EFFECTIVE School Practices

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FOCUS: PRESCHOOL

ADI

Philosophy of *Effective School Practices*

1. Teachers are responsible for student learning.
2. The curriculum is a critical variable for instructional effectiveness.
3. Effective teaching practices are identified by instructional research that compares the results of a new practice with the results of a viable alternative.
4. Experiments should not be conducted using an entire generation of Americans. The initial experimentation with a new practice should be small in scale and carefully controlled so that negative outcomes are minimized.
5. A powerful technology for teaching exists that is not being utilized in most American schools.

Effective School Practices is published quarterly by the Association for Direct Instruction. The mission of the Association for Direct Instruction, as stated in the by-laws, is to promote the improvement of educational methods.

The name *Direct Instruction* originated with the highly effective instructional model first developed by Zig Engelmann in Project Follow Through during President Johnson's Great Society legislation. Although the evaluation of Project Follow Through showed the Direct Instruction model to be far more effective than the other models on every identified outcome, education in America remained generally unchanged.

A few educators, impressed by the extraordinary results of the original Direct Instruction model and the programs that were developed as DI evolved, formed the Association for Direct Instruction in 1981.

Today, this organization is a vanguard in promoting school practices that have been validated as effective through the use of the scientific method in educational research.

The Association for Direct Instruction was incorporated in 1981 in the state of Oregon for educational purposes. ADI is a nonprofit, tax-exempt corporation under Section 501(c)3 of the Internal Revenue Code and is a publicly supported organization as defined in Sections 170(b)(1)(A)(ii) and 509(a)(1). Donations are tax-deductible.

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Overview

by Bonnie Grossen, Editor

This quarter we have selected contributions that provide research data and guidance toward answering 4 important questions regarding preschool:

1. Should preschool really be "school" or should it only be a time for socialization and play?
2. What can we do at the preschool age to ensure that our children grow up to be well-adjusted adults?
3. When should a child ideally start an academic preschool?
4. If preschool is really a "school," with some academic goals as well as social goals, what should the curriculum look like, especially in the area of reading?

As always, to save our readers time, I'm going to give the answers to these questions "the fast way" in this overview and point to the specific articles that will provide more details regarding the evidence supporting these answers.

Academics or Play in Preschool?

Early childhood educators in America, and in all the English-speaking countries for that matter, are not convinced that an academic preschool is a good thing. Quite the contrary, most early childhood educators advocate a nonacademic model—to help the children mature socially through playful interactions with their peers. Including any academic goals in preschool, or even kindergarten, is disparaged because academic expectations are believed to have debilitating effects on the social development of the child. Academics are thought to cause stress for young children and possibly repress a child's natural instincts to play.

In other countries, this perspective is not shared (see the introductory section to the French study, pages 72-73). The French government has gone so far as to make academic preschool (è*cole maternelle*) available for free to children age 3 to school-age, to encourage parents to send their children to academic preschool rather than to the nonacademic "crèche" for which parents must pay. The Jarousse, Mingat, and Richard study (pages 73-79) was designed to evaluate whether the cost of this policy is justified.

Ironically, the idea that a playful environment was best for preschool-age children came originally from the French-speaking culture via Jean Piaget. In fact, most English-speaking countries refer to the nonacademic model by its French name, "crèche," indicating its origin.

What do the data indicate? Much publicity has been given to the findings of a longitudinal study of a very small sample of children which is alleged to show that an academic preschool causes higher levels of juvenile delinquency and arrests. The original study consisted of only 68 subjects assigned to three different types of preschool: High/Scope's play preschool (n=22); an academic preschool (n=23), and a control group (n=23). The High/Scope Foundation has periodically checked in with these subjects to see how their different preschool experiences may have affected their later lives. The results of these periodic evaluations are widely disseminated at conferences and in journals. Most recently Schweinhart and Weikart (1997) evaluated them at age 23 and have published their conclusion in a monograph and in the *Early Childhood Research Quarterly*, in *Educational Leadership* (1998),and in *Education Week* (1998). The shorter reports emphasize the finding that the academic preschool group had higher arrest rates than the other groups. The headlines, "Academic preschool causes juvenile delinquency," even made front-page news in *USA Today* in 1997. These are not different studies, as some might assume. All these reports come from only one evaluation.

This High/Scope evaluation is highly flawed, just as earlier evaluations were when the same subjects were younger. Several critiques of the evaluation are printed in this issue, in the form of letters in the *From the Field* section and in a larger critique by Zig Engelmann on pages 18-23. The most obvious flaw concerns the highly publicized arrest data. Of the 68 original subjects the High/Scope researchers could only locate 42; High/Scope (n=11), academic preschool (n=18), control nursery school (n=13). The arrest data were gathered by searching police records of the state of Michigan and of the community where the original study took place. When Schweinhart and Weikart tallied the arrest data, they counted all the original subjects, assuming no arrest record meant no arrests, even for the subjects they could not find. However, the subjects they could not locate may not have had arrest records because they have been living in other states, or maybe they are dead. Counting missing subjects as having no arrests immediately biases the results in favor of the High/Scope

group, which had lost half its subjects. *Educational Leadership* is printing a short version of Zig's rebuttal in their March, 1999 issue.

Apart from the flaws in the data analysis, it seems quite far-fetched to attribute whatever differences might be observed in the social characteristics of these three small groups of individuals to the type of preschool experience they had at age 4. Given the serious flaws that have been repeatedly identified in Schweinhart and Weikart's longitudinal studies, the media treats their conclusions with far more respect than they deserve. To base national policy on the conclusions of such a small study—funded and conducted by the folks who have most to gain economically from positive findings for the High/Scope model, namely the High/Scope Foundation—is worse than silly.

The dichotomization of academic and nonacademic preschools is a bit misleading. Academic activities are completely taboo in a nonacademic model, such as the High/Scope model. However, in an academic preschool, there is time for play, just as there is time for play in an academic elementary school. Time for reading and phonemic awareness ranges generally from 10 to 20 minutes a day in any academic model. Another 10 to 20 minutes might be spent on counting and other beginning math skills. And finally, 15 to 30 minutes might be spent on language, storytime, learning names of colors, prepositions, and so forth. Even the academic activities within these short time spans vary frequently, and naps, juice, and play are still present in any academic preschool model, including the Direct Instruction preschool model. Academic learning activities are also very social, especially with the Direct Instruction model, where there is constant interaction.

The question of Direct Instruction versus a play emphasis for older, school-age children has been clearly answered in other research. The *Follow Through* data were clear that children receiving Direct Instruction in grades K to 3 had higher self-esteem, did better later in school, and had higher graduation rates from high school than both traditional direct instruction and the play-emphasis models. A research summary published in the last issue of *Effective School Practices* (Gunter, Hummel, & Conroy, 1998) helps explain why DI does better than even traditional direct instruction in reducing behavior problems: Behavior problems are decreased by increasing correct academic responding. The DI programs are engineered and teachers are coached to produce high levels of first-time-correct responses in children, even when new material is introduced. When students get the answers right all the time they feel smart and behave better. However, these studies all involve school-age children. We cannot say directly that these data rule out the possibility that academics in preschool could have the opposite effect and produce behavior problems. What does research say we can do specifically at the preschool age to prevent later behavior disorders?

Raising Well-Adjusted Children

Research does show that interventions for preventing behavior disorders are most powerful at the preschool age. Ed Feil's article "Using the Preschool-Age as a Developmental Leverage to Prevent Behavior Problems with Early Screening and Intervention" (pages 50-55) summarizes briefly the current state of the research findings for preventing behavior problems. We now know that much can be done in these early years to prevent later behavior disorders. However, the few hours that children spend in preschool are not the key. It's what occurs at home that makes the biggest difference. Preschools are an opportunity to identify higher risk children so that the parents can be included in further intervention to prevent future problems. Parents and preschool educators need to work together to be most effective. The nature of the parenting that is needed to build character and some research-based training programs are briefly described by Feil. Readers should note that a nonacademic preschool experience is not one of the things that research has identified as important in preventing antisocial behavior.

The Positive Effects of an Academic Preschool

While any debilitating effects of an academic Direct Instruction preschool on socialization are imaginary, positive effects on academic achievement are not. In "Building Brains" (pages 16-17), the late Al Shankar builds a strong case for academic preschools. Two large-scale studies (n=1900 and n=2100) done in France have evaluated the effects of early academic preschool. We have translated into English a report of the findings of these very important French studies (Jarousse, Mingat, & Richard, 1992) on pages 72-79. E.D. Hirsch cites these studies in his book *The Schools We Need and Why We Don't Have Them* as evidence that should be taken into consideration when agencies make educational policy. Instead we ignore the findings of this kind of large-scale research and rather accept the conclusions of a study now involving only 42 subjects, even when they contradict the findings of the larger-scale research.

As we learn in *Reasoning and Writing*, when you face a contradiction, you have to make a choice: one is true, the other is false. To identify the one that is true, you must evaluate the evidence and the reliability of the source. The source of the 42-subject study is the High/Scope Foundation whose mission is to sell the High/Scope preschool program. The source of the French study is a group of researchers from the Institute of Research on Education Economy at the University of Burgundy whose mission is to evaluate national education policy in France.

It is difficult for people to attend to an important study if they cannot read it, so we worked very hard to get this study translated with integrity and clarity. We thank Mary Beth Cowardin for volunteering her expertise in the translation. (She is employed by the Department of Agriculture in Ohio, an unbiased source.) We also thank Sophie Cazaux Kaufman, a current resident of France, who could provide us with some valuable background information and additional details to complete the translation.

The most important findings of this large-scale study are as follows:

1. Children who enter an academic preschool at age 2 know more when they start school and learn at a faster rate during school than children who enter at age 3.
2. These advantages of age 2 versus age 3 entry are greater than the advantages for age 3 versus age 4 entry or later.
3. The academic gains achieved by children who enter preschool at age 2 overcome any negative effects of socio-economic level by grade 5. In other words, when children enter academic preschool at age 2, the socio-economic level of the child's family seems to make no difference in the child's later achievement.
4. Providing preschool at age 2 results in better achievement gains than reducing class sizes by 5 pupils in elementary school and is more cost effective.

These findings are amazing! These findings should have made headline news in this country and researchers should begin testing if these results replicate in this country. Placing economically disadvantaged children in academic preschool at the age of 2 could possibly eliminate the insidious achievement differences that seem to always correlate with socio-economic level.

I hear many, especially those who lived through the Great Depression, who dispute the correlation between poverty and low achievement because they do not believe that poverty causes low achievement. A correlation does not mean that poverty causes low achievement, nor does it mean that this correlation is necessary and can never be changed. A likely explanation for the correlation between poverty and low achievement is that, given no unnatural kind of economic context, such as war or a depression, is that people who are knowledgeable, ambitious, reliable, hard-working, and so on, become economically more successful than those who aren't. When these economically successful people become parents, they pass these behaviors and expectations on to their children, which makes their children more successful in school than the children of parents in lower income jobs or on welfare. It is conceivable, that by teaching these behaviors early, at age 2, the correlation between poverty and low achievement could be largely eliminated.

Teaching Reading in Preschool

What should the instruction in an academic preschool look like? We focus on reading in answering this question. Reading is the subject of greatest interest to parents. We've reprinted the *Parents' Guide to Good Reading Instruction* out of the book, *Teach Your Child to Read in 100 Easy Lessons* (sold by ADI, see publications list on page 100). More than one person has indicated to me that reading this guide was the easiest-to-understand explanation of Direct Instruction they had ever seen. Furthermore, the analysis of reading and reading instruction was so logical that it ended the reading debate for them. The design of the reading instruction in the *100 Easy Lessons* book for parents is lifted from *Reading Mastery* and adapted for one-on-one instruction. *Reading Mastery* is the program used for group instruction in schools. This guide explains how reading is taught in both these DI instructional programs.

Some have asked how phonemic awareness is taught in the Direct Instruction programs. Because Direct Instruction has been around so long and phonemic awareness is such a current topic in reading, it seems impossible to some that anything new could be found in something old. However, Zig Engelmann understood the importance of phonemic awareness long ago. He learned about its importance when he studied those preschool children in the 1960's. He wrote about it then, but he didn't call it phonemic awareness. But he did include phonemic awareness instruction in his reading programs, even from the start. Zig explains his analysis of phonemic awareness for us on pages 43-498. He also critiques some of the current phonemic awareness programs for their lack of specificity in connecting directly to the reading task. Zig's reading programs worked in the 1960's because they included thought-

fully designed phonemic awareness instruction, as well as a lot of other important instructional design features. Today people are only beginning to understand the importance of phonemic awareness and its relationship to reading and are perhaps treating phonemic awareness as a panacea for reading problems.

Three research studies with very interesting findings regarding the effects of early reading interventions with preschool children are included. In a descriptive study, Meyer, Stahl, Wardrop, and Linn (pages 56-64) found that time teachers and parents spent reading to children did not correlate with reading achievement. They even found a zero correlation between teachers' reading time and children's listening comprehension in first grade. Time spent doing phonics correlated more highly with reading acquisition. Time is better spent reading *with* children, not *to* children. Children learn to read by being taught to read instead of being read to, and they need to practice reading text in order to enhance their achievement.

Similarly, the Gibbs and Nicholson's study, "When You've Heard It All Before and Still Can't Read" (pages 80-86), conducted an experimental study to determine the effects of several related treatments on reading acquisition. The treatments included (a) pretend reading, (b) hearing stories several times, (c) seeing a story while hearing it several times, all using "predictable" texts. While the children did become better in some treatments at knowing the content of the stories they were working with, transfer measures using new stories produced no effects. The number of story repetitions did not matter. Children who heard stories 6 times did no better than children who heard stories only 2 times. They also found that the effects were no different for either high or low ability groups. Gibbs and Nicholson compare learning to read to learning to drive a car. You don't become a better driver by riding in the car. You usually don't even remember how to find your way to new places if you were the passenger and not the driver.

So if reading to children isn't all that helpful, what should parents do? A study by Ebey and Nelson, "Using Parents as Early Reading Instructors: A Preliminary Investigation" (pages 65-71), evaluated the effectiveness of a using parents to teach reading using *Teach Your Child to Read*. The parents who did the program were successful. The problem was that the lower income parents did not make it very far into the program before they dropped it. It looks like an academic preschool might be the best way to reach those children from lower income families.

What helps children learn to read is teaching them how letters work. In other words, phonics is essential, but not just any ol' phonics, "good" phonics. Bob Dixon (pages 5-9) explains the difference between "good" phonics and phonics that, well, "sucks." His column is extremely informative and important for those advocating phonics to read. Getting everyone to adopt some kind of phonics program is not likely to solve our national reading problems.

Finally, Kerry Hempenstall provides a critique of a very popular reading measurement technique, "Miscue Analysis" (pages 87-93). Miscue analysis, also sometimes called a "running record," has serious validity and reliability problems. Counting words read correctly in one minute, without classifying the errors according to whether they changed the meaning or not, is still the best measure. ◆

"The best thing for being sad," replied Merlyn, beginning to puff and blow, "is to learn something. That is the only thing that never fails. You may grow old and trembling in your anatomies, you may lie awake at night listening to the disorder of your veins, you may miss your only love, you may see the world about you devastated by evil lunatics, or know your honour trampled in the sewers of baser minds. There is only one thing for it then to learn."

Introductory quote from T.H. White, "The Once and Future King," 1939.

A View From Askance

Sometimes, Phonics Sucks

Bob Dixon,
Executive Director, Association for Direct Instruction

All of us who prefer phonics instruction to Whole Story Memorization as an approach to beginning reading are feeling pretty good about the monumental resurgence of interest in phonics instruction. Not me, though. I'm nervous. In my book, a bandwagon is a bandwagon, and jumping on any bandwagon has some inherent dangers. I won't press that metaphor any further. The danger I see lying ahead is the rapid growth in availability of *REALLY BAD* phonics instruction. If that happens, a bunch of "child-centered" professor-types are going to come up with a modified Whole Story approach to beginning reading, and are going to give it a catchy name (creative inventive motivational psycho-cognitive language—CIMPL, pronounced "simple"), and they're going to sell it to the International Reading Association and the National Council of Teachers of English. They won't sell CIMPL on it's merits; they'll sell it by pointing out examples of awful phonics instruction that the average person on the street would quickly recognize as awful.

If phonics is so great, how could phonics instruction be terrible? Simple. Phonics *per se* has nothing to do with instruction. "Phonics" is a very general term, often abused and misused, that refers to the relationship between English orthography and English oral language. At this point, I should define some terms, to help ensure that we're all talking about the same thing.

Phonetics. Don't use this word. It doesn't have much of anything to do with what we teach in school—with the exception of speech pathology. The people who use phonetics are anthropological linguists, who study all the various sounds in different languages. A phoneticist is interested in all the *different* ways you can make the /t/ sound, for example. Each different /t/ sound is called a *phone*. All the different phones that people recognize as /t/ in English are called *allophones* of the *phoneme*, /t/. See? Why would we care about *that*?

Phoneme. Phonemes are what we're interested in. When you change a phoneme in a word, you

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Next Issue of Effective School Practices—

Systems for Change: Increasing School's Capacities to Provide Effective Behavior Support

Guest Editors:

Mack D. Burke and Shanna Hagan Burke

change the word. A phoneme isn't one sound: it's a cluster of allophones that speakers recognize as "one sound" because it makes a difference in word meaning. There is a lot difference between *bad* and *bat*, in terms of meaning, but surprisingly little difference between /d/ and /t/, in terms of sound.

Phonemics. The study of phonemes. (Phonetics is the study of phones. I suppose that if we study telephones, we're studying telephonetics.)

Phonology. This term is even more general that the others: it covers both phonemics and phonetics. We don't need it.

Note that phonemics, phonetics, and phonology aren't synonyms: that's my main point with these words.

Phonics. This is sort of an educational version of phonemics, applied specifically to spelling and reading. We can get away with using phonemics and phonics almost interchangeably, if we're looking for nice anaphoric variation in our writing. But in reality, phonemics doesn't necessarily have anything to do with writing system, or orthography. Phonics, then, can be thought of as the relationships between phonemics and orthography.

Aren't you glad you read this far? The easiest thing to do is use *phonics* most of the time. And, the safest. In a pinch, we can get away with *phonemics*. Forget the rest (if you haven't already).

Here's what I think is the most critical thing for us to know about phonics: it is an *approach to content*, not an approach to *instruction*. It's a good approach to content (reading, mostly, and to some extent, spelling), without question. It's an intrinsically good approach to content because it's no more nor no less than a reflection of reality: sounds are represented by letters in our writing system, and letters can pretty reliable be encoded back into sounds. As an approach to content, phonics doesn't suck.

But how phonics is *taught* is another matter altogether. Phonics can be taught well, or it can be taught so horribly that a Whole Story alternative doesn't look all that bad. That's why I'm nervous. I'm afraid that there's a good chance that I could end up standing on a bandwagon with all sorts of people who promulgate poor phonics instruction—usually clueless to the differences between good and poor instruction. If the history of reading instruction is any indication, we're a lot more likely to see terrible phonics instruction foisted upon children than good phonics instruction.

I've heard Zig Engelmann say that there are dozens of good ways to teach something, but an infinite number of poor ways. Not that I'd want to offend anyone, but the fact is that any idiot can throw together some garbage involving sounds and letters, call it phonics, and sell it. Personally, I'd be willing to call Whole Language a phonics approach to beginning reading. It's just not a very good one, instructionally. Many kids (in absolute numbers) have learned to read from Dick and Jane and a whole host of sight word approaches to reading. I did. I don't think many of those people had incredible memories, though. What I think is that human beings *generalize*, whether we want them to or not. I think a lot of successful whole word learners aren't using whole word as their reading strategy at all. Rather, they infer sound/symbol relationships, generalize upon them, and get most of their early reading success that way. In short, they *discover* phonics on their own (or with help outside of the classroom).

That's one way we could teach phonics very poorly: let students discover the system of sound/symbol correspondences on their own. But in addition, I've seen a lot of phonics instruction that was far more overtly focused upon sound/symbol correspondences, but that was horrific phonics instruction, nonetheless.

Independent Phonics Instruction. This could be my "favorite." When we try to "individualize" something like phonics, we end up with "individualized worksheets" or cards or something similar, wherein students study individually, "at their own pace." None of that sounds too bad until we notice that there isn't any *sound* coming from those worksheets or phonics cards from phonics kits.

Everyone is familiar with this type of stuff. First, kids look at a picture. Remember, a picture is worth a thousand words. And, more to the point, a single picture can represent all sorts of words. The instructions are to circle the word below that ends (or begins) with the same sound as the first sound of the word in the picture. Job one, then, is to *guess* which word the picture is supposed to represent.

When I volunteer at my daughter's school, the volunteers spend half our time trying to figure out pictures such as this. When we do, we cut to the chase: we ask the children, for instance, which word starts with the sound /rr/. But that still looks and smells a lot more like spelling to me: going from the sound to the letter.

And guess what? Once the volunteers get involved, the instruction becomes a whole lot less individualized and a whole lot more like teacher directed instruction. Well, aren't those little duffers in my daughter's school lucky, having about six adults (and a teacher and a student teacher) around to help them with their independent worksheets?

I have an idea that seems revolutionary and profound to me: show the children a letter printed on a page, and ask them what sound that letter makes.

Because all the kids have to know all the sounds for all the letters and letter combinations, regardless of their individual differences, one teacher could manage this task, even with large groups, if necessary.

Let's face it—if you want to teach phonics in beginning reading, you're going to need to have a teacher highly involved in the process. I'm showing my age with this old fashioned point of view, that teachers are superior "delivery systems" in comparison to computers and audio tapes (*Hooked on Phonics* and *The Phonics Game*) and worksheets.

Sounds First; Words Someday. Maybe this is my favorite. In this approach, kids learn sound/symbol correspondences until they're blue in the face, *without a clue about why they're doing so.* In short, this approach doesn't get kids into reading words until they've mastered (or more likely, *covered*) just about every sound/symbol correspondence.

With a small handful of judiciously chosen sound/symbol correspondences, children can start reading words right away. With words, they can read "stories" (of a sort). Reading words helps reinforce sounds, and reinforced sounds help with reading words, and on and on. This isn't so different from rotten math facts instruction, wherein kids learn billions of facts before they get the chance to use the knowledge anywhere. Kids don't have to know very many facts before they can start working on verbal problems.

Bandwagons foster extremes. We've got the one extreme in which little duffers *begin at the end* with good literature, and the other extreme in which some flounder in a sea of sound/symbol correspondences until they get identified as having some sort of learning problem. Either way, the kids take it in the shorts.

No Individual Sounds. Hmmm. I wonder if this is my favorite. This is a good example of how a little bit of knowledge about linguistics can go a long way—backward. (Now you'll see why I got into that phonemic/phonetic business before.) There is a quasi-linguistic argument that goes like this: the *exact* sound of any phoneme in a given word is determined in large part by what goes in front of it and behind it, if anything. That is, a given phoneme is expressed as a lot of different *phones* in different words, surrounded by different sounds. That's true, no doubt about it. In fact, sometimes, we have the option to use one phone or another in the same word. You can pronounce a simple word like *cat*, for example, in either of two common ways. In the first, you stop the /t/ sound before releasing any air. (Say *cat* into your hand. If you don't feel any air escaping from you're mouth, you're saying an unreleased /t/.) In the other, you go ahead and release air (and, maybe, a little spray of saliva). That's two very distinct sounds (phones) that would appear to be quite different on a sound spectrograph, but that native speakers of English readily recognize as "one sound"—one phoneme, really.

So if we have children say sounds in isolation, the argument goes, the isolated sounds will be distorted. They won't really be "distorted." They'll just come out a little differently than they would when they're in a word. The theory is that kids will never make the connection between the individual sounds and those same sounds in words. What a crock! First, that is an empirical question that's been answered thousands upon thousands of times—kids do make the connection between sounds said in isolation and those same phonemes said in words. They just do. End of theory. But even theoretically, that argument doesn't make sense. Someone could know a lot about linguistics and next to nothing about human learning. Human beings generalize, whether we want them to or not. Humans couldn't possibly recognize different sounds (allophones) as belonging to the same phoneme family at all if this weren't the case.

Semi-discovery Phonics. This probably isn't my favorite. It relates to the last point about individual sounds. Some approaches to phonics have children read lists of words such as: cat, mat, rat, bat. The kids are supposed to be very analytical about this, figuring out a lot of stuff on their own. It might not *look* like discovery learning to adults who already know the stuff the kids are supposed to figure out, and it's not as bad as discovering phonics from reading Whole Good Literature Stories, but it's pretty iffy, nonetheless. This is one of those tasks that can be a very good task or a pretty bad one, depending on what else is going on. Programs that eschew having children (and teachers) say individual sounds often use this list approach as the sole strategy for learning sound/symbol correspondences. Those programs suck.

Confusing Reading and Spelling. Okay, you just knew I'd land on my favorite. And this is without question my favorite.

There is no monolithic system of sound/symbol correspondences in English that applies equally well to reading and spelling. The claim that after using some phonics program sold over the radio, children will be able to read and spell just about any word, is nuts at best, and completely irresponsible at worst. There is phonics for reading, and a very different system of phonics for spelling. Reading is decoding;

spelling is encoding. The latter goes from letters to sounds; the former from sounds to letter. Beginning reading is pretty regular in terms of sound/symbol correspondences (with the notable exception of irregular sight words), but spelling is quite a bit less regular.

Take the long "e" sound as an example. (If we want to play amateur linguist, we could call that a "free e" sound. That really helps.) First, reading. What letter or letters or pattern would cause you to say the long-e sound when you see them?

ee – as in seed
ea – as in speak (but this combination causes some problems)
ie – brief
ei – receive
y – study

And so forth. Interestingly, you don't run across many words with a pattern of e-consonant-e, like you would with other vowels (bake, rope, fine, puke). Anyway, if we've learned to say the long-e sound when we see "ee." we're going to do okay. Even the problems with "ea" are surmountable, with good sequencing. A bet on long-e with "ie" is a pretty safe bet.

Now for spelling. The question is: how do you spell the long-e sound? The answer is: lots of ways. And therein lies the problem. With the long-e sound, phonics for spelling and phonics for reading are worlds apart. As it happens, there is just enough correspondence between reading and spelling phonics—enough "reversability"—to reinforce the very mistaken notion that the two system are actually just one.

For instance, it's pretty safe to tell readers to say the long-e sound when then see the letter "y" at the end of a two-syllable word. (It's safe, anyway, if you can assume that these children who are learning their sounds know that a word has two syllables before they've even decoded it.) And, it's pretty safe to tell children to spell long-e with a "y" if it's at the end of a two-syllable word. (Personally, I wouldn't spend two precious seconds of instructional time talking to kids about syllables at all. But, that's another article.)

What astounds me the most is that I frequently see spelling "rules" presented in reading programs as reading rules, and way more frequently, reading rules passed off as spelling rules in spelling programs (and experimental studies on spelling). The inevitable result is a ton of kids who are confused out of their minds, but who don't know enough to blame someone other than themselves. If the author of a spelling program doesn't know the difference between reading and spelling, then it's not likely that lots of kids are going to figure that out on their own.

Many years ago, long before I added five inches to the size of my waist, I was asked—too late—to consult on a phonics kit under development. I completely ignored the fact that the kit didn't produce any sounds, and that the pictures were highly ambiguous, and decided instead to just make a list of all the places where spelling and reading were intermingled in a way that couldn't have been more confusing if confusion had been the goal. The list was long. I was thanked, then replaced by another consultant who apparently was a little less compulsive about such things.

If I haven't made my point by now, I suppose I never will. Nonetheless, I'll write just a bit more, undaunted. Have you noticed all the Whole Language people running around, proclaiming that they were *never* opposed to phonics instruction? If that isn't *chutzpa*, I don't know what is. I could spend a lot of time digging out old quotes about phonics from Whole Language leaders, and even more time digging out old IRA and NCTE conference programs, which prominently featured anti-phonics sessions in all state conferences and internationally, as well. But why bother? What I think we can depend upon is that as a means to simple survival, lots of "student-centered" learning people are climbing onto a phonics bandwagon. And that scares me. That *really* scares me. Just try to imagine what "student-centered phonics instruction" is going to look like. "Well, children, what word sound do you think you'd be interested in learning today? None? Well, okay. I have an idea. Let's use words today, all day, when we talk. And remember, all those words have sounds in them." (I don't mean to offend anyone. I think using words in oral language all day is a good idea.)

Now, don't write in and accuse me of exaggerating. I get e-mail almost every day in which someone describes a "reading" or "spelling" activity that couldn't possibly, in a million years, lead to improved achievement in reading or spelling. Between those e-mail messages and road rage, you have to think the whole world is falling apart, sometimes.

Just when you were thinking I'd never stop writing, I'm just about to do so. But one more thing. Have you ever heard of someone saying that all kids are different, and that they learn in different ways, and that phonics should be just one of several approaches to beginning reading that can accommodate all those interesting differences among chil-

dren? Have you heard that more than two thousand times or less? If less, do you sleep a lot?

How is it that we educators can make the most mundane statements about the most obvious facts, and do so as if we were being so darn profound that we belong in the Mensa Hall of Fame? All kids are different. Oh, really? Gosh, I hadn't ever noticed that before. Up until now, I thought they were all the same. I thought that's why we put name tags on the desks of all first graders, so we could tell them apart. Oh, guess what? All snowflakes are different, too.

But every snowflake has something in common with every other snowflake, too. And that's the important point about children: their differences, and their similarities. Phonics has nothing to do with differences among children, or for that matter, similarities. Phonics just describes relationships that exist between oral English and English orthography. *Those relationships are completely independent of differences among children.* If I were trying to teach a tree in my yard how to read, I'd have to acquiesce to relationships between oral English and orthography, in spite of the fact that the tree differs from any child far more than any child differs from other children.

If you've ever read Engelmann and Carnine's *Theory of Instruction*, you'd know just what the "stimulus locus analysis" is all about. Realities of instructional *content* aren't affected in the least by differences among children. It's utter nonsense to say I'm going to modify the realities of content to accommodate differences among learners. What??? Let's say a bunch of kids try subtracting the bottom number from the top. Should we just tell them to not worry about it? Change the *content*? Change *mathematics*? It's been done, but it always leads children down a destructive path.

Do kids really learn in different ways? Yes and no. The question isn't a very good one to begin with. I'd rather ask, in what ways do all children learn in a similar fashion, and in what ways do they learn differently? Here's something that varies *considerably* among children: plain old ordinary memory. (I reject out of hand, for the record, that kids don't have to remember anything in order to learn.) Take something as simple as what sound to say when you see the letter "r." You can give some kids that information and never have to repeat it. You can repeat that with some kids for what seems like an eternity, and they still seem to have trouble. Do I favor accommodating that difference? You bet I do, knowing full well just how difficult that can be.

On the other hand, *all children—every single child in the world*—generalizes upon the same fundamental bases: similarities and differences across examples. If there is some other basis for generalization, I've never heard of it, haven't read about it, and can't imagine it. Is there any logical possibility of classifying things upon some basis other that similarities shared by all members of the class? Every letter "r" shares something with every other letter "r," regardless of the size or font or color of one another. When you find an "r" that doesn't, you've found something that isn't actually an "r" at all.

Phonics isn't one of many tricks teachers can pull from their bags in order to help beginning readers learn to read. It's not something that's appropriate for some kids and not others. It's simply not true that some kids can't learn to read with phonics, or can learn to read better some other way. Such thinking is the sort of wishy-washy baloney we're likely to find on a phonics bandwagon.

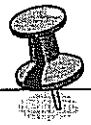
In my view, the war between phonics and Whole Language is all but over. Many from the other side are carrying our flag now. Quite a few, to be sure, are snipers holed up in bunkers here and there. For phonics afficionados, there is simply a more pressing and equally dangerous war on the horizon, the war in which good phonics instruction is likely to be way outnumbered against the forces of awful phonics instruction. This is the worst possible time to become complacent. This is the worst possible time to find self-satisfaction from the knowledge that phonics is beginning to appear everywhere around us.

And it's the best possible time to turn all our attention to the differences between good and bad phonics instruction. It's the best possible time to recognize a plain truth that could have devastating effects on children: sometimes, phonics sucks. ◆

◆ ◆ ◆

Letters

The following messages were posted on the Direct Instruction internet listserve (public discussion group). To subscribe to this free email service, see page 63.



I teach sixth and seventh grade students with Severe Disorders of Language. Most of my students are speaking English as their second language in addition to a myriad of other issues (ie.: Tourette's, ADHD, schizophrenia...).

This is my second year using CMC Levels C and D. I am soooooooo impressed. My returning seventh graders who were in Level C last year tested right into Level D this year and have moved on without missing a beat. I have shown the program to General Education math teachers and they are very impressed with what is covered as well as how well my students are able to do.

For the first time in 10 years of teaching in a self-contained classroom I am feeling good about my ability to teach math appropriately to my students. I love teaching math now and the parents of my students tell me that their kids are saying that math is their favorite subject. I am thinking that it is because they KNOW that they are learning. After all, they get to show me everyday how much they know.

Thanks for letting me extoll the virtues yet again!

Randi Saulter
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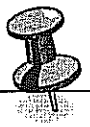

I teach 4th, 5th, and 6th grade children with emotional and behavioral disabilities in a self-contained program. I use CMC Level D for my 5th graders and they and I really like it. CMC is the only math curriculum I know that so forcefully encourages focused, on-task behavior, which is what my kids need. They are successful at following directions, and they are learning useful strategies in math. I look forward to teaching it, and they look forward to learning it.

W. Corry Larson, Ph.D.
clarson@alltel.net

Today we substituted in second grade—doing RM II, lesson 15. This is about 12 days of DI for these kids. Responding to our errors, they said...

1. "Sit on the chair."
   "Miss S sits on the chair."
   "Not on the floor here?" (MK)
   "No, we gotta all see."

2. "You gotta get us ALL to say it."

3. "We get to read a whole thing (points to a column of words) by ourself."
   Three other kids lean in and touch the columns.
   "Me and then JT and then N and then..."

4. "Hold the book up here." (higher)
   "Not on your knee."

5. "JT said it wrong. Make him do it again."
   "He said 'Oh.' It's 'Ah.'"
   "He's gotta do it again."
   JT is smiling and clearly waiting for us to give him another turn. He's not embarrassed. He belts out the right sounds, smiling at us.

6. "You ain't pointin' at the word."

7. "That's not the sentence we're on." (referring to the story book)

8. "Sit up, N (a kid), you're slowin' us down."

9. "We can't do this Take Home!"
   "Yeah, we didn't finish the story!!"
   "I can't answer this question. It's later. We didn't finish."

The motif is clear.
Obviously they know the sequence.
Following the sequence is almost a moral obligation.
They want to get it right and do it all.
(You had to see the faces and hear the tones of voice. As if "What, are you a moron? That's not how it goes!" Or, "You're nice, but Miss S knows how to do this better.")

M "Say it fast—Moron" K (Martin Kozloff)
and Frances Bessellieu

Recently, I spent several days observing a child in a four year-old, public, preschool class. The biggest impression I came away with from this class had nothing to do with the child I had to watch, but rather how little was accomplished throughout the day.

The first thing the kids do after they come in and put up their coats and book bags is calendar. The children sit on the floor and face the teacher as she goes through the various calendar activities—month, day of the week, date, shape pattern, weather. Then they turn to another section of the room and the teacher guides them through a theme related activity. In this case the latest theme was the food groups. She showed the children pictures of some of the foods in the various groups and the food pyramid. Then she played what I call the "Hide the Food" game. She brought out a collection of various junk food, put them in a line on a table and had the class identify them. (chips, crackers, Oreo's, etc.) She then hid the food from view with a piece of cardboard and picked one of the foods out to hide under a hat. The children had to try to remember what was missing. I guess the point of this exercise was to improve memory skills.

After that, the class was allowed to go to centers—areas around the room where different activities were offered. There was an art center, a housekeeping center, a play-doh center, a puzzle/game center, a block center and a big, Little Tikes Castle center. The only center that I could see that was even vaguely academically oriented was the puzzle/game center. The children are allowed to pick out whatever center they want to do and do it for as long as they want to do it. The little fellow I was watching never goes anywhere but the play-doh center.

