

EFFECTIVE School Practices

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FOCUS: The RMIT Bundoora, Australia Direct Instruction Model
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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 incor-

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The RMIT Bundoora Australia Model

This issue is the first of what we hope will be several featuring Direct Instruction Implementation Models around the world. The RMIT Bundoora Australia Model was developed by Kerry Hempenstall, a clinical psychologist and a remarkable scholar.

We open this feature issue with Kerry's perspective on the causes of reading problems in Australia and the debilitating impact of that failure. The cause of the failure is an educational system that ignores the evidence.

In Kerry's synthesis of the research on reading, "The gulf between educational research and policy: The example of direct instruction and whole language," Kerry shares his extensive knowledge base of the DI research literature in the larger context of the NICHD research. This is a must-read for everyone. Not only is Kerry one of the most widely-read experts on Direct Instruction research, he also seems to have read everything else done in the field. He is able to integrate all of this research and communicate it lucidly. And even more amazing, he accomplished all of this while living in far-away Australia.

The next piece, "The role of phonics in learning to read: What does recent research say?" can be read as a response to the questions Patrick Groff raises in his letter printed in the "From the Field" section. In that letter, Groff objects to many statements made recently in Bob Dixon's column, "Sometimes, Phonics Sucks." Kerry summarizes the available research relevant to determining the most effective techniques for teaching phonics. Although it may be true that, "A rose is a rose is a rose," it is not true that, "phonics is phonics is phonics." We do know from scientific research to date that not all phonics programs are equal. And, in fact, some "phonics" instruction can be quite bad. As Kerry points out, investigating further the specific features of phonics instruction that make it more or less effective is the area where additional reading research is very necessary. Groff is right though—if we can't get the field to embrace phonics in general, we are never going to get any energy going into sorting out what kind of phonics works best and what kind of phonics instruction is better cast aside.

The Royal Melbourne Institute of Technology (RMIT) Bundoora Australia is a psychology clinic. Apparently, many who come to the clinic believe something is wrong with their heads because they have not learned to read. However, the failure to learn to read is largely due to the failure of the

educational system and is not a within-client problem. In the RMIT clinic the problems are not only diagnosed, but a solution is provided in the form of good reading instruction. The shape of the instruction prescribed varies according to the type of learner. And no, this is not a learning style thing. The RMIT model uses scientific research to define categories of problems and prescribes treatments appropriate for those problem types.

"Three types of learners" provides a concrete illustration of these learning types. Sarah is the student who will come out on top with whole language instruction. (This is the type of learner who does not end up in the RMIT clinic.) David is a true dyslexic; initially smart and articulate, but unable to figure out how to read; consequently, over time, David falls behind in every area because he can't read. Johnny, on the other hand, is an example of the garden variety non-reader described by Stanovich. Johnny is more interested in non-academic learning, and for that reason, is not as far along academically as other more academically inclined children might be.

With a picture of these two types of non-readers in mind, the RMIT assessment model will make more sense. The RMIT clinic looks for a discrepancy between reading comprehension and listening comprehension to discriminate these two types of reading problems. The students with a discrepancy are dyslexic, while those with no discrepancy are the garden-variety type. This is more relevant to educational programming than the IQ-Achievement discrepancy that U.S. special education categorizations often require. If a child has better listening comprehension than reading comprehension (the dyslexic type), then the child needs a program focused on decoding. If the child is low in both reading and listening comprehension (the garden-variety type), then the child needs both decoding and comprehension instruction.

Homeschoolers and private schools will be very interested in the RMIT Model. Kerry describes, in detail, the assessments used in the RMIT clinic, the way decisions are made based on these assessments, and how parents are trained to deliver the treatment. Yes, parents deliver the treatment! The RMIT Model is a model for treating reading problems in a context of a school system that ignores the evidence on how to teach reading so that ALL children learn.

