics programs in widely used basal reader manuals by Beck and Block (1979), Beck and McCaslin (1977), Popp (1979), and Beck (1981) indicate much circumlocution, questionable arrangement of elements taught, and insufficient review. Indeed, I drew similar conclusions in *The Great Debate* on the phonics in the basal programs of the 1950s and 1960s. Analytic phonics can, of course, be taught with less circumlocation and with better sequencing and review. But much of the circumlocution seems to come from the strong position taken by these programs that sounds are not to be isolated, lest meaning is lost, and thus letter sounds are rarely taught as such. The sounds are, instead, to be inferred from words.

Different Methods for Different Learners: Aptitude-Treatment Interaction

THAT DIFFERENT METHODS may be more effective for different beginning readers has been proposed for many years (see Cronback and Snow, 1977 for a review). It has been suggested that children with weakness in visual perception and strength in auditory perception might do better with a phon-

ics beginning, while children with the reverse profile might do well with a sight method (deHirsch, Jansky, and Langford, 1966). In a recent review (Dawson, 1978) of fifteen studies attempting to test this hypothesis, thirteen found no evidence for preference of method based on such strengths and weaknesses. In most studies, a phonics approach was found more effective, irrespective of modality strength. Bateman's review (1979) of aptitude-treatment interaction studies arrived at a similar conclusion.

Another approach to aptitude-treatment interaction is that of Popp (1978) who, after an analysis of the skills needed for different types of reading programs (synthetic phonics, linguistic, whole-word, language experience), suggested that a sophisticated analysis of the child's abilities at the beginning of first grade might be used to match the child to the "best approach" to beginning reading. This is currently being tested.

In teaching children with severe reading disability who are functioning below a first-grade level, it has been suggested (Roswell and Natchez, 1977; Roswell and Chall, impress that a trial teaching procedure be used to determine the best method for starting instruction (sight, linguistic, spelling-patterns, direct-synthetic phonic, or kinaesthetic). The "best approach" should be viewed as one to begin with, not one to stay with. As the student begins to learn, the approach should change to ones that suit them better.

In light of all this, the effectiveness of a beginning approach depends both on the ability of the learner and the relative difficulty of the approach. In a sense, the ease of the sight method, or the meaning-emphasis approach sometimes found with beginning readers who have lower readiness, would suggest that they may still be functioning on a beginning level.[2]

Is the Alphabet Necessary?

The Great Debate also contained a review of the research on what effects knowing the alphabet (naming the letters) had on beginning reading achievement (pp. 140–159). From the research, it appeared that the alphabet was indeed important for success in beginning reading.

What is the evidence now? The most extensive data since 1967 come from the *27 USOE First Grade Cooperative Research Studies* which cor-

[2]See, in this connection, Chall's *Stages of Reading Development* (1983) where Stage O, the earliest stage, is characterized by a "make-believe" or pseudoreading of stories made familiar through much reading to the child. The child's "reading" resembles a kind of sight reading from memory

related alphabet knowledge and other readiness factors at the beginning of Grade 1 with reading achievement at the end of Grade 1. The findings reported by the coordinators of the study (Bond and Dykstra, 1966) were that knowledge of the alphabet was the best single predictor of end-of-Grade-1 reading achievement. Alphabet knowledge was also the best predictor in the Jansky and deHirsch (1972) study of high-risk children. Of all the factors that were significantly related to Grade 2 reading achievement, alphabet knowledge tested in kindergarten was the strongest.

Other recent evidence on the importance of knowing the alphabet for early reading comes from the "invented spelling" studies of preschool children (Read, 1971; Chomsky, 1979). Children who write early, and who seem to do so before they can read, start to write, according to these researchers, when they have had some direct instruction on letter names. When they learn to say and write the names of the letters, they generally "take off," writing and spelling in ways that make sense linguistically. Gradually, their spelling errors change, and their spelling becomes conventional (Bissex, 1980). Downing and Thackray (1975) take a contrary view on the importance of knowing the alphabet for beginning reading, based on the experimental studies such as those of Samuels (1970), Ohnmact (1969), Jenkins et al. (1972), Muller (1973) and Johnson (1970). These experimental studies found that direct teaching of letter names is not more effective than other instruction in promoting first-grade reading. According to these studies, there is no facilitating effect on reading achievement for children taught the alphabet names before they are given other reading instruction.

A similar conclusion with regard to letter names seems to be held by Gibson and Levin (1975), Venezky (1975), and Samuels and Pearson (1980). Some authors (e.g. Samuels and Pearson, 1980) suggest that the positive correlation of letter names with beginning reading may stem mainly from their association with socio-economic status—the more affluent, the more exposure to letters and books and the higher the achievement.

Other experimental studies of early alphabet knowledge (Jenkins et al. 1972, and Muller 1973) suggest that letter instruction combined with blending is more effective than other forms of early reading practice. Both studies found that letter names and blending were just as effective as letter sound and blending training. Others have argued, however, that letter sound training is more effective than letter name training (Downing and Thackray, 1975).

What can we conclude from the research from 1967 to 1982 on the importance of the alphabet on beginning reading? In many ways the more recent evidence confirms the earlier evidence. The earlier and more recent correlational studies found that children who knew more of the alphabet before grade 1 generally were better readers than those who knew less. The

experimental evidence published after 1967 tends to find that while training in letter names before reading is begun helps reading, other reading instruction seems to be as effective.

What does this mean for practice? Should we teach the alphabet? It would seem that the research still confirms the benefit for beginning reading of early knowledge of the alphabet. The question regarding when to begin and when to complete the instruction is still open, as it was in 1967. From the existing research we still do not know whether all of the alphabet instruction should precede the reading of words and larger units. Indeed, our conclusion in 1967 seems still to be appropriate today.

> Perhaps the crucial point is not that children must know *all* the letters *before* they learn to read words, but instead that they should *pay attention* to the letters, and naming or sounding them helps them pay attention. (p. 158)

The association of letter knowledge with social background has been found again and again. The evidence is strong that the children of the affluent and more highly educated tend to learn to read earlier and better than the children of the less affluent and less educated, and that they "know their letters" earlier. These differences in reading achievement are attributed to differences in home experiences with language and literacy (Wells, 1982).

The home experiences change, with time. Indeed, Durrell and Catterson (1980) note that more of the first graders they tested recently knew the letters than in previous years. This gain has probably come at least partially from *Sesame Street* and *The Electric Company*. Thus, it would seem that some of the traditional social class differences can be compensated for by instruction in the home as well as in school. Indeed, some of the successful beginning reading programs for low SES children have done just that—they put an early focus on learning the alphabet.

That alphabet knowledge is not inherently based on social class but on experience—in the home, the preschool, the media—can also be inferred from the better letter knowledge today of first graders compared to a decade or more ago when the educational level of parents was lower.

Thus in 1982, as in 1967, I would recommend early learning of the alphabet along with other early exposures to literacy—reading to the child, learning of signs and labels, experiments in writing, etc. The alphabet is a good way to talk about print, and gives the child a means of sharing his or her knowledge with parents and siblings.

And perhaps of greatest importance in learning letters is that it provides early knowledge and practice in abstract, formal aspects of language—abilities related to further growth in literacy and the mind.