As the kids do centers, the teacher and her assistant do small group activities with a few of the children at a time; usually an art and/or cooking activity related to the theme. After centers comes lunch time. After lunch comes play time—either outside or in the gym. After play time it's back to the room to do more centers—same routine as in the morning. Some days they go to music after gym instead.

At the end of the day, they get their coats and book bags ready, then sit on the floor and do a group activity for about 20 min until the bus gets there. The principal has encouraged the teacher to do some phonemic awareness exercises during this time and she is trying them, although she feels they are not very appropriate for preschool. (Mostly listening to alliterative songs and listening to and identifying environmental sounds.)

Preschool runs from 10:00 a.m. to 1:00 p.m. Maybe I'm wrong but to me it seems that the overwhelming bulk of the day is spent in either in play or eating! This is a Head-Start type class—made up primarily of children from low SES backgrounds or considered "at-risk" for one reason or another. Doesn't this group historically suffer from low academic/readiness skills when they enter Kindergarten? Shouldn't they be receiving more real instruction in the areas they are weak in?

The teacher of this class is a friend of mine. She is an intelligent, caring professional who truly believes that what she does in her class is the best way to teach these young children. After all, I am sure that this is what she was taught in her college education classes as being "developmentally appropriate practice" and "what the research shows about how kids learn."

Mary Ellen Huss
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I used 100 Easy Lessons to teach both of our children to read, this when they were 4 years of age. The "Teach your child to read in 100 easy lessons" worked very well, with the children learning to read quite complicated material by the end of that time. (I spent more than a hundred days going through the book, by the way, and it still worked very well.)

I'm a psychologist in private practice in Portland, Oregon, and I recommend the book frequently to parents of young children (and especially to those parents who are concerned about the school system not focusing on phonics instruction).

Terrific book! and I am sure that the rest of the supplemental material will be quite helpful as well. Great for your interest in the book! (I've always thought that nanny schools, etc., should also teach using that book. And maybe AARP would be interested in it as well...)

Yours,
Caleb Burns
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Editor's note: The following letters were submitted to *Education Week* in response to a letter by David P. Weikert, "High/Scope Study Raises Direct Instruction Questions," in the July 8, 1998 issue.

To the Editor:

David P. Weikart's letter to the editor asserts claims in favor of his own curriculum and against Direct Instruction. However, fatal flaws in Mr.Weikart's allegedly "rigorous High/Scope study" leave no basis for seriously entertaining his oft-repeated claims.

Judging by his letter to the Editor and recent report (cited below), Mr.Weikart must believe that readers of *Education Week* have time to examine, once again, his increasingly predictable litany of statistics and self-serving conclusions from research that is as questionable today as when first conceived. However, Mr. Weikart's letter and recent report are not without value; they provide fine examples of numerous fallacies of irrelevance—ignoratio elenchi (irrelevant conclusion); post hoc, ergo propter hoc (after this, therefore because of this); cum hoc, ergo propter hoc (with this, therefore because of this); hasty generalization; argumentum ad populum (appeal to the people); argumentum ad hominem(against the man; abusive variety); and argumentum ad ignorantium (argumentfrom ignorance).

One wonders if Mr. Weikart considers readers to be so naive at evaluating research that they are not stunned by weaknesses in design, measures, data collection, reliability checks, control and inference that plague his "rigorous" research. (See Gersten, *in Early Childhood Research Quarterly,1*, 1986, 293-302.) Readers of *Education Week* are no doubt also familiar with Mr. Weikart's recent article with L.J. Schweinhart, in *Early Childhood Research Quarterly, 12*, 1997, 117-143. This article, which purports to be part of a longitudinal study of curricular outcomes, serves equally well as documentary evidence of longitudinal and cumulative invalidity in Mr.Weikart's research.

For example, it is hard to imagine that anyone would not be amazed by the middle paragraph on page 120 of this article—which begins with an unbelievable example of yet another fallacy—begging the question. The authors ask, "How could the High/Scope or Nursery School preschool curriculums improve adult success and social responsibility better than the Direct Instruction preschool curriculum?" (The astute reader asks, "Who

says they did?") This line is followed by the lamest and most self-interested explanation of alleged findings we have ever read. "A parsimonious hypothesis is that, compared to the Direct Instruction curriculum, the High/Scope and Nursery School curriculums improve children's positive dispositions that lead to later success and away from later misconduct." ("Positive dispositions" as an explanation of 20 years of psychosocial development? And we were afraid Mr. Weikart was going to serve up something fanciful, or perhaps pure tautology.)

Concerning this recent article, does Mr. Weikart dream that readers are not absolutely baffled at his conclusions? Does he imagine readers do not demand answers to questions about the validity of his research? For example,

1. Why did Mr. Weikart not collect extensive information from follow-up study participants on what their lives had been like since their preschool days—information on quality of schooling, the differential probabilities of schools labeling children as having disabilities, family histories (abuse, neglect, alcoholism), neighborhood stability, church participation, and health records? After all, these individuals had been living in poverty and racial discrimination for 12 to 20 years or so. Given his tiny samples (fewer than 20 participants in each group), between-group differences in the lives of only a few persons would account for the alleged differences in percentages of antisocial and other behavior. Indeed, Mr. Weikart states, "...some group differences in long-term outcomes may be due to differences in background characteristics rather than curricular experience" (p. 140). (The astute reader replies, "SOME group differences is very likely ALL differences." Unlike other researchers have done when faced with complex phenomena, Mr. Weikart did not test that rival hypothesis.)

2. Does Mr. Weikart expect us seriously to entertain the proposition that a mere 20 minutes a day of Direct Instruction lessons—in which teachers and students, working in small groups characterized by high rates of teacher praise and student enthusiasm, and in which teachers ask "What word?" or "Say it with me" or "Say it fast"—can have any conceivable causal connection to antisocial behavior one and two decades later?

3. In his recent article, Mr. Weikart refers to a "...long-time, well-known African-American resident of Ypsilanti (who) found and interviewed study participants at ages 15 and 23." Who is this apparently lone interviewer who "had served as a high school coach and knew many of them" (Schweinhart & Weikart, 1997, p. 126)? And how "rigorous" is research when this one person—who appears to be just the opposite of an objective observer—collects all of the interview data?

Readers of *Education Week* must be amazed that Mr. Weikart pits his research with very small samples against Project Follow Through (75,000 children in170 communities)—the results of which showed, again and again, that Direct Instruction was superior, far superior, to Mr. Weikart's High/Scope model in teaching basic skills, cognitive-conceptual skills, and (what may be terribly ironic for Mr. Weikart in view of his allegedly student-centered curriculum), superiority in fostering students' internal locus of control and satisfaction with their instruction. Mr. Weikart does not address the many follow-up studies of students who received Direct Instruction—studies which show that these students continue to surpass their peers and (as judged by completion of high school and acceptance into college) appear to be even more fit for life in adult social institutions.

Readers of *Education Week* are an understanding sort. We care. We sympathize. But our patience is not infinite. On behalf of America's children, we hope Mr. Weikart will invest more of his time and abundant talents improving High/Scope, and less time trying (unconvincingly) to detract from the demonstrably and reliably superior Direct Instruction.

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Building Brains

Albert Shanker

This article, which first appeared in the New York Times *(Nov. 3, 1996) as the "Where We Stand" column, is reprinted by permission of the American Federation of Teachers.*

PERSPECTIVES

Over the past several years, the Carnegie Corporation of New York has brought out a series of reports that discuss how we currently educate our children—and how we ought to do it. The latest report, "Years of Promise: A Comprehensive Learning Strategy for America's Children," builds on an earlier report, "Starting Points," in emphasizing the critical importance of the early years in developing children's capacity for learning.

We used to think that people were born with a fixed amount of brain power. Now we know that the right kind of stimulation in the early years dramatically affects a child's intellectual capacity. "Starting Points" described studies that led scientists to conclude that young children have intellectual potential they will lose unless they use it. And in his book, *The Schools We Need* (Doubleday, 1996), E.D. Hirsch, Jr. connects neuroscientists' discoveries about the way the human brain develops in early childhood with the importance of excellent preschools: "Children's brains can make far more synaptic connections than can adults'. Shortly after birth, the brain makes connections at an incredible pace. As puberty approaches, the numbers taper off." One researcher compares the process of development to the work of the sculptor: "We chisel our brain from the larger stone, so to speak." And as Hirsch observes, the "greatest chiseling" takes place in the early years.

We used to think that people were born with a fixed amount of brain power. Now we know that the right kind of stimulation in the early years dramatically affects a child's intellectual capacity.

What do these insights about the brain's development mean in terms of what a preschool program should be like? According to "Years of Promise," children should be laying the foundation for the kinds of things they will be expected to learn when they enter school: "These include the comprehension and use of new words; a basic understanding of the relationship of print to spoken language; the understanding of numerical concepts; [and] the ability to draw representative symbols and pictures...." Hirsch goes further. Citing the example of the French preschools, the *ecoles maternelles*, he asserts that children can learn content in preschool and should be encouraged by the school program to do that. But as "Years of Promise" points out, a great number of our preschools have no academic program at all. They are staffed by temporary employees with no professional training. And of course most preschools have a high turnover rate. These limitations explain why Head Start programs did so little good in the long run. The lack of academic focus in most preschool programs is partly a matter of money. "Years of Promise" estimates that even a college-trained preschool teacher starts at about $5,000 a year less than an elementary school teacher. Preschool teachers must be willing to subsidize their students' education by accepting poor pay, and trained professionals are, understandably, often unwilling to do that. However, there are also philosophical reasons for the weak academic content of most U.S. preschools, as Hirsch points out in *The Schools We Need*.

There are no developmental reasons why children should not be encouraged to learn content when they are in preschool. ...Use it or lose it.

Many of the people who run preschools would not favor introducing academic content even if they could hire top-notch teachers. In this, they are following progressive educators who believe that it is wrong to push children. As Hirsch reminds us, progressives say that children should be allowed to learn "naturally," and if they are not ready to learn, why, let them play. This, Hirsch says, is ideology rather than psychology. There are no developmental reasons why children should not be encouraged

to learn content when they are in preschool. Quite the contrary, according to a Yale neurobiologist whom Hirsch quotes: "It's crazy...Americans think kids should not be asked to do difficult things with their brains while they are young. 'Let them play; they'll study at the university.' The problem is, if you don't train them early, it's much harder." Use it or lose it.

The implications of this casual attitude towards childhood learning are much more serious for poor, minority children than for youngsters who come from middle-class homes where their parents can afford to offer them all kinds of stimulation. Being baby-sat does not help poor minority children who need to catch up so they can start school ready to learn. On the other hand, Hirsch cites studies showing that French preschools, with their strong academic content, are successful in reducing the achievement gap between advantaged and disadvantaged children.

There is no question that early learning is important for children's intellectual development. The question is, are Americans serious about providing it? Working mothers want their children to be looked after in safe and pleasant places. But American taxpayers are not convinced that most of these places are educational. When they hear about using public funds to pay for preschools, they think they are being asked to subsidize babysitting. If we are convinced that preschools are important for the development of young children—and I think they are—we need to begin rethinking our ideas about preschool education. Then maybe we can convince the public. ◆

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Response to "The High/Scope Preschool Curriculum Comparison Study Through Age 23"

Siegfried Engelmann, Director
National Institute for Direct Instruction
University of Oregon

Based on the follow up on three groups of children who had different preschool experiences (Direct Instruction, High/Scope and Nursery School), Schweinhart and Weikart suggest that Direct Instruction causes antisocial behavior. The follow-up, which occurred 20 years after the preschool exposure, is presented as a monograph, *Lasting Differences* (1997), and as an article in *Early Childhood Research Quarterly*, "The High/Scope Preschool Curriculum Comparison Study Through Age 23" (1997).

Most of the data that Weikart and Schweinhart present may be rejected out of hand because it is non-significant, and the only major finding that has not been presented in earlier High/Scope reports is the arrest data, which the authors declare shows that DI children had a significantly greater number of felony arrests than children in the other curriculum groups. The authors clearly implicate the preschool instructional practices as the cause of this difference. In the monograph, they write, "The increase in felony arrests might well be considered a harmful effect of providing a Direct Instruction program for young children living in poverty" (p. 66).

The problems with this conclusion are revealed only through some detective work because of the awkward way the data are presented. There were originally 68 children in the entire study —23 in DI, 22 in High/Scope, and 23 in Nursery school. Instead of presenting tables with actual numbers of children, Weikart and Schweinhart convert them to percent values, which they sometimes add. Neither practice is reasonable. Adding percents sometimes yields a value that is impossible because it is not the correct percent for the actual number of subjects involved in the computation. Also, because the data tables do not indicate the number of subjects in the three curriculum models (only the total number for all), the only way to determine the actual number in each group is through inferences based on the percent values presented. The apparent reason for the percents is to make the study seem large, involving many subjects, when in fact the High/Scope sample is smaller than that of the other models and frequently has 14 or fewer subjects.

The authors attempt to establish statistically significant differences between the preschool programs. The procedures the authors use are probably inappropriate because the groups are small, and they are not well matched in number of subjects, sex, mobility, and differences in home environments. However, the data presentation has problems far more basic than those of statistical methods. The most severe problems have to do with elementary issues, such as the number of subjects actually involved in the comparison.

For the felony-arrest data, the number of subjects becomes a central issue. Of the 68 original preschool participants, 52 were reported to have been interviewed at age 23. In the monograph version of the table that deals with arrest records (Table 12, p. 53) the reported *N* is 68, which means that the table ostensibly reports on every subject who went through the preschool. This number assumes that the authors have data on every subject—data on whether or not each subject is still alive, data on where each resides, and data on the subject's arrest record.

In the *Early Childhood Research Quarterly* article, the reported *N* for the arrest-data table is 62, not 68 (Table 6, p. 133). The revised *N* is an admission that there are at least 6 subjects for which there is no valid arrest data.

A problem with these two tables is that both of them present some of the same percentage values, which means that not all the values are possible. If done correctly, the percentages for the subgroups would change as the *N*s change. However, the two arrest tables present the same per-capita felony-arrest numbers for all three curriculum groups, and the same percentages for 1-2 arrests and 3-4 arrests. The percentages for the DI group in both tables are 22% and 17%. Both these percentages are impossible for a group of 21 subjects, which would be the size of the DI group if the total *N* were 62. Likewise, the Nursery School group has 4% and 13%. Both these

numbers are impossible with an *N* of 22, which would be the size of the group in the *Early Childhood Research Quarterly* report.

The total *N* for the study is further complicated by the authors' description of which subjects were interviewed at age 23. The monograph's Table 3 (p. 23), which presents demographic data on the subjects, indicates that 52 subjects were interviewed. It even indicates where they were interviewed, with 75 percent of them (39 subjects) interviewed at home and the remainder (13 subjects) accounted for in a footnote (b). One irregularity with this table, however, is that there is no information about the whereabouts of three of these interviewed subjects. For the heading in the table *Current Home*, the *N* is indicated as 49, which means that the location of three of the interviewed subjects was unknown, even though there was a record of where the interview took place.

How is that possible? If the subjects were interviewed, how could their "home" be unknown — particularly if the classification will either be Ypsilanti, the county, the state, or outside Michigan? It seems impossible. Even if, for some incredible reason, the data on where these three subjects resided were lost, but all the other data on them were retained, the *N* for *Current Home* would still be 52, and the three orphans would be listed under a heading, *address unknown*. They would have been "interviewed," and therefore counted as interviewed subjects, not discarded from the group of interviewed subjects. The background-information table in the *Early Childhood Research Quarterly*, (Table 2, p. 125) also indicates that 52 subjects were interviewed, but the "home" was identified for 50 subjects, not 49. So apparently one subject was found. (A note at the bottom of the table indicates that the *N* for the table is 68 unless otherwise indicated. Yet, the headings for which no deviation is indicated have an *N* of 52).

Another irregularity with the three interviewed subjects whose home is unknown is that all of them were members of the Nursery-School group. If, in fact, only 49 subjects were interviewed, the nursery school group would not have 19 interviewed subjects, as claimed, but 16. This reduction in number attenuates the apparent "statistical" effectiveness of this group.

Some of the assertions the authors make clearly suggest that the total number interviewed was 49 and not 50 or 52. For instance, in the *Early Childhood Research Quarterly* account, the authors state, "The 19 study participants who were not interviewed were retained in the arrest records sample" (p. 127). For now, we will not consider the soundness of this procedure, merely the number of subjects not interviewed —19. If there were 19 subjects who were not interviewed and 52 who were interviewed, the total *N* for the study would not be 68, but 71. This total is impossible because previous records indicate that the total *N* for the group was 68. The only other conclusion is that the reported number of subjects interviewed (52) is false. If 19 subjects were not interviewed, the correct *N* for interviewed subjects is 49.

As noted above, the reported *N* for felony-arrest data in the monograph is 68, although the *Early Childhood Research Quarterly* account indicates that the *N* is 62. The argument that the authors presented for determining both *N*s for felonies is tenuous. In the Monograph, they argue, "Unlike missing school records, which simply count as missing data, missing arrest records signify the absence of arrests, giving a particular study participant a score of 0 for *number of arrests*" (p. 31). This conclusion follows only if the arrest records for all the subjects are thoroughly searched. In fact, Weikart and Schweinhart searched only the records for Michigan, not those for other states. Yet, they report that they did not interview 19 subjects and did not have the address for these 19. Therefore, it seems unlikely that they know whether these subjects live in Michigan or even whether all of them are still alive. The possibilities are that they lived at least some of their adult life in Michigan or none of it in Michigan. In the former case, they could have committed some adult crimes in Michigan. For the latter, they could have committed no adult crimes in Michigan. The authors' conclusion, however, is that if there is no knowledge of where they live, they are assigned to live in Michigan.

In the *Early Childhood Research Quarterly* article, the authors present a somewhat moderated argument for establishing the total *N* of 62. They dropped 6 subjects from the group that had been interviewed because these subjects did not live in Michigan. The authors observe that "...study participants who were interviewed at age 23 in a state other than Michigan had a reduced chance of being arrested in Michigan....So...6 cases...were dropped from the sample" (p. 127).

This correction is reasonable, but it deals only with subjects who had been interviewed and who lived out of state. What about the 19 subjects who had not been interviewed and whose location was unknown? The authors argue that these subjects should be retained. Their rationale is that a search of Michigan state records resulted in percentages that are similar to percentages for the subjects whose

location is known. The authors state, "Of the study participants not interviewed, 49% (8 of 19) had adult arrest records, only slightly less than the 56% (24 of 43) of the interviewed Michigan residents who had adult arrest records" (p. 127).

The argument rephrased goes something like this. "We don't know where 19 subjects reside. We have information that 8 of them committed crimes in Michigan; therefore, all of them reside in Michigan and all of the crimes they ever committed occurred in Michigan." This argument is not logically sound or even reasonable. The idea that the percentages of arrests this group achieved in Michigan is evidence that all the subjects reside in Michigan is conjecture, not fact. (Note that the authors tacitly admit that the number of subjects interviewed was only 49, not 52. They observe that there were 43 interviewed Michigan residents who had adult arrest records. If we add in the six cases interviewed in a state other than Michigan, the total for those interviewed is 49.)

A more serious problem with the arrest records for the 19 subjects not interviewed is that again, the numbers are inconsistent. The authors state that 8 of the 19 subjects not interviewed had arrest records and that the resulting percentage was 49%. In the first place the percentage for 8/19 is not 49%, but 42%. So the percentage is not as close to 56% as the authors suggest. In the second place, both percentages are contradicted by the authors' description of the resulting *N*s for the three groups. The authors indicate that "1 of 4 Direct Instruction group members, 3 of 8 High/Scope group members, and 1 of 7 Nursery School members had adult arrest records" (p. 127). The description accounts for all 19 members, but it indicates that only 5 of them had adult arrest records. The resulting percentage of the 19 subjects who had adult records in Michigan was therefore not 49% or 42%, but 26%, which means that the authors' argument that the percentage of arrests for the missing 19 was the same as that for the interviewed sample is spurious. The arrest percentage for the 19 is less than half of that for the interviewed subjects, which means that if percentages are used as a basis for determining the number of the subjects assigned to live in Michigan, less than half of the subjects not interviewed live in Michigan.

A different comparison between the Michigan subsample and the entire group appears in the monograph (p. 55). Here, the authors refer to felony arrests, not to adult arrests, and they present data that purportedly demonstrates that the rate of felony arrests is substantially the same for the Michigan subset as it is for the entire group. The data actually shows a much higher rate for Michigan residents than for the others, but the numbers presented for the Nursery School group (NS) are particularly revealing. The average felony arrests for the Michigan subsample of NS is reported at 0.5, and for the entire NS group it is 0.3, which is mathematically impossible. There were 15 subjects in the Michigan subsample and (according to the authors' reckoning) 23 in the entire sample. 0.5 of 15 is 8 subjects, but 0.3 of 23 is only 7. So the authors would have us believe that part of the group had 8 felony arrests, but the entire group had only 7. Even if we assume that this is simply a rounding error and that the Michigan group had only 7 arrests, we would be faced with the obvious contradiction that the Michigan sample had a much higher rate of arrests than the non-Michigan sample —7/15 versus 0/7. A skeptic might conclude that there has been manipulation of this data.

So what is the proper total *N* and the *N*s for the three subgroups' arrest data? If we remove the 19 not interviewed subjects and remove the subjects who were interviewed in a state other than Michigan, the total number is 43. If we add in those 5 subjects whose addresses are not known but who committed crimes in Michigan, the *N* increases to 48. This may be the most reasonable number. It represents the group for which there is information about crimes in Michigan.

With a total *N* of 48, the *N*s for the various subgroups would be: 18 for DI, 14 for H/S and 16 for NS. When these numbers are used, the statistically significant difference for felony arrests disappears.

Even if we disregard all these manipulations, however, the case that Weikart and Schweinhart present does not show that there were any statistically significant differences on **convictions for felonies.** The "significant" data that the authors have advertised as showing that DI promotes crime is based on "arrest" data, not on data about whether the subjects were judged to be guilty. The data reported by the authors on convictions shows that whether the total *N* is 68 or 62, there is no statistically significant difference between the groups on convictions for felonies. So even if the authors had the benefit of great doubt about whether there were significant differences in arrests, the data would not support the authors' assertions that DI causes more crime, only that it results in more arrests. If the authors are to make assertions about the rate at which crimes are committed, (rather than the rate at which arrests are made) the authors would need to refer to conviction data, which is something they do not always do. For instance, in a letter to the editor of the *National Review*, Schweinhart wrote, "... those

who received Direct Instruction ...committed three times as many felonies...." Schweinhart's numbers are wrong and his judgment of guilt is premature.

One factor that the authors gloss over in their analysis of data is the mobility of the subjects. The goal in conducting a comparison is to be able to make statements about what caused outcome differences. Therefore, the groups that are compared should have matched experiences —except for one. The extent to which there is more than one great difference in the composition or experiences of the group is the extent to which it is not possible for us to determine which of the differences or which combination of differences accounted for the differences in outcome.

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The groups in the High/Scope comparison differed in preschool experience; however, they also differed in other ways. Their gender balance was greatly different, with the High/Scope group having nearly two thirds of its participants female. The high-school experiences were greatly different. The percentages that attended Ypsilanti High School were 83% for DI, 69% for H/S and 39% for NS. The percentages that lived in Ypsilanti at age 23 were significantly different: 84% for DI, 64% for H/S and 44% for NS. Finally, the number of confirmed subjects within each group at age 23 is different, with DI having 18, H/S having only 14, and NS having 16.

The authors have a curious way of dealing with the possibility that mobility could have any effect on the outcomes. They don't address it. Instead, they make the following observation about the significant differences in mobility. "It seems unlikely that differential geographic mobility before high school is directly attributable to preschool *curriculum model;* it is probably best to treat it as a chance occurrence."

It's hard to imagine how any thoughtful person would suggest this obtuse relationship. The issue is not whether the curriculum model causes mobility; the issue is whether the differences in mobility cause differences in later arrest data. Given that pre-high school children are not usually in a position to determine whether they will move out of the city, the county, or the state, the idea that the preschool model would be related to difference in mobility is not only absurd; it displaces attention to a straw-man issue and completely ignores the very reasonable possibility that moving to a different environment may cause a difference in arrest rate, rates which are highly correlated with particular environments. The difference in mobility may therefore result in children growing up in greatly different environments, and being subjected to different pressures that relate to criminal activities. The difference in environments is a more recent possible cause than the differences in preschool curricula; the difference in environments has a longer duration and provides a more pervasive effect on the behavior of the subjects. Stated differently, the differences in environment, mobility, and sex between the curriculum groups could be used to make a far stronger case for differences in arrest data than any arguments based on preschool curricula.

Another problem with the arrest data presented by Weikart and Schweinhart is that these authors have a larger sample of subjects that show how atypical the performance of the High/Scope group is. The Perry Preschool project had a much larger number of preschool students than those involved in the High/Scope comparison study. The curriculum for the Perry Preschoolers was the same as that of the High/Scope group in the curriculum-comparison study. The estimated arrest performance of Perry Preschool subjects was quite different from that of the High/Scope children in the comparison study. In the *Early Childhood Research Quarterly* article, the authors acknowledge this difference. They write, "In the High/Scope Perry Preschool study, the estimated average felony arrests by age 23 were 0.7 for the program group and 1.5 for the no-program group" (p. 134). The reported number for the High/Scope group in the High/Scope comparison was 0.2, and DI was 0.9. It seems quite obvious that 0.2 is farther from the Perry Preschool mean of 0.7 than DI number of 0.9 is. The DI subjects are only .2 from this mean; the High/Scope subjects are 0.7 from this mean. Given the magnitude of this difference, the authors should have recognized that their best data (the data for a larger sample of subjects) would strongly imply that the arrest rate for the small sample in the comparison study is not typical for High/Scope (and most probably not typical for NS) but that DI performed quite similarly to the Perry Preschool program group.

The authors present a curious interpretation of the relationship between the Perry Preschool data and the DI group. They assert that "...The Direct

Instruction program did not lead to more felony arrests than no preschool program would have, but neither did it lead to fewer felony arrests than no preschool program, as the other preschool programs did" (p. 134).

The felony arrests for no-program subjects and High/Scope subjects in Perry Preschool are 1.5 and 0.7 respectively. The arrests for the no-program group and DI are 1.5 and 0.9. The numbers in these comparisons contradict the assertion that the DI program did not lead to fewer felony arrests than no preschool program. If the High/Scope subjects in the Perry Preschool showed an advantage over the no-program subjects, the DI subjects likewise showed an advantage over the no-program subjects.

...the case Weikart and Schweinhart present falls far short of the mark of being scientific or even orderly. The numbers don't add up; the arguments are illogical; the presentation is so laced with inconsistencies that it smacks of questionable "manipulations".

Note also that when the authors argued for categorizing all subjects whose address is unknown as Michigan residents, they appealed to the percentages they ostensibly discovered when searching the Michigan arrest records. They argued that if the percentages are close to those obtained for another sample, the entire group must be a Michigan group. In the case of overall program effect, they could have used a variation of the same argument, to wit: If the programs are the same, the numbers for arrests should be the same. Given that the arrest numbers are not the same for the Perry preschool High/Scope subjects and for the High/Scope group in the comparison study, the High/Scope comparison group is probably an outlier.

A final fact attenuates possible conclusions about arrest data being caused by particular preschool curricula. Eight of the original DI group and 8 of the NS groups had only one year of preschool (as four-year-olds) but all the High/Scope participants had two years of preschool (as 3-year-olds and 4-year olds). So the duration of preschool for the groups was not well matched. Sixteen students experienced half of the preschool exposure that the other 52 experienced. If the preschool experiences caused lasting differences that manifested themselves in such outcomes as arrest rates, it would seem that the effects of the two-year program would be more pronounced than those of a one-year exposure. If no differences are observed between one-year subjects and two-year subjects, the difference in preschool duration is not a possible cause in arrest rates, which means that the second year of preschool is apparently inert. But if the second year has no influence on arrest outcomes, and if there are other possible causes for explaining felony differences between the groups, it's possible that first year had no influence either. Possibly, whatever differences are observed for arrest rates are caused by differences in gender balance and place of residence.

In fact, the authors confirm that there are no differences between the one-year and two-year preschool experiences. They write, "To see if the shorter preschool program influenced the curriculum group difference in felony arrests, the analysis was conducted with the subsample who attended their preschool programs for two years. In the two year subsample, the mean number of felony arrests for each of the three curriculum groups was almost exactly the same as it was in the complete arrest sample" (p. 134). This procedure is circuitous. The most straightforward comparison would be between the one-year sample and the two-year sample. It may have been that this comparison revealed some uncomfortable differences, such as the one-year subjects tending to commit more felonies than the two-year subjects. In any case, the authors suggest that the lack of difference in felony rates between the subsamples supports their case that DI causes relatively higher arrest rates and that the NS model causes lower rates. The absurdity of this logic is evident by extending their argument. If it's true that there is no difference between one and two years — both for programming the "good" attributes that occurred with the NS subjects and the "bad" that occurred with DI —would the authors predict that a subject who received only 2 weeks of DI or NS would have the same arrest rate as a two-year subject? If not, what is the "exposure time" required to program DI students to engage in activities that lead to a higher arrest rate and for NS subjects to become squeaky clean? Clearly, if length of preschool exposure is not a variable in arrest performance, either the preschool is not a principal variable in accounting for the arrest performance or we should give a serious consideration to the one-week preschool experience that programs children for life.

In summary, the case Weikart and Schweinhart present falls far short of the mark of being scientific or even orderly. The numbers don't add up; the

arguments are illogical; the presentation is so laced with inconsistencies that it smacks of questionable "manipulations". The most serious problem, however, is that there is no data to suggest that preschool experiences had an appreciable influence on the rate of felonies. There are too many intervening influences, too many differences between the groups and their experiences to single out the preschool as the cause for differences in felonies.

Yet, the authors proceed with confidence in identifying the preschool experience as the single cause of differences in felony arrests, despite the fact that their data comes from three woefully small groups of subjects who had begun preschool with an average IQ of 78, groups not well matched in number, in duration of preschool, in gender balance, or in pre-high school mobility. The case that Weikart and Schweinhart present lacks the endorsement of statistical significance, even with the most liberal interpretations. And their denial that influences other than the preschool could affect adult performance sets a new standard for fatalism.

Weikart and Schweinhart would like people to believe that DI is harmful. In fact, DI has lots of data to show that it is greatly beneficial, that it promotes a positive self image, and that it is effective in teaching children skills that permit later academic success. (See *Research on Direct Instruction*, 1996.) ◆

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PARENTS' GUIDE

From *Teach Your Child To Read in 100 Easy Lessons*

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THE COMPLEX SKILL OF READING

The sophisticated reading that adults do is analogous to playing a concerto on the piano. The ultimate goal of reading instruction is to prepare children for the concerto of reading—reading complicated material silently, at a reasonably fast rate, and understanding the details of the message the author presents.

The program that prepares the child should be a careful one, just as good instruction in playing the piano starts with simple skills that are modified and expanded to create more complicated ones. A piano-playing program is poor if it requires the naive student to play a concerto. The student will not be able to perform and will understandably become frustrated. A more reasonable program would build toward the concerto one step at a time, designed so that the student achieves mastery of each step before moving to a more difficult one.

So it is with reading instruction. A reasonable program begins *at the beginning* and builds. The skills that are needed for more complicated tasks are first taught in their simplest form. Once the child has mastered these skills, the program presents more complicated variations.

The following are the four most important points about *an effective sequence for teaching reading:*

1. The beginning exercises are simple and do not resemble later exercises (just as beginning piano exercises do not look much like advanced ones).
2. The program provides teaching for every single skill that the child is expected to use when performing even the simplest reading exercises.
3. The exercises change form slowly, and the changes are relatively small, so that the exercises are always relatively easy for the child.
4. At every step, the program provides for very clear and unambiguous communications with the child.

THE **DISTAR®** READING PROGRAM

The major force that has determined the design and content of the **Distar** program is feedback about specific, detailed problems that children experience. When **Distar** was developed, the authors assumed that if students had problems with any of the exercises presented, the program—not the students—was at fault. So the program was changed, and tried out with new students, and changed again until it was smooth and manageable. In its final form it has the potential to teach virtually any child who goes through it. Note that it has only the *potential*. For this potential to be realized, the "teacher" must present the various exercises as specified and must make sure that the child is able to perform every task presented in each lesson.

Research Involving **Distar**

The largest single study in which **Distar** was involved was the comparison of U.S. Office of Education Follow Through sites—the largest educational experiment ever conducted. Various geographic sites in the United States selected a specific educational program from those made available. Each site agreed to implement the chosen program for teaching poverty children in kindergarten through grade three. The University of Oregon Follow Through model, which used **Distar** instruction in all grades and for all major subjects (reading, language, math), consistently outperformed all the other sponsored programs in reading achievement, arithmetic achievement, language performance, and measures of self-esteem. The more than ten thousand children in the University of Oregon model

came from various cities and counties in the United States—some from Indian reservations; others from poverty neighborhoods in cities like New York and Washington, D.C.; still others from rural places like DeKalb County, Tennessee, and Williamsburg County, South Carolina. The **Distar** programs worked better than any other program in the cities, better in rural areas, better with whites, with blacks, and with brown, better with poverty children and with middle-class children.

The **Distar** programs are more effective than other programs because they control more of the details that are important to successful teaching. Some beginning reading programs control the reading vocabulary that is presented to the child. **Distar** goes far beyond this. It controls vocabulary, the specific tasks that are presented, the type of example, the number of times the example appears, and even the teacher's wording—including specifications about how to effectively correct different types of errors that may occur. The control involves all the details that might make a difference in how the child receives the communication. Some things that **Distar** controls may seem quite reasonable and necessary to a person not familiar with educational practices, (for instance, the control of how to correct the child's mistakes.) Yet the "basal reading" programs that are most widely used in schools do not provide teachers with this type of information. We analyzed the four most widely used basal reading programs in grades four through six and discovered that none of them contains any specific correction procedures. The teacher's guides simply provide general suggestions cautioning the teacher to work longer with the children who learn more slowly than others.

COMMUNICATING CLEARLY WITH THE CHILD

Traditional reading programs are poor devices for teaching *all* children because they do not have provisions for communicating clearly. To appreciate the pitfalls that are involved in clear communication, we have to put ourselves in the place of the child who is trying to learn to read. This child may not understand exactly what reading is or precisely how one goes about doing it. Adults may have a clear idea of what they are trying to tell the child, but things may look quite different from the child's perspective. Let's say that we teach the child to look at the first letter of words and identify those words (an activity common in poor reading programs). We might begin by presenting words that are easy to distinguish by looking at the first letter. Here's a possible list of such words:

he go fat run with

Although the naive child might quickly "read" those words by looking at the first letter, the child may later encounter a serious problem. As soon as we introduce a new word that begins with the same letter that one of those first words begins with, we will probably discover that the child confuses the new word with the familiar word. For example, when we introduce the word **him**, we will probably discover that the child calls the word **he**, because both words begin with **h**.

This example points out a very important feature of poor communication in a teaching sequence. *The problem that the communication creates is not evident at the time the teaching occurs*. The child in the example reads the initial set of words without a hitch. Everything seems to be fine. Only later, when we introduce examples that call for more difficult discriminations, does the problem emerge.

If we examine the communication involved in early instruction, we can identify the kind of confusion that it may create and predict the kind of problem the child may later encounter. One of the more popular (but less effective) techniques for teaching initial reading skills is called the language experience method. This method involves doing something with the children, then talking about the experience, then writing sentences on the board that tell about the experience, then pointing to the words in the sentences and showing the children how to "read" them. The most obvious problem with the method is that it is far easier for the children to *remember* the sentences than it is for them to identify the individual words. Remember, these children do not know anything about reading. The teacher stands up, makes some squiggles on the board, points to them, and talks slowly. While pointing to the different squiggles, the teacher then requires the children to repeat what was said. Although it is possible for some children to extract the intended meaning from this communication,

the communication is very poor. Some children predictably come away from it with the idea that when you read, you simply point to the squiggles and talk slowly as you recite one of the familiar sentences. If we were to put up one of the charts the children worked on earlier without first cueing them about the content, some children would point to the words in order and say sentences for *another chart* with great fidelity.