A View From Askance

Education and Politics ...and George W. Bush

Bob Dixon,
Board of Directors, Association for Direct Instruction

ADI is not political, and for good reason: the focus of ADI is upon good education, and good education is not—or should not be—political. I'm quite sure that the political leanings of ADI members range from ultra-conservative to leftist liberal, including everything in between. Good for us. No political party "owns" the idea of teaching children effectively.

In reality, of course, politicians—and many educators—have worked very hard trying to make political hay out of education. That trend might well have started with the publication of Rudolph Flesch's book, *Why Johnny Can't Read*. Flesch couldn't resist the temptation to make instructional approaches to literacy look like litmus tests for one's true interest in democracy.

Regardless of whether Flesch *really* started this trend or not, the "politicization" of education in general and reading in particular has been exceptionally strong in recent years. With respect to reading, phonics has been associated with right wing conservatism, and whole language with liberalism. That is because people have *tried* to make those associations. Ken Goodman, a self-avowed liberal and at least one of the fathers of whole language, has often referred to phonics as a right wing conspiracy. One has to wonder: a right wing conspiracy to accomplish what, exactly?

Education should *not* be political, but it is, nonetheless, at least in the sense that we have to depend upon politicians to sort out the myriad forms of "school reform." Those politicians, in turn, belong to one party or another, and have one persuasion or another within their parties. As educators, each of us has to keep up with the political views of our state legislators, and national office-holders. Few—if any—of us are one-issue voters. Often, we face difficult choices. We like the education policies of a given politician, for example, but really dislike some of that person's other policies.

I'd like to bring to your attention the policies of Presidential candidate, George W. Bush, son of President George Herbert Walker Bush, and perhaps more significantly, Barbara Bush. If everything I've said above sounds to you a bit like an apology for discussing just one presidential candidate, you're probably right, I'm not endorsing a candidate here, or asking you to support a candidate. But number one, I think that George W. has come up with a spectacular education policy. Number two, I think ADI members will find it interesting, at the very least, and might even share my enthusiasm for it. And finally, I think Bush's education policy is truly non-partisan.

Disadvantaged Children

The first evidence I offer to support my contention that the Bush education policy is non-partisan is the simple fact that the Governor has chosen to focus exclusively on the plight of disadvantaged children during this early phase of his campaign. (He will focus on other aspects of education later.) Traditionally, we'd have to say that the Democrats have shown more interest in the education of the disadvantaged than the Republicans. George W. Bush isn't simply invading traditionally Democratic turf. He isn't simply creating a policy for the benefit of a presidential campaign. What he *is* doing is extending his track record for compassion in Texas to a national venue.

The Governor said in a recent speech, "More and more, we are divided into two nations, separate and unequal. One that reads and one that can't. One that dreams and one that doesn't ... All children can learn, and no child should be left behind." Does that sound a bit "DI'ish" to you, or is it just me?

But he's a politician. Can we believe him? I think so. The Governor "... considers it a scandal that the educational achievement gap between rich and poor, Anglo and minority, is not only wide, but in key

areas such as reading, is wider today than it was in 1992." Well, that is a national scandal, one of gargantuan proportions. One that's inexcusable.

In Texas, in stark contrast, the performance gap has narrowed between economically disadvantaged and minority groups, and their more advantaged and non-minority peers. Further, that gap hasn't been narrowed at anyone's expense. The achievement of advantaged and non-minority students in Texas has risen steadily under the Governor's reform administration. All ethnic groups in all grades have advanced significantly in reading and math.

The real beauty is in the fact that the Texas reforms have not been in place very long. It is highly likely that things are just going to get better and better in Texas. That state now has an early reading initiative aimed at ensuring that *all* children are reading at least at grade level, by the end of the third grade. The Governor is quick to share credit for these advances equally with the Democrats and republicans in the State Legislature.