Another communication problem occurs if we try to teach too much during the initial reading exercises. This problem is characteristic of most of the basal reading programs that are used in schools. These programs are extremely poor at communicating the difference between decoding and understanding. Decoding is the simple act of identifying the words in a sentence. Decoding does not necessarily imply understanding. To decode the sentence **Ruf unter glop splee,** you simply say the words. This illustration points out that you may be able to decode without understanding what the sentence means. Traditional reading programs typically confuse the beginning reader about whether the teacher is trying to teach decoding or understanding. These programs typically begin with the teacher discussing details of a picture. If the picture shows a girl named Jan, the teacher talks about Jan—what she is wearing, the color of her hair, and so forth. After discussing Jan, the teacher points to the word below the picture. The word, of course, is **Jan.**

It might seem that this communication is effective because it promotes interest and gives the children the motivation for both reading and understanding the written message. However, this communication may prompt the child to formulate a serious misconception about how to read. If the teacher always talks about the picture before reading the word, and if the word is always predictable by referring to the picture, the child may reasonably assume that:

- You read words by referring to a picture.
- You must understand the word that is to be decoded before you can read it.

Unfortunately, most children who fail to learn to read in school learn either one or a combination of these misconceptions. The typical poor reader in the upper elementary grades, for instance, reads some words by saying a *synonym* that bears no resemblance to the word on the page. The word may be **fine** and the reader calls it **good.** Consider the machinations that must occur in the reader's confused mind for this type of mistake to occur. The reader must approach the task of decoding with the idea that before reading a word, you must understand that word. The child looks at the word and seems to understand it, but when the child tries to say the word, a synonym comes out. (After all, the synonym and the word have the same meaning.)

A careless teaching communication permits the child to succeed for the moment, only to experience a serious setback later. To avoid these pitfalls, we must use a program that proceeds very carefully, tiptoeing around the pitfalls without taking costly shortcuts. The communications make it very clear when the child is simply to figure out the word and when the child is supposed to attend to the meaning. The communication arranges the order of these events so that the child *first* decodes, *then* discovers the meaning. The communication further shows the child a workable set of procedures for decoding or figuring out the word. At first this procedure is directed, a step at a time. As the child becomes adept at linking the steps, the directions shrink and the child assumes increasing responsibility.

Decoding—is the central skill in initial reading. Most of the other skills are nothing more than language skills. Once a sentence has been decoded, it is like a spoken sentence that may have been presented slowly. If the child has the language skills necessary to understand the spoken sentence, the child has the skills necessary to *understand* the decoded sentence. The central issue is not that of teaching the child to understand, but of teaching the child how to decode the sentences that *are to be understood.* (We should not require the child to read sentences that are beyond the child's understanding, any more than we would require somebody to read a Spanish text if the person had no understanding of Spanish. But if we have met this obvious language requirement, the central thrust of initial reading becomes the emphasis on decoding.)

MAKING TEACHING EASIER

Just as some of the control measures used in **Distar** may seem reasonable, others may initially seem contraintuitive or simply unnatural. An example of this control is the script that the teacher is to present verbatim when teaching

the lessons. A typical response to the scripted presentations is "Why would a program have to choreograph what the teacher says?" The answer becomes apparent only if you observe teachers trying to teach without carefully controlled scripts, particularly when the presentation is delicate (which is the case when trying to teach a naive five-year-old to read). We know about these problems because before designing **Distar** we ran a master's training program at the University of Illinois. We provided our interns with detailed instruction in how to present tasks to children—the rate at which to pace them, procedures for stressing different words, and procedures for reinforcing and correcting the children. Unless you are a teacher who has had a great deal of training, the amount of information that you must attend to when carrying out an effective presentation of this type to a group of eight fidgety five-year-olds is overwhelming. If you add the requirement that the teacher must also supply the wording for each example that is presented, the overwhelming becomes impossible. Typically, the interns attended either to the content they presented or to the behavior of the children they were trying to teach. When they attended to the behavior, they frequently became verbose, repetitive, and often bumbled. When they talked too much (which they frequently did), their delivery suffered because their pacing became poor. The children became confused and lost interest. The solution was to remove some of the variables from the teacher by scripting what the teacher was to say. The teacher was left with plenty to do because the material still had to be presented in a way that was both effective and dynamic. But the teacher could now concentrate primarily on delivering the content, not on trying to create it or design ways to "get it across." After all, sitting in front of a group of children, each of whom may produce an incredible variety of responses at any moment, is not the best place to create smooth presentations.

Effective communication is the sum of many *details*. Unless all these details are controlled, the child will receive poor communication from the teacher, and the teacher will receive poor information about the child. The naive child fails to perform very well unless all details are carefully controlled. The information that the teacher receives is that the child cannot perform and therefore must be slow, must have some sort of visual perception problem or emotional problem. This information is categorically wrong. Each author of this book has worked with thousands of children, from gifted to "severely retarded." The authors have never seen a child four years old or older with an IQ above 70 who could not be taught to read, and read well, within a reasonable period of time. We have seen hundreds of children who have not been taught to read in school. We have worked with children at preschool to college levels who could not read and whose parents probably believed in the finality of the labels with which the school had adorned these students: dyslexic, perceptually handicapped, learning-disabled. These labels are nonsense. Almost without exception, the "disabled" students that we have worked with had two obvious problems. The first was that they had not been taught properly. Their confusion suggested that the malfunctions existed in the teachers' techniques, not in the children's minds. The second problem was that these students seemed to *believe* the labels. They hated reading (or trying to read). But the cure for these problems did not involve neurosurgery or wonder drugs. It involved nothing more than starting over and teaching carefully. The children soon discovered that they could learn, that their progress impressed their teacher, and that reading (or learning) was not so bad after all. A child's self-image goes through a remarkable growth spurt when the child receives powerful demonstrations of success.

Distar ORTHOGRAPHY: WHY THE "FUNNY" PRINT?

Orthography is a fancy word that refers to the letters that make up words, or how words are spelled. One problem with reading from the kind of orthography that occurs in everyday reading is that the spelling is sometimes outrageous. The word **said** is not spelled the way it sounds: "sed." Many of the simplest words that we would use to make up even the simplest sentence are also irregular—**the, off, of, what, to, do, where, who** . . . An interesting exercise for beginning reading teachers is to try to make up simple sentences in which the orthographic code is perfectly regular. For it to be perfectly regular, each letter would make exactly the same sound each time it appeared in the sentence. **Pam had ham** is a perfectly regular sentence. The letter **m** oc-

curs twice, but it makes the same sound each time it occurs: "m." The letter **a** occurs in all words. Each time it occurs, it makes the same short-vowel sound. Although it is possible to use conventional symbols and conventional spelling to make up sentences in which all words have a regular spelling, as soon as we move from Pam and her ham, the task becomes much more difficult. If we try to express the idea that a girl and a boy went to a lake, we may encounter a great deal of difficulty in creating sentences in which all the letters make one and only one sound. Consider the sentence **He and she go to the lake.** The letter **e** has the same function in the words **he** and **she.** In the words **the** and **lake,** however, the letter takes on two different roles. First it makes an "uh" sound (in **the**), and then it becomes silent (in **lake**). The letter **o** has different sound roles in the word **go** and the word **to.** The letter **h** takes on some bizarre roles. First it makes the common **"h"** sound (in the word **he**). Then it becomes combined with **s** to make the **"sh"** sound (in the word **she**). Then it combines with **t** for the **th** sound (in the word **the**).

English, clearly, is not a regularly spelled language. It is an amalgam of contributions from Latin, Greek, and French. But there are ways to simplify it for the beginning reader.

Distar solves the problem by introducing an altered orthography. This orthography does two things. It presents variations of some symbols so that we can create a larger number of words that are spelled regularly (each symbol having only a single sound function). At the same time, the orthography permits us to spell words the way they are spelled in traditional orthography. Here is the **Distar** alphabet:

a ā b c ch d e ē f g h i I I̲ j k l m n

o ō oo p qu r s sh t th u ū v w wh x y ȳ z

Notice that there are two variations for the letter **a** and for the letter **e.** By using these letters we can make the words **he** and **went** regular. The word **he** is presented as **hē** and the word **went** as **went.** Now both words are clearly the sum of their letters. Stated differently: if you say the sound value for each letter, you will say the word.

The orthography also provides joined letters. We can use these to make the word **she** regular: **shē.** The clue that **s** and **h** are joined is very important to the beginning reader. We can also make the word **the** sort of regular: **thē.** (We do not normally pronounce the word that way, unless we are making a speech or trying to be super-proper; however, the beginning of the word is now regular.)

One more convention in **Distar** orthography that permits us to spell words correctly and yet make them regular involves *small letters.* The rule about small letters is this: you don't say them. Silent letters are presented in small type. With the small letters we can now make the word **lake** regular: **lāke.** You do not read the final **e,** but the letter is present and the word is spelled as it should be: **l-a-k-e.**

Here's the entire sentence about **he** and **she,** with all the **Distar** conventions:

hē and shē went to the lāke.

Everything is now regular (one symhol making one and only one sound) except for the word **the** and the word **to.** Your first impulse might be to think, "Isn't that a shame," and then start trying to figure out ways to make these words perfectly regular. Hold the impulse. When we first began working with the modified alphabet, we used one that was completely regular. We discovered that when we attempted to provide a transition to traditional orthography, some children had a lot of trouble. Their trouble was created by our poor communication. By making the code completely regular, we had implied that reading involves nothing more than looking at the sounds for each word and adding them up. We failed to alert them to the fact that some words are different and that a different strategy is needed to approach these words. Later, we discovered that when we introduced some irregularly spelled words early in the program, the transition was much easier because we had provided practice in dealing with the kind of strategy needed for irregularly spelled words like **to, was,** and **said.**

But **Distar** orthography permits us to do a lot of nice things. We can make potentially difficult words like **where** and **were** perfectly regular:

(where were)

Notice that the word were has the joined **er,** which makes the sound "ur." The e is silent, so if you say the sounds for **w** and **er,** you will say **were. Where** is also regular now. It has the short **e** (as in **end**). By saying the sounds for **wh, e,** and **r,** you will say **where.**

The alphabet does not provide for all possible sounds. The goal in using this alphabet is not to replace traditional orthography but rather to create a variation of it that facilitates initial instruction. Once the child has learned to read words written in this modified orthography, we make the transition to traditional orthography. **Distar** orthography does not have to be exhaustive (presenting symbols for every sound) because we do not have to teach all words or all sound combinations at the beginning of reading instruction. We can teach many skills after we have made the transition to traditional orthography. By then the child has many reading skills, which means that the communications do not have to be as careful as those for the initial skills. The most careful part of the program must be the first part, because it develops the most basic skills that are later expanded and made more precise. If poor communications occur in the first part, the later parts cannot build successfully on skills that had been taught. These parts may then have to include the unpleasant job of reteaching the basics.

TEACHING FIRST THINGS FIRST

A good reading program should introduce actual reading as soon as possible. But before the child is able to perform the simple act of decoding words such as **mat** and **if,** the child must have some important prereading skills. We can figure out what most of those skills are by determining what a child would have to do to read a simple, regularly spelled word like **mat.**

The most obvious skill the child needs is knowledge of the sounds that each letter makes. This fact suggests some preteaching in sound identification. **Distar** does not initially teach letter names, because letter names play no direct role in reading words. The simplest way to demonstrate this fact is to say the letter names "em," "ay," and "tee" very fast and see if they add up to the word **mat.** They do not. They generate something like "emmaytee." It may not be a dirty word, but it certainly is not **mat.**

Sounds are functional in reading. So we preteach the sounds before we present them in words. Before reading the word **mat** and other words composed of these letters, the child would learn to identify **m** as "mmm." The repeated letters do not mean that you say the sound again and again. They signal you to hold the sound. Take a deep breath and say "mmmmmm" for a couple of seconds.

Not all sounds can be held for a long time. The sounds that can be held are called continuous sounds. They include **f, s, n, l, z, w,** and all the vowels. The sounds that cannot be held are noncontinuous. This group includes **b, d, ch, g, h, p, j,** and **t.** To say these sounds, you pronounce them very fast and add no "uh" sound to the end of them. The sound at the end of the word **mat** is unvoiced, which means that it is whispered. It is not "tuh." It is a whispered little "t." That is how it occurs in the word, and that is how it is pretaught. When the child has mastered the sounds that will occur in various words, the child has mastered the most obvious skill that is needed to read.

But other skills are quite important. Blending skills are verbal, not visual, skills. A child who does not have them will have difficulty linking the sounds of a word. To teach the blending skills called for by the word **mat,** we get rid of the written word **mat** but require the verbal behavior that the child would use in reading that word. First the child says the word very slowly, holding each sound but not stopping between the sounds: "mmmaaat." Next the child says it fast: "mat."

Here's how we might present the task:

"Say **mmmaaat.**"(Child says:) "mmmaaat."

"Say it fast." (Child says:) "mat."

For the blending task, the teacher does not stop between the sounds. (Learning this skill is sometimes difficult for children; however, it is usually much more difficult for teachers.) The reason for presenting the sounding out without stopping between the sounds is that it creates a much cleaner communication than one created by stopping between the sounds: "mmm—aaa—t." When the child says the sounds without pausing, the child is actually saying the word slowly. To say the word at a regular speaking rate, the child simply speeds up the word. The

child does not first have to put the parts together and then say it fast.

When we add the written word to the blending exercise, we have an initial word-reading exercise.

You point to the word **mat** and touch under the letters **m, a,** and **t** as the child says "mmmaaat."

You say, "Say it fast." Child says, "mat."

We've identified two important skills that are called for by the simple word-reading task. There are others, the most important of which is rhyming. Rhyming points out the relationship of one word to words that are similar. If we start with the ending **op** and add different beginnings (by putting different consonants in front of **op**), we create a series of related words. If the child has basic rhyming skills, the relationship between the words becomes very clear. They rhyme. This understanding promotes important generalizations about word families (which are based on common endings). This understanding helps the child see that a word like **hop** is not an island but is part of a network of words that includes **top, pop,** and **drop.**

To summarize, you are going to teach your child the sounds the different letters make. You do not teach the letters all at once. You present them one at a time and give your child plenty of practice with each new letter. While you are teaching the letters, you also work on blending skills. The child practices saying a variety of simple words slowly and then saying each word fast. Also, you work on rhyming and other skills related to the task of sequencing the different sound parts of words. During the initial lessons, your child will work on these skills, not on reading words. After your child has learned the sounds for the letters that will appear in the first words presented in the program, and learned the other necessary skills, you introduce the simplest form of word reading. At this time your child will have practiced all the verbal components called for by the complex task of decoding. Your child will have made rhymes for the words that are to be read and will have blended them. Now simply put the parts together, add the written word, and presto: your child can read.

The sequence is designed so that the child who takes the first steps can take the next step and the steps that follow that step. Furthermore, all the skills that are needed are pretaught, which means that you should always be able to correct mistakes in more complicated tasks by referring to the specific skills that were pretaught.

Irregulars and Comprehension

Initial decoding is certainly not the end of reading instruction; however, it is the major stumbling block. After you guide the child past the initial decoding, you must still teach a great deal. You must introduce different groups of irregularly spelled words (such as the group that contains **ar,** like **part, smart, bark,** and so on). And you must switch emphasis from the reading of isolated words to sentence reading and sentence comprehension. To make reading the key to the discovery of meaning, you first direct the child to read a sentence, then answer questions about the sentence. If the sentence the child has just read is **We went home,** you would ask questions such as "What did we do? . . . Who went home?" This type of comprehension is simple, literal understanding, but like initial decoding, it is the simplest and most basic form that can be presented. In addition to the strictly literal questions about the sentences the child reads, you also introduce comprehension activities to promote the idea that the sentences may tell about pictures, and that these pictures show what the sentence tells. If the sentence is **It is on,** you tell your child, "You're going to see a picture. And what do you know about the thing you'll see in the picture?" (Child says, "It is on.") You present the picture showing a child who has just turned on a light. You now ask questions that relate the text to the picture. "What is on?" You also ask questions that serve as rewards.

As your child becomes more proficient at handling the simpler forms of comprehension activities, more elaborate ones are introduced. One type is the prediction question. After the child reads a sentence that tells what somebody wants to do, tries to do, or starts to do, you ask, "What do you think will happen?" The next sentence in the text answers the question. Prediction questions help the child develop the skill of "anticipating" what will happen next. These questions help the reader form a tie between the skills used in listening to a story and those involved in the more active role of reading it.

The Outcome

So your child starts the program with presumably very few reading-related skills. Within one hundred teaching days—about two-thirds of a school year—your child reads, although not as well as an adult. But through the course of the lessons your child has learned to read words without first sounding them out—and therefore has learned to read at a rate much faster than that at which the child read during the first lessons that presented word reading. Your child has learned to read from traditional orthography and now reads simple stories that are more than 250 words long (through a transition that begins in Lesson 74). The child has learned basic sentence-comprehension skills (literal comprehension and prediction skills).

And the program provides for teaching you. As you read the description of the various comprehension skills, you may have wondered, "How will I know which questions to present and when to present them?" It's easy. All the questions that you are to present are written in the program. All tasks and activities that you are to present are written in the program. In fact, all the correct responses that your child should make for the various tasks are indicated. If you follow the program religiously the first time you present it, the outcome is guaranteed. Your child will read, and you will be an effective reading teacher. When you present the program a second or third time to other children, you will understand where each type of exercise is going. You will be able to free-lance more, add, change, possibly streamline. If you try to become too fancy the first time you present it, however, you will probably find out later in the program that you should not have modified some of the things you did earlier. Our discussion of the program was very general. A host of mini-skills is taught along the way, and unless you know how each of these skills relates to others that are to be taught, you may change an exercise from the way it is specified and in so doing fail to teach one of these skills.

GETTING READY

Before you start teaching your child, you should do four things:

- Learn the sounds that are introduced in the program, particularly the first ten.
- Make up a teaching schedule.
- Practice some corrections.
- Practice presenting the first couple of lessons in the program.

The sounds. The following list presents the sounds in the order of their appearance. Accompanying each sound is a brief description of it, indicating whether it is *continuous* or *noncontinuous* and whether it is *voiced* or *whispered.*

Before you present any sounds in the program, make sure that you can pronounce each sound properly. First make sure that you can produce an individual sound in isolation (apart from a word) in a way that is not distorted. The sound will be distorted if you add a funny sound to the end of it.

The simplest procedure is to start with a word that ends in the sound you are interested in. Say the word slowly and loudly, as you would say it to a person who is hard of hearing. For example, to figure out how to say the sound **nnn** in isolation, say the word **fan** very slowly, holding each sound for at least one second. The way you say the **nnn** sound in that word is the way you would say the sound **nnn** in isolation. Note that you do not say "fffaaannn*uh*" or "fffaaannn*ih*." So when you say the **nnn** sound in isolation, you would not say "nnnuh" or "nnnih." You would say a pure **nnn** with no additional sound tacked onto the end.

To figure out how to say the **t** sound, say the word **fat** slowly and loudly. Note that you cannot hold the t sound. It occurs quickly no matter how long you hold the **fff** sound and the **aaa** sound (both of which can be held a long time). Note also that you do not add a funny sound to the end. You do not say "fffaaat*uh*" or "fffaaat*ih*." So you would not say "tuh" or "tih" when you present the **t** sound in isolation.

Remember, the simplest procedure for figuring out how to say sounds in isolation is to say a word that ends in that sound. Say the word slowly and loudly, but not in a way that distorts the sounds. The sound that you say at the end of the word is the sound you would produce when presenting that sound in isolation.

A sound is whispered if your voice is not turned on when you say the sound. Place your hand on your throat and *whisper* the entire word **fuss.**

PRONUNCIATION GUIDE

Symbol	Pronounced	As in	Voiced or Whispered	Introduced in Lesson
m	mmm	ram	v	1
s	sss	bus	w	1
a	aaa	and	v	3
ē	ēēē	eat	v	5
t	t	cat	w	7
r	rrr	bar	v	9
d	d	mad	v	12
i	iii	if	v	14
th	ththth	this and bathe (not thing)	v	16
c	c	tack	w	19
o	ooo	ox	v	21
n	nnn	pan	v	23
f	fff	stuff	w	25
u	uuu	under	v	27
l	lll	pal	v	29
w	www	wow	v	31
g	g	tag	v	33
I	(the word *I*)		v	34
sh	shshsh	wish	w	35
ā	āāā	ate	v	37
h	h	hat	w	39
k	k	tack	w	41
ō	ōōō	over	v	43
v	vvv	love	v	45
p	p	sap	w	48
ar	ŏřrr	car	v	49
ch	ch	touch	w	50
e	ĕĕĕ	end(ed)	v	52
b	b	grab	v	54
ing	iiing	sing	v	56
I	īīī	ice	v	58
y	yyyē	yard	v	60
er	urrr	brother	v	62
oo	oooooo	moon (not look)	v	65
J	j	judge	v	67
wh	www	why	w	69
ȳ	īīī	my	v	71
ū	ūūū	use	v	74
qu	kwww (or koo)	quick	v	74
x	ksss	ox	w	75
z	zzz	buzz	v	75
ea	ēēē	leave	v	79
ai	āāā	rain	v	88
ou	owww	loud	v	89

You should feel no vibration on your throat because all the sounds are whispered.

Now *say* the word **fuss** very slowly by holding each sound longer than you normally would. Do not try to whisper the word. Say the word in a normal speaking voice. You should feel no vibrations on your throat for the sounds **fff** and **sss.**

Now say the word **fun** slowly and feel your throat. Your throat should not buzz for the **fff** sound. But it should buzz for both **uuu** and **nnn.** The sound **nnn** is a voiced sound.

Now say the word **run** and feel your throat. Your throat should buzz for all sounds—**rrr, uuu,** and **nnn.** The **rrr** is a voiced sound.

Do not present a lesson that introduces a new sound until you can produce the sound accurately and consistently. (If you misteach a sound, your child will have a lot of trouble later in the program when trying to read words that include that sound.)

Pay particular attention to the pronunciation of the following sounds:

- **r.** Do not say "urrr" for this symbol or the child will have a lot of trouble reading words like **run.** The child will try to call the word "urun." Use the sound that is at the end of the word **bar.** It is a single sound that can be held.
- **th.** The sound for this symbol is *voiced.* There is a whispered **th** for words like **math** and **thing.** The voiced sound occurs in words like **them, then, that,** and **those.** This sound is the one that is taught in the program.
- **h.** The **h** sound is very tricky. It is produced quickly by letting out a little air *with no voice.*
- **y.** The sound we use for this symbol occurs only at the beginning of words (**yēard**). It is quite similar to the sound ēēē (as in **eat**), but it is slightly more restricted. If you have trouble with the sound, say **ēēē.** It will work pretty well.
- **oo.** This symbol refers to the sound in **boo, moon,** and **toot,** not to the sound in **look, soot,** or **book.**
- **wh.** This sound is pronounced differently in different parts of the country. In the East it is unvoiced. In the Midwest and West it is voiced. Use the pronunciation that is appropriate for your speech.

In addition to indicating whether a sound is voiced or whispered, the column of the sounds chart labeled "Pronounced" shows whether the sound can be held or must be said very rapidly. If a sound can be held, three symbols are shown for the sound (such as **mmm** and **sss**). These symbols tell you that you should be able to hold the sound for at least two seconds without distorting it. Note that you are not to say the sound repeatedly ("m—m—m"). You are to take a deep breath and say it one time, holding it for at least two seconds.

The sounds that cannot be held are shown in the "pronounced" column as single letters, **d, c, t.** These sounds must be said very quickly. Say the word **mad** slowly and loudly. The last sound you say is the appropriate pronunciation for the **d** sound. It is a voiced sound. (Feel your throat.) It does not have an "uh" sound following it (not "mmmaaad*uh*"), and it must be said very quickly.

To use the sounds chart, refer to the last column. That column tells you the lesson in which a new sound is introduced. In Lesson 1, the sounds for **m** and **s** are introduced. Practice these sounds before presenting the lesson. Both sounds are voiced. Check the column labeled "As in" to make sure that you are using the right pronunciation for the letter, particularly the vowels. The symbol **a** is introduced in Lesson 3. It has many different pronunciations when we deal with traditional orthography. For the beginning of the program that you will use, the symbol **a** refers to only one sound—the first sound in the word **and.** Note that you will *never* say "**aaa** as in **and**" to the child. The model word is to show *you* the sound you are to say for a.

Saying Words Slowly

Practice saying words without pausing between the sounds. As noted earlier, the child will have a much easier time identifying words that are sounded out if the child learns to blend the sounds by saying them without pausing between the sounds.

Beginning with Lesson 1, you will say words slowly, without pausing between the sounds. The words that you will say in Lesson 1 are **am, me, in,** and **she.**

Practice saying these words properly. Start with **am.** Put your hand on your throat. Take a deep breath. Say "aaammm," holding each sound for at least two seconds. Do not stop between the sounds. If you stop, you will feel your throat stop buzzing. Your throat should buzz from the first instant of "aaammm" to the last, with no inter-

ruption. Remember to hold both sounds for about an equal amount of time. Do not say a very fast **a** sound followed by a long **mmm** sound. Try to hold each sound for two seconds.

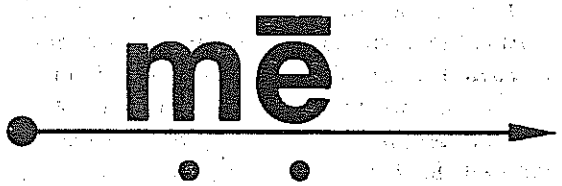
Practice the other words—**me, in,** and **she.** Note that when you practice **she,** your voice will not start until you say the sound ēēē; however, you should hold the **shshsh** sound for two seconds, and there should be no time during which there is silence. The ēēē sound should begin as soon as the **shshsh** sound stops, but there should not be the slightest pause (silence) between these two sounds.

Beginning with Lesson 1, your child will say words slowly after you say them. Make sure the child does not stop between the sounds. Correct mistakes immediately. Your child shouldn't have any serious problems with this task if you do a good job of saying the words slowly, one sound at a time.

The same rules that apply to pronouncing sounds in isolation apply to saying words slowly. Some sounds cannot be held for more than an instant. To say the word **mat** slowly, you would hold the first two sounds for two seconds each. Then you would quickly say the t sound: "mmmaaat." (Remember, this sound is whispered.) (Note that there is a silence immediately before the sounds **c, t,** and **p** when they occur at the end of words. This pause is acceptable because a pause occurs when we say the words at a normal speaking rate.)

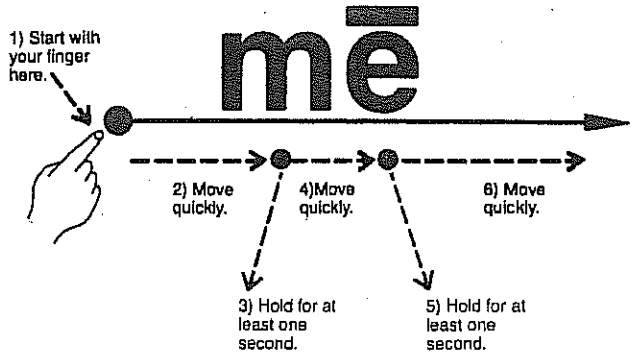
Sounding Out Words

Beginning with Lesson 9, you will direct your child to sound out written words and then say them fast. The words to be read look like this:



For each word, you will first touch the big ball at the beginning of the arrow that runs under the word to be read. You tell the child to "sound it out." Then you move to each ball on the arrow and stop for at least *one second.* (One second is not one instant. It is a fairly long time.)

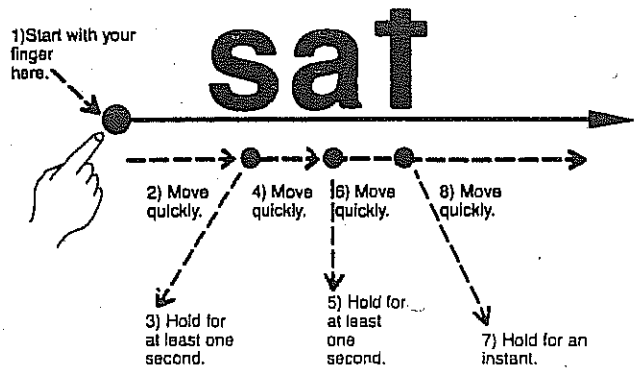
The illustration below shows what you are to do.



Practice moving quickly along the arrow and then stopping for at least one second at each ball. After you have stopped at the last ball for at least one second, move quickly to the end of the arrow.

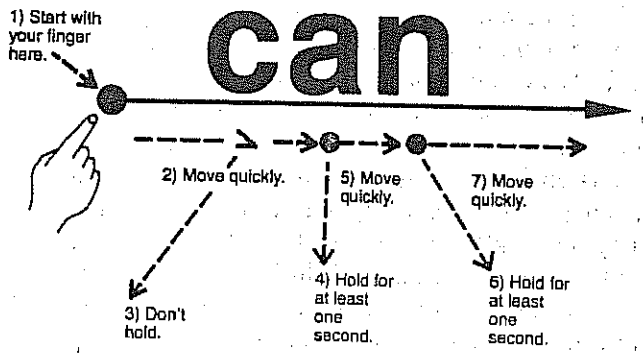
The child is to say the sounds as soon as you touch the ball for each sound. The child is to keep holding the sound until you touch the ball for the next sound. The child is then to say the next sound without stopping. (The child is to say "mmmeee," not "mmm"—pause—"eee.") The child's task will be much easier if you remember to move fairly quickly from one sound to the next. (Note that if you move too quickly, the child will not know what sound to say next and will not be able to respond when you touch the next ball. If you move too slowly, the child will run out of air before saying the last sound.)

Some words end in sounds that cannot be held for a long period of time. You present these words almost the same way you present words with sounds that can be held. The only difference is that you don't stop at the last sound for a full second. You stop for an instant and then move quickly to the end of the arrow.



The program script for each task indicates the response the child is to produce. The response for the word above is "sssaaat." The response shows that the child holds the first sounds but does not hold the last sound. The way you touch the sounds should parallel the response the child is to produce. Hold the first sounds for at least one second each. Stop for a moment under the **t**.

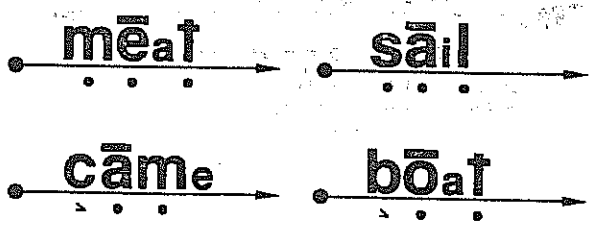
In Lesson 21 a new type of word is introduced. This type begins with a sound that cannot be held. It is the most difficult type of word the child will read. The illustration below shows your behavior for presenting these words.



As you point, the child produces the response "caaannn." Note the symbol under the **c** in **can.** It is an arrow shape, not a ball. You do not stop under the **c.** The arrow symbol indicates that although you do not stop, the sound is to be pronounced. It is pronounced when you stop under the next sound (a). At that time the child says "caaa."

Remember, when an arrow shape appears under a letter, you do not stop or even pause under the sound. The child says the sound in combination with the next sound when you stop at the next ball.

Some words would be regular if they did not have "silent letters." Among these words are **meat, sail, came,** and **boat.** When these words are first introduced in **Distar** orthography, they are written this way:



Note that there is neither a ball nor a small arrowhead under the silent letters. You do not pause for these letters or stop at them. When the child says the sounds for the letters that are marked with balls and arrowheads, the child says the sounds for the word. Later in the program, beginning with Lesson 74, the small letters become full-size. The child typically has no trouble reading them because the child has dealt with each word many times by Lesson 74. The transition is therefore not difficult.

No Skipping Allowed!

We have made this point several times, but it is extremely important. Do not push your child by skipping lessons or by introducing new procedures before the program presents them. It is possible that your child *may* be able to progress at a rate faster than that of the program sequence; however, before this possibility is a fact, you must consider the nature of the reading skill. The goal of decoding instruction is to make decoding an automatic practice, not something that requires a great deal of thinking time or a great deal of effort. Therefore, the program should progress at a rate somewhat slower than what would be possible if the only criterion for decoding were, Can the child do it? In other words, if your child is on Lesson 30 and you were to skip ahead to Lesson 50, you would find that indeed your child can read some of the words—maybe most of them. But simply being able to read the words is not enough. You must make sure that the child has enough practice to become relatively fluent. The task of decoding should not be a supreme effort. The goal of fluency and ease of reading is achieved if you stay well within the bounds of what the child is capable of doing. No harm will come of the child's reading the words **was** or **ram** ten or fifteen more times before reaching Lesson 50. The additional practice will simply make Lesson 50 easier and provide more reinforcement for the child. So do not skip.

Also, do not introduce such skills as "reading the fast way" (without sounding out words) before the program introduces them. Certainly the child can learn these skills earlier. But unless the child is very firm on sounding out, you may have no ready way to correct the mistakes made later when the child begins to "word guess." If the sounding out is very firm, you will easily be

able to correct mistakes when the child later reads words the fast way. If the child has learned simply to say words, the child may have very little trouble early in the program but may encounter very serious problems when highly similar-looking words begin to appear. (After **that, this, those, them, then,** and **than** have been introduced, the child is not able to use a simple word-reading strategy that works when **the** and **that** are the only words that begin with **th.**)

Reinforcement and Corrections

To work effectively with your child, you must convey the information the child needs. You must also respond to your child's efforts. In responding to these efforts, you should reinforce appropriate behaviors and correct mistakes.

Although the lessons should be overwhelmingly reinforcing, do not confuse being reinforcing with being soft. You are soft if you "overlook" mistakes or if you let the child get by with a sloppy effort. This behavior is not reinforcing. Furthermore, it is not realistic. The skills that are taught early in the program will be used later—all of them. If they are weak when they are presented in their simplest form, early in the program, they will most certainly be weak later, when the child is expected to use them in complex tasks. If the child is weak in all the components of the complex task (which is what will happen if you use a very low standard on all skills), the child will fail hopelessly. The only remedy would be to take the child back to the beginning of the program and start over, this time with a firm criterion on performance.

Some statements of reinforcement are specified in the script for the daily lessons. However, the script does not tell you how to respond to all the good things that should be praised. To be reinforcing, follow these rules:

1. If the child is working hard, praise the child: "You are a really hard worker." (You can use this kind of praise even if the child's performance is not perfect.)
2. If the child performs well, praise the child: "That's amazing. You are really smart."
3. If the child performs well on a task that presented problems earlier, express surprise. "You got that right this time. I thought you'd have a lot more trouble than that. You're terrific."
4. Give the child a chance to show off skills that have been mastered. "Wait until your father sees you do that tonight. He'll never believe it."

Note that three of these four points express surprise. The most effective reinforcement that you can present is built around surprise, because the surprise shows that the child did not merely do what you expected, but more. Doing better than you expect is one of the most reinforcing experiences a child can have. Therefore, the most effective procedure you can use to assure that the child will find learning to read very reinforcing is to challenge the child. If you challenge the child to do something you think the child can do, and if the child succeeds, you can act amazed. Start by expressing a challenge. Ideally, the challenge should involve a group of tasks, not a single task. "Let's do the say-it-fast tasks for today. I'll bet that you can't do them all without making more than two mistakes. These are very hard words in the lesson today."

Present the tasks. If the child makes fewer than two mistakes (which will probably happen), respond by saying something like "You didn't make one mistake. I think you just got lucky. There is no way you could be that good at say-it-fast."

Even if the child does make more than two mistakes, you are in a good position to permit the child to save face without feeling defeated. "Those were hard words, weren't they? Let's go over them one more time and make sure that we can do them. I'll bet some of them will come up again tomorrow."

To make the challenge effective, pick a group of tasks that you are pretty sure the child can do. If the child is firm on sounds, say, "I don't think you'll be able to get all the sounds today without making a mistake."

Remember, the goal of the challenge is not to tease the child or to make fun of failure. The challenge is designed to let the child show you that she can do more than you expect. If you say, "I wouldn't be surprised if you missed two or three of the sounds today," the stage is set for the child to make *no* mistakes (or possibly one) and for you to say, "Wow, you did it. I don't believe it. Those were hard." Remember, if you cannot say, "Wow, you did it" at the end, the challenge was either a complete flop or less than a total success. The "Wow, you did it" is what the challenge is all about.

Two technical points about reinforcement:

1. If you reinforce the child after *every* task, you will actually be teaching the child to go off-task rather than to work through the lesson. The child learns that following each task will be a "reinforcement break."
2. The same thing will happen if you frequently use elaborate (lengthy) reinforcement.

Do not reinforce the child after every single task. The challenge should always be presented for a group of tasks. As you present each task within the group, make *very* brief comments such as "That's it" or "Good job." These interruptions should take no more than a second or two at most. Try to maintain very fast pacing from one task to the next. As soon as the child successfully completes a task, present the next task with the smallest interruption possible. This procedure is important not only from a "management" standpoint, but from a communication standpoint also. If the examples are presented quickly, one right after the other, the child will more readily see how the examples are the same and how they are different. If long pauses intervene, the child will not receive a message that is as clear.

If the child interrupts you while you are presenting, do not reinforce the behavior. If you listen to the child or permit the interruption, you reinforce interruptions, and they will occur with increasing frequency. Simply tell the child, "Whoa. Not now." Continue with the task. After you have completed a group of tasks (such as the say-it-fast tasks specified for the lesson), praise the child (if the child performed well). Then, "Now what was it you wanted to say earlier?"

In addition to discouraging the child from interrupting you, praise the child for not interrupting. Do not overdo this kind of reinforcement. But if the child has a tendency to interrupt and if the child does not interrupt during a group of tasks, say, "You are really a big person. You didn't interrupt one time. That's great. I didn't know you could work that hard."

A final reinforcement procedure: Occasionally a child becomes frustrated, has a bad day, and may produce a tear or two. A good way to respond to this behavior is to say, "Do you know how I know that everything is going to be all right tomorrow? You're crying. That means you care. That's good, because if you care, you'll keep working, and if you keep working, you'll get it. Do you know why? Because you're very smart."

Corrections

When the child makes a mistake, correct it immediately. If the child makes a mistake on the second letter of a word that is being sounded out, do not wait until the child finishes sounding out the word before correcting. Correct immediately. Correction procedures are specified for the most common mistakes the child will make. These corrections are based on the three things a good correction should do:

1. Alert the child to the mistake and where it occurred.
2. Provide practice with the skill the child needs to overcome the mistake.
3. Test the child within the context in which the mistake occurred.

If the child makes a mistake in identifying the third sound that is presented in a sound exercise:

1. Signal the mistake: "Stop."
2. Provide practice with the skill: "This sound is **aaa.** What sound?"
3. Test the child within the context in which the mistakes occurred. "Remember that sound. Let's go back and do those sounds again." Repeat the sounds in order, starting with sound 1. If the child is able to respond to the third sound correctly, the mistake has been corrected. (This assertion does not mean that the child will never misidentify the symbol again; it means that you know the child is able to handle the activity in which the mistake occurred.)

All three steps are important. If you simply tell the child the "answer" without testing the child, you have no way of knowing whether the correction was transmitted.

Step 2 of the correction does not always mean that you "tell the answer." The only way the child will know the sound that is called for by a given symbol is if you say it; however, some mistakes are different. If the child uses a particular skill, the child will be able to figure out the answer. For instance, if the child is sounding out the word **ram** but is unable to say the word after sounding it out, you would not tell the child the word. Instead, you would make it easier for the child to say the word fast.

Here is the correction:

1. You stop the child after a few seconds. You do not let the child flounder. "Stop."

2. "Listen: **rrraaammm.** Say that." (Child says:) "rrraaammm."
   "Now say it fast." (Child says:) "ram."
   "That's it."
3. Point to the written word **ram.** "Now do it here. Sound it out."
   (Child says:) "rrraaammm."
   "Say it fast." (Child says:) "ram."
   "You did it."

Learn this correction procedure. You will probably have many occasions to use it. Note that it follows the same three steps as the correction for sound identification. You first signal that a mistake has been made. You then provide practice in the skill needed to overcome the mistake. Finally, you test the child on the word in which the mistake occurred.

ADDITIONAL ACTIVITIES

The program includes sound writing as part of each lesson. It does not specify other activities that reinforce reading skills. Note that the purpose of sound writing is not to teach writing or penmanship. The rationale for sound writing is that if the child copies sounds, the child must attend to the shape details of the sounds. If the child attends to these details and associates them with the name of the sound, the child will learn the sounds faster and better. The sound-writing exercises, in other words, are included because of their reading-related value.

Note: It is not necessary to make **sh, th, wh, ch, er,** and **qu** so that they are actually joined. But identify each combination by the sound presented in the program.

To make it easier for the child to see how complex letters are formed (**a, w, t, h,** and other letters shown with two or more arrows), use two different-colored chalk (or pencil) lines. *Always* make the first part of complex letters with the same color and *always* make the second part with the same second color. (For instance, always make the first part with yellow and the second part with white.)

You may also teach writing and spelling. In fact, the reading program sets the stage for both additional activities. What follows is an outline for the more basic reinforcement activities that you might present.

Copying words. Beginning with Lesson 30, you can introduce copying words. Pick any words that have been presented in the reading lesson. Write three or four words on paper or the chalkboard (using **Distar** orthography). Leave a space below each word and a line on which the child is to copy the words. Direct the child to sound out the words that you have written, then to copy each word.

Writing words from "dictation." Beginning in Lesson 35, you can present a more sophisticated writing activity (one that is presented in addition to the copying activity, not as a substitute). Use this procedure:

"You're going to write a word that I say.

"Listen: **mat.** I'll say the word slowly: **mmmaaat.** Say that."

"Write the first sound in **mmmaaat.**

"Now listen again: **mmmaaat.** Write the next sound in *mat.*

"Listen again: **mmmaaat.** Write the last sound in *mat.*"

If the child has trouble isolating the sounds from the word, first say the word, then tell the child the first sound. Say the word again. Then say the next sound. After presenting the third sound in the same way, present the exercise above. Use any of the words that have been presented in the lessons.

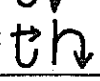
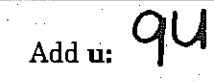
Writing stories from pictures. Beginning in Lesson 50, present pictures to the child. For each picture tell the child, "Make up a story for this picture." Reinforce the child for spelling words phonetically. Do not expect the child to spell words conventionally (particularly irregular words). Typically, the child will have very few inhibitions about expressing very elaborate ideas and tackling any word composed of known sounds. The result will be horrible misspellings but very clever recordings of the way we say those words.

THE SCHEDULE

Typically, lessons do not take more than fifteen minutes. In fact, you may be able to present most lessons in twelve minutes. It is a good idea, however, to make a schedule that allows twenty minutes for each lesson. If you finish early, you

SOUND-WRITING CHART

m	Start with vertical line: 	Add humps: 
s	Start at top: 	
a	Start with backward **s**: 	Add ball: 
e	Start with horizontal line:  **Note:** Do not make long line over **e**.	Make **c** around it: 
t	Start with vertical line:	Cross near top: 
r	Start with vertical line:	Add curved line: 
d	Start with **c**: 	Add vertical line: 
i	Start with vertical line:	Add dot:
c		
o	Start like **c**: 	Close: 
n	Make first part of **m**: 	
f	Start with cane: 	Add horizontal line: 
u	Start with cane: 	Add vertical line: 
l	Make vertical line: 	
g	Start with **c**: 	Add: 
h	Start with vertical line: 	Add hump: 

k	Start with vertical line: 	Add **v** shape: 
v	Make **v**: 	
w	Start with **v**: 	Add **v**: 
th	Start with cane: 	Add vertical line:  Add hump and cross: 
sh	Start with **s**: 	Add **h**: 
p	Start with vertical line: 	Close with backward **c**: 
ch	Start with **c**: 	Add **h**: 
b	Start with vertical line: 	Close with backward **c**: 
y	Start: 	Add: 
er	Start with **e**: 	Add **r**: 
j	Start with vertical line: 	Add curve: 
wh	Start with: 	Add **h**: 
x	Start: 	Cross: 
z	Start with horizontal line: 	Add **v** shape: 
qu	Start with **c**: 	Add vertical line:  Add **u**: 

can either quit at that time or permit the child to select a fun activity, such as the child playing teacher and presenting part of the lesson to you.

Schedule the lessons for a specific time each day. A good time is before dinner. Because the lessons do not take very long, you may decide to schedule the reading every day of the week (not just on Monday through Friday). The advantage of the every-day schedule is that the reading becomes a daily, nonnegotiable part of the day. When children understand that something is part of the daily schedule, they accept it far more readily than they do if it comes and goes or, even worse, if it is open to negotiation. Do not negotiate the schedule. Do not make deals over it. Discuss it after you have made it up. Change it if it is inconvenient or unworkable, but do not succumb to "I'm tired today" or "Do we have to? Huh?" Just smile and say, "Oh, come on, it only takes a few minutes and you're so smart you'll go through it like nothing," or "Well, let's work hard and see how quickly we can get it over with." Do not argue.

Some parents who have used **Distar** Fast Cycle have found that they can schedule two lessons a day—one early in the day, the other in the evening. These parents found that the early lessons go so quickly that presenting two lessons during one day is not a problem. Often they were right. Sometimes, however, this schedule overwhelms the child with information, even during the early lessons. If you feel that two lessons a day is possible for your child, try it. But remain extremely sensitive to the possibility that the new sounds and new skills introduced by the program may come so fast that the child does not have adequate time to digest them and become thoroughly facile with them. If you notice that your child does not have good retention of things that were presented in earlier lessons, abandon the schedule or modify it. A good modification is to present one entire lesson in the morning. In the evening, repeat the first part of that lesson. This part includes the work on sounds and blending (and, later in the program, word reading). Do not repeat the writing and comprehension activities for the lesson. If the child does well on the review of the lesson presented earlier (which should take no more than ten minutes), begin the next lesson. Stop when the twenty-minute period is over. Begin the next lesson where you left off.

Posting your schedule is a very good idea. In that way you can use the schedule as a symbol of the child's success. If you make up a schedule that looks like a calendar, you can end each lesson by writing the number of the lesson just completed on the schedule. You can indicate that the child has mastered the lesson by making a star or a smiling face next to the lesson number. From time to time refer to the number of lessons that have been mastered. "Wow. You've already got twenty stars. Look at that!" This technique makes your schedule a strong reinforcer.

Practicing the early lessons. Each lesson presents a script for all activities in the lesson, which indicates precisely what you are to say. It also indicates what the child is to do and what the child is to say when producing a correct response for each task that you present. Before you work with your child, make sure that you can present the tasks without fumbling or stopping while you figure out what to say or whether the child's response is correct. The only way to become facile with the scripts is to practice them. And practice means just that. Read the script out loud. Practice doing what the script tells you to do—for example, touching the ball at the beginning of the arrow for the sound exercises, and then moving along the arrow. After you present directions that call for a child's response, say that response to yourself.

These are the conventions for the script:

- What you *say* appears in red type.
- What you or the child does appears in parentheses.
- What the child says is presented within quotation marks.

Here is part of a task from Lesson 1:

5. Your turn to say the sound when I touch under it. (Touch first ball.) Get ready. (Move quickly to second ball. Hold.) "ssssss."

You first say, "Your turn to say the sound when I touch under it." You then touch the first ball. Then you say, "Get ready." You move quickly to the second ball and hold. As you do this, the child says, "Sssssss." For this task, the child produces the response, "sss." For other tasks, you will model or show the correct response. But remember, when the child is supposed to talk, you don't talk. And you don't move your lips to mouth the response or clue the child. You simply move under the ball and stop. The child produces the response.

PRACTICE PRESENTING LESSONS 1 AND 2

Assume that the child is sitting next to you.

Present each task of the lesson out loud. Remember, when the script indicates that the child is to respond, you are not to respond with the child or lead the child.

Go through the lesson a couple of times, until you can present it without looking at the book all the time. Remember, you are going to have to observe the child and respond to what the child says. Try to maintain fast pacing from task to task, but do not rush each task. Present each task in a conversational way, not in a stilted schoolmarm manner.

Practice quick praises for quick response, and practice corrections.

After you take these steps you will be ready, and the preparation for the later lessons should not take more than a quick run-through before you present them to your child.

Phonemic Awareness in *Reading Mastery*

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The identification of phonological awareness or phonemic awareness is generally treated as a recent breakthrough in identifying metacognitive underpinnings that enable children to relate sounds to the symbols that compose words. The current interpretation is that if children lack skills needed to process spoken sounds and words in different ways, they would be at a serious disadvantage when working with symbols and words that represent spoken sounds and words.

Activities that constitute phonemic awareness include word segmentation, word blending , rhyming, and alliteration. For segmentation, children listen to a word and identify the component sounds. For blending, children listen to a series of sounds that compose a word and identify the word. For rhyming and alliteration, children do a variety of activities but usually identify words that rhyme or alliterate with a word or word part that is presented.

Although these activities are considered a reading preskill for beginning readers, the relationship between word decoding and specific phonological activities or skills that underpin it is not perfectly clear in the current framing of phonological awareness. A more precise interpretation of these verbal preskills appears in the early works of Siegfried (Ziggy) Engelmann and his development of Direct Instruction in the 1960s. The current literature acknowledges neither his contribution nor his analysis of the purpose of these activities, their relationship to reading, nor the structure of tasks that are effective. Instead, the literature gives the impression that understanding and identification of this reading skill emerged in the 80s (cited in *Becoming a Nation of Readers* in 1985). Some of these citations referred to reading programs that Engelmann designed (*DISTAR Reading Mastery*); however, these programs were not named in the text.

DISTAR Reading Mastery has been reviled by traditional educators (having been labeled by both David Weikart and Kenneth Goodman as the thalidomide of reading programs) even though this program has more experimental data to confirm its effectiveness than possibly all other reading programs combined.(See Adams, *Research on Direct Instruction*, 1997).

The beginning level of the 1969 edition of the DISTAR reading program had over 300 activities that involve phonological awareness; the teachers' guide described the various phonological sequences and why the activities were included in the program (what they taught the children about decoding and about the relationship between spoken sounds and symbols). Although the labels DISTAR used for the various activities were not the same as those that are currently in vogue, the labels gave a good indication of what the children were to do—"say it fast" (blending), "say the sounds" (segmentation), and rhyming. A further explanation of DISTAR's orientation to phonological awareness appeared in a 1969 book written by Engelmann, *Preventing Failure in the Primary Grades* (reprinted by ADI, see page 96), which described the need for these tasks and how they fit with alliteration to form a systematic phonological base for a beginning reading program. In 1976, Carnine and Silbert further specified "formats" similar to those in DISTAR in the text, *Direct Instruction Reading*.

The difference between the Direct Instruction orientation to phonological skills and that of other early programs that presented children with phonological manipulations is the precise articulation of how the various skills served as necessary preskills for a beginning reading program in which children were to sound out and blend words. For Direct Instruction the needs were very precise and were based on analyses of the various reading tasks presented to the beginning reader. It was unlike Lindamood, and some of the Peabody applications that were related to reading in gross and often unspecified ways. The single purpose of these tasks for DISTAR was to prepare children for specific decoding tasks they would soon encounter.

The basic argument that Engelmann used for the necessity of phonological manipulations was that they were components of corresponding decoding manipulations. Component tasks are analytically "easier" to learn than tasks that incorporate the component (because these tasks involve the components plus additional components that must be coordinated). Therefore the components should be mastered before the more complex operations are introduced. The components involve less learning and less coordination. A similar argument would

hold that the child should learn the "sounds" for the various letters that appear in the word to be decoded before being required to decode the word. Decoding each individual sound is a component of decoding the entire word. Therefore, the sounds for the various letters should be pretaught.

Another way of viewing the instructional-design question is to consider the possible causes of failure. When a child attempts to decode a word like ran (by sounding it out and then identifying it) the child could fail if the child did not know the sound for any component letter; similarly, if the child could not blend the various sounds, the child could fail. If the child has been pretaught various components (verbal blending, the sounds for the various letters, the orientation of ordering the sounds from left to right) the likelihood of failure is greatly reduced. Also, the ease of correcting the child who makes a mistake is greatly increased.

The demonstration that phonological manipulations are precise components of a beginning word-reading operation can be seen by constructing a task that is as similar as possible to a beginning decoding task but that does not refer to any symbols. It is a verbal skeleton of the task.

In the following example, the teacher will say the word ran slowly, holding each sound for about 2 or 3 seconds and not pausing between the sounds.

> **Listen.** Hold up a finger for each sound.
> **Say** (pause) **rrraaannn. Get ready.** Hold up a finger for each sound. *Rrraaannn.*
> **Again. Get ready.** Hold up a finger for each sound. *Rrraaannn.*
> **Say it fast.** (Signal.) *Ran.*
> **Yes, ran.**

The responses the children make (saying the segmented word and then saying it fast) are the same responses the children make when decoding the word ran. The only difference is that when they decode the word, they refer to written symbols to initiate the segmented word.

The principal goal of the pre-decoding activities in *DISTAR Reading Mastery* is make children sufficiently facile with the verbal components of decoding that they will successfully coordinate these with the symbol-identification component during the introduction of the first decoding words. Even with this practice, children sometimes make mistakes because they become overwhelmed with the coordination of saying the sounds, remembering the sequence, and trying to concentrate on the symbols so they identify them appropriately.

Because children are facile with the verbal components, however, the teacher has a very effective correction procedure that does not involve telling children the word, but that shows them how to use what they already know to figure out the word. The correction procedure simply removes the symbol component of the task, presenting only the skeleton of the task that involves sounds.

Here's an example of the word-reading procedure the teacher script specifies, a typical error and the correction. Note that this example comes from very early in the program, after children have been decoding written words only a few lessons.

TASK 7 Children say the sounds, then sound out the word

a. Point to the first ball of the arrow for **mē.** **This is the word** (pause) **me. What word?**
Touch the first ball. *Me.*
Yes, me.

b. Point to the ball for **m. When you sound out** (pause) **mē, what sound do you say first?** Touch the ball for **m.** *mmm.* **Yes, mmm.**
Point to the ball for **ē. What sound do you say next?** Touch the ball for **ē.** *ēēē.*
Yes, ēēē.

c. Repeat *b* until firm.

d. **You're going to sound it out, then say it fast.** Return to the first ball. **Everybody, sound it out. Get ready.** Move under each sound. Hold under each sound for two seconds. *Mmmēēē.*

One or two children say nothing or say *eee.*
The correction: The teacher immediately puts down the display book and says, Listen: mmmeee. Say it with me. mmmeee.
All by yourself:
Children: *mmmeee.*
Teacher: Say it fast.
Children: *me.*
Teacher quickly holds up display book and touches ball of the arrow for *me.*
Teacher: Now do it here. Say the sounds. Get ready.
Teacher touches under me as children say *mmmeee.*
Teacher: Say it fast.
Children: *me.*

The correction is effective because the teacher doesn't have to tell the children the word. The cor-

rection also implies what children are required to be proficient in before they are introduced to the decoding of written words. If they do not have the basic verbal skills that are required to respond to the skeleton example presented in the correction, they lack skills needed to decode words. Conversely, if they have the verbal skills, they have at least part of what they need to be successful.

Blending

The sequence of pre-reading skills begins with say-it-fast on lesson 1 in DISTAR and continues in progressively more difficult formats through lesson 40. The sequence starts with simple examples and moves to more difficult ones. The simple examples, those that quite low-performing children are capable of processing on lesson 1, present familiar multisyllabic words or word pairs that are separated into two parts.

> **Let's play Say It Fast again.**
> Hold out your hand. **Listen. Snow** (pause) **flake.** (Pause.) **Say it fast!** Drop your hand. *Snowflake.* **Yes, snowflake.**

Very quickly, these examples become interspersed with examples that are a bit more difficult—familiar two-sound words composed of voiced sounds that are presented continuously, presented with no pauses between the sounds: mmmeee. Say it fast. (These examples are more difficult because there is less sound information for the child . When blending ham (pause) burger, the child could miss some of the middle sounds and still be able to identify the word: ha-..b—gur. will be identified as hamburger. If either sound in mmmeee is not registered, the word will not be identified.)

By presenting the word with no pause between the sounds, and by assuring that the word begins with a continuous sound (not a stop sound like b,d, or g) the example assures that the "segmented" word the teacher presents is very "similar" to the same word spoken at a normal speaking rate. Many lower-performing children who succeed in blending mmmeee would have difficulty blending mmm(pause) eee. This teaching strategy has proven helpful (Weisberg & Savard, 1993).

Words of intermediate difficulty, and that appear next in the sequence, are those that have an unvoiced sound, and those that have more than three sounds. A two-sound word with an unvoiced sound (if, so, see) is relatively harder than those that have voiced sounds, simply because the voiced sounds have greater salience.

Examples that are of the next order of difficulty are those that begin with a continuous sound but that have three sounds. These examples would include mat, man, sit, run.

The most difficult words presented in the sequence are those that have more than three sounds (sailor, open, picnic), words that have difficult consonant blends (snap, rings), and those that have pauses between the sounds: fff iiishshsh. Words with pauses are very important for setting up rhyming, which means that rhyming is sequenced to begin after children have mastered variations of say-it-fast.

In the later variations of say-it-fast, the teacher says the sounds; the children then repeat those sounds before saying them fast.

Throughout the sequence, children receive demonstrations that the words they say have meaning. As part of each lesson from 1 through 23, children first identify a word by saying it fast, then see a picture that illustrates the word. Note that they do a verbal decoding of the word first and use this decoded word to predict what the picture will show. This task is a strong precursor of reading comprehension tasks. It shows that the words refer to familiar things in the environment.

Here's an example from lesson 4.

> **If you can say this word fast, I'll show you a picture.**
> Hold out your hand. **Listen. Ham** (pause) **burger.** (Pause.) **Say it fast!** Drop your hand. *Hamburger.*
> **What word?** (Signal.) *Hamburger.*
> **Yes, what is the picture going to show?** (Signal.) *Hamburger.* **Yes, hamburger.**

The word predicts the picture, which is what occurs in real reading. This is the opposite from the illogical tactic used in many beginning reading programs of presenting the picture to predict or infer the word. The traditional tactic would be appropriate for teaching picture interpretation or suggestions. The word-first approach is appropriate for reading comprehension, which requires children to go from the words to the meaning of the words or to the pictures that show the word. Note that the word is of the easiest type. By lesson 15, children identify a more difficult word before they see the picture of it on their worksheet.

TASK 6 Children say it fast, then see a picture

a. Do not show the picture until step *g*.
b. Say it fast and I'll show you a picture.
c. Listen. Sssâăăiiiiior. (Pause.) **Say it fast!** (Signal.) *Sailor.*
What word? (Signal.) *Sailor.*
d. Yes, what is the picture going to show? (Signal.) *Sailor.*
e. The man you will see in the picture is a .... (Pause.) **Sssâăăiiiiior.** (Pause.) **Say it fast!** (Signal.) *Sailor.*
f. Repeat e until firm.
g. Here's the picture.

Another element of the say-it-fast track in *Reading Mastery* involves applying say it fast to symbols. Children first say the sound for a continuous letter (f, l, m, e) slowly and then say it fast. For example, in lesson 13, children see the letters

Touch the first ball of the arrow for m. Your turn. Say the sound slowly. Get ready. Move quickly to the second ball. Hold for two seconds. *mmmmmm.*
Return to the first ball. **Say it fast.** Slash to the end of the arrow. *m.* **Yes, m.**

The program presents verbal tasks that involve single sounds. For example, on lesson 16, one of the tasks the teacher presents is, listen: rrrr. Say it fast. These manipulations are important because they demonstrate to the children that sounds as well as words can be said slowly and said fast, which is what children will do when they decode words.

After children have mastered the various sound manipulations, word decoding is introduced. At this time, the children have learned the other components (aside from phonological manipulations) that are logically implied for initial decoding. Children learn to identify sounds for the various symbols that will appear in the words they will decode. (In *Reading Mastery*, children do not learn letter names until much later in the program. The reason is that they don't need letter names to read.) Children also learn to "follow the arrow," which appears under every symbol or group of symbols, and which is used in different picture tasks to teach children to temporally sequence events that are displayed in a left-to-right arrangement.

In the first "routine" for directing decoding of words, children identify words that are first sounded out by the teacher. Then children sound out and identify these words. For example, the teacher displays the word am.

e. Touch the first ball of the arrow for am. My turn. I'll show you how to say these sounds without stopping between the sounds. Move under each sound. Hold. Say **aaammm.**
b. Return to the first ball of the arrow for am. Your turn. Say the sounds as I touch under them. Don't stop between the sounds. Get ready. Move under each sound. Hold. *Aaammm.*
Return to the first ball of the arrow. **Again. Get ready.** Move under each sound. Hold. *Aaammm.*
Good saying aaammm.

The last step in the sequence requires the children to do all the steps, say the sounds without pausing between them, then saying the word fast. The entire sequence involves a smooth gradation of tasks to assure if the teacher presents the material as specified and teaches to mastery, all the children will learn to decode, including those with low IQs and who would generally be labeled not ready (Becker & Engelmann,1996).

Rhyming

When children decode words, they follow the convention of not pausing between the sounds. The no-pause convention suggests the need for another type of preteaching—rhyming of a particular type. This format for rhyming would give information about the ending and would require children to attach the beginning sound to the specified ending.

Rhyming has two primary functions as a preskill in a beginning reading program. The first is to show patterns within word families. If words have endings that are spelled the same, the endings are probably pronounced the same, which means that the words rhyme. The other function is to "sound out" words that begin with a stop sound. It is possible to hold continuous sounds (those for letters e, f, r, s, z, etc.) for as long as the person has a breath; however, stop sounds are produced quickly (sounds for b, c, d, g, h, j, k, p, t, x). It has been argued by linguists and whole-word advocates that stop sounds document the impracticability of "sounding out" words. They

argue that if a stop sound occurs as the beginning sound, there are many possible variations of the sound, all governed by the sound that follows. They further argue that this phenomenon proves that stop sound cannot be produced in isolation without serious distortion.

They are wrong on both counts. The simplest contention to refute is that stop sounds cannot be produced in isolation. If the stop sound occurs at the end of word there is always a pause before it. Pronunciation of the sound demands a pause—a momentary suspension of all vocalization—immediately before the sound. By slowly saying a word that ends in a stop sound, one can exaggerate the pause quite naturally. Say the word rub very slowly and try to do without suspending your voice completely before the b sound. It can't be done. Therefore, you are producing the b sound *in isolation*.

Furthermore, the difference in the b sound that you produce for the words rab, reb, rib, rob, robe and rube are almost indistinguishably different. Therefore, it is possible to produce these sounds in isolation without serious distortion. Just practice saying the last sound of words that end in a stop sound. The teaching of stop-sounds in isolation would be very efficient for words that end in stop sounds.

Stop sounds at the beginning of the word present a different problem because the transition sound, which is minimal when the stop sound is at the end of the word, is greatly influenced by the following sound. The b sound at the beginning of the word bite is slightly different from that at the beginning of bute, bet, boat, and bait. The conclusion that it is therefore impractical to teach these sounds in isolation doesn't follow because the first part of the sound is the same for all these variations. What many children need to process these sounds is knowledge of rhyming. Here's a task: rhyme with ite and start with the sound for b. You cannot perform on this task unless you select the transition sound that leads from b to ite. If you start with b and rhyme with oat, ut, or ait, you cannot select the transition for ite, but the transition for the sound that follows. Therefore if children receive rhyming practice in verbal contexts, they will learn the skills that readily transfer to reading words that begin with stop sounds.

Reading mastery introduces the sounds for stop-sound letters as "quick sounds." The teacher does not hold the point under these letters. Rather, the teacher moves along the arrow without even stopping under the letter. Children produce the sound when the teacher's finger moves directly under the letter.

The teacher and the children also pronounce these sounds correctly (which is often not done in phonics programs). Some sounds are unvoiced, which means that they are whispered. There is no vocalization and no voiced sound on the end of them. The sounds for c, k, p, t and x are unvoiced. The sounds for b, d, g, and j, are voiced, but they do not end in an uh sound. They end as they do at the end of the words like rob, sad, and fig.

Preskills for rhyming begins on lesson 16. The first preskill requires children to blend a word that is presented in two parts, the beginning sound and the ending. There is a pause between the sounds, so the task is different from those that children have worked on when they sound out words. Here's the part of the exercise that follows the teacher modeling the task.

> **All by yourself.** Hold up one finger. **First you'll say** (pause) **mmm.** Hold up second finger. **Then you'll say** (pause) **at. Get ready.** Hold up one finger, then second finger as the children say *mmmat.*

Although it is not immediately apparent, this task is very close to a task that requires children to rhyme. The rhyming variation is introduced through a series of progressive variations in teacher wording. For all variations, the beginning sound is written, and the ending part is indicated by the teacher. For example the teacher displays:

a. Touch the first ball of the arrow for **m. My turn.** Move quickly to the second ball. **First I'll say this sound. Then I'll say** (pause) **eat.**
Listen again. First I'll say this sound. Then I'll say (pause) **eat.**
b. Return to the first ball of the arrow. **Here I go.** Move quickly to the second ball and say **mmm.** Slash to the end of the arrow and say **(mmm)eat.**
c. Return to the first ball of the arrow for **m. Do it with me. First you'll say this sound.** Quickly move to the second ball. **Then you'll say** (pause) **eat.** Slash to the end of the arrow.

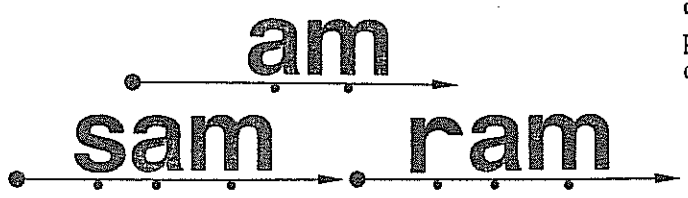
d. Return to the first ball. **Get ready.** Move quickly to the second ball. **mmm.** Slash to the end of the arrow. **(mmm)eat.**
e. Repeat c and *d* until firm.
f. Return to the first ball. **Say it fast.** Slash. *Meat.*
g. **Yes, meat. Good saying it fast.**

On lesson 30, after children have processed dozens of words through the formats described above , the teacher refers to rhyming.

a. Touch the first ball of the arrow for **s.** Move quickly to the second ball. **You're going to start with this sound and rhyme with** (pause) **at.**
b. Return to the first ball of the arrow. **Tell me the sound you're going to say first.** Move quickly to the second ball. *sss.*
Then what will you say? Slash to the end of the arrow. *at.*

By doing the same steps with m and r, children are introduced to the rhyming relationship between words. All have the same ending sound. Each has a different beginning sound.

On lesson 37, children do the same basic steps with written words.



a. Point to the red part of the words. **The red part of these words is the same. So these words rhyme.**
b. Touch the first ball of the arrow for **am.** (Pause.) **Sound it out. Get ready.** Move quickly under each sound. *Aaammm.*
c. Return to the first ball. **Again, sound it out. Get ready.** Move quickly under each sound. *Aaammm.*
d. Return to the first ball. **Say it fast.** Slash. *Am.* **Yes, am.**
e. Touch the first ball of the arrow for **sam. What sound are you going to say first?** Tap the ball. *sss.* **Yes, sss.**
Then you're going to say (pause) **am.**
Remember, first you'll say (pause) **sss.**
Then you'll say (pause) **am. Get ready.**
Move quickly to the second ball. Hold for two seconds. *sss.* Slash. *Sssam.*
Return to the first ball. **Say it fast.** Slash. *Sam.*
Yes, (pause) **sam rhymes with** (pause) **am.**

The teacher follows the same steps for ram.

On lesson 40, the teacher presents a variation of the task that refers to rhyming. The words are eed, seed, feed.

a. Point to **ēēd, sēēd,** and **fēēd. These words rhyme.**
b. Touch the first ball of the arrow for **ēēd.** (Pause.) **Sound it out. Get ready.** Move quickly under each sound. *ēēēd.*
c. Return to the first ball. **Again, sound it out. Get ready.** Move quickly under each sound. *Eēēd.*
d. Return to the first ball. **Say it fast.** Slash. *Eēd.* **Yes, ēēd.**
e. Touch the first ball of the arrow for **sēēd.** **The red part of this word is** (pause) **ēēd. So what does this word rhyme with?** Tap the ball. *Eēd.* **Yes, ēēd.**
Rhyme with (pause) **ēēd. Get ready.**
Move quickly to the second ball. Hold. *sss.* Slash. *Ssseēēd.*
Return to the first ball. **What word?** Slash. *Seed.* **Yes, seed.**

The teacher follows the same steps for feed.

On lesson 44, children rhyme with a word that begins with a stop sound. The words are ear and **dear.** Children first identify ear and follow the same procedure used for words that begin with continuous sounds for identifying dear.

a. Point to **ēar** and **dēar. These words rhyme.**
b. Touch the first ball of the arrow for ēar. (Pause.) **Sound it out. Get ready.** Move quickly under each sound. *Eēērrr.*
c. Return to the first ball. **Again, sound it out. Get ready.** Move quickly under each sound. *Eēērrr.*
d. Return to the first ball. **Say it fast.** Slash. *Ear.* **Yes, ear.**
e. Touch the first ball of the arrow for **dēar.** **What sound are you going to say first?** Tap the ball. *d.* **Yes, d.**
The red part of this word is (pause) **ēar. So what does this word rhyme with?** Tap the ball. *Ear.* **Yes, ear.**
Remember, first you'll say (pause) **d.**
Then you'll say (pause) **ēar. Get ready.**
Slash. *Dear.* Return to the first ball.
What word? Slash. *Dear.* **Yes, dear.**
f. Return to the first ball for **dēar. Again, first you'll say** (pause) **d. Then you'll say** (pause) **ēar. Get ready.** Slash. *Dear.* **Yes, dear. How are you** (pause) **dear** (pause) **friend?**

Various words that begin with stop sounds are processed through this format on the following lessons. In a later variation, children do the second word in an abbreviated fashion. After they sound out and identify the first word (in), the teacher points to the second word and says, (tin) this word rhymes with in.

Say it fast and rhyme with (pause) **in.**
(Pause.) **Get ready.** Slash. *Tin.* **Yes, tin.**

On lesson 63, a variation is introduced. The teacher presents two words: not, hot.

a. **Point to the first sound of not. What sound?** (Signal.) *nnn.*
Point to the first sound of hot. What sound? (Signal.) *h.*
b. **These words rhyme with** (pause) **ot.**
What do they rhyme with? (Signal.) *Ot.*
Yes, rhyme with (pause) **ot.**
c. **Touch the ball for not. Get ready.** Touch **n.** *nnn.*
Move your finger quickly along the arrow. *Not.*
d. **What word?** (Signal.) *Not.* **Yes, not.**
e. **Touch the ball for hot. This word rhymes with** (pause) **ot.**
What does it rhyme with? (Signal.) *Ot.*
f. **Get ready.** Move your finger quickly along the arrow. *Hot.*
g. **What word?** (Signal.) *Hot.* **Yes, hot.**

Note that the sound for h is not strictly a stop, but it is a sound that must be produced quickly (like stop sounds) and it has various transition sounds that are determined by the following sound (like stop sounds.)

The children also do a variation in which they analyze a single word (he). The children first identify the ending (ee). The teacher then tells them that this word rhymes with ee.