State Versus National

George W. is running for *President*, not Governor. Can he duplicate his accomplishments in Texas at the national level? No, not exactly. Clearly, state governments have the greatest influence upon education in their respective jurisdictions. Rather, he intends to reform existing Federal programs in ways that will make them substantially more effective. Specifically, Governor Bush proposes the following three key reforms:

Reform #1. Ensure that Federal Education Programs Produce Results

What a novel idea! It is my belief that current Federal education programs do, in fact, produce results of a particular type: they tremendously help education professors achieve tenure in their respective institutions. They help Members of Congress in sending a little more pork to their own states. And that's about it. Right now, you could probably get Federal funding for being "innovative." Let's say you wanted to teach beginning reading in a greenhouse, without any books. Pretty innovative. Let's throw a little money in that direction.

George Bush says, "*We will start by funding only what works in education—only those methods and ideas that prove their power to close the achievement gap ... My administration will require every federal program—in teacher training, curriculum research, school safety—to prove results. If it can't we will shift that money into a program that is using it wisely.*" I can't say anything to improve on that. It speaks for itself. I'll just add

that the policy is *revolutionary* for a major, credible presidential candidate. The only thing I'm unsure of is whether the average voter realizes just how unaccountable Federal education spending is at the moment.

Although Bush's proposed overhaul of the Department of Education applies across the board, he is specifically targeting the Office of Education Research and Improvement (OERI). As the name implies, OERI's purpose is to sponsor reliable research, and disseminate results objectively. However, in spite of receiving \$510 million annually, OERI has generally failed its mission.

Who wants to see Federal education dollars spent wisely, on programs that produce results? Democrats or Republicans? Both, I would guess. This is a "pro-child," non-partisan approach to reforming the Department of Education.

Reform #2: Return Head Start to its Original Purpose—Education

It might not be widely known that when Head Start was established in 1965, its purpose was to serve as a *literacy* program for disadvantaged preschool children: to give them a head start on their academic careers. However, Head Start gradually evolved into a day-care, health, and nutrition program. While those aspects of Head Start are certainly critical to disadvantaged children, they nonetheless do not contribute notably to the improved academic performance of children.

It is clear as a bell that *effective* early childhood education programs can tremendously improve a child's chances for subsequent academic success in school. It is insane to continue to "wait until *they're* ready," and then, when *they* never seem to be ready, refer *them* to special education.

Specifically, Governor Bush proposes to:

- Move Head Start from Health and Human Services to the Department of Education
- Require Head Start Programs to Adopt Proven Core Curricula
- Award Head Start contracts on a Competitive Basis

Once again, we see in this policy a lot of common sense that crosses traditional political boundaries. On the one hand, the Governor holds the traditional Republican belief in the power of competition as a force for creating improvement. On the other hand, he is committed to strengthening a Federal program initiated by Democrats, in order to finally realize the ideals that motivated those Democrats in the first place.

Reform #3: Restructure Title I to Close the Achievement Gap

One has to wonder: what is the point of Title 1, if it isn't that of closing the achievement gap? The Governor has said, "We must trust parents and states and local communities to chart the path to excellence, and free them from the burden of bureaucracy. Yet when it comes to federal money, we have a right to expect excellence for everyone—to expect high goals and accountability ..."

Currently, Title I provides \$7.7 billion annually to *supplement* the education of 11 million low-income students in our country. To *supplement* their education. That is, the same local money is spent on those 11 million poor children as is spent on their more economically fortunate peers, *plus* the \$7.7 billion. We in DI know of many excellent schools where Title 1 money is used very effectively. But overall, an interim report to congress this past July seems to suggest that Title I students are growing academically at *less than a year's progress for each year in school*. There is a great need for the less effective Title 1 schools to get with the same programs as those used in the highly effective Title 1 schools.

The Governor will:

- Focus most Title I funds in the elementary grades, in the spirit of an ounce of prevention being worth a pound of cure.
- Hold schools accountable for the performance of Title I students. Low-performing schools will be given three years to reform—that is, three years to demonstrate that they are closing the achievement gap for disadvantaged children. In schools that don't take advantage of the three-year opportunity, students will be given the option of transferring to a

school that is closing the gap, and that transfer will be fully paid for. Alternately, the parents of students in failing schools may be given a proportional share of Title I money—about \$1,500 per student—for use toward improving the education of their children through supplemental educational services, and/or transfer to another school.