The procedure implies a correction for children who have trouble with words that begin with a stop sound. The teacher directs the children to identify the ending, then point to the beginning sound and ask the children, "What does this word rhyme with?" The children are then able to look at the first letter of the word and identify the word.

Another variation is to cover up all but the first two letters of the word. Point to the second letter and have the children identify the sound. Then tell them to rhyme with that sound.

The careful progression of the instructional design of *Reading Mastery* attends to the complete integration of those key phonological skills that children need to master beginning reading. This progression is coordinated with other strands, such as left-to-right sequencing, comprehension, and careful integration of various subtypes of words children decode.

There may be several reasons the traditional reading establishment so vigorously ignores *Reading Mastery*. One may be that they don't actually examine the program or see how it works with children. Another may be that it seems to be simple and could not therefore be sophisticated. Perhaps the most prominent feature of an elegant program, however, would be that it is simple and could be used effectively by a very wide range of teachers. Well-designed automobiles are relatively easy to use and trouble free, even though the engineering is very intricate. In any case, the more the traditional reading establishment discovers about effective components, the closer they move toward the theories, details, and practices that have been incorporated in *DISTAR Reading Mastery* since the 60s. ◆

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Using the Preschool Age as a Developmental Leverage to Prevent Behavior Problems with Early Screening and Intervention

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Abstract: Researchers suggest that much problem behavior in school-age children has its origins in early childhood. The preschool-age period, from three- to five-years-old, allows a unique opportunity to dramatically affect children's lives in positive ways. Preschoolers are more responsive to adult attention than older children. Preschoolers are also learning how to interact with their peers and these early lessons influence their future relationships. Therefore, the preschool-age can be viewed as providing "developmental leverage" for preventing potential problems. Developmental leverage is the increased effectiveness or impact of an intervention used at an advantageous time during a certain developmental stage or period. Preschool intervention in cooperation with home and community settings is the best hope for remediating anitsocial behavior before it becomes chronic and intractable (Kazdin, 1987). The preschool-age affords an opportunity to avert the future development of antisocial behaviors such as violence, substance abuse, educational failure, and criminal involvement.

RESEARCH

Origins of Behavior Problems

The global term "behavior problems" is applied to a range of behaviors that includes aggressive, withdrawn, antisocial, disruptive and/or deviant behavior. Other terms describing similar phenomena are *conduct disorders, antisocial behavior, emotionally disturbed, emotional/behavioral disorders, separation anxiety, and social maladjustment.* In an educational setting, the terms *emotionally disturbed* and *behavior disorders* are the most frequently utilized. Seriously Emotionally Disturbed (SED) is the term used in the Individuals with Disabilities Education Act (IDEA) to refer to severe behavior problems for children 3-18 years old.

Behavior problems can be classified as *aggressive/acting-out behavior* and *withdrawn/solitary behavior* (Achenbach & Edelbrock, 1986; Eisert, Walker, Severson, & Block, 1989; Fischer et al., 1984; Hinshaw et al., 1993; Kohn, 1977; Rolf & Haazi, 1977; Walker, Severson, Stiller, Williams, Haring, Shinn, & Todis, 1988). Children with aggressive/acting-out characteristics exhibit such behaviors as aggression, antisocial acts, social-skill deficits, hyperactivity, and/or lack of attention. These children can be easily angered and will move from activity to activity, being less focused than other children. Children with withdrawn/solitary behaviors are characterized as being socially withdrawn, anxious, inhibited, depressed and having social-skill deficits. These children will frequently position themselves on the outskirts of an activity and will not engage in play without encouragement. Frequently, the children with the most severe behavior problems exhibit both behavior patterns; that is, periods of social isolation with explosive episodes. Our research has shown that children spending over 40% of their free-play time in anti-social and/or solitary play are significantly more at risk for the development of behavior problems than their peers (Walker, Severson, & Feil, 1995).

Studies have indicated that behavior problems have origins in early childhood (Fischer, Rolf, Haazi, & Cummings, 1984; Lerner, Inui, Trupin, & Douglas, 1985; Patterson et al., 1992; Waxler, 1993). Problem behaviors have been shown to be stable over time (Kohn, 1977) and predictive for preschool children of learning problems in third grade (Fischer et al., 1984; Patterson et al., 1992). Without intervention, children with behavior disorders risk increasing levels of long-term social maladjustment (Patterson DeBaryshe, & Ramsey, 1989) and remediation becomes more difficult (Bower, 1982). With early screening and intervention, there is evidence that children and their families can experience profound and enduring gains in adaptive, social relationships, and in academic achievement.

Indicators Evident in Preschool Settings

Most children attend some kind of care outside the home. Young children are more likely to be placed in an organized child-care facility (31%) or nonrelative home (18%) than to be placed in the care

of a relative (21%) (Interagency Forum on Child and Family Statistics, 1988). Among children under age 5, the proportion placed in formal group settings has increased, while the proportion cared for by nonrelatives in private homes has declined.

Children make two important adjustments in preschool: They adjust (a) to teacher expectations and (b) to peer relationships. These two adjustments are developmentally appropriate and normal for all children. Therefore, these factors can be viewed on a continuum in which all children adapt and learn. They also can be used as indicators of a child's socialization.

For many preschool children, being supervised by an adult other than a relative is a new experience. Classroom rules may or may not be congruent with home rules. New teacher expectations include attention during large group activities (e.g. story reading) and appropriate participation and use of materials during individual activities (e.g. painting). Some children have difficulty adjusting to these new expectations and, as a consequence, display inappropriate behaviors. These behaviors are initial indicators of potential behavior problems.

The second adjustment children make is in their relationships with peers. Development of social interaction takes a predicable course (Gottman & Mettetal, 1986). Infants and toddlers will spend most of their time in solitary play, although there is some parallel play with little direct social engagement. Parallel play seems to be a precursor to social initiations and subsequent interaction. That is, parallel play increases the probability that direct social interaction will take place because children are involved in a similar activity in proximity. Preschool-age children spend most of their free-play social time in parallel play and begin to spend more time in social engagement. Frequently, social initiations that were previously rebuffed or ignored in the toddler period are now reciprocated. If a child has social skill deficits and does not make the transition from initiation to positive social interactions, the likelihood of future antisocial behavior and involvement in deviant peer groups increases (Patterson, Reid, & Dishion, 1992). Through teacher evaluation and direct observation, a child's adjustment to preschool (adult and peer) expectations can be monitored, referral made, and intervention prescribed as necessary.

Screening as the First Step

Careful structuring of the preschool classroom teacher's evaluation of ***all*** children in her/his classroom, in relation to objective criteria that define behavioral "at-risk" status, can yield long overdue improvements in the naturally occurring referral practices of most school systems. At best, these current practices appear to be reactive and highly idiosyncratic to the behavioral standards of individual, referring teachers (Gerber & Semmel, 1984); and at worst, they are extremely biased in the direction of securing the removal of referred students from the educational mainstream with the goals of reducing classroom management pressures, and improving overall teachability (Ysseldyke, Algozzine, & Epps, 1982; Ysseldyke, Christenson, Pianta, & Algozzine, 1983).

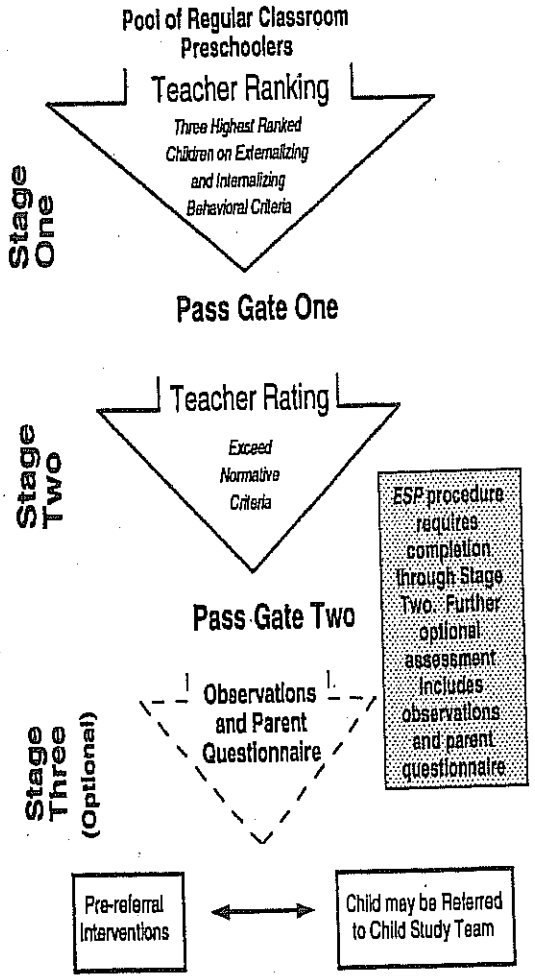
Most preschool teachers do not want to refer children for social/emotional reasons until she or he has tried everything possible to remediate the problem; typically delaying support services until the problem behavior has become more severe and behavioral patterns more entrenched. I have spoken with many preschool teachers who feel a personal failure if they refer a student for special services for social/emotional reasons. Current practices in this important area of educational performance can be improved significantly via the following methods: (a) the adoption of more objective definitional criteria for school related behavior problems and disorders, (b) structured *proactive* involvement of teacher appraisal procedures in the initial screening and assessment process, and (c) the use of "multiple gating" assessment procedures (Loeber, Dishion, & Patterson, 1984) to provide integrated and multiple sources of data in a cost efficient screening and identification process.

Multiple gating is a procedure that contains a series of progressively more expensive and precise assessments or "gates" that provide for the sequential assessment and cross validation of multi-method forms of child assessment. Multiple gating establishes a decision making structure for the aggregation of information produced by different assessment sources. It appears that the climate for adoption of such a model is quite timely given the widespread dissatisfaction that parents and educators have expressed regarding current behavioral assessment practices, at both preschool and elementary levels, (Huntze, 1985; Jenson, 1984; Kaufman, 1982; Wood, Smith & Grimes, 1985). When combined with professionals' advocacy for the adoption of more objective and standardized assessment procedures (Forness, & Knitzer, 1990; Kaufman, 1992), the case for more generically effective assessment practices is highly persuasive.

The Early Screening Project (ESP) universal screening procedure provides for the cost effective, mass

screening of all young children who are enrolled in regular preschool and kindergarten classrooms, and links definitional criteria, screening and assessment procedures, and normative based, eligibility decision-making into one self-contained system. This model relies heavily upon structured teacher judgement of child behavioral characteristics in the first two assessment stages and uses normatively-referenced, behavioral observation data to provide independent, in vivo assessments of the child's functioning within instructional and free play settings in stage three. The results of assessments and decision making in initial screening stages are cross-validated by increasingly more intensive assessments in subsequent screening stages. Figure 1 graphically illustrates the screening and student identification processes involved in the ESP's multiple gating procedure.

Figure 1. Early Screening Project Procedure.



Early screening has been found to be user-friendly and reports from staff users and reviewers have been positive regarding both its length and simplicity (Yoshikawa & Knitzer, 1997). One preschool director stated that she expects that use of the ESP will increase the credibility of the staff when they make referrals to local early childhood special education programs. Early screening can make a positive difference in obtaining timely referral, diagnoses, and follow-through for preschool children showing emotional and behavior problems (Yoshikawa & Knitzer, 1997).

Early Interventions

After screening, the next step is providing intervention. Good interventions teach and reinforce positive social skills as well as decrease problem behaviors (such as hitting). There are several interventions, which have been empirically validated, and can be implemented in early childhood. They range from universal school-based, home/classroom, and parent-group interventions to teacher inservice training models.

Universal Intervention

Some interventions can be implemented with the entire classroom where all children can benefit. For example, social skills instruction can benefit all children. The Second Step curricula were developed to provide teachers with a research-based program that would help them teach essential social skills to all their students to (a) reduce and prevent violence and (b) improve social competence. Studies conducted by the Second Step developers in 12 public and 2 private schools located in urban and suburban areas in Western Washington with students of varying ethnic backgrounds supports the efficacy of this program (Sylvester & Frey, 1994). Lessons are taught by teachers several times a week and students are encouraged to use their newly learned problem-solving strategies and to encourage skills usage. Results found children's perspective-taking and social-solving abilities improved significantly after participating in the social skills intervention.

Classroom- and Home Based Intervention

The First Step to Success program can be used with children who are exhibiting high levels of aggressive and/or oppositional behavior. The intervention involves: (a) home and school rewards for appropriate behavior, (b) group and individual reinforcement systems, (c) a point system, (d) behavioral contracting procedures, (e) adult praise, and (f) a home visiting curriculum. The program is initially implemented by a teacher consultant, but the teacher

takes over running it once behavior change has begun. It is initiated in classroom situations and can be extended to the playground and other settings if needed. The home visiting component consists of 6 visits by the consultant in an individual format to be personalized for the parents' strengths and needs. Topics include communication, cooperation, limit setting, problem solving and emotional regulation, friendship-making, and self-esteem.

Group Parent-Based Intervention

The Parents and Children Series (PACS) consists of a twelve-session videotape-based package presented in a supportive group format (Webster-Stratton,1984). It has extensive evidence of its efficacy, low cost, consumer satisfaction, and convenience of administration in a community setting. In PACS, parents meet weekly in groups of 10-15 for 10 two-hour sessions, led by a professional facilitator. The videotapes of the PACS program are divided into four programs: (a) Play, (b) Praise and Rewards, (c) Effective Limit Setting, and (d) Handling Misbehavior. One 20-minute videotape is viewed per session. Each includes a series of parent-child vignettes that illustrate and model various parenting skills.

Inservice Teacher Training Model

Preschool staff from all over the country report about increasingly disruptive behavior among children (Yoshikawa & Knitzer, 1997). The Management and Prevention Program (MAPP) (Kaminski, 1995) is a year-long training program with a comprehensive series of modules that focus on topics such as team collaboration, environmental arrangements, promotion of social competence and preacademic skills. In coordination with didactic inservice sessions, a project coach visits each participating teacher on a biweekly basis to tailor and focus the principles to teacher's individual circumstances.

A recent RAND study (Karoly, Greenwood, Everingham, Houbé, Kilburn, Rydell, Sanders, & Chiesa, 1998) of early childhood education has found several very positive effects: (1) gains in emotional or cognitive development for the child, typically in the short run, or improved parent-child relationships, (2) improvements in educational process and outcomes for the child, (3) increased economic self-sufficiency, initially for the parent and later for the child, through greater labor force participation, higher income, and lower welfare usage, (4) reduced levels of criminal activity, and (5) improvements in health-related indicators, such as child abuse, maternal reproductive health, and maternal substance abuse.

Conclusion

The ultimate goal of any intervention is to affect the incidence or prevalence of a significant problem. Progress in affecting the skills of individual children and their parents via clinical one-on-one or family intervention needs to be translated into a reduced prevalence of behavior disorders. In order to decrease the incidence of antisocial behavior, it is critical that validated, cost-effective home and school interventions take place early in the school career of children.

The beginning of antisocial behavior patterns can be identified at an early age, and these behaviors can be prevented from escalating into more serious and intractable problems. These effective practices (as noted above) should include universal screening to provide early detection, school-based interventions, training in parenting skills, and teacher inservice training, which have been empirically shown to increase prosocial behavior and reduce aggressive behavior problems (Reid, 1993, Walker, et al., 1996).

We, as educators and parents, have an opportunity to take advantage of the current popular interest in the preschool-age group research to improve the lives of preschool children and their parents. Using validated programs and procedures, the developmental leverage inherent in the preschool-age period can be utilized to remediate and reduce the prevalence and severity of early patterns of problem behavior. ◆

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Reading *To* Children Or Reading *With* Children?

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Abstract: Reading to children, both at home and in school, is so steeped in tradition and lore that few people have actually done research on what happens to children who have been read to naturally by their parents and teachers. It has been assumed that reading to children helps them learn to read just as we would expect it to facilitate their vocabulary and language acquisition. The purpose of this paper is to examine the effects of storybook reading on children's reading development. Reading to children has been suggested to facilitate children's vocabulary, initiate them in the language of literature (and of school), and contribute to their development of a sight vocabulary. We will examine these claims in turn, and then discuss the results of a naturalistic, longitudinal study which included an examining of the effects of teacher and parent storybook reading on children's reading and language development.

Does Reading to Children Improve Their Vocabulary?

The answer, here, seems to be an unequivocal *yes*. Children seem to learn new word meanings incidentally from exposure to words in storybooks. In incidental learning, no attention is given to the target words prior to or during reading. This has been found with preschoolers (Eller, Pappas & Brown, 1988; Leung & Pikulski, 1990), with 7- and 8-year-olds (Elley, 1989; Nicholson, 1991), and with sixth graders (Stahl, Richek & Vandevier, 1991). These gains ranged from about 2 to 6% in incidental learning of word meanings for a single reading, and about 15% for three readings. Elley (1989) also found gains of up to 30% if the reader directly discussed the words during reading. Storybook reading can be an effective means of improving children's vocabularies, especially for children who do not read on their own, such as preschoolers or poor, older readers.

Dickinson and Smith [1994] compared the effects of different teacher interactional patterns in storybook reading on children's vocabulary growth. From their observations, they derived three instructional patterns. The first was a Co-construction pattern typified by high amounts of teacher and student talk. They called the second pattern Didactic-Interactional. This pattern was typified by limited talk as the book was being read, and most of the interactions dealing with class management. The third pattern seemed to be Performance-Oriented, which included little talk during the reading, but more talk before and after reading. The reading itself was treated as a performance, with the emphasis being on the author's words. Similar patterns have been found by Dickinson and Keebler (1989) and Mason, Peterman and Kerr (1989).

Only one of these patterns—the Performance-Oriented style—was significantly related to children's vocabulary growth when measured one

year later. There were no differences between patterns on measures of story comprehension or print knowledge. Regardless of the overall pattern of reading, the amount of analytical talk that involved the teacher and the children during the book reading strongly predicted children's performance on a story comprehension measure, also given one year later. These results compare with Elley's (1989) finding that children's learning of word meanings from storybook readings can be enhanced through discussion of the words' meanings during reading.

Storybook reading can be an effective means of improving children's vocabularies, especially for children who do not read on their own, such as preschoolers or poor, older readers.

Does Reading to Children Initiate Them into Literate Language?

The language of storybooks differs from that of ordinary speech in other ways aside from vocabulary and sentence structure. Olson (1977) distinguished between the language of ordinary speech and the language used in school. Messages between face-to-face speakers share a common context which allows a great deal of information to be omitted from the discourse, since that information can be inferred from the context. For example, the statement, "What is that?" is ambiguous in writing, since the reader has no idea what "that" might be. In speech, what "that" is referring to might be signaled by pointing, or it might be obvious to both speakers. Since the speakers are face-to-face, any ambiguities or lack of understanding can be discerned and corrected on the spot. In contrast, writers do not necessarily know their readers personally. While writers do expect that their readers share some knowledge, they need to specify more information than do speakers. Therefore, learning to cope with the language of schoolbooks can be difficult for many children.

Parents' reading of storybooks can provide help in this transition. Snow (1983), analyzing the patterns of her reading to her son, suggests that parents try to provide a scaffold to aid their children's understanding of the story as they read. Therefore, parents might elaborate points they feel their child may not understand, question key incidents, and so on. The nature of this support changes as their children grow more competent in their understanding of book language. Snow sees the interactions between mother and child in terms of Vygotsky's notion of the "zone of proximal development." In this analysis, parents provide as much support as the child needs. As the child becomes more competent, the parent provides less support.

The studies of Feitelson and her colleagues (Feitelson, Rosenhouse, Charadon, & Givon-Oz, 1991) gives further evidence of the effects of storybook reading on language skills, especially the literary register. The Arabic language is unique in that literary Arabic and everyday Arabic are very different tongues. Feitelson found that reading storybooks to Arabic children can be a powerful method of teaching the literary register, the vocabulary, syntax, and tone used in school, to poor Arab children in Israel. Her experimental storybook reading program appears to have long-term effects in terms of children's school achievement.

These studies are the strongest evidence that reading to children helps them make this transition between the language of home and the language of school. However, Feitelson's work may not apply to reading to children in other countries, whose circumstances are different. This still needs to be tested.

Do Children Learn to Decode from Being Read To?

Recently, a number of authors have made the claim that children will learn to read through being read to. As children hear the same book again and again, they will begin to read the book by themselves. As they practice reading these books independently, their re-enactments (Sulzby & Teale, 1991) become closer and closer to the original text. Through these re-enactments, and from fingerpointing during both their own independent reading and the adult readings, they begin to acquire a sight vocabulary and knowledge of sound-symbol relationships. Thus, at least according to these authors, reading ability can emerge naturally, spurred on by adults, parents or teachers reading stories to children.

Durkin (1966), examining children who were reading when they entered school, found that one common factor among early readers was parents who had read regularly to their children. In addition, she also found that those same parents had taught their children letter names and letter sounds, and they had often provided chalkboards for their children. Therefore, in this study, it is not clear whether reading to children *per se* contributed to their early reading, or whether reading to children was part of a

general literacy-oriented environment. Durkin also found that many of the siblings of these early readers, who grew up in the same environment, presumably with the same literacy activities, did not themselves become early readers.

Other studies which examined the effects of parents reading to children are not as supportive of the power of storybook reading. Share and his colleagues (Share, Jorm, Maclean, & Matthews, 1984), examining 543 children in a study that looked at prereading and oral language abilities, motor skills, home background, and the relationship of each to reading achievement at the end of kindergarten and first grade, found that the amount of time parents spent reading to their children had relatively low correlations with reading skill at the end of kindergarten and at the end of first grade. However, both letter name knowledge and phoneme awareness had three times the relationship with first grade reading success.

Studies of teachers reading to children has produced similar low correlations (Dickinson & Smith, under review; Stallings & Kaskowitz, 1974). These studies have found correlations close to zero between the amount of time that teachers spend reading to children and their reading achievement at the end of first grade. Stallings and Kaskowitz, for example, found a correlation of -.15, that was not only significantly different from zero, but also in the opposite direction predicted. We found similar results in our longitudinal study—small, negative correlations in kindergarten and low correlations in first grade. We will discuss these results fully next.

When in the Course of a Longitudinal Study

In 1983, at the insistence of the National Institute of Education, two of us (Meyer & Linn) began a longitudinal study of how children learn to comprehend what they read and how they learn science concepts and processes. We recruited three school districts in Illinois to participate in the study for at least seven years. We explained our general questions and that we would be interested in testing the children each fall and spring, doing classroom observations of all teachers at each grade level, kindergarten through grade five. We also told them that we would be analyzing the reading and science textbooks that the children were using and sending questionnaires to their parents. We emphasized that this would be a data-driven study—that we would collect data in each of these areas every year and then work with all of the data at each grade level to try to find out how the children were learning to comprehend what they read and how they were learning science concepts and processes.

The School Districts

As we did the initial testing and then began observations in 14 kindergarten classrooms, we were struck by how similar the range of children's abilities were in the three districts and how different the teachers in the three districts were. A district that we will identify as Poplar had a philosophy that included early instruction in reading with their kindergarten students. They used the Alpha K Time (Reiss & Freidman, 1976) program to teach letter sounds to whole classes of children, and then by mid-year they also used Houghton Mifflin's *Getting Ready to Read* (Durr, LePere, Alsin, Bunyon, & Shaw, 1979). By spring many children in these four classrooms were reading short stories in small groups directed by their teachers.

In the district we will call Mahogany, every kindergarten child began the school year in the Harcourt Brace Jovanovich *Look Listen and Learn* (Early, Cooper & Santeusanion, 1979) workbooks. These teachers set up interest centers in their classrooms and taught the children how to rotate from one center to another. One of the center activities was the regular classroom teacher directing the HBJ lessons. Children usually spent about 20 minutes in each center. Children most often rotated to three centers a day. Therefore, teachers saw each small group just 2-3 times each week. In addition, these teachers conducted fairly traditional opening and closing exercises each day—time spent taking roll, doing a lunch count, singing songs, having show and tell, and reading to the children.

We will identify the third district as Evergreen. Unlike Poplar and Mahogany, Evergreen had a full-day kindergarten program. They had yet another curriculum perspective. They described themselves as eclectic, but leaning toward whole-language instruction, except that one of three kindergarten teachers also spent some time most days teaching letter sounds, sound blending, and words to her classes. For the most part, Evergreen teachers organized their school day around lengthy opening and closing exercises, long periods of reading to children, extended activity time periods where the children played freely, music, science, math, physical education, and art. They had no textbooks for instruction, and they believed strongly in keeping the children physically active.

Classroom Observations

One of our goals was to develop an observation system that would allow us to build upon systems that had been used successfully in the past, at the same time expanding those pre-existing systems so that each child in every classroom was observed for full days. To facilitate this, we tape recorded every literacy and science-related activity during observations so that we could return to the tapes when coding, if necessary. While in the classroom, we focused on the teachers. We coded every instructional interaction the teacher had with individuals, small groups, or the whole class. Each instructional interaction was coded in terms of the task it required the children to perform. For example, if a teacher said, "Everyone open your books to page 87," we coded that as one procedural interaction to the entire class. If, on the other hand, the teacher said, "John, read this word," we coded that as one word reading interaction to John. Likewise, if the teacher said, "Mary, read the next two sentences," that teacher-directed interaction would be coded as a sentence-reading interaction to Mary. We also recorded teacher's praise and feedback during instruction and the percentage of students who were on task.

Data Collection in the First Year

Classroom observations. By the end of the first year of this study, we knew that we had found major instructional differences between districts. For example, the teachers in Poplar looked more like each other than either of them looked like any one of the teachers in either Mahogany or Evergreen. Poplar teachers allocated about 28 minutes each day they were observed to decoding instruction. In contrast, Mahogany teachers *averaged* only from zero minutes to 15 minutes a day for decoding. Evergreen teachers allocated a scant 3-6 minutes a day for decoding. Within this instructional time dedicated to decoding, Poplar teachers managed about 120 interactions; Mahogany teachers 35-70 interactions, and Evergreen teachers 22-37 interactions. Given these differences the logical next step in the analyses was to determine the relationships between what the teachers had done during the school day and how the children performed on a battery of tests that we administered at the end of the school year.

Testing. During kindergarten, we administered subtests from both the Stanford (Madden, Gardner & Collins, 1982) and California Achievement Tests (CTB/McGraw-Hill, 1973). These are tests that primarily require children to select the appropriate word from a list of words. We also gave the CIRCUS (ETS, 1976a) Listen to the Story subtest, a measure of listening comprehension, and the TOBE 2 (Moss, 1978) as a measure of science knowledge. The Woodcock Reading Comprehension Passages (Woodcock, 1973) served as an out-of-level cloze test of reading comprehension, and the Wide Range Achievement Test reading subtest (WRAT) (Jastak, Jastak & Bijou, 1978) and the Chicago Reading Test (Barr, 1983) as two measures of word, letter, and sound recognition. In addition, at the first grade level, we added the CIRCUS Think it Through Test (ETS, 1976b) to measure problem-solving ability, and the Error Detection Test (Meyer et al., 1985) to assess the children's abilities to detect and explain errors in text as well as their decoding skill. Of these seven instruments, we found the WRAT and the Chicago to be the most sensitive. They revealed the greatest variance between children. We judged that they were also valid for assessing children's beginning reading in school because together they focused on letter sound and word ending knowledge, rhyming word lists, random word lists, and a few nonsense words.

Much to our surprise, we found that the time teachers spent reading to children at the kindergarten level correlated negatively with the children's performance on all of the tests that we administered to them except for the TOBE 2 and CIRCUS Listening.

Results

Kindergarten

Much to our surprise, we found that the time teachers spent reading to children at the kindergarten level correlated negatively with the children's performance on all of the tests that we administered to them except for the TOBE 2 and CIRCUS Listening. Generally similar results were found for the relationship between time teachers spent in opening and closing exercises and transition time from one activity to another. As might be expected, positive correlations were found for time teachers spent in both decoding and small group reading on all of the reading measures administered. However, negative relationships were found for decoding and small group reading and student performance on the CIRCUS Listening Test and the TOBE 2.

At almost exactly the moment that we found these results in our own kindergarten data, we also found the following quotation in the Rosenshine

and Stevens chapter of the *Handbook of Reading Research* (1984), P. D. Pearson, R. Barr, M. L. Kamil, and P. Mosenthal, editors:

> Nonacademic activities. Throughout these studies, nonacademic activities tended to yield negative correlations with achievement gains. Stallings and Kaskowitz (1974) found that activities involving group time, teacher reading of stories to the class, arts and crafts, active play, use of toys and puzzles, and even use of academic games consistently had negative correlations with achievement gain. Similarly in Brophy and Evertson (1976) and Stallings et al. (1977), there were negative correlations with reading achievement gain for teacher questions about family background or personal experience, social interactions, and for student initiated contacts involving personal concerns. Similar results also hold true for secondary school students (Stallings et al., 1979), where the frequency of social interactions had consistently negative correlations with student reading achievement gain.
>
> Throughout these studies, there was no nonacademic activity which yielded positive correlations with reading and mathematics achievement ... (p. 753)

In short, we had found what others had found about a decade or so before, a finding that had never been addressed on its own. For this reason, and because we had a longitudinal study in progress to work with, we decided to try to understand the phenomenon of kindergarten teachers' reading to students correlating negatively with those students' performance in reading. A year later, we found that at the first grade level there appeared to be no relationship between the time kindergarten teachers had spent reading and student performance in reading at the end of first grade.

We found that the relationships between parents reading to their children and their children's performance in reading was positive but weak and not significant.

We began an investigation of the data that we hoped would help us to understand this phenomenon. First, we looked at the tests that we had administered and quickly determined that the measures were primarily tests of word recognition. The Woodcock scores were so low (most children could complete five or fewer items) that we decided to omit it from the battery. Therefore, one theory that could explain these findings is that teachers reading may affect children's decoding ability negatively while at the same time affecting their listening ability positively.

A "displacement" theory also made a certain amount of intuitive sense. Could it be that teachers' reading displaced other activities that affected children's reading abilities positively? In short, we found the answer to this question to be *yes*. We combined the three general reading-related activities that we had observed in the kindergarten classrooms (decoding, comprehension, and text reading)

It appears that children learn to read by being taught to read instead of being read to and that they need to practice reading text in order to enhance their achievement.

and found that only one of the three districts spent a substantial amount of time in these activities. That district was Poplar; and the activities were largely phonics. Furthermore, Poplar teachers read to children less than the teachers in Mahogany and Evergreen. By first grade, the overall pattern had changed, and all teachers in the three districts spent substantial amounts of time each day that they were observed teaching reading.

As mentioned earlier, we had also collected information from parents on the support they gave their children at home that one would expect would contribute to children's gains in reading achievement. Items from the kindergarten questionnaire fell into five categories, two of which are of particular interest here. We asked parents if they read to their children daily, weekly, occasionally, hardly ever or not at all, and if their child had a favorite book. We also asked questions about whether or not the child tries to read and whether or not family members help the child read.

We found that the relationships between parents reading to their children and their children's performance in reading was positive but weak and not significant. However, the relationship between the children's participation and their reading achievement was both stronger and significant. Now, the pieces in this puzzle were beginning to make some

sense. It appears that children learn to read by being taught to read instead of being read to and that they need to practice reading text in order to enhance their achievement. We have subsequently found that Share, Jorm, Maclean, and Matthews (1984) and Chall, Jacobs and Baldwin (1990) have gotten almost identical results in studies of early schooling.

First Grade

We found almost a zero correlation between time first grade teachers spent reading to children and their students' achievement in reading. Surprisingly, we found almost the same relationship between teachers' reading time and children's listening comprehension.

Although it appeared that no relationship existed between teachers reading and children's reading performance at the first grade level, we explored the possibility that we might find some kind of curvilinear relationship. In other words, might we find that some teacher story reading time is positively related to student achievement in reading whereas more (or less) time is negative? We found no significant break point in this relationship. Once again, however, we did find a significant relationship between children's reading in text and reading achievement. We also found that teachers who spent more time reading to students tended to have their students spend less time on text.

Discussion

Reading *to* Children

A closer examination of the studies of what teachers actually do during storybook reading suggests a reason that children do not learn much about print from storybook reading. Studies such as those by Phillips and McNaughton (1990), Bus and van Jzendoorn (1989), Morrow and Smith (1990), and Yaden, Smolkin and Conlon (1989) found that adults, both parents and teachers, devoted very little attention to the print in a story, devoting most of their comments and questions to the narrative. Phillips and McNaughton (1990), who observed mainstream New Zealand families reading to their children, found that only 3.3% of the comments made by either parents or children related to the print. In contrast, 85.5% related to the narrative. In these studies, the amount of attention to the print increased with repeated readings of the same book, but only slightly. The exception was alphabet books, which parents seemed to use as a means of teaching children about print (Smolkin, personal communication, April 1992). Thus, parents and teachers do not seem to draw students' attention to the print but toward the narrative. In ordinary reading, at least, parents and teachers do not use storybook reading as a means of teaching children about print.

The claim that children will learn about print through repeated readings of storybooks was based on their own independent reenactments of favorite storybooks, not that parents of teachers would necessarily point out print. Instead, emergent readers were proposed to begin to use the print to get their reenactments closer to the story read by the adult, using more and more features of print to do so. Thus, readers' fingerpointing was proposed as a very important means of children learning about print during reading.

We and others found that the amount of time that adults, teachers, and parents spend reading to their children does seem to improve their vocabulary knowledge and their knowledge of the specific language used in school. However, it does not seem to improve their knowledge of print.

Ehri and Sweet's (1991) analysis of fingerpointing seems to point out the complexity of learning about print from storybooks. They examined the types of knowledge that emergent readers need to learn to point accurately to words and learn to recognize them as they read memorized text, a crucial step in Sulzby and Teale's (1991) developmental model of learning to read through interactions with storybooks. They had their 4- to 6-year-old subjects memorize a simple predictable text and then fingerpoint-read the story independently. They found that fingerpointing skill is itself dependent of children's awareness of phonemes in spoken words, knowledge that is related to a number of early reading skills (see Adams, Stahl, Osborn, & Lehr, 1990). Learning to recognize words from the memorized text when presented in isolation was dependent of recognizing other, preprimer words. In short, children needed to be reading already to learn to fingerpoint from memorized text.

The findings of Ehri and Sweet (1991) suggest that storybook reading may be an important part of children's emergent literacy development, but that print knowledge does not come from that simple exposure to words in print. Instead, children's ability to learn new words from exposure to them in a

text may itself depend on their acquisition of other abilities, including phoneme awareness and the acquisition of a small sight vocabulary. If a child knows something about print, she or he can learn more through exposure to storybooks, but without a requisite level of print knowledge, learning does not occur.

Reading *with* Children

We and others found that the amount of time that adults, teachers, and parents spend reading to their children does seem to improve their vocabulary knowledge and their knowledge of the specific language used in school. However, it does not seem to improve their knowledge of print. From observational studies of teachers and parents reading to children, it seems that ordinary storybook reading is not focused on the print, but instead is focused on the sharing of a narrative. Adults do not pay much attention to the print during reading, so that students do not get informal teaching about decoding during storybook reading sessions. Children also may not gain much print knowledge through their own reenactments of books they have been read. Accurate fingerpointing seems to depend on a wide variety of skills and knowledge, including phoneme awareness and some knowledge of printed words.

What does enable children to learn about print? From our data, and that of others, it is that adults read *with* children, as opposed to reading *to* children. Reading with children involves actively helping children to read independently, rather than reading to children and expecting them to read on their own.

Information about the importance of reading with children comes from several sources. First, in our parent questionnaire, as noted above, the amount of child participation—whether the child tries to read on his/her own, whether the parent or other family members helps the child read, and so on—had strong correlation with children's achievement in both kindergarten and first grade, while the amount that parents read to their children did not. These questions tapped a different type of reading than what we have called ordinary storybook reading, a more interactive reading, with a greater focus on helping the child use the print to tell (or retell) a familiar story. This more interactive reading seems to promote print knowledge.

Second, we found that teachers who were more active in teaching about print, either in isolation or in the context of their reading of storybooks, had higher reading achievement, in both kindergarten and first grade.

Recommendations

In this article, we are talking about the unthinkable, that children may not learn to read simply by being read to by adults, but that many children need interactions with adults in order to read independently. Research shows that children do learn many new word meanings through being read to, and that storybooks can help form a bridge between the language of the home and that of the school. However, the naturalistic studies conducted over the past 20 years have failed to find strong relationships between parents or teachers reading to children and children's reading achievement. Instead, it seems that children need adult interactions centered around the print to be successful as readers.

What does enable children to learn about print? From our data, and that of others, it is that adults read with children, as opposed to reading to children. Reading with children involves actively helping children to read independently, rather than reading to children and expecting them to read on their own.

These interactions can be the type of direct instruction found in the Poplar district in our longitudinal study. It does not need to be, though. Whole language educators recommend that one can and should direct students' attention to the print during storybook reading (e.g., Newman & Church, 1990). However, the studies we reviewed suggest that this is not what is ordinarily done during storybook reading, by either teachers or parents. In any case, there should be active attempts to help children decode the print independently.

We do not suggest that parents or teachers stop reading to children. We intend to demystify the notion that one need simply read to children in order to help them learn to read. Such a notion is held by at least a few parents and teachers (see Stahl, Osborn & Pearson, 1992). We do not deny that some children will learn to read through the processes described by Sulzby (1992). There will always be some children who seem to learn to read, as if by "magic," through increasingly accurate attempts at reenacting their favorite texts. However, such a process does not appear to work for the majority of students, who seem to need some more active guidance from adults in order to learn to read. ◆

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Using Parents as Early Reading Instructors: A Preliminary Investigation

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Abstract: This study explored the efficacy of parents as reading instructors for their children using the curriculum Teach Your Child to Read in 100 Easy Lessons (TYCTR) by Engelmann, Haddox, and Bruner (1983). Twenty-three children and their parents started the reading program; one year later, seven children and their parents were noted as having finished the reading program. Gains were demonstrated from pre- to posttest assessments on three reading subtests on the Woodcock-Johnson-Revised: Tests of Achievement and on graded word lists on an informal reading inventory. This study adds to the research base on using the TYCTR program with preschool-age children. The results are discussed in light of various issues facing those who wish to incorporate the assistance of parents as reading instructors.

An alarming number of children go through school without being proficient at figuring out words in reading passages (Weisberg & Savard, 1993). For example, the U. S. Department of Education has indicated that the reading achievement level of 40% of all fourth graders, 30% of all eighth graders, and 25% of all twelfth graders is below a standard level (Campbell, Donahue, Reese, & Phillips, 1996). It is no wonder that the area of reading is where most children qualify for special services (Meese, 1996).

The education community continually searches for ways to overcome these reading deficits. One approach is to teach children early to read. This view is not without controversy since some people suggest that reading does not begin at a specific age but rather is a constantly emerging process that develops through a "series of predictable stages: scribbling, drawing, nonphonetic letterstrings, invented spelling, and conventional orthography" (Cox, 1996, p.152). Once through the above stages, children can read and write. However, children who learn to read at an early age outperform others in school who do not receive this early instruction (Center for the Future of Teaching & Learning, 1996).

For example, a longitudinal study conducted by Hanson and Farrell (1995) demonstrated the effects of early reading instruction. A comparison was made between two groups of high school seniors (N=3959). One group received the Beginning Reading Program (BRP) in kindergarten; the other group did not (instruction began in first grade). Data were collected on reading competency as measured by the Academic Instructional Measurement System (AIMS) Reading Test (Sabers, 1985) and the Reading Vocabulary Test (Broach, 1988); reading behaviors (which included attitude, books read that year, and time spent reading), school history, and family background were also recorded. The group receiving the BRP in kindergarten represented overall a lower social class than those who did not receive instruction in this program; however, students who received the BRP scored higher than the higher social class students who did not. Results indicated that "students who learned to read in kindergarten were found to be superior in reading skills and all other educational indicators measured as seniors in high school" (p. 929). Additionally, no evidence of negative effects from learning to read in kindergarten was noted. Given the results of this longitudinal study, it seems clear that when children learn to read at an early age, they are more successful in school.

One way of providing early instruction to children is through the use of parents. Parents are a tremendous resource for educators. They can pro-

vide a greater understanding of their children's needs, select important target behaviors, provide social and activity reinforcers, and provide feedback to teachers on how training programs are working at home (Heward & Orlansky, 1992). According to Tizard, Schofield, and Hewison (1982), "children who receive parental help are significantly better in reading attainment than comparable children who do not" (p. 14). Thus, parents can help with the acquisition of academic skills. For example, in a series of parent tutoring studies by Thurston and Dasta (1990), parents tutored their elementary-age children in three programs (4 months, 8 weeks, 16 weeks) which included oral reading, math, and spelling instruction, respectively. The children made academic gains of 13 to 19 months as measured by norm and criterion referenced reading and academic achievement tests. The findings demonstrated that the tutoring of academic skills at home by parents was an effective practice for school achievement. Skills learned at home generalized to the classroom. In another investigation, Foxx and Foxx (1986) used a behaviorally based reading program where parents received training (approximately 1 hour) in basic behavior management skills, the use of systematic praise, and the delivery of appropriate reinforcers. Two children (8 1/2 and 7 years old) tutored by their parents demonstrated gains of 3.1 years in 5 months of the program and 2.7 years in 20 months of the program, respectively, on a vocabulary comprehension test. Phone calls and office visits occurred weekly and monthly to monitor progress.

One method of promoting early reading instruction through parental involvement is through the *Teach Your Child to Read in 100 Easy Lessons* (*TYCTR*) program developed by Engelmann, Haddox, and Bruner (1983). This method, modified from SRA's DISTAR Fast Cycle Reading Program, is designed for parents of preschool children who are at least 3 1/2 years of age. Although this program was adapted from an empirically validated curriculum (DISTAR), only one published investigation was found examining the effectiveness of this program for children (i.e., Leach & Siddall, 1990). Leach and Siddall examined the effectiveness of four tutoring methods. Parents volunteered for the project and were assigned to receive one of the following methods: Direct Instruction (*TYCTR*); Paired Reading (a procedure that utilized simultaneous reading of texts with parent and child); Pause, Prompt, Praise (a method in which self-correction responses to errors were taught using syntactic and semantic cues); or Hearing Reading (a program consisting of reading books from school, talking about the books, and giving a thinking delay when an error occurred before correcting it). Each group was trained separately. One training session of 1 1/2 half hours was provided for the Paired Reading and Pause, Prompt, and Praise groups. The Direct Instruction group received three training sessions each lasting 1 1/2 hours. Only written instructions were given to the Hearing Reading group. Reading sessions were conducted in the parents' own homes for 10-15 min a day for 10 weeks. One home visit to observe a reading session and a telephone call to monitor instruction were made. Participants included forty children: 14 girls and 26 boys with ages ranging from 5 years 3 months to 6 years 4 months with a mean of 5 years 10 months. Results indicated that the greatest gains were seen in the *TYCTR* group (16.8 months gain-reading accuracy, 16.3 months gain-reading comprehension). The Paired Reading intervention showed 12.6 month gains in reading accuracy and 13.7 month gains in reading comprehension. Gains of 9.9 months for reading accuracy and 9.8 months for reading comprehension were made on the Pause, Prompt, Praise program and 5.9 months (reading accuracy) and 6.3 months (reading comprehension) for the Hearing Reading technique. All four programs were measured by the Neale Analysis of Reading Ability (1966) which included assessments of reading accuracy and comprehension.

One limitation of the Leach and Siddall (1990) investigation was that the targeted sample was narrowly defined. Further information is needed on the efficacy of the *TYCTR* program as marketed for parents to use with their own children, particularly between the ages of 3 1/2 years to 5 years (as recommended by Engelmann et al., 1983).

The purpose of this study was to further validate the *TYCTR* program and instruct parents who responded to a local newspaper advertisement to teach their children to read. All children who were at least 3 1/2 years of age were included in the investigation, thereby keeping the sample as broadly defined as possible.

Method

Participants

Table 1 shows the demographic information for the participants and their parents.

Parent sample. An advertisement, which invited parents who wanted their children to learn to read before going to school, was placed in a Northwestern city's newspaper on one Sunday (circulation: 150,000). Fifty individuals responded to the advertisement by calling the second author. Parents were eliminated based on age of the child (not yet 3 1/2

years of age when study would begin) or the inability to commit to the time requirements of the program (at least 5 months). From this preliminary sample 28 (56%) children qualified for the study. Parents of these 28 children were called and invited to attend a 2-hr training session (held on one afternoon on either a Saturday or Sunday). Parents of 23 (82%) children attended the session (note: a blizzard occurred on both days of the training which made driving quite treacherous).

Program sample. Over the course of 1 year, 16 (69.6%) participants dropped out of the program. Reasons cited included: new child in the family, participants began new reading program in school, participant illness (e.g., pneumonia), and lack of time. The average age of those children who did not finish the program was 4 years 11 months (range 3 years 7 months to 7 years 2 months). In all, 75% of the children had one or both parents having education levels below bachelor's level, while 18.75% of the children had one or both parents having 4-year college or advanced degrees. None of the children with disabilities finished the program.

Seven (30.4%) children finished the program. The mean starting age for those who finished the program was 4 years 8 months (range 4 years 1 month to 5 years 11 months). In all, 28.6% of the children did not have at least one parent with at least a Bachelor's Degree, while 71.4% of the children had at least one parent with a 4-year college or advanced degree.

Research Assistants

Four research assistants collected data for this project. These assistants included one graduate student in school psychology and three undergraduates in special education. Research assistants were randomly assigned to work with parents of the children. Each assistant was responsible for three to six children and was assigned to place one phone call every other week to each household to collect data and answer any questions from the parents. A monthly meeting was conducted with the research assistants by the second or third author to discuss data and answer questions that were not resolved during the phone calls. The research assistants received training by the second author on the *TYCTR* program, mastered the 44 sounds of the program, and learned about potential pitfalls that parents might face.

Parent Training

Parents attended a 2-hour training session held by the second author on either a Saturday or Sunday afternoon. Parents were provided an overview on the *TYCTR* program; watched the training videotape (Haddox, 1993) on how to get started, learned the pronunciation of the sounds, and how to complete difficult lessons (i.e., lessons 1, 5, 13, 20, and 36); practiced the sounds; and learned the data collection system. Questions were answered at the end of the session.

Data Collection

The children were pretested by the research assistants while the parents received training. The pretest (and posttest) assessments included three subtests from the Woodcock Johnson-Revised: Tests of Achievement (1990) including: Letter-Word Identification, Passage Comprehension, and Word Attack; and graded word lists from the Burns/Roe Informal Reading Inventory (1983). Age and grade equivalents and standard scores were analyzed in terms of gains made on pre- to posttest assessments. Also, on the Burns/Roe Informal Reading Inven-

Table 1. Demographic Information for Participants

Participant	Starting Age	Ending Age	Disability Diagnosis	Gender	Parental Education	
					Mother	Father
1	4y 3m	5y 4m	No	M	BA	BA
2	4y 2m	5y 0m	No	M	AA	DC
3	5y 11m	6y 4m	No	F	BA	BA
4	4y 4m	4y 9m	No	M	BA	MA
5	4y 9m	5y 7m	No	F	Some College	Vocational Training
6	4y 1m	4y 11m	No	M	HS	BA
7	5y 3m	6y 2m	No	M	Some College	Some College

HS=High School; AA=Associate of Arts degree; BA=Bachelor of Arts degree; MA=Master of Arts degree

Figure 1. Reading Project Recording Form

Parent's Name: ______________ Child's Name: ______________

	Date	Lesson(s) covered	Estimated time to complete lesson	Estimated amount of time you read to your child today	Comments
Week #___			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
Week #___			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	
			10 15 20 25 30 over 30	5 10 15 20 25 30 35 40 45 50 55 60	

General Comments:

tory, the percentage of words read correctly on preprimer, primer, and grade 1, 2, or 3 word lists were recorded (word lists contained 20 words each).

Additionally, parents gathered data on data sheets supplied to them on the following: lessons completed, date of completion, amount of time each lesson required, and number of minutes children were read to by their parents. Figure 1 shows the data sheet used by parents.

The research assistants gathered this data on identical data sheets via telephone calls as a means of keeping track of how the program was progressing. Telephone calls were pre-scheduled (e.g., every other Wednesday night after 8:00 p.m. a research assistant was assigned to call a particular family knowing they would have collected data for 2 weeks). Parents were asked to do at least four lessons a week, with additional lessons completed if agreed to by the parents and their children.

Results

The program was completed in an average of 9.2 months (range 5 months to 1 year 1 month). Table 1 shows starting and ending age for each participant who completed the program. The group means on the Woodcock-Johnson Revised Tests are reported in Table 2. The results on the Burns/Roe Reading Inventory are reported in Table 3.

Average Time Spent Daily Reading to Children

Results indicated that parents of the children who completed the program read to their children 15 min a day on average. Those children who did not finish were read to less than 5 min a day (on average).

Average Daily Lesson Time

Those children who finished the program completed daily lessons in an average of 23 min per lesson. The children who did not finish the program averaged 35 min per lesson for the lessons they did complete.

Program Satisfaction

Children, parents, and data collectors each completed a set of questions regarding their satisfaction with the reading program. All reported values were computed from scores of the seven participants who completed the program. Mean values and ranges of the responses to the questionnaires are reported.

Child satisfaction. Children dictated responses to their parents; responses were computed based on NO=1, no=2, ?=3, yes=4, and YES=5 to the following questions: Did you like the reading program? (mean=4.57, range 4 to 5); Do you think you can read better? (mean=4.86, range 4 to 5); Do you think this program would work for other kids? (mean=4.86, range 4 to 5); and Anything else that you would like to tell me about the reading program? Examples of comments included: (a) "I'm glad I can read;" (b) "I like doing reading lessons;" (c) "I like saying the words;" (d) "I liked the pictures;" and (e) "Didn't take very long each day."

Parent satisfaction. Questions and values (based on a 5 point Likert-type scale) for the parent satisfaction questionnaire included the following. Overall, rate how *satisfied* you were with the reading pro-

Table 2. Woodcock Johnson-Revised Pretest and Posttest Mean and Standard Deviation Scores

		Letter-Word Identification		Passage Comprehension		Word Attack		Basic Reading Skills	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age-Equivalent	Pretest	4y 11m	1y 2m	5y 8m	3m	5y 9m	3m	5y 0m	11m
	Posttest	6y 9m	6m	6y 7m	6m	6y 7m	9m	6y 7m	5m
	Gain	1y 10m		11m		10m		1y 7m	
Grade Equivalent	Pretest	K.3	.36	k.3	.41	K.8	.15	K.4	.38
	Posttest	1.3	.36	1.3	.37	1.3	.49	1.3	.30
	Gain	1..0	.18	1.0	.28	.5	.41	0.9	.22
Standard Score	Pretest	103	18.49	127	42.09	105	18.03	101	16.48
	Posttest	121	13.36	138	32.55	131	41.05	118	14.64
	Gain	18		11		26		17	

SD=Standard Deviation

gram (1=not satisfied to 5=highly satisfied). The mean response was 4.86 (range=4 to 5). Rate your child's *level of interest and attention* for each lesson (1=highly motivated to 5=not motivated). Mean response given was 3.57 (range=3 to 5). Rate the extent to which your child's reading performance improved (1=much lower than before to 5=much higher than before). The mean response was 5. Rate your child's satisfaction with the reading program (1=not satisfied to 5=highly satisfied). The mean response was 4 (range=3 to 5). All parents indicated they would recommend the program to other parents. Other comments included: (a) "I am very glad to have been involved with this program;" (b) "My son has been given a special beginning;" (c) "I can't say enough great things about his program;" (d) "Would prefer complete sentences in stories;" and (e) "Some of the stories were too long, and the wording was confusing. However loved the concept of teaching sounds before letter names."

Table 3. Percentage of Correct Responses on the Burns/Roe Informal Reading Inventory across Pretest and Posttest Particpants.

		Participant								
		1	2	3	4	5	6	7	Mean	SD
Pre-Primer	Pretest	0	0	5	20	0	0	0	3.57	7.48
	Posttest	90	65	100	100	45	35	75	72.86	25.96
	Gain	90	65	95	80	45	35	75	69.29	22.44
Primer	Pretest	0	0	0	0	0		0	0	0
	Posttest	80	45	80	90	40		45	63.33	22.29
	Gain	80	45	80	90	40		45	63.33	22.29
Level 1	Pretest	0		0				0	0	0
	Posttest	80		55				35	56.67	22.55
	Gain	80		55				35	56.67	22.55
Level 2	Pretest	0								
	Posttest	75								
	Gain	75								
Level 3	Pretest	0								
	Posttest	75								
	Gain	75								

SD=Standard Deviation

Test Scores lower than 35% not reported.

Data collector satisfaction. Data collector satisfaction ratings (based on a 5 point Likert-type scale) follow. Overall, rate how *satisfied* you think the parents were with the reading program (1=not satisfied to 5=highly satisfied). The mean response was 4.75 (range=4 to 5). Rate what the parents indicated to you about their child's *level of interest and attention* for each lesson (1=highly motivated to 5=not motivated). Mean response given was 4 (range=3 to 5). Rate the extent to which you think the child's reading performance improved (1=much lower than before to 5=much higher than before). The

mean response was 5. Rate the child's satisfaction with the reading program (1=not satisfied to 5=highly satisfied). The mean response was 4.5 (range=3 to 5).One comment noted by a data collector was that the program needed "more ways to get children motivated."

Discussion

The results from this investigation show that parents can successfully teach their own children to read at an early age. Children demonstrated gains in basic reading skills and reading comprehension on a standardized academic achievement test and in reading graded word lists on and informal reading inventory. Overall, children were happy with the reading program; their parents were equally satisfied with the program and the obtained results.

The gains made by the children in the present study align with the findings of other studies (e.g., Foxx & Foxx, 1986; Leach & Siddall, 1990; Thurston & Dasta, 1990) where parents served as effective reading instructors for their own children. Unlike the other investigations, this study focused on teaching preschool-age children to read (mean age at the start of the program was 4 years 8 months). The children in the studies conducted by Foxx and Foxx (1986), Thurston and Dasta (1990), and Leach and Siddall (1990), were 8 1/2 and 7 years old, elementary school age, and 5 years 3 months (mean age), respectively. Thus, this investigation adds to the literature on teaching young children to read, a skill noted as important to acquire at an early age by Hanson and Farrell (1995) and the Center for the Future of Teaching and Learning (1996). This study provides further field testing of the *TYCTR* program. Although this program was modified from the heavily field-tested DISTAR Fast Cycle Reading program, only one published article using this program could be found in the literature. Given that the *TYCTR* program is marketed for parents to use with bright 3 1/2 year olds and average 4 and 5 year olds (see Engelmann et al., 1983), further validation for the intended/marketed audience seems especially important.

Despite the positive gains made in this investigation, several areas of concern exist. First, the sampling of research participants was drawn entirely from a convenience sample. Future investigations should randomly select participants and randomly assign them to experimental and control groups to evaluate the extent to which growth may be attributed to natural maturation. Second, mortality is a weakness in this investigation. Only seven (30.4%) of the participants finished the program. It is important to analyze factors that may have contributed to the success of the program for some and the failure of the program for others. For example, the majority (71.4%) of the parents of the children who finished the program had at least one parent with a 4-year college or advanced degree. Compare this to the parents whose children did not finish the program (25%) Interestingly, parents of the children who finished the program read to their children 3 times more than parents whose children did not finish the program. The average daily lesson time for children who did finish the program was 23 min (on average), while lessons lasted 12 min longer (on average) for children who did not finish the program. The *TYCTR* program indicates that lessons should last approximately 20 min (Engelmann et al., 1983). Reasons for dropping out of the program included the following: behavior management difficulties, family health problems, lack of time to complete lessons, and encouragement by others (e.g., teachers) to withdraw because it involved phonics and/or Direct Instruction. Having parents who are more highly educated, who read to their children more, and who are more efficient in delivering lessons may have been key variables for those who successfully finished the program. Mastery may certainly come into play here as well as having children who have certain prerequisite skills including compliance and attention before starting the program.

In addition to the aforementioned difficulties, further attention should be placed on parent training. A 2-hr workshop on how to use the program may not be enough for many parents. Parents' mastery of information (e.g., sounds, lesson formats, reinforcement) may be a necessary prerequisite to starting the *TYCTR* program with their children. This aspect is critical to explore given that the book is marketed for parents to use with *no* obvious training component required. Also, problem solving difficulties with the program (e.g., rhyming, blending, stop sounds, irregular words) and behavior management issues (e.g., off-task behavior, noncompliance) may need to be covered. Offering some parents and children incentives for continuing with and finishing the program might be beneficial to ensure program completion for those at-risk of dropping out of the program. In this study, even those who finished the program frequently lacked motivation. An indicator of the motivation level of the children involved in the program was noted by the data collectors (mean= minimally motivated for level of interest and attention for each lesson). Thus, it seems prudent to explore ways of motivating children to complete the lessons. This could involve stickers or

points after completion of tasks within a lesson, contracting for reinforcer after completion of a lesson, or increasing enthusiasm and praise (on the part of parents) as they conduct the lessons with their children. Another recommendation might be for the research assistants to make more frequent contacts with the parents, possibly including in-home visits to observe instructional performance.

Parental involvement is without question an important variable in the process of teaching children to read. Innovative ways of getting parents more involved in their children's academic readiness are needed. The *TYCTR* program offers promise for parents who want to teach their children to read early. Further research is needed on how best to prepare parents for this task to ensure program completion with their children. ◆

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Academic Preschool Beginning at Age 2: Educational and Social Effects

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INTERNATIONAL

Editor's Note: Some understanding of the French context should help our readers more fully comprehend the meaning of this translated article. First, two different types of preschools are available for parents in France: the "écoles maternelles," translated here as "academic preschool," and the "crèche," which is a play preschool environment. Here is a description of the differences between these two French preschool models by Sophie Cazaux Kaufman, a resident of France:

> Traditionally, the"crèche" was just a handy place for working parents to drop their child before going to work. Therefore, no requirement was (is) necessary: any child from birth to school age (6), whether or not he can walk/talk could go to a "crèche." While this is still fundamentally true, "crèches" now have an "official" role in promoting language, physical coordination and dexterity, and social skills (since the 70's). Hence, their staff (puéricultrices) have special training and the building provides a special setting: usually, a large common room for all the children with mattresses, big plastic cubes instead of furniture, a toboggan, some toys and a "water point" (a sink). During the day, children interact together whatever their age. If there is a conflict, they have to solve it by themselves. Adults don't intervene much, except in case of physical danger, to push an isolated child toward the others or to initiate new activities. "Crèches" are a service provided to parents who have to pay a fee on a half-day basis. Some "crèches" (called *cooperative centres*) work with parents coming in once or twice a week in order to reduce the charges.
>
> In contrast, "écoles maternelles" are schools (école = school) for preschool students, normally between the ages of 3 and 5. Younger children can enroll on the condition that they are clean (meaning they don't wear diapers) and that the school has room for them. The role of the "école maternelle" is to prepare students for primary school, that is, to get them accustomed to print, numbers and discipline.
>
> "Ecoles maternelles" are divided into 3 levels, according to age and maturity. Each level introduces something new and closer to the rules and setting of a primary school (desks, raising hand...) and at each level, the number of activities based on reading, writing and number knowledge becomes more important. Parents are not required to enroll their children in an "école maternelle" but because it is a school, it is free, and the staff are teachers who have received special training for preschool teaching, similar to the training received by a primary or secondary teacher.
>
> According to recent national statistics, approximately 35% of all 2-year-olds now attend. Most families I know enroll their children in an "école maternelle" for the simple reasons that it's free and the educational advantage is obvious in their minds. Most families don't send their children to a "crèche." The typical parents who do are:
>
> —working parents with no other alternative.
>
> —parents who consider it to be an advantage for their children's education.
>
> Working parents would enroll their children in a "crèche" until they are old enough to go to the "école maternelle" if they can afford it. Despite the cooperative centres and some special government help, the "crèche" can still be expensive. (Sophie Kaufman)

In additon, many readers perhaps do not realize how multicultural French society is. Table 1 displays percentages of non-French nationals in French schools.

Table 1. Percentage of student population that are of non-French nationality in 1993-94 and 1983-84

	Primary School		Middle School	
	1993-94	1983-84	1993-94	1983-84
Urban France	8.8	10.4	7.0	6.7
Rural France	3.5		2.1	
Total	8.6		6.8	

The following translated article reports the work of two different French agencies that conducted two large-scale studies of the effects of early academic preschool ("écoles maternelles") on later school achievement. A group of French researchers at the Institut de Recherche sur l'Economie de l'Education (the IREDU; Institute of Research on Education Economy) at the University of Burgundy evaluated the effects of early academic preschool on the later school achievement of a sample of 1900 children in the Cote D'Or between 1985 and 1989. In 1987, the Direction de l'Evaluation et de la Prospective (DEP; Center for Evaluative and Prognosis Research) reported a study of the effects of early preschool on achievement of a sample of 2100 children at the end of grade 5 in 1987. The results of this second study are also reported in the following article. This transaltion has been edited slightly according to U.S. standards for reporting research and for readability. An independent, very literal translation of the same article, including an introduction by E.D. Hirsch, is available at the following web site: http://www.estone.net/users/core/CKproto2/about/eval/FrenchEquity.htm (Bonnie Grossen)

From *Academic Preschool Beginning at Age 2: Educational and Social Effects*

The French educational system currently encourages children to start academic preschool by the age of 2. These efforts are based principally on the argument that the school environment may be an effective substitute for the home setting, especially in those situations in which the home does not provide sufficient stimulation for the young child (socioeconomically disadvantaged families and those in which the language spoken at home is not French). Whether this policy has a positive effect on academic achievement is the research question of this study.

By directly comparing the achievement levels of students who entered preschool of ages two, three, or four, we evaluated the effect of early academic preschool on later academic performance. It is quite clear from the data displayed in Table 2 that the longer children spend in academic preschool, the higher their intellectual achievement. This is particularly true when you compare the skills of students who entered academic preschool at age 2 with those who entered at age 3. Other factors aside, the differences are approximately the same at the be-

Table 2. Mean Achievement Level of students from beginning of grade 1 to end of grade 2 according to the age of entry into academic nursery school.

Preschool Entry Age	age 2	age 3	age 4-5	Advantage of age 2 entry over age 3
Evaluation at beginning of grade 1				
Cognitive	104.4	100.2	89.0	+ 4.2
Language	104.0	100.4	98.4	+ 3.6
Behavior	102.0	99.8	98.4	+ 2.2
Evaluation at the end of grade 1				
French	103.5	99.7	98.5	+ 3.8
Mathematics	103.3	100.3	98.3	+ 3.2
Evaluation at the end of grade 2				
French	103.1	98.8	98.2	+ 4.3
Mathematics	103.3	99.6	98.3	+ 3.7

Note to reader: The cognitive-instrumental level of students entering academic preschool at 2 years old is 104.4 points, and of students entering at 4-5 years old, 89.0 points. At each level and for each dimension, the achievement levels are standardized with a mean of 100 and a standard deviation of 15.

Table 3. Distribution of the sample according to age of entry into academic preschool (n=1900).

	Age of entry into academic preschool				
	age 2	age 3	age 4-5	Unknown	Group
raw percent	11.2	51.2	12.4	25.1	100.0
adjusted percent	15.0	68.4	16.6	—	100.0

Note to reader: 15% of the sample entered academic preschool at the age of 2. (This study by IREDU consists of 1900 students, conducted in the Cote D'Or from 1986 to 1989.)

ginning of first grade, at the end of first grade, and at the beginning of second grade. At the beginning of grade 1, the mean cognitive development score of students who entered academic preschool at age 2 surpassed that of students who entered at age 3 by 4.2 points; the mean language score, by 3.6 points; and the mean score for attitude toward scholastic work by 2.2 points. Similar differences were found in French language and mathematics, subjects at the core of primary education at the end of first grade and at the end of second grade.

....but the influence of other factors must be considered...

These findings from the study are difficult to translate into a pedagogical justification for a policy of starting school at age 2. Indeed, we cannot be sure, a priori, that the groups of students who differed according to age of entry would not show equal differences dependent on other variables (gender, class, nationality,...). Only 15% of the sample entered preschool at age 2 (see Table 3). So we further analyzed the results to determine the possible influence of other factors.

The age of enrollment varies according to the nationality and the social class

As Table 4 indicates, gender differences were consistent across age groups. Therefore, gender cannot explain the differences in academic achievement levels found for the different entry ages. However, some differences in nationality and social class across the different entry ages were found:

- 11.5% of children enrolled in academic preschool at age 2 were of foreign nationality compared to 17.2% of the sample group.
- 35.9% of the children enrolled in academic preschool at age 2 were children of business executives (middle or top level management) and technicians compared to 26.3% of the sample group.
- 15.8% of children enrolled at age 2 had a mother who worked compared to 21.2% of the sample.
- 28.2% of the children enrolled at age 2 lived in government subsidized housing, compared to 35.3% of the sample group.

On the whole, fewer children from disadvantaged families began academic preschool at age 2. Therefore, the data must be adjusted to control for the influence of socio-economic status.

... ...

Table 4. Principle social characteristics of students according to age of entry into academic preschool (n=1900).

	Age of entry into academic preschool			
	age 2	age 3	age 4-5	Overall
% girls	45.0	47.2	42.5	46.1
% foreign	11.5	18.0	19.3	17.2
Father's employment				
specialized blue collar worker	13.4	17.5	20.2	17.3
technician	35.9	24.5	25.3	26.3
Mother's activities				
factory worker	15.8	23.3	17.6	21.2
not employed	45.0	46.1	52.8	47.0
Housing				
Apartment	28.2	35.8	39.5	35.3
detached house	45.9	40.2	35.6	40.3

Note: 45% of the sample entering academic preschool at 2 years old are girls. The IREDU study consisted of 1900 students, conducted in the Cote D'Or from 1986 to 1989.

Net Effects of the Length of Preschool Education

In order to control for other factors to evaluate the effect of the age of enrollment in academic preschool on the academic achievement of students, several further analyses were conducted:

We controlled for the effects of socio-economic level and ethnicity to isolate the effects of early academic preschool on beginning grade 1 achievement in the cognitive, linguistic, and behavioral domains. Then we controlled for the effects of socio-economic level and

Table 5. Gross and net impact (ajusted for socio-economic level) of the age of entry into academic preschool on achievement level at the beginning of first grade (n=1900).

Age of entry into academic preschool	age 2	age 3	Unknown	Advantage of age 2 entry pupils over age 3 entry
Cognitive				
Gross effect	+ 6.4 ***	+ 2.3 ***	+ 1.7 ns	+ 4.1
Adjusted effect	+ 4.3 ***	+ 1.8 **	+ 0.7 ns	+ 2.5
Language				
Gross effect	+ 5.6 ***	+ 2.0 *	+ .3 ns	+ 3.6
Adjusted effect	+4.8 ***	+ 1.9 *	0.2 ns	+ 2.9
Behavior				
Gross effect	+ 0.4 **	+ 0.1 ns	+ 0.1 ns	+ 0.3
Adjusted effect	+ 0.3 ns	+ 0.1 ns	+ 0.2 ns	(+ 0.2)

Note to Reader: Concerning the language, the impact of schooling at 2 years old is 5.6 points in contrast to the effect of 4.8 points for advantaged socio-economic status.

Note on the method: For each considered dimension at this level of study, the first line presents the gross effect of schooling (identical to those presented in table 1) and the second line presents the net effect controlled for the influence of socia-economic status (profession of the father, activities of the mother, family size, nationality and type of housing).

(Study by IREDU, consists of 1900 children, conducted in the Cote d'Or from 1986 to 1989.)

*** significant at .01 level

** significant at .05 level

* significant at .1 level

ns = not significant

Parens indicate no significant overall effect.

ethnicity on French and math performance at the end of grade 1 and at the end of grade 2.

First we conducted an analysis of covariance controlling for the influence of socio-economic level on scores at each point: the beginning of grade 1, at the end of grade 1, and at the end of grade 2.

The second analysis was a longitudinal analysis of the progress of students between successive levels.

Net effects of the length of schooling on achievement at the entry of primary school.

The results obtained at the entry to grade 1 (Table 5) in the measures of cognitive and lingustic achievement show:

a) that most of the gross effect of the length of schooling (found in Table 2) at the beginning of grade 1 is accounted for by early academic preschool. The positive effect of an advantaged socio-economic level is smaller.

b) that the positive net effect of academic preschool at age 2 on the achievement of students at the beginning of grade 1 is significant when one controls for the socio-economic level of the children. However, this effect size is only approximately 1/6 standard deviation difference in the dimension of cognitive and instrumental achievement levels (2.5 points) and 1/5 of a standard deviation in language (2.9 points).

c) The analysis of behavior and work habits focused on the influence of early schooling on the attentiveness and participation of students in class. We found that the gross positive effects for early preschool shown in Table 5 were primarily due to the socioeconomic level of the family. Advantaged children are more positive. The length of preschool did not make a difference.

Advantages of early academic preschool are more significant at grade 2.

The data in Table 6 indicate that entry into academic preschool at age 2 has a positive significant effect on achievement at the additional two points of the study (at the end of grade 1 and end of grade 2). The effect size is comparable in French and math (4.1 points or nearly 1/3 standard deviation).

With the effects of socio-economic level taken out, the net advantage of students entering aca-

Table 6. Gross and net impact (adjusted for socio-economic level) of the age of entry into academic preschool on achievement (math and French) at the end of grade 1 and of grade 2. (n=1900).

Age of entry into academic nursery school	age 2	age 3	Unknown	Advantage of age 2 entry over age 3 entry
End of grade 1				
1) Group				
Gross effect	+ 5.2**	+ 1.6*	+ 0.7 ns	+ 3.6
Adjusted effect	+ 1.6 ns	+ 0.2 ns	+ 0.3 ns	(+ 1.4)
2) French				
Gross effect	+ 5.3***	+ 1.2 ns	+ 1.2 ns	+ 4.1
Adjusted effect	+ 1.2 ns	+ 0.5 ns	+ 0.6 ns	(+ 0.7)
3) Mathematics				
Gross effect	+ 5.1***	+ 2.0*	+ 0.1 ns	+ 3.1
Adjusted effect	+ 1.9 ns	+ 0.8 ns	+ 0.0 ns	(+ 1.1)
End of grade 2				
1) Group				
Gross effect	+ 5.1**	+ 1.0 ns	+ 2.4*	+ 4.1
Adjusted effect	+ 3.5***	+ 0.6 ns	+ 1.6 ns	+ 2.9
2) French				
Gross effect	+ 4.8***	+ 0.6 ns	+ 3.1*	+ 4.2
Adjusted effect	+ 3.1***	+ 0.3 ns	+ 2.1*	+ 2.8
3) Mathematics				
Gross effect	+ 5.5**	+ 1.3 ns	+ 1.7 ns	+ 4.2
Adjusted effect	+3.9***	+ 1.0 ns	+ 1.3 ns	+2.9

Note to reader: At the end of grade 1 the achievement gain of children 2 years old, over those 3 years old is 4.1 points in French and 3.1 points in math (gross effect).

(Study by IREDU, consists of 1900 children, conducted in the Cote d'Or from 1986 to 1989.)

*** signifies a threshold of 1%

** signifies a threshold of 5%

* signifies a threshold of 10%

ns = not significant

parens indicate no significant overall effect.

demic preschool at age 2, in contrast to their counterparts entering at age 3, is tenneous at the end of grade 1 but more substantial at the end of grade 2. The mean achievement level scores at the end of grade 2 indicate statistically significant differences (2.9 points or 1/5th standard deviation), representing a significant advantage for children entering academic preschool at age 2 who come from higher socio-economic level families.