Conclusion

I'm enjoying hearing a candidate for the Presidency talking about success for all children, including (especially) disadvantaged children. I admit readily to being politically naive. Can a President really pull this off? I don't know. Congress has something to say about Title 1 and Head Start and the Department of Education, I imagine. Some stories I've seen in the press are already ignoring the fact that poor achieving Title 1 schools would have three years to improve under the Bush plan. Some stories are ignoring Bush's plans for reforming the Department of Education. Some stories are treating the Title 1 and Head Start proposals as if they were of minor significance.

I'm impressed, however, by the fact that under George W. Bush's leadership of Republicans and Democrats alike, the lives of disadvantaged children in Texas are improving notably. An interest in disadvantaged children in general, and in literacy specifically, appears to be a sincere passion that George W. shares with his mother, his wife, and other members of his family as well. I'm not quite ready to cave in to cynicism yet. ♦

Is It Time to Attack Certain Kinds of Phonics Teaching?

Patrick Groff
San Diego University

[Ed. note: The following is a response to Bob Dixon's column, A View From Askance, from Volume 17, number 3, entitled "Sometimes, Phonics Sucks."]

The Association for Direct Instruction is a leading defender of direct, intensive, systematic, early and comprehensive (DISEC) instruction of discrete reading skills. However, in the Winter 1999 issue of its journal, *Effective School Practices*, the ADI's executive director, Bob Dixon, warns about what he calls "REALLY BAD phonics instruction," the kind that supposedly has "devastating effects on children" learning to read.

Under the title, "A View from Askance: Sometimes, Phonics Sucks," Dixon envisions a "danger" to students learning to read, of ruinous proportions, that lies in certain "bad" phonics instruction. This is the kind that the average person on the street (let alone competent teachers) would quickly recognize as awful, he contends. It is phonics information "taught to horribly" that even the discredited Whole Language (WL) approach supposedly "doesn't look all that bad." To Dixon, the villains here are the people he believes are "clueless to the differences between good and poor phonics instruction."

In his attack on so-called horrid phonics teaching, Dixon implies that its promoters do not understand that "phonics *per se* has nothing to do with instruction." It is true, as he indicates, that the term, *phonics*, refers to a body of information about how letters are used to represent the speech sounds in spoken words (speech sounds cannot be uttered in an authentic manner unless said in words). It is best, therefore, that when using the term, *phonics*, to always follow it with a qualifying word, for example: phonics information, phonics teaching, phonics knowledge, phonics rules, phonics generalizations, phonics skills, phonics emphasis, phonics program, phonics content. However, this makes Dixon's recommendation, that "the easiest thing to do is use *phonics* most of the time," unacceptable.

Nor is it true that the "most critical thing" for teachers to know about the term, *phonics*, is that "it is an *approach to content*, not an *approach to instruction*." That statement by Dixon unwarrantedly complicates the issue of how to decide what phonics

means. By using a qualifying word with it, as noted above, there is little if any doubt raised in this regard.

Dixon also warns teachers not to confuse the term, *phonics*, with *phonetics*. The latter term refers to the science or study of how speech sounds, or *phonemes*, are produced and their physical properties, and not the manner in which the letters represent them.

There is another reason for not confusing the two terms. In phonics teaching, speech sounds in English (the *phonology* of English) are defined as those that allow students to distinguish one word from another. For example, the /t/ sound in /tan/ signals to students that this word does not have the same meanings as /fan/, /man/, /ran/, etc. But, as phoneticists note, the /t/ sound involved here actually is a bundle of five *allophones*, or slightly different utterances of the /t/ sound.

To demonstrate this fact, hold before your lips a piece of paper, by its bottom edge. Then say /top/ and /stop/. Notice that the paper moves with the utterance of air for that first allophone of /t/, but not with the second one, in /stop/. In short, phonetics is a more complex matter than phonics information. Furthermore, it need not be learned by students in order for them to gain phonics knowledge in the fastest way possible.

Nonetheless, it is important that teachers know these facts, Dixon maintains, to avoid the likelihood of "terrible phonics instruction foisted upon children than good phonics teaching." However, if these facts are not to be taught to children, how could ignorance of them by teachers be of significant consequence?

On the other hand, in bad phonics instruction, it can be agreed, students are not taught phonics information in a DISEC manner. Instead, they are forced to "discover phonics on their own," as Dixon rightly protests. (That they should do so, nevertheless, is a principle of WL.)

Another form of bad phonics teaching, as Dixon

points out, is that in which students learn alone through the use of "worksheets or cards or something similar." Absent from this procedure is a vital ingredient of effective phonics tutelage: teaching students how to identify, utter, and manipulate individual speech sounds. This ability is called phonemic awareness (PA), i.e., students' conscious awareness of speech sounds. Preschool children learn to speak/listen normally with very little, if any, PA. On the other hand, beginning readers' PA is the best predictor of all available of their later success in learning to read.

Bad phonics teaching also presumes that beginning readers must have total PA before they are taught phonics information, Dixon observes. These students only need to become phonemically aware of a "handful of judiciously chosen" speech sounds before they are taught about the letters that represent them, he exactly notes. This leads to introduction of written words with which students can practice their newly acquired phonics skills at the earliest time possible.

Because speech sounds cannot be uttered authentically unless spoken in words, bad phonics instruction further assumes, but wrongly, that speech sounds should not be isolated when teaching students the letters that represent them, Dixon continues. He offers one justifiable reason why that supposition is invalid. This is the consistently superior success found in teaching phonics information by isolating speech sounds and letters.

An additional reason is that teaching isolated letter-sound correspondences is the most efficient way to develop students' awareness of familiar spelling patterns (FSPs) in words, such as the *at* in *rat*, *mat*, *bat*. Once students recognize an FSP in a word, they no longer need to sound out each of its letters. For example, they can sound out the *r*, *m*, and *b* in the above words, attach the FSP, and through this process of recognizing words by *analogy*, read them faster. Isolated letter-speech sound teaching thus is not only a prerequisite of accurate word recognition. It also leads to an increasingly rapid version of it, as well.

Not supportable, however, is Dixon's caution that bad phonics instruction is that which presumes students' phonics knowledge applies to both reading and spelling. In this regard, it is untrue that "there is phonics for reading, and a very different system of phonics for spelling." In truth, students' knowledge of letter-speech sound (or vice versa) correspondences forms the basis for both decoding (reading) and encoding (spelling) words.

That is to say, there is not one set of phonics rules applicable exclusively to reading, and another to

spelling. This point is suggested by the high correlations calculated between students' spelling and reading abilities. Their spelling skills are found experimentally to make a significant contribution to their reading ability. It is well known that if students can spell words, they always can read them accurately.

Also, the number of possible ways speech sounds (excluding the schwa sound) can be spelled (303) is approximately the same as the number of ways letters can be sounded out (290). It is true that, on average, there is a larger number of ways to spell speech sounds than there are ways to sound out letters. However, this differential is neutralized in part by the fact there are only 39 speech sounds (omitting the schwa sound) to be spelled, but 159 letter or letter clusters to be sounded out.

Moreover, there apparently has been no experimental study of whether only teaching beginning readers to spell speech sounds, as versus exclusively teaching them to sound out letters in words, is the more effective manner in which to develop their mastery of phonics rules. Thus, Dixon errs in saying it is "nuts at best, and completely irresponsible at worst" to conclude that students' learning to read and spell greatly reinforce each other, when both learnings are based on the application of a regular set of phonics rules. There thus to do appear to be "a ton of kids who are confused out of their mind" about decoding words, when their teachers have them apply phonics rules to spell them.