Table 7 displays the learning gains made during grade 1 and during grade 2 by the different groups of pupils. It seems that children entering academic preschool at age 2 acquire certain lasting achievement gains that change little in the course of grade 1, but which strengthen in the course of grade 2. In other words, the rate of progress of students in the course of grade 1 is not affected by the age of entry to academic preschool; the gains of all the groups of students during grade 1 are comparable (see Table 7). On the other hand, in the course of grade 2, the students who began academic schooling at age 2 show greater gains than their counterparts entering academic preschool later. Early academic preschool shows a tendency to accelerate learning after grade 1. These results invite a longitudinal analysis of the effects of early academic preschool on achievement in later grades; such an analysis of academic performance at the end of grade 5 will be presented before the end of this article.

Table 7. Net impact of preschool experience on student progress during first grade, during second grade, and between the beginning of first grade and the end of second grade.

Preschool entry age	age 2	age 3	Unknown #	Advantage of age 2 entry over age 3 entry
End-1st grade/Start-1st grade difference				
Total	+ 0.7 ns	+ 0.2 ns	– 0.6 ns	(+ 0.5)
French	+ 1.1 ns	+ 0.0 ns	– 0.2 ns	(+ 1.1)
Mathematics	+ 0.3 ns	+ 0.4 ns	– 0.9 ns	(– 0.1)
End-2nd grade difference with				
Total				
Beginning of first grade	+ 1.2 ns	+ 0.1 ns	+ 1.1 ns	(+ 1.1)
End of first grade	+ 1.8 **	+ 0.5 ns	+ 1.9 *	+ 1.3
French				
Beginning of first grade	+ 1.0 ns	– 0.1 ns	+ 1.6 ns	(+ 1.1)
End of first grade	+ 1.9 *	+ 0.6 ns	+ 2.5 *	+ 1.3
Mathematics				
Beginning of first grade	+ 1.4 ns	+ 0.4 ns	+ 0.5 ns	(+ 1.0)
End of first grade	+ 2.4 **	+ 0.4 ns	+ 1.2 ns	+ 2.0

= concerns differences in achievement levels for students having an early, but incomplete preschool experience (1 or 2 years)

*** Significant to the .01 level

** Significant to the .05 level

* Significant to the .10 level

ns = not significant

parens indicate no significant overall effect.

Note to reader: The net gain obtained by students entering preschool at two years compared to those entering at three years old is + 1.1 point in French, – 0.1 point in mathematics controlling for the influence of family background (fathers employment, mother's occupation, family size, nationality and type of housing).
(Study by IREDU, consists of 1900 children, conducted in the Cote d'Or from 1986 to 1989.)

Early education compensates for a disadvantaged socio-economic background

We investigated the extent to which entry into academic preschool compensated for educational disadvantages attributed to a lower socio-economic background. For example, early schooling may have a more positive impact on the learning of children of foreign families than on the learning of children from French families because entry in to academic preschool at age 2 allows early achievement in the academic basics (especially of language) that the French nationals could acquire "naturally" in their home environment.

To investigate this question, we used three measures of "social handicap" and grouped the children accordingly:

1—working class children were matched with children of other employers;

2—children of foreign nationality were matched with those of French nationality;

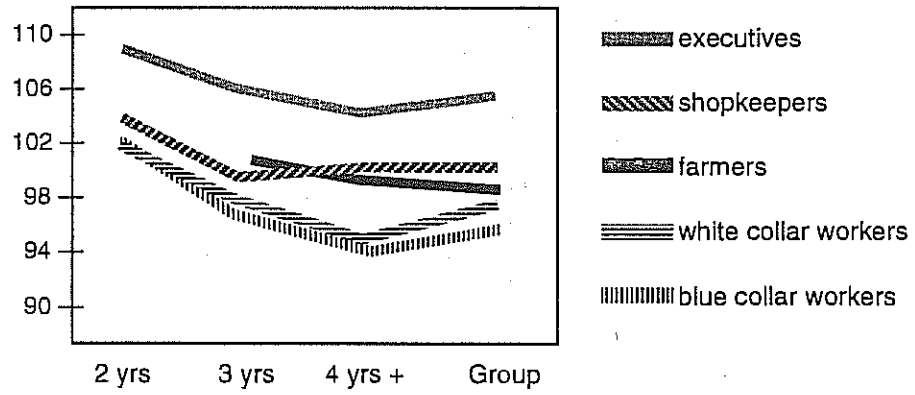
3—the children living in apartments were matched with other children.

We conducted multiple analyses of variance on the performance of these groups of children on the various subscales used at the end of academic preschool and on the French and math measures at the end of grade 1 and of grade 2. All the obtained results showed that beginning academic preschool at age 2, rather than age 3, had stronger positive effects than any other variable, though the strength of the differences was sometimes very weak.

The effects on achievement at the end of grade 5

A national DEP evaluation of the middle school level indicated that the effects of early preschool were clearly evident at the end of the grade 5. At the end of grade 5, the group of students entering school at age 2 had an achievement level of 104.8 compared to an average score of 101.1 for those of the students

Figure 1. Achievement level at the end of grade 5 according to age of entry into academic preschool and the profession of the father (mean = 100, SD = +15).



Note to reader: at the end of grade 5, the children of the blue collar workers entering academic preschool at age 2 obtained a mean achievement level of 102.3 points, compared to an average score of 97 for children entering at 3 years old.(Study conducted by DEP in 1987 consisting of 2100 children.) The legend shows the professions in order of income level.

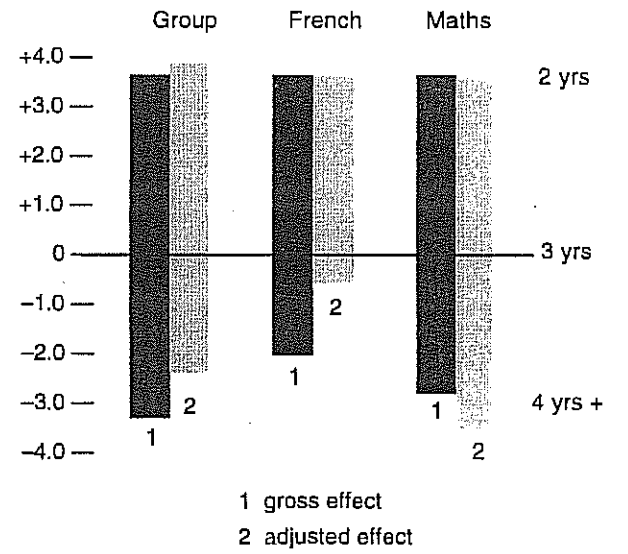
who entered at age 3, and 97.7 for those students who entered at age 4 or later. However, as we have previously seen, differences in the socio-economic level of children having access to early schooling may explain these differences in part. For example, children of blue collar workers have a mean achievement level at grade 5 of 96.5 while the mean score of children of executives is 106.0 (almost ten points more).

Figure 1 displays the mean scores of children of different socio-economic levels (based on father's profession) according to their age of entry into academic preschool. At grade 5 the children of blue collar workers who entered preschool at age 2 achieved a mean achievement level that was 7.8 points higher than that of children of blue collar workers entering at age 4 or older. They achieved a mean score 4.4 points higher than their counterparts entering at age 3. Children of executives who entered at age 2 achieved only 4.6 and 2.5 points more than those who began preschool at age 4 or 3, respectively.

A multiple analysis of variance was conducted to evaluate these differences according to socio-economic level. According to the results of this analysis, children of disadvantaged families seemed to benefit from early preschool more than children of more advantaged families (see Figure 2). The mean difference in achievement at grade 5 for children entering academic preschool at age 2 versus age 3 is 3.8 points (column 1 in Figure 2). The difference is the same for both French and mathematics. This difference is almost identical to the difference that occurs between children of executives and children of blue collar workers. These results indicate that by grade 5, entry into academic preschool at age 2 versus age 3 neutralizes the achievement advantage that children of higher income families generally have over children from lower income families.

The national study tested for an interaction between early preschool effects, and the effects of the socioeconomic level and the ethnic group of the students. No significant interactions were found.

Figure 2. Net impact of the age of entry into preschool on the achievement in math and French at the end of grade 5. (National study by DEP).



Note to reader: At the end of grade 5, the raw effect of schooling at 2 years old compared to the schooling at 3 years old is +3.7 points. SES level makes no difference.
(Study conducted by DEP in 1987 consisting of 2100 children.)

Similar to the findings of the IREDU study at grade 1 and grade 2, at the end of grade 5 significant differences in the achievement scores of children entering academic preschool at age 2 were found, regardless of these two important demographic statistics. Entry into academic preschool at age 2 versus age 3 appears to have a beneficial effect on achievement at grade 5, regardless of the socioeconomic level or ethnicity of the students.

It is clear that early academic preschool at age 2 results in improved achievement scores when compared to children entering academic preschool at age 3. These positive effects sustain and even increase by the end of primary school. In comparison to their peers entering academic preschool much later, the students who begin schooling at age 2 enter the primary grades with an achievement level that is 2.5 points higher at the beginning of grade 1, 2.9 points higher at the end of grade 2, and of 3.8 points higher at the end of grade 5.

To judge the relative value of early schooling, it is useful to compare the 3.8 points that early schooling gains for children at the end of grade 5 with the effects of lower class sizes. One can crudely estimate that the average cost of a year of academic preschool is equivalent to a reduction in class size by 5 students. However, a reduction in class size produces an average gain of only 1.6 points at the end of grade 5. Though this comparison is only quasi-experimental, it seems to provide some evidence that beginning academic preschool at age 2 is more "cost effective" than reducing class sizes in primary school. ◆

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When You've Heard It All Before And Still Can't Read

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Abstract: This study investigated the effects of repeated reading of audiotaped stories on emergent reading. Audiotaped books enable a pupil to read along silently with a pre-recorded text. Factors looked at included the presence or absence of audiotaped reading, whether or not the audiotaped readings were repeated, and whether or not the pupil received audio taped encouragement to read each page unassisted. Sixty-four 5-year-olds, in their first term of school, read a book each day, every day, for five weeks. The results showed that pupils who listened to the "talking books" were able to read them more accurately, and had better recall of ideas in the books, than did pupils who did not read along with the audiotaped books. But the results did not transfer to new stories that had not been included in the study. The results suggest that the effects of audiotaped books on learning to read are more apparent than real.

Listening to stories read aloud is widely encouraged as being important for learning to read. Parents all over the world are likely to agree with the proposition that reading to their children is the most important thing that they can do to help them learn to read. In New Zealand, the Ministry of Education (1996a) also endorses this practice in schools, "Reading to students should happen almost every day, in all classrooms ... " (p. 15) Teachers are encouraged to engage in shared reading of books with children, to read in unison with children, to enable children to listen to repeated readings of audiotaped stories, and to encourage them to "read along" with the taped readings (Ministry of Education, 1996b).

There is also general support in the wider literature for reading to pupils, and for encouraging children to read and re-read (e.g., Dowhower, 1989, 1994; Larking, 1988; Leidholdt, 1989; Martinez & Roser, 1985).

There is also historical and theoretical support for the belief that exposure to texts to the point where they can be memorised may be important in learning to read. Samuels (1979) identifies the age-old method of memorising sentences from the bible, as in the horn book, as the historical support for learning texts to the point of memorisation.

Reading theorists also seem to be agreed that listening to and re-reading a book is useful. Smith (1975, p. 238) comments: "A child might reread a favourite book a dozen times; and though he may be able to recite many passages by heart, he will still learn more about how to read fluently." Gough and Hillinger (1980) also argue that audiotaped books are worth exploring with emergent readers because they simultaneously present pairs of spoken and written words which are essential for understanding the alphabetic principle.

Other support for reading books to children comes from Mason (1992), who reviewed several studies which found that reading achievement was positively influenced by the frequency of story reading books to preschoolers at home. Mason writes that "Children can learn about how to read from hearing stories read to them" (p. 236). Further support for the effects of audiotaped books comes from work with disabled readers. A number of researchers have reported that remedial methods involving listening to audiotaped books have positive spinoffs for struggling readers. The Look-and-Listen method involves the teacher presenting the text on a screen, and pointing to each word, while reading the text aloud (Robinson, 1979). The audiotaped books method involves playing a pre-recorded audiotape of the story while the pupil reads along (Chomsky, 1976, 1978). The common characteristic of these methods is that poor readers are able to get accurate feedback about the correct pronunciations of words, and this in turn helped to improve their reading.

On the not so positive side, however, Scarborough and Dobrich (1994) found little evidence to show

that reading books to preschoolers predicted their later reading achievement. They reviewed a number of studies carried out over the last thirty years, and found a median correlation of only .28 between the amount of time parents spend reading to their children, and later reading achievement. It may be that audiotaped reading has to be repeated several times in order for children to make progress. Samuels (1979) has reported success with the repeated reading technique, where the pupil reads the passage aloud several times. However, Rashotte and Torgesen (1985) failed to achieve similar results, finding that pupils were only able to read new stories that had substantially the same words as the stories they had practised on.

Finally, encouragement to read-aloud may be important for learning to read. The Neurological Impress method, used with disabled readers, involves the teacher and child reading aloud together, with the teacher gradually phasing out her reading support, so that the child takes over. Heckelman (1969) found this technique effective with disabled readers.

The present study investigated the influence of repeated book reading on emergent reading using the variables of audiotaped reading, repeated reading, and audio-taped encouragement to read each page unassisted.

Method

The study involved 64 children in their first year of school. The children each received individual instruction, in eight different conditions. Each condition varied. First, children in each condition either listened to audiotaped stories or did not. Second, they also either re-read the stories several times, or did not. Third, they were either encouraged to re-read the stories aloud by themselves, or were not. There were eight children in each condition, with half the children in each condition rated as high in reading skills and half rated as low in reading skills. Each child received exposure to 12 different books, in individualised reading sessions. The 12 book sessions were repeated, for a total of 24 sessions. The intervention programme was carried out every day, for five weeks. The aim was to assess the effects of audiotaped reading, repeated reading, and encouragement to read, on children's emergent reading skills.

Participants

The sample of 64 five-year-old children (31 girls, 33 boys), all in their first few weeks at school, was drawn from four city schools. The schools were included in the study because they could each provide 16 children from one of their beginner classrooms. Children ranged in age from 4:11 to 5:03, with a mean age of 5:01. All children were unfamiliar with the stories used in study. The sample was broadly representative in terms of gender, cultural designations, and pre-reading skills. All children spoke English as their first language.

Design

The design of the study was a 2 x 2 x 2 factorial with three between subjects factors, each with two levels. The factors were audiotaped reading (yes, no), repeated reading (yes, no), and encouragement to read the book aloud (yes, no). This 3-way design meant that children were assigned to eight different conditions. Class and teacher effects were controlled by assigning high/low ability pairs of children to each of the eight conditions in each of the four classes. More specifically, in each classroom, 16 children were in the study, so it was possible to assign two children to each of the eight conditions. Each pair of children in each condition had either high reading skills, or low reading skills. In summary, there were four schools in the study. In each school, 16 children from one particular classroom were paired, based on different levels of beginning reading ability. Each ability pair was then randomly assigned to one of the eight conditions. This assignment procedure was replicated across all four classrooms.

Pretest and posttest measures

Pre- and post-intervention measures assessed knowledge of print concepts, such as directionality and print orientation when reading a text (Clay, 1985), and letter identification (Clay, 1985). Word identification was assessed with the Burt Word Reading Test (Gilmore, Croft, & Reid, 1981), the Clay High Frequency Word List (Clay, 1985).To assess children's ability to "self-correct" reading errors, we used the Spot the Mistake task (Nicholson, 1982). Audiotaped oral readings of two new stories were played, while the child followed the written text. The audiotapes included deliberate oral reading errors (e.g., "dark" for "park") implanted at a mean rate of one error per ten text words. The oral reading errors differed in visual and semantic similarity to the text words they replaced. The child's task was to say "stop" when an error was spotted, and then to correct the mistake. To assess children's ability to predict the meanings of words, an Oral Cloze measure was used. Audiotaped versions of two new stories were used, where target words were deleted,

and replaced by a pre-recorded audio cue. The interviewer paused the audio tape and asked the child to guess the omitted word. Cloze deletions occurred at different locations within sentences, at a mean rate of one word per ten text words, and included equal numbers of interest words and high frequency words.

Children's ability to read stories was assessed by asking them to read two new stories at the pretest phase and the same stories at the posttest phase of the study. In addition children were asked to read two of the stories they had been exposed to during the intervention phase of the study. In all, children read two new stories at pretest and the same two stories at posttest. They were also assessed on pre-reading skills, that is, concepts about print and alphabet knowledge. They were given the Burt and Clay word reading tests at pretest and posttest, and were also given the Spot the Mistake and Oral Cloze tasks. Posttest-only tasks involved the children reading two of the stories from the intervention phase of the study, completing the Spot the Mistake task with two of the stories from the intervention phase of the study, and completing the Oral Cloze task with two other intervention phase stories from the study. Other posttest-only measures included a list of the twenty most frequently occurring words in the twelve stories used in the intervention part of the study, which we called the Storybook Word List. Other post-test only measures included a pseudoword reading task (Bryant, 1975), and a writing vocabulary task (Clay, 1985).

The data from the children's oral reading of the stories were analysed in two ways. The first way was a propositional analysis. Sentences in each story were broken into propositions (Rumelhart, 1975) which were further classified according to function (setting, events, overt responses, internal responses, changes of state). Each child's oral reading of a story was matched against the number of propositions in the text. The propositions were scored as either strict or lenient matches. Strict matches occurred when the child's response was semantically similar to each text proposition and matched at least 80% of the text words. A lenient match was one where the child's response was semantically similar to the text proposition but matched fewer than 80% of the text words. The second form of data analysis was word matching based on actual and plausible word similarities between the child's oral reading, and the exact words in the story. Each word response was scored as either a strict or lenient match to the actual word in the text.

Materials and Procedure

The materials used in the intervention part of study were 12 stories the children had not seen or heard before. The stories were commercially produced, designed for early reading instruction, written by internationally well-known children's writers June Melser and Joy Cowley, and illustrated by a variety of artists. The stories were published as "little books". The mean number of words used in the stories was 81, although the number of text words per story varied from 24 to 186. The texts were repetitive, yet memorable, with final episodes usually breaking the expected pattern, so that the stories could end in humorous ways. Each daily reading session covered one story. After 12 days, the sequence of 12 stories was repeated. Thus, each child experienced a total of 24 story reading sessions. All reading sessions were standardised to take 12 minutes. If the instructional sequence finished before the 12 minutes expired, the audiocassette would continue in silence until the time limit expired, thus ensuring each child had access to the stories for equal amounts of time.

During each session, each child had a copy of the story to read. Children received a different set of reading experiences, depending on which of the eight intervention conditions they were in. During each reading session, the child was set up with an audiotape, headphones, and a book. Children who were hearing the audiotaped readings of stories would hear a page-turn signal (a spoon on a glass), at the end of each page. Children who were given repeated readings would hear the story read aloud three times each session. Children who were encouraged to read the story aloud, on their own, would hear nothing on the audiotape, but were given sufficient time to read the story to themselves. For example, if a child was in the audiotaped books, repeated reading, and read-aloud condition, he or she would hear the story read aloud three times, with turn-page cues, and then be given an opportunity to read the story aloud on their own a fourth time, but on this occasion without audio, and without turn-page cues.

To give an example of the least supported condition, the child did not hear the story read aloud, did not hear it repeated, and did not get asked to read the story aloud on their own a fourth time. However, the child was connected to the audiotape recorder, was wearing headphones, had a copy of the story, and received page turn cues, while the audiotape continued in silence for the 12 minute duration of the session.

Results

Analysis of variance and covariance procedures were carried out to analyse this pretest-posttest factorial design. The covariates included pretest reading skills, word reading, and story reading scores. A correlational matrix was also calculated for all variables.The results of all these analyses showed a significant effect only for the audiotaped reading condition. There were no other effects, and no interactions. Since there were a large number of assessment measures, only the results for the audiotaped reading factor will be reported.

The audiotaped reading factor had two levels (audiotaped books; non-audiotaped books) meaning that some children heard pre-recorded story readings with page turn audio cues, while others heard only page turn audio cues and no story reading. In this condition, there were no significant effects for print concepts, letter identification, word reading, pseudoword reading, or writing vocabulary. There were, however, significant effects for children's readings of the intervention stories. These effects appeared on proposition matches at the strict level, $F(1,48)=129.44$, $p<.001$. Inspection of the means for proposition matches showed that the means for audiotaped reading condition (Strict M=16.06; Lenient M= 27.56) were considerably higher that the means for the non-audiotaped reading condition (Strict M=0.53; Lenient M=10.13).

Effects were also identified on word matches from readings of intervention stories at both the strict, $F(1,48)= 136.96$, $p<.001$, and lenient levels $F(1,48)= 101.33$, $p<.001$. The means for the audiotaped reading condition (Strict M=112.90; Lenient M=127.30), were higher than means for the non-audiotaped reading condition (Strict M=29.75; Lenient M=56.28).

These results showed that children were more likely to approximate both propositions, as well as the specific words in a story, if they were familiar with that story. What was notable in the analysis, however, was that audiotaped reading effects failed to appear for proposition and word matches on children's oral reading of non-interventionn stories. Significant effects were also evident for Oral Cloze on intervention stories at both the strict, $F(1,51)= 49.89$, $p<.001$, and lenient levels, $F(1,51)= 24.89$, $p<.001$. Similar effects were identified for Spot the Mistake on intervention stories at the strict level, $F(1,51)= 18.44$, $p<.001$, and the lenient level, $F(1,51)= 13.5$, $p<.001$. Comparison of the Oral Cloze means for each condition showed that the audiotaped reading mean scores (Strict M=18.41; Lenient M=22.20) were considerably higher than the non-audiotaped reading mean scores (Strict M=12.13; Lenient M=16.97). This was also the case for Spot the Mistake audiotaped reading mean scores (Strict M=10.53; Lenient M=10.72) compared with non-audiotaped reading mean scores (Strict M=7.34; Lenient M=8.00). These results showed that children were more likely to predict omitted words, as well as correct errors implanted in a story reading if they were familiar with that story. What was surprising, however, was the absence of Spot the Mistake and Oral Cloze effects for non-intervention stories.

In addition, there were no significant effects for audiotaped reading on other reading measures, that is, concepts about print, alphabet knowledge, Burt word reading, Clay word reading, the Storybook Word List, the pseudoword reading test, or the writing vocabulary test.

Follow-Up Analysis of Reading Ability Groups

The preceding results raise a question as to whether the effects of audiotaped reading, repeated reading, and reading aloud might be influenced by the level of reading competence of the child at entry. To explore this possibility, analyses of variance and covariance were again carried out, with reading ability as a fourth factor. The pattern of results stayed almost the same, except that there were significant effects for the reading ability factor itself. The high ability children performed significantly better than the low ability children on almost all the assessment measures, for both intervention and non-intervention stories.

Follow-up Correlation Analysis

A follow-up correlation matrix showed similar results to previous analyses. No reading measure was strongly correlated with the repeated readings condition, or the read-aloud condition. There were strong correlations between the audiotaped reading condition and children's reading of intervention stories, both for strict proposition matches, $r = .75$, and lenient proposition matches, $r = .81$. Similarly, strong correlations were yielded between audiotaped reading and intervention stories for strict word matches, $r = .77$, as well as for lenient word matches, $r = .72$. Conversely, the same effects were extremely low between audiotaped reading and non-intervention stories, with correlations ranging from $r=.03$ to $r=.21$.

These results were consistent with previous analyses suggesting that the audiotaped reading effect was confined to intervention materials rather than new materials. This indicated that the improvement on the instructional stories was probably related to

the fact that they were easily memorised. Strong correlations were identified between strict proposition scores for reading of non-intervention stories, and posttest word identification tests. Strict proposition scores on pretest-posttest non-intervention stories correlated highly with posttest Burt word reading scores, r = .78, and posttest scores on the storybook list, r = .67. On posttest-only non-intervention stories, the pattern was similar with strict proposition scores correlating highly with Burt word reading scores, r = .75, and the storybook list, r = .70. However, strict proposition scores on readings of intervention stories showed weak correlations with Burt word reading scores, r = .30, and the Storybook Word List, r = .35. This pattern of results was also replicated for lenient scoring.

The correlational differences between readings of intervention stories and non-intervention stories also occurred for the word match measures. Strict word matches on reading of pretest-posttest non-intervention stories correlated highly with the Burt word reading measure, r = .79, and with the Storybook Word List, r = .71. On the posttest-only non-intervention stories, word matches showed a high correlation with the Burt word reading test, r = .74 and for the Storybook Word List, r = .72.

Conversely, for intervention stories, strict word matches showed low correlations with the Burt word reading test, r = .32, and the Storybook List, r = 35. These correlational results were replicated for lenient scoring of the proposition and word matches.

To summarise, the results suggest that the effects of the audiotaped reading factor on children's 'readings' of stories was quite different for intervention stories as opposed to the new stories.

Discussion

To what extent is emergent reading behaviour influenced by reading stories to children? The results of this study, which used audiotaped readings of stories, were both expected and unexpected. Not surprisingly, children who heard audiotaped stories were better at reading them than children who did not experience the audiotaped readings. They were better able to match the words and propositions in the intervention stories. They were also better at predicting omitted words, and correcting misread text than children who did not hear the stories read aloud on audiotape.

What was surprising was that these influences occurred only on the intervention stories, not on the non-intervention stories. In fact, they persistently failed to appear on any of the pre-reading, reading or writing measures, including concepts about print, alphabet knowledge, word reading, pseudoword reading, or writing vocabulary.

To what extent is emergent reading influenced by repeated readings? We found that the number of story repetitions did not matter. Children who heard each story read up to six times (three times on the first round, three on the second) did no better than children who heard stories just twice (once on the first round, once on the second). These results were also somewhat surprising. It seems plausible to argue that high numbers of repeats would provide a type of rehearsal which was likely to have more chance of bringing about changes in reading skills (Dahl & Samuels, 1974; Gonzales & Elijah, 1975). Yet the lack of an effect for repeated reading may be due to the fact that these children were reading stories with very predictable story lines. For example:

"Go home," said the hens.
"No," said little pig.
"Go home," said the ducks.
"No," said little pig.

In a trial of stories for this study, we found that children were able to retell the stories almost perfectly, after hearing them read just twice. Further repetitions, then, probably were unnecessary if the child was simply memorising the story line, as appears to have happened.

To what extent is emergent reading behaviour influenced by encouragement to "read-how-stories-go"? Once again, it could be argued that encouraging children to read-aloud stories on their own might give them a chance to reconstruct the text for themselves, which in turn may contribute to learning to read. Yet, the results were disappointing. Children who were encouraged to read each page for themselves performed no better than those who simply looked at the text.

To what extent is emergent reading behaviour influenced by the interaction of audiotaped reading, repeated readings, and encouragement to read aloud? We found no significant interactions among the three factors. The only factor that showed a difference was the presence or absence of audiotaped reading for the intervention stories.

Do ability differences matter? Commonsense suggests that high ability children will score better than low ability children, and they did, on most of the reading measures, including reading on non-intervention stories. But there were no clear-cut interactions of the ability factor with the other three factors in the study. This indicated that the effects of audiotaped reading, repeated reading and reading aloud were no different for either the high or low ability groups.

While reading stories provides access to the storyline, it does not necessarily provide access to the actual words, their position, and sequence. Future research on this topic might look at the effects of reading books to children, while encouraging the child to point simultaneously to words in the text. In this way, the child is shown the location of specific words, as well as their print-speech associations.

The use of word-pointing adjuncts to audiotaped reading may direct the child to specific features of print. This could be done with adult help, such as a parent reading and pointing to each word. Television, video and computers also have the potential to direct the child's attention to specific words during reading, and this may be more important than simply reading along with an audiotaped recording of the story. Meek and Elley (1996) have reported some success with this approach. They used predictable books similar to those in this study, but the books were presented on video, with story words highlighted as the story was read aloud to children. One problem with the study was that the video lessons also included teaching of the sounds of the letters of the alphabet, and some phonics in context, so a number of teaching strategies were included. Another problem was that the study did not include a matched control group. Nevertheless, it may be that future research can take account of these points.

Why shouldn't children learn to read by having books read to them? We think that listening to talking books is like being driven to a destination in a taxi. Someone else is doing the driving for you, so there is no need to pay attention to the driving task, or even to the direction in which you are going. Similarly with reading. The child who is being read to does not have to confront the alphabetic principle, since someone else is doing it for them. Even when parents read books to their children, research indicates that children and parents may not focus on the alphabetic principle. Phillips and McNaughton (1994) studied a group of ten 3- and 4-year-old children whose parents read to them either every day or every other day. The children had an average of 300 picture books of their own at home (range was from 50 to 500 children's books). These children came from a highly literate home environment, yet none of them were able to read more than a few words. The reason is probably that when reading stories to children, the conversational interactions tend to be about the meaning of the stories and pictures, rather than about decoding of words. For example, here is a short transcript of a conversation between a 2-year-old and her mother while reading a book (Ninio & Snow, 1995):

Mother: Those are birdies.
Child: Birdies.
Mother: And the name of those kinds of birdies they call owls.
Mother: And they say hoo-hoo.
Child: Hoo.

Phillips and McNaughton (1990) noted the same kinds of intereactions with their older preschool sample. Here is one conversation between a mother and child while reading a book together (p. 206):
Mother: What do you think might come out of there?
Child: Don't know.
Mother: What comes out of eggs?
Child: Birdies.

Thus, although there is support in the literature for using talking books and repeated reading with beginners, the present study does not indicate that these procedures enable beginners to learn to read. Their main value may be in terms of increasing the confidence of beginners by improving their ability to "pretend-read." In future studies, it would be useful to compare the effects of reading books to children with more direct instruction, such as the teaching of phonemic awareness, letter-sound correspondences, and simple phonics. Whitehurst, Epstein, Angell, Payne, Crone, and Fischel (1994), using an experimental and control group design with at-risk first-graders, found that a combination of reading books to children, as well as teaching of phonemic awareness and letter-sound correspondences, produced significantly higher gains in writing and print concepts, than did regular instruction. Ng (1997), using an experimental and control group design with Singaporean preschool children, found that the teaching of phonemic awareness and letter-sound instruction got children off to a faster start in reading that did the control group programme of simply reading books to them.

To conclude, this research into the effects of reading books to children gives rise to several general considerations. Firstly, the study challenges teachers to look closely at instructional props in reading programmes. There may well be a difference between what is and ought to be happening, and this difference can only be revealed through systematic inquiry. Secondly, the belief that children will learn to read by being read to cannot be sustained in its simplicity.

This study does not argue that reading to children is not important. Rather, it contends that reading aloud to children may not be enough to facilitate reading or writing development. Children who hear stories read to them a lot may appear to be learning to read. But we conclude that this may be more apparent than real. ◆

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Miscue Analysis: A Critique

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The assessment of children's reading progress has long been of interest to teachers, researchers, and parents. The purposes for reading assessment include comparing one child's progress to that of his peers, screening students for special assistance, measuring an individual's progress over a period of time, diagnosing particular areas of strength or weakness, using information for decisions about instruction, and determining placement within a reading program or special facility. There have been many different approaches to reading assessment based partly upon these differing purposes, but also upon the conception of reading development held by the test designer or user.

Reading miscue analysis is a major whole language test designed to assess the strategies that children use in their reading. Kenneth Goodman and his colleagues in the 1960's were interested in the processes occurring during reading, and believed that miscues (any departure from the text by the reader) could provide a picture of the underlying cognitive processes. He used the term *miscue*, rather than *error*, reflecting the view that a departure from the text is not necessarily erroneous (Goodman, 1979). Readers' miscues include substitutions of the written word with another, additions, omissions, and alterations to the word sequence.

Initially, he developed a Taxonomy (Goodman, 1969) which detailed 28 different types of miscues. Established initially for research purposes, its unwieldiness and a desire to broaden its usage led Yetta Goodman and Carolyn Burke in 1972 to develop a briefer version comprising nine questions to be asked about each miscue—a simpler system that they believed would become a useful and manageable tool for clinics and for teachers in the school system. The authors were less interested in traditional quantitative measures such as reading accuracy or reading rate, and considered that their qualitative approach provided more fine-grained and relevant information than did other approaches to reading assessment. In the Reading Miscue Inventory (RMI) a student's incorrect response, when compared to the written word, may display a dialect variation, an intonation shift, graphic similarity, sound similarity, grammatical similarity, syntactic acceptability, semantic acceptability, meaning change, and self-correction with semantic acceptability to the text word. An inventory of a child's miscues involves selecting text of sufficient length and difficulty to ensure that a child will make at least 25 errors, tape-recording the oral reading, and assigning the child's miscues to one or more of the nine categories. A further step requires a retelling of the story by the student as a comprehension check. The RMI requires about 20-40 minutes with each individual child, and a further hour for analysis. Through miscue analysis, the authors argued, teachers can better monitor a child's progress along the path to reading success, and identify the strengths and needs of students. Depending on the prevalence and type of miscue, teachers may decide whether any intervention is required and also its focus.

The value of any assessment tool depends upon the importance of the quality to be measured and the capacity of the tool to perform its task. For example, the measurement of height does not provide important information about reading. Despite the fact that height can be measured quite accurately using appropriate instruments, it has neither theoretical relevance to reading, nor does it correlate even moderately with reading development when both height and reading are assessed across the population. Thus, a consideration of the RMI involves two questions, each of which must be answered in the affirmative for the Inventory to be useful: Are the qualities that the instrument purports to measure significant as indicators of reading progress given the current knowledge about reading and its development? Is the instrument a valid and reliable indicator of the presence or absence of the targeted qualities?

Problems with the Theoretical Basis for RMI

The first question for the RMI involves its theoretical relevance to reading development. What is the status of the whole language view of reading development and of skilled reading? This question is crucial because miscue analysis is predicated upon the whole language conception of reading, and hence stands or falls on the validity of this conception. The significance of any reading errors is thus superimposed on the reading behaviour through the adoption of the whole language conception of reading—"... the model of reading makes the understanding

of miscues possible" (Brown, Goodman, & Marek, 1996, p.vii). The whole language philosophy conceptualizes reading development as the gradual integration of three cueing mechanisms (semantic, syntactic, and graphophonic), although the graphophonic system is considered a lesser contributor, even potentially disruptive if over-relied upon by readers (Weaver, 1988). Reading should entail as little emphasis on each word's letter-construction as possible. Rather, reading is perceived as a process of ongoing prediction of target-words based primarily upon semantic and syntactic cues, followed by confirmation that the chosen word is consistent with the context (and possibly the target word's initial letters). "In turn [the reader's] sense of syntactic structure and meaning makes it possible to predict the graphic input so he is largely selective, sampling the print to confirm his prediction" (Goodman, 1973, p.9).

Consistent with this view of skilled reading, the Reading Miscue Inventory is concerned largely with errors that cause a loss of meaning, the number of errors being less important than their immediate impact on comprehension (Weaver, 1988). There are differences in the acceptability of various miscues. Good miscues maintain meaning and are viewed as an indication that the student is using meaning to drive the reading process, and hence, is on the correct path. Bad miscues are those that alter meaning. Whether the word the student reads corresponds to the written word may not be important in this conception. "Accuracy, correctly naming or identifying each word or word part in a graphic sequence, is not necessary for effective reading since the reader can get the meaning without accurate word identification" (Goodman, 1974, p.826).

More recent research has demonstrated that this assertion is incorrect. Good readers, though more sensitive to context cues to elicit the meaning of unfamiliar words, do not need to use context to decode unknown words (Tunmer & Hoover, 1993). At best, even good readers can guess words only one time in every four, and then only with fairly predictable words (Gough, 1993). They soon learn that word structure more reliably supplies the word's pronunciation than does context; unfortunately, it is poor readers who are more likely to invest attention on such context guesswork (Nicholson, 1991). The error made by whole language theorists is to confuse the desired outcome of reading instruction—a capacity to grasp the meaning of a text—with the means of achieving that end. In order to comprehend meaning, the student must first learn to understand the code (Foorman, 1995).

A teacher using the RMI will examine the nature of the errors the student has made in the chosen passage. Consider this text and a reader's response, substituting *pony* for horse:

Child #1:

pony

The **man** rode his horse to town.

Asking the nine questions reveals that the miscue (compared with the target word) has grammatical similarity, syntactic acceptability, semantic acceptability, does not change meaning, and the miscue does not involve dialect variation, an intonation shift, graphic similarity, sound similarity, or self-correction. Such an error is considered an acceptable miscue. Reading *pony* for horse is indicative of the student using contextual cues appropriately and a signal for satisfaction about reading progress. The teacher would be content with this error, as meaning has been more or less preserved. "Often substitutions of words like *a* for *the*, *by* for *at*, *in* for *into*, do not cause a change in meaning. ... substitutions like *daddy* for *father*, *James* for *Jimmy* ... are generally produced by proficient readers and are not reading problems" (Goodman & Burke, 1972, pp.101-102).

According to the whole language conception of skilled reading, students must make many miscues during the progressive integration of the cueing systems in order for reading to develop. It is expected that these errors are not necessarily a cause for intervention but simply a sign of a reader prepared to take risks. Any corrective feedback regarding errors is risky as it may jeopardise the student's willingness for risk-taking: "...if these resulting miscues preserve the essential meaning of the text, or if they fail to fit with the following context but are subsequently corrected by the reader, then the teacher has little or no reason for concern" (Weaver, 1988, p.325).

Suppose another student reads *house* for horse:

Child #2:

house

The **man** rode his horse to town.

Asking the same nine questions reveals that the miscue (compared with the target word) has graphic similarity, some degree of sound similarity, grammatical similarity, syntactic acceptability, and the miscue does not involve dialect variation, an intonation shift. Further, it does not include self-correction, is not a semantically acceptable change, and the miscue creates meaning change. This response is

considered an unacceptable miscue because it changes the meaning. "Proficient readers resort to an intensive graphophonic analysis of a word only when the use of the syntactic and semantic systems does not yield enough information to support selective use of the graphophonic system" (Goodman et al., 1987, p.26). Despite the closer graphemic similarity of the response *house* to the target word, children who make errors based on graphemic similarity, such as *house* for horse, are considered problematic and over-reliant on phonic cues. Whole language theorists argue that good readers' miscues display less grapho-phonemic similarity to the target word than do those of poor readers (Weaver, 1988) and thus readers-in-training should do likewise.

Thus, the remedy the teacher would choose for child #2 would be to encourage him to rely more on context and to look less at letter patterns. However, according to recent research, this remedy is more likely to result in poorer reading than in better reading. To improve this child's reading, the child should be encouraged to look more closely at the letters, the reverse of what is recommended in the RMI (Adams, 1991). Adams (1991) found that good readers' miscues display more grapho-phonemic similarity to the target word than do those of struggling readers. In fact, most nascent readers' miscues shift over time, from early errors based upon contextual similarity to those based upon graphemic similarity; however, this shift is now recognised as functional and a characteristic of progress. The student's dawning understanding of the pre-eminence of a word's graphemic structure encourages close visual inspection of words, a strategy that accelerates the progressive internalisation of unfamiliar spelling patterns, that is, it leads ultimately to whole-word recognition. That some teachers may unwittingly subvert this process with well-meaning but unhelpful advice to readers is an unfortunate outcome.

According to current knowledge, the *house* response is a preferable error to the *pony* substitution. It is a sign that the student is in the process of acquiring the alphabetic principle; however, corrective feedback should be provided as *house* is an erroneous response. Through the error correction, the student's attention is directed toward the letters in the written word and the sound usually made by the *or* combination. The response recommended to teachers through the RMI—that of directing the students' attention away from the letters in the word to that which can be predicted and which makes sense—provides an alarmingly unstable and counterproductive rule for students.

Child #1 is likely to be in greater need of instruction that directs his attention to the letters in the words. Child #1 could just as well have substituted ***bicycle*** for **horse**. The substitution makes sense but is far from that which the author intended. The child whose primary decoding strategy is driven by semantic and syntactic similarity is unaware that ***bicycle*** bears no graphemic similarity to the ***horse***. The instructional message to the student is that, despite the errors directly attributable to the strategy of guessing, the strategy is the appropriate one. The student is encouraged to continue using a strategy that is unhelpful, and is dissuaded from attending to the major cue that would improve his reading—the word's structure. Regardless of the type of miscue, students who make errors need to focus on the letters in the word to improve their reading.

Self-corrections are errors that are corrected without another's intervention, usually because the word uttered does not fit in the context of the sentence. Within the whole language framework, self-corrections are a clear and pleasing sign that meaning and syntactic cues are being integrated into the reader's strategies. Clay (1969, cited in Share, 1990) asserted that good readers self-corrected errors at a higher rate than did poor readers. She considered high rates were indicative of good text-cue integration, which in turn was a measure of reading progress. The significance of self-correction has been questioned by Share (1990), and Thompson (1981, cited in Share, 1990). They found that self-correction rates are confounded with text difficulty. When text difficulty was controlled in reading level-matched designs, the rates of self-correction became similar among good and poor readers. That is, when text is very difficult everyone is more likely to make errors and increase their rate of self-correction. Hence, an increased rate of self-correction can be interpreted as simply indicative of excessively difficult text rather than as reflecting reading progress. This interpretation based on difficulty levels also presents problems of unreliability for the assessment of self-correction rates. The conclusion that there is no direct support for self-correction as a marker or determinant of reading progress makes the activity of recording such ratings for students of questionable value.

How does the view of reading underpinning the RMI sit with research findings regarding the reading process and its development?

> This view of skilled reading, which comes from Goodman (1967) and Smith (1978), has been rejected by the scientific community (Adams, 1990; Ehri, 1986; Goswami & Bryant,

1990; Gough, Ehri & Treiman, 1992; Just & Carpenter, 1987; Perfetti, 1985; Rayner & Pollatsek, 1989; Rieben & Perfetti, 1991; Stanovich, 1986, 1991; Vellutino, 1991). Skilled reading is not sampling features of the text on the run, it is not a psycholinguistic guessing game, and it is not incidentally visual. Rather, research has shown that 'skilled readers process virtually all the words they encounter in connected text, and typically, all of the letters in those words' (Vellutino, 1991, p.82). Research further indicates that skilled readers are sufficiently fast and accurate at recognising words in text to make reliance on contextual information unnecessary (Perfetti, 1985). (Tunmer & Hoover, 1993, p.167)

The findings of individual researchers and such syntheses as provided above have been formalised through the National Institute of Child Health and Human Development (NICHD). In 1985, the Health Research Extension Act directed the NICHD to coordinate research on reading disability and learning disability such that results of research would meet a number of criteria regarding scientific rigour. The intention was to define research characteristics that would ultimately lead to methodologically unassailable findings and benchmarks of consensual knowledge. More than 100 researchers in numerous sites across the USA are involved in this cooperative multidisciplinary research employing large scale longitudinal studies, careful sampling, and replication of findings with the view of integrating their research efforts. A summary of the findings is provided by the director, G.R. Lyon (1996):

> The ability to read fluently for meaning depends primarily on rapid, automatic decoding and recognition at the level of the single word. The basis of reading deficits (phonological processing) should provide the focus for intervention. Efforts should be directed at explicitly and systematically teaching the connection between phonological rules and the written word. A phonics emphasis provides advantages for disabled readers over a whole language approach.

The NICHD research summary has been very influential, even at a political level. Recently, the U.S. Federal Reading Excellence Act was passed by both houses, is currently in committee, and is expected to be enacted during this year. This legislation ensures that all reading programs eligible for federal support in future will be based on reliable and replicable research. Part of the definition of reading included in the Bill provides a clear indication of consensus concerning the incompleteness of the whole language view of reading. Reading is "the process of comprehending the meaning of written text by [depending] on the ability to use phonics skills (i.e., knowledge of letters and sounds) to decode printed words quickly and effortlessly both silently and aloud." In a similar vein, the British National Literacy Strategy (1998) has recently been released to all primary schools, requiring them to abandon the current Whole Language approach to reading. Components of the former system, such as reliance on context clues to aid word reading, are discredited in the Strategy, and schools are directed to introduce explicit phonics instruction from the earliest stages of reading.

The RMI was designed to provide a "window on the reading process" (Goodman, 1973, p.5); however, the analogy with a window is a misleading one as it implies a direct and transparent medium. The picture of reading obtained through the RMI involves an interpretation of what is viewed through this window. What is really displayed by a student is reading behaviour (words, sentences)—the subsequent analysis of miscues involves making inferences about unobservable processes based upon assumptions about the reading process. With this instrument, the picture is coloured by a discredited conception of reading.

An important rationale for the choice of an assessment device resides in its capacity to inform intervention (Goyen, 1992). The RMI Manual, however, provides few strategies for corrective intervention—perhaps because miscue analysis was not originally developed to inform intervention. Alternatively, it may relate to the whole language view that reading progress is natural in a strongly literate environment. "Learning is continuous, spontaneous, and effortless, requiring no particular attention, conscious motivation, or specific reinforcement" (Smith, 1992, p.432). The typical global recommendation from the RMI for students with reading difficulties involves prompting the increased use of psycholinguistic guessing—"the reading strategies of sampling, predicting, and confirming are the same for all readers. ... non-proficient readers ... need to be invited to do what proficient readers do, their attention drawn to inferential strategies" (Goodman, Watson, & Burke, 1987, p.170). Additionally, students are expected to learn about reading through their mistakes rather than through instruction from teachers; hence, the reticence of the RMI developers toward explicit intervention strategies is understand-

able, even if unhelpful to students.

One implication of the current understanding of the reading process is that the qualitative analysis of reading errors is largely irrelevant to instructional planning. Decoding errors of whatever type are best addressed at the level of decoding instruction (Lyon, 1996). Thus, the student who makes errors due to reliance on contextual strategies and the student who makes errors based on inadequate graphophonic analysis each requires decoding instruction and practice, sufficient to enable effortless reading at the appropriate level of text difficulty. Psychometric studies have demonstrated that it is decoding ability that predicts children's capacity for word identification and comprehension. Measures of semantic and syntactic ability as assessed in the RMI are not strongly correlated with word identification or passage comprehension (Vellutino, 1991).

Issues of Validity and Reliability

Modern research has indicated that the RMI does not provide important information regarding reading, and hence is of largely historical interest. However, even if its foci were of interest, there are other difficulties that create problems for its use. An assumption implicit in miscue inventories is that oral reading reflects similar processes to those involved in silent reading, and hence errors detected while students are reading aloud are representative of errors in their silent reading. However, even Goodman (1976) expressed suspicions about the usefulness of the results of oral reading assessment: " ... 'poor' oral reading performance may reflect a high degree of reading competence rather than a lack of such competence" (p.489). If poor oral reading can be interpreted so diversely, and may be simply an artifact of the assessment, its value is dramatically compromised (at least insofar as its implications for silent reading ability).

An additional problem for the Reading Miscue Inventory is its inadequacy as a psychometric instrument (Allington, 1984). Leu's (1982) review of oral reading error analyses highlighted serious problems of unreliability. Unreliability in an assessment means that the same tool can provide differing results on different occasions, or with different texts, or with different examiners, without any change in the student's capacity. The unreliability problems arise from:

1. Vague definitions of the boundaries of the error categories. Determining when *meaning has been essentially preserved* may produce different decisions from different teachers for the same miscue.
2. An absence of theoretical justification for the categories.
3. A failure to allow for the effects of passage difficulty. When passage difficulty is controlled (i.e., similar error rates), reliance on context occurs at least as much for less skilled as for skilled readers (Allington & Fleming, 1978; Batey & Sonnenschein, 1981; Biemiller, 1970, 1979; Cohen, 1974-5; Coomber, 1972; Harding, 1984; Juel, 1980; Lesgold & Resnick, 1982; Perfetti & Roth, 1981; Richardson, Di Benedetto, & Adler, 1982; Weber, 1970; Whaley & Kibby, 1981; cited in Stanovich, 1986);
4. The ambiguity resulting when categorising multiple-source errors.

Hood (1982) noted that other text characteristics (besides difficulty) also influenced the type of error produced by readers. Wiederholt and Bryant (1987) further point out that miscues are influenced by the reading instruction the students have received, student age, the writing style, student familiarity with the text, and the stated purpose of the reading task (e.g., reading for expression compared to reading with a view to answering comprehension questions). Such contamination of results inevitably leads to inconsistent diagnosis and similarly inconsistent instructional implications. The findings of any individual assessment cannot be relied upon to provide information about the habitual strategies used by a reader, and thus fail the basic reliability requirement of an assessment instrument. Given the difficulty in separating these various potential causes of miscues, it is difficult to accept Goodman's characterisation of the miscue analysis as providing a clear insight into the student's cognitive processes.

The Reading Miscue Inventory has had considerable influence in instructional texts and in classrooms (Allington, 1984), and remains influential among Whole Language theorists and teachers (Weaver, 1988). A revised version—RMI: Alternative Procedures (Goodman, Watson, & Burke, 1987)—offers four analysis options of varying complexity for classroom use. The rationale is unchanged: " ... it is best to avoid the common sense notion that what the reader was supposed to have read was printed in the text" (Goodman et al., 1987, p.60)—and the Alternative Procedures are subject to the same criticisms as earlier versions. Although the RMI has been a very popular test itself, many teachers (for example, in Reading Recovery) have been trained to use an informal procedure of maintaining "running records" (Clay, 1985) with their students, a procedure that provides similar information on types of

errors and self-correction rates, and that are based on a similarly flawed conception of reading.

It should be noted that the critique presented here does not necessarily imply that the qualitative analysis of readers' errors is valueless. However, it is essential for any proposed analysis that the rationale for error categories should be well grounded in knowledge about the reading process, the function of the analysis should be clearly explicated, and the instrument have acceptable psychometric properties. It should also be recognised that such qualitative analyses may be primarily of research interest, but not very useful in informing intervention. The authors of the RMI make the claim that their assessment is authentic because it makes use of literature for the assessment task. However, even authentic assessments should meet the requirement of relevance and trustworthiness. Given the problems with the theory, design, and implications of the Reading Miscue Inventory (and its derivatives), its widespread continued acceptance in the education community is difficult to fathom.

A more valuable approach to assessment is one grounded in up-to-date knowledge of skilled reading and its development. Given that skilled readers process almost every letter of every word, and they read fluently and accurately—then we should assess how well we teach students to develop the range of salient skills. We want students to appreciate:

- how words are composed of phonemes,
- how words can be deconstructed into phonemes,
- how phonemes can be blended to manufacture words,
- how printed letters have sound values (individually and in clusters),
- how decoding operates,
- how adequate practice at decoding leads to whole word reading,
- how fluent reading releases attention from the mechanics of reading to the processes of comprehension,
- how the use of comprehension strategies can increase our capacity to become more sophisticated readers.

We require tools that provide the appropriate measure for the reader's stage of development. For example, phonemic awareness is strongly predictive of reading success for beginning readers (Adams, 1990), and the early use of such measures can both aid in determining the intensity of teaching required by individuals to ensure their success, and can also reduce the disheartening effects of failure at this critical task. Additionally, instruction in phonemic awareness has been demonstrated to be beneficial to students at-risk of reading failure (Adams, 1990; Stanovich, 1986). Thus the phonemic awareness assessment provides information about students in an important reading preskill, and it also guides instruction. Other measures of letter-sound knowledge, blending, and segmenting can assess progress in the decoding development phase, providing information about the adequacy of teaching the student has received and the level of practice required for each individual to master these skills. Assessment of sight words can provide information about the development of orthographic images of words, the stage beyond decoding indicative of progress towards efficient, skilled reading (Ehri, 1995). A schedule of reading-rate assessment is important (Samuels, Schermer, & Reinking, 1992; Slocum, Street, & Gilberts, 1995) as it is indicative of the reader's growing fluency. A secondary benefit is that rate assessment is simultaneously an intervention as it provides an impetus for students to increase their rate, thereby aiding comprehension. The regular, frequent measurement of reading rate and accuracy using literature of known and appropriate difficulty levels becomes critical for students who have mastered the earlier stages described above. It guides the teacher in the continuing decisions regarding instruction and student practice needed to ensure the student reaches that stage of automatic, accurate reading described by Ehri (1995) as the "consolidated alphabetic phase" (p.121).

A different conception of reading underpins this approach to assessment compared to that of Reading Miscue analysis; a further major difference concerns the responsibility assigned to the teacher for a student's reading progress. The whole language teacher believes that reading is as natural as learning to speak (Smith, 1992), and acts largely as a facilitator for students, observing the inevitable success engendered by immersion in authentic literature. In contrast, the focus described above includes an emphasis on the importance of quality instruction in ensuring success. It is argued that written language is an invention, and reading is not a natural extension of learning to speak (Liberman & Liberman, 1990). Although it is the learner whose progress is being assessed, the prime purpose is to assess instruction rather than the learner. It is the focus on adapting instruction to the benefit of the learner which provides the major rationale for assessment. ◆

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We have all encountered those wonderful teachers who truly inspire learning. To this day, we remember their names, the classes they taught, and their unique ability to elevate the subject matter into a magical learning experience.

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Videotapes on the Direct Instruction Model

Aren't You Special—25 minutes. Motivational talk by Linda Gibson, Principal at a school in Columbus, Ohio. Successful with DI, in spite of minimal support. Keynote from 1997 National DI Conference. Price: $15.00

Effective Teaching: It's In the Nature of the Task—25 minutes. Bob Stevens, expert in cooperative learning from Penn State University, describes how the type of task to be taught impacts the instructional delivery method. Keynote from 1997 National DI Conference. Price: $15.00

One More Time—20 minutes. Closing from 1997 National DI Conference One of Engelmann's best motivational talks. Good for those already using DI, this is sure to make them know what they are doing is the right choice, for teachers, students and our future. Price: $15.00

Direct Instruction in Action—45 minutes. This tape is a series of student, parent, teacher and administrator testimonials about the use of DI, and many examples of Direct Instruction being used across the country with a wide range of learners. A good tape for anyone who needs to know what DI looks like and why it works. Price: $45.00

Keynotes from 22nd National DI Conference—2 hours. Ed Schaefer speaks on "DI–What it is and Why It Works," an excellent introductory talk on the efficiency of DI and the sensibility of research based programs. Doug Carnine's talk "Get it Straight, Do it Right, and Keep it Straight" is a call for people to do what they already know works, and not to abandon sensible approaches in favor of "innovations" that are recycled fads. Siegfried Engelmann delivers the closing "Words vs. Deeds" in his usual inspirational manner, with a plea to teachers not to get worn down by the weight of a system that at times does not reward excellence as it should. Price: $25.00

Keynotes from the 1995 Conference—2 hours. Titles and speakers include: Anita Archer, Professor Emeritus, San Diego State University, speaking on "The Time Is Now" (An overview of key features of DI); Rob Horner, Professor, University of Oregon, speaking on "Effective Instruction for All Learners;" Zig Engelmann, Professor, University of Oregon, speaking on "Truth or Consequences." Price: $25.00

Keynote Presentations from the 1994 20th Anniversary Conference—2 hours. Titles and speakers include: Jean Osborn, Associate Director for the Center for the Study of Reading, University of Illinois, speaking on "Direct Instruction: Past, Present & Future;" Sara Tarver, professor, University of Wisconsin-Madison, speaking on "I have a Dream That Someday We Will Teach All Children;" Zig Engelmann, Professor, University of Oregon, speaking on "So Who Needs Standards?" Price: $25.00

An Evening of Tribute to Siegfried Engelmann—2.5 hours. On July 26, 1995, 400 of Zig Engelmann's friends, admirers, colleagues, and protégés assembled to pay tribute to the "Father of Direct Instruction." The Tribute tape features Carl Bereiter, Wes Becker, Barbara Bateman, Cookie Bruner, Doug Carnine, and Jean Osborn–the pioneers of Direct Instruction–and many other program authors, paying tribute to Zig. Price: $25.00

Challenge of the 90's: Higher-Order thinking—45 minutes, 1990. Overview and rationale for Direct Instruction strategies. Includes home-video footage and Follow Through. Price: $10.00 (includes copying costs only).

Follow Through: A Bridge to the Future—22 minutes, video, 1992. Direct Instruction Dissemination Center, Wesley Elementary School in Houston, Texas, demonstrates approach. Principal, Thaddeus Lott, and teachers are interviewed and classroom footage is shown. Created by Houston Independent School District in collaborative partnership with Project Follow Through. Price: $10.00 (includes copying costs only).

Where It All Started—45 minutes. Zig teaching kindergarten children for the Engelmann-Bereiter pre-school in the 60's. These minority children demonstrate mathematical understanding far beyond normal developmental expectations. This acceleration came through expert teaching from the man who is now regarded as the "Father of Direct Instruction," Zig Engelmann. Price: $10.00 (includes copying costs only).

Direct Instruction—black and white, 1 hour, 1978. Overview and rationale for Direct Instruction compiled by Haddox for University of Oregon College of Education from footage of Project Follow Through and Eugene Classrooms. Price: $10.00 (includes copying costs only).

Corrective Reading: Decoding B1, B2, C—4 hours, 38 minutes + practice time. Pilot video training tape that includes an overview of the Corrective Series, placement procedures, training and practice on each part of a decoding lesson, information on classroom management / reinforcement and demonstrations of lessons (off-camera responses). Price: $25.00 per tape (includes copying costs only).

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New Videos Available!

Keynotes from the 1998 National Direct Instruction Conference in Eugene are now available from ADI. These videos are professional quality, 2 camera productions suitable for use in meetings and trainings.

☐ ***Successful Schools... How We Do It***—35 minutes. Eric Mahmoud, Co-founder and CEO of Seed Academy/Harvest Preparatory School in Minneapolis, Minnesota presented the lead keynote for the 19998 National Direct Instruction Conference. His talk was rated as one of the best features of the conference. Eric focused on the challenges of educating our inner-city youth and the high expectations we must communicate to our children and teachers if we are to succeed in raising student performance in our schools. Also included on this video is a welcome by Siegfried Engelmann, Senior Author and Developer of Direct Instruction Programs. Price: $19.95

☐ ***Fads, Fashions & Follies—Linking Research to Practice***—25 Minutes. Dr. Kevin Feldman, Director of Reading and Early Intervention for the Sonoma County Office of Education in Santa Rosa California presents on the need to apply research findings to educational practices. He supplies a definition of what research is and is not, with examples of each. His style is very entertaining and holds interest quite well. Price: $19.95

☐ ***Moving from Better to the Best***—20 minutes. Closing keynote from the National DI Conference. Classic Zig Engelmann doing one of the many things he does well... motivating teaching professionals to go out into the field and work with kids in a sensible and sensitive manner, paying attention to the details of instruction, making sure that excellence instead of "pretty good" is the standard we strive for and other topics that have been the constant theme of his work over the years. Price $19.95

☐ ***Special Pricing.*** Each video is $19.95. Purchase all three keynotes from the 1998 National Direct Instruction Conference for $45.00 (includes shipping)

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ADI Association for Direct Instruction

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What is ADI, the Association for Direct Instruction?

ADI in a non-profit organization dedicated primarily to providing support for teachers and other educators who use Direct Instruction programs. That support includes conferences on how to use Direct Instruction programs, publication of a professional quarterly magazine entitled *Effective School Practices*, and the sale of various products of interest to our members.

Who Should Belong to ADI?

Most of our members use Direct Instruction programs, or have a strong interest in using those programs. Many people who do not use Direct Instruction programs have joined ADI due to their interest in receiving our quarterly magazine, *Effective School Practices* (ESP). In addition to articles on Direct Instruction programs, it contains articles on broader topics as well. The criterion for the inclusion of articles in ESP is that they focus on scientific research on effective instructional and teaching practices.

Membership Options

☐ $32.00 ***Regular Membership*** (includes 4 issues of *Effective School Practices*, a 20% discount on ADI sponsored events and on publications sold by ADI).

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✔ Canadian addresses add $5.00 US to above prices.

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ADI Materials Price List

The Association for Direct Instruction distributes the following Direct Instruction materials. Members of ADI receive a 20% discount on these materials. To join ADI and take advantage of this discount, simply fill out the form and include your annual dues with your order.

Title & Author	Member Price	List Price	Quantity	Total
Teach Your Children Well *(1998)* NEW! Michael Maloney	$13.50	$16.95		
Preventing Failure in the Primary Grades *(1969 & 1997)* Siegfried Engelmann	$19.95	$24.95		
Theory of Instruction *(1991)* Siegfried Engelmann & Douglas Carnine	$32.00	$40.00		
The Surefire Way to Better Spelling *(1993)* Robert C. Dixon	$9.75	$12.00		
Teach Your Child to Read in 100 Easy Lessons *(1983)* Siegfried Engelmann, Phyllis Haddox, & Elaine Bruner	$14.95	$17.95		
Turning Our Schools Around: Seven Commonsense Steps to School Improvement *(1995)* Phyllis Anderson Wilken	$15.95	$19.95		
Structuring Classrooms for Academic Success *(1983)* S. Paine, J. Radicchi, L. Rosellini, L. Deutchman, & C. Darch	$11.00	$14.00		
War Against the Schools' Academic Child Abuse *(1992)* Siegfried Engelmann	$14.95	$17.95		
Research on Direct Instruction *(1996)* Gary Adams & Siegfried Engelmann	$19.95	$24.95		

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$21.00 to $40.99	$6.00
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$81.00 or more	10% of Subtotal

Serving Non-English Speaking Children

Effective School Practices, Summerl, 1997, Volume 16, No.3

In California, more than one-fifth of public school children participate in bilingual education. Each year only 5% of the students not previously proficient in English are found to have gained English proficiency. Critics of bilingual education say it produces students illiterate in two languages. This issue presents two seminal research studies on the effects of Direct Instruction on English language learners, both Asian and Hispanic. Direct Instruction for English language learners, characterized as "structured immersion," offer an alternative to the more common forms of bilingual education, where the school programs are bilingual to enable the children to remain monolingual for a longer period of time.

Tools for Middle School Success

Effective School Practices, Winter-Spring, 1997, Volume 16, Nos. 1 and 2.

ABSTRACT: Over the past decade, much of the research conducted under Doug Carnine's leadership at the University of Oregon has been investigating effective instructional interventions for middle school students. Zig Engelmann and associates have also been applying Direct Instruction theory to higher level cognitive tasks of more sophisticated learners. The combined results of these efforts have been rewarding in terms of higher achievement levels for at-risk populations. The instructional tools that resulted from this work and some of the research studies that evaluate these interventions for higher level thinking are featured in this double issue.

Developing Professionalism

Effective School Practices, Fall, 1996, Volume 15, No.4

ABSTRACT: This issue contains Doug Carnine's keynote address to the 1996 Eugene DI Conference: "How Business Can Help Education Learn About Accountability." Also, implementation news from Maryland, Alabama, California and Delaware are included. In a case study, initial language instruction using a cumulative progamming strategy is evaluated. Research articles measure the effects of videodisc instruction and question whether method of teaching beginning reading should be matched to a student's learning syle.

Reading Recovery/Preventing Reading Failure

Effective School Practices, Summer, 1996, Volume 15, No.3

ABSTRACT: Reading Recovery advocates claim that the program brings the lowest performing children up to the average level of their local class by the end of first grade within 60 lessons, or 12 weeks. However, independent evaluations have found that Reading Recovery is far less effective and more costly than has been claimed, and that learning gains are not maintained. Those independent evaluations are reprinted in this issue. In contrast to the unscientific methods of Reading Recovery, the National Institute of Child Health and Human Development (NICHD) for thirty years has conducted research into reading difficulties following the most rigorous scientific procedures. In this issue, the Center for the Future of Teaching and Learning identifies best practices based on NICHD research.

Regular Education Issues

Effective School Practices, Spring, 1996, Volume 15, No. 2

ABSTRACT: To achieve equity in education, the performance of traditionally low-performing groups of children must be improved. This issue includes a synthesis of the research in ability grouping and mixed-age grouping and also describes school models where low achievers reach remarkably high performance levels. Also featured is an article that compares traditional math textbooks with *Connecting Math Concepts* and reports the results of a field study that was conducted by a school district prior to its adoption of a new mathematics basal. It's an excellent example of the kind of small research project that districts should undertake before spending thousands of dollars on new textbooks. A student teacher also reports on the success she had in her inner city classroom using DI to teach basic mathematical skills.

What Was That Project Follow Through?

Effective School Practices, Winter, 1996, Volume 15, No. 1

ABSTRACT: Find out about the largest, most expensive educational experiment in history. What were the results? Why weren't they publicized? In the history of education, no educational model has ever been doucmented to acheive such positive results with such consistency across so many variable sites as Direct Instruction.

Planning for a Direct Instruction Implementation

Effective School Practices, Summer, 1995, Volume 14, No. 3

ABSTRACT: A workbook and guidelines provide a framework for planning a Direct Instruction implementation. The planning stages include: 1. Feasibility planning (Does the school have the support and resources to begin a DI implementation?), 2. Setting specific school policies (What policy changes regarding grouping and scheduling, report cards and discipline, inclusion and evaluation, substitutes and so on, need to be made?), 3. Deciding on the scope of the first year's implementation (Given the support and limitations, what level of implementation should the school schedule for the first year?), 4. Budget planning (What will the DI implementation cost?). A full set of placement tests for *Reading Mastery, Reasoning and Writing, Spelling Mastery,* and *Connecting Math Concepts* are included. The planning guide is particularly appropriate for the school administrator or leader.

Handbook for Grassroots Reform

Effective School Practices, Winter 1995, Volume 14, No. 1

ABSTRACT: An article by Russell Worrall and Doug Carnine describes the problem to solve: the irrationality of top-down educational decision-making. Individual school communities that wish to use a more rational process are provided with reference materials and guides for establishing bottom-up reform, particularly in the selection of the teaching practices and tools (textbooks, technology, media, software, and so on). A Handbook for Site Councils to use to improve schools guides local site councils in obtaining reliable information about what works, that is, site councils should select validated practices and tools or cautiously monitor the implementation of unvalidated practices. Reliable information is usually available in the form of research studies. Because research is often misused and abused, a guide for using research to identify superior teaching practices and tools is also provided.

Twenty Years of Effective Teaching

Effective School Practices, Fall 1994, Volume 13, No. 4

ABSTRACT: Two keynote addresses by Sara Tarver and Jean Osborn at the summer conference provide an overview of the history of Direct Instruction. Headline news articles featuring Direct Instruction and/or disappointing results from trendy approaches are reprinted. An exchange of letters between a Montana parent and the National Council of Teachers of Mathematics highlights issues regarding school adoption of unproven, faddish methods, textbooks, and philosophies. The NCTM is unable to provide evidence that the teaching methods they promote improve learning. NCTM claims there are no measures

that assess the kinds of outcomes they wish to achieve. They expect to have a guide for assessment published in 1995, 4 years after the guide for teaching practice was published. The Montana parent argues that the assessment should be used to evaluate the practices before they are promoted nationwide.

OBE and World Class Standards

Effective School Practices, Summer 1994, Volume 13, No. 3

ABSTRACT: This issue is a critique of outcome-based education. Criticisms from educational researchers and from the American Federation of Teachers are featured. Positive suggestions for education reform legislation are offered, as well as some guidelines for evaluating standards. The standards of most states are criticized for their lack of rigor, for their non-academic focus, and for their evaluation systems that do not provide information regarding the effectiveness of the school programs, but rather only evaluate individual students.

Achieving Higher Standards in Mathematics

Effective School Practices, Spring 1994, Volume 13, No. 2

ABSTRACT: The standards from the National Council of Teachers of Mathematics prescribe teaching practice more than they set standards for student performance. Several research articles provide evidence that the NCTM teaching practices are probably not the best practices for achieving the student performance standards implied in the standards.

Beginning Reading Instruction

Effective School Practices, Winter 1994, Volume 13, No. 1

ABSTRACT: Research still shows that systematic phonics instruction with a code-based reader are important components of effective initial reading instruction and are not incompatible with most whole language activities. Read Keith Stanovich's analysis of reading instruction issues in *Romance and reality* and Patrick Groff's review of *Reading Recovery* research. Read how a highly successful school teaches reading to Spanish-speaking children. Edward Fry also provides a set of tools for solving common reading problems.

Discriminatory Educational Practices

Effective School Practices, Spring, 1993, Volume 12, No. 2

ABSTRACT: Research has documented discriminatory effects for two popular school reforms: whole language and "developmentally appropriate practice" as it has been defined by the National Association for the Education of Young Children. This edition summarizes the research evaluating effects of these reforms on the upward mobility and learning of economically disadvantaged children, minority children, and special education children. These diverse learners in programs incorporating the popular "child-centered" pedagogies are less likely to acquire the tools they will need for economic success and have lower self-esteem than children in traditional programs.

Heterogeneous Grouping and Curriculum Design

Effective School Practices, Winter, 1993, Volume 12, No. 1

ABSTRACT: Heterogeneous grouping is a superficial and ineffective solution to the problem of discrimination in education. Equal access to education involves much more than having equal access to a seat in the classroom. This edition presents research summaries and perspectives surrounding grouping decisions. Research finds subject-specific homogeneous grouping most effective in subjects that are skills-based, such as reading and mathematics. The reprinted education survey by the *Economist* compares educational systems around the world and finds America's attempt to provide equal education for all a failed experiment. The *Economist* praises Germany's ability to turn out the most highly skilled

workers in the world. Both *Forbes* and the *Economist* criticize many of the currently popular American reforms, such as whole language and heterogeneous grouping, for the mediocrity they seem to encourage.

Listing of Effective Programs

Effective School Practices, monograph, 1993, also *ADI News*, Volume 11, No. 5.

ABSTRACT: This issue features a complete annotated listing of Direct Instruction, programs authored by Zig Engelmann and his colleagues. Also included are procedures for obtaining funding, addresses of funding sources, and a model proposal.

Wholistic Approaches

ADI News, Summer, 1992, Volume 11, No. 4

ABSTRACT: Effective instruction (e.g., Direct Instruction,) provides wholistic integration of skills that have been specifically taught. Wholistic programs that do not teach important component skills are inferior. A study is reported that shows that students learning from Direct Instruction programs in mathematics achieve higher scores than students learning from the new teaching standards promoted by National Council of Teachers of Mathematics. A synthesis of studies in reading shows that using Direct Instruction reading programs result in higher reading scores than whole language programs that provide no instruction in component skills, such as decoding.

ADI News, Volume 11, No. 2

ABSTRACT: This edition includes a study comparing the effects of four procedures for parents to use in teaching reading to their children. Parents using *Teach Your Child to Read in 100 Easy Lessons* (see ADI materials list for ordering information) obtained the highest reading improvement scores with their children. This edition also reports a comparison of the achievement scores of Wesley Elementary, a Direct Instruction school, with ten other schools, the results of a comparison of meaning-based versus code-based programs in California, and other reports of the effectiveness of Direct Instruction programs with special populations.

Historical Issue III

ADI News, Volume 8, No. 4

ABSTRACT: The historical series reprint highlight articles and contributions from earlier editions. The featured articles in this edition are divided into the following sections: (1) Implementation strategies and issues, (2) Direct Instruction research studies, and (3) Research related to DI's goals. Russell Gersten's response to a study that is widely discussed among promoters of the current child-directed instruction reform is reprinted in this edition. That study by Schweinhart, Weikart, and Larner is highly critical of DI preschool programs. Gersten criticizes that study primarily for using self-report data to evaluate delinquency and for interpreting nonsignificant differences as if they were significant.

Historical Issue I

ADI News, Volume 7, No. 4.

ABSTRACT: The featured articles in this issue are divided into the following sections: (1) Introduction, (2) Research studies, and (3) Management strategies. These include a classic essay by Zig Engelmann "On Observing Learning," a high school follow-up study on Follow Through children in Uvalde TX, a meta-analysis of the effects of DI in special education by W.A.T. White, and other studies reporting the effects of DI in teaching English as a Second Language, poverty level preschoolers, secondary students, and moderately retarded children. Also included are classroom management tips from Randy Sprick and Geoff Colvin, along with a school-wide discipline plan.

Effective School Practices Editorial Board

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