To his credit, at the end of his article, Dixon returns to facts, over speculation, when he rejects the empirically discredited notion that most students do not have learning styles compatible with acquiring phonics information taught in a DISEC manner. It is true that experimental evidence indicates that all students develop word recognition skills by noting "similarities and differences" among words and drawing generalizations as to their identities based on that form of observance. They could develop these generalizations by looking repeatedly at a random sample of words, the Whole Language approach advises. However, that is a relatively time-ineffective procedure to use, compared with that implemented through the DISEC teaching of phonics rules, experimental research finds.

Dixon reinforces the veracity of this judgment with his concluding statement that "it's simply not true" that some students "can learn to read better some other way" rather than by being taught phonics information in a DISEC manner. That eclectic view in fact is "wishy-washy baloney," i.e., it has no overall scientific verification.

However, Dixon unfortunately appears overly

optimistic about a speedy end to "the war between [advocates of DISEC teaching of] phonics and Whole Language" proponents. This belief leads him to the precipitous conclusion that now is "the best possible time" to negatively criticize bad phonics teaching.

To the contrary, there is little evidence that the WL movement is presently "carrying the flag" of DISEC teaching of phonics information. In that regard, most WL enthusiasts never opposed students' learning phonics information and applying it to decode words. However, they persistently object, to the present day, to DISEC instruction of phonics information. That opposition in fact remains a major reason for being of the WL movement. It is part of the "balanced" reading instruction that they now promote.

Thus, the rejection by WL advocates of DISEC teaching of reading remains a greater threat to future students' full opportunity to learn to read than is the bad phonics teaching that Dixon describes (and sometimes wrongly accuses of imaginary faults). Even bad phonics teaching is less a handicap to

students' reading progress than is WL instruction, it is easy to document.

Consequently, it is not a propitious time at present for defenders of DISEC teaching of phonics information to rush to engage in internecine squabbles over the precise features of this form of instruction, and condemn each other in the excessive terms that Dixon uses. In fact, this dispute largely would be an empty debate, since the differing proposals for DISEC phonics instruction, with the notable exception of DISTAR, never have been compared experimentally, one against the other.

Therefore, for defenders of DISEC phonics teaching to negatively criticize one another at this point in time, with the extreme language that Dixon employs, will do little more than help rejuvenate the WL movement's pernicious strangle hold on reading instruction in the nation's schools. That would inflict far more terrible consequences on students' chances to learn to read than would any shortcomings that can be observed in present-day DISEC teaching of phonics information.

A Response to Professor Patrick Groff

Bob Dixon

In this issue of *Effective School Practices*, Professor Groff writes a critique of my "Views from Askance" article entitled, *Sometimes, Phonics Sucks* (ESP V17, N3). Dr. Groff's critique is thorough and thoughtful. (It's possible that he put more thought into his critique than I put into the original article.)

I'll concede some of Dr. Groff's points readily, while defending myself on just a couple of points.

Indirectly, Dr. Groff accuses me of hyperbole. To that, I plead guilty. The effects of bad phonics instruction are probably only really "devastating" with respect to a relatively small percentage of children. I don't really believe that whole language doesn't look so bad in relation to bad phonics instruction. Hyperbole. However, if "bad instruction" is defined in terms of ineffectiveness, rather than analytically, then I suppose some bad instruction is as bad as some other bad instruction.

And yes, it probably is a good idea to qualify "phonics" when using it. Nonetheless, people do talk about phonics without qualifying words, and most often, it is pretty clear that they are talking about content. I'm not sure what Dr. Groff and I disagree upon.

In any case, I had hoped to convey the idea that bad phonics instruction is *bad for phonics*. Bad phonics instruction gives good phonics instruction a bad name.

I honestly don't understand some of Dr. Groff's points. I don't believe that I advocated that teachers learn *phonetics*. I don't advocate that. I only think it is important that we don't use the term "phonetics" when we're talking about "phonemics." I must not have made that point clearly.

I mentioned in passing that the problem with trying to "teach" phonics with cards and worksheets is that there are no *sounds* involved. Dr. Groff elaborates on that fact in a discussion of phonemic awareness. Also, Dr. Groff elaborates on the reasons why it is fine—desirable—to teach speech sounds in isolation. I'm certainly in agreement with both elaborations.

I do take issue when Dr. Groff says, "...there is not one set of phonics rules applicable exclusively to reading, and another to spelling." The arguments he offers in support of that claim are true, but don't prove the case. Yes, good spellers are good readers. However, every teacher knows that there are many

very good readers who don't spell very well. It doesn't matter that there are "only 39 speech sounds to be spelled." (I think there are more than 39, not even counting the schwa, but that doesn't matter too much.) The question is, how many sound-letter combinations are there? That's what students have to learn. The precise answer is, *way* more than thirty-nine.

In spite of Dr. Groff's arguments, I contend that in order to conclude that one phonics system applies to both reading and spelling, you'd have to show that letter-sound correspondences are *reversible*. In a truly phonemic orthography, they are. In English, most are not. English orthography is not phonemic; it's morphophonemic. I'm all in favor of teaching *encoding* sound-to-letter correspondences to children as part of an overall strategy to teach them to spell.

Finally, Dr. Groff is no doubt quite right about my over-optimism regarding the imminent demise of Whole Language. (I say that while also admitting that I don't really know what Whole Language is, exactly, because of the huge variance in practices that I've seen attributed to Whole Language.) I do know this. The new English and Language Arts

Framework for California, written by Ed Kame'enui and Debbie Simmons of Direct Instruction fame, very precisely mandates the type of direct, intensive, systematic, early, and comprehensive instruction of discrete reading skills that Dr. Groff and I alike advocate. There is similar movement in Texas, particularly with the Early Reading Initiative. Those facts are worth a little optimism, at least.

On the one hand, I have the gut feeling that Dr. Groff is correct in asking for unity among "phonics advocates." But I also have an uneasiness based upon my anticipation of "empirical research" of the future showing that "phonics isn't any better than whole word," or even that "whole word students out-perform phonics students." It won't matter then that both Dr. Groff and I think folks should be careful when talking about phonics.

It's good that Dr. Groff has taken the time to ensure that the readers of *Effective School Practices* get a chance to think more about the issues surrounding phonics. None of us should take phonics for granted. Any way you look at it, though, I think I have to stick with my original thesis—that bad phonics instruction is bad. ♦

Plan now to attend an ADI Conference

The Association for Direct Instruction is proud to announce dates and locations for summer Direct Instruction training. The sessions offered at these conferences will provide you with the training you need to be successful with your students. Sessions are designed for both beginning and experienced teachers, as well as sessions for administrators and staff development specialists.

3rd Annual Southeast Direct Instruction Conference

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5th Mountain States Direct Instruction Conference

July 17–19, 2000 • Park City, Utah • Yarrow Resort Hotel and Conference Center

26th National Direct Instruction Conferences and Institutes

July 23–27, 2000 • Eugene, Oregon • Hilton Eugene Hotel and Conference Center

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Reading Problems: The Causal Role of the Education System

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There has been renewed interest in the teaching of reading recently, and concern has once again focussed on the whole language controversy. R.H. Thouless might have had just such an issue in mind when he formulated his Law of Certainty. It can be summarised by the observation that when there is cause for doubt about a particular belief one may expect that most people would adopt a position of caution. In fact, such doubt seems to strongly polarise people's views so that more people are prompted to hold extreme views of support or condemnation than to hold a moderate position. Thus, supporters may clutch even more strongly to a belief about which there is doubt, while detractors focus strongly on the apparent negative aspects of the belief and disregard the positives. This profound observation may partly explain why educational policy making has been subject to such extreme pendulum swings.

Having been assured in their training that children will learn to read when they are developmentally ready, teachers have little choice but to give bland assurances to parents concerned about their child's progress in Years 1 and 2.

Keith Stanovich, one of the foremost researchers and commentators on reading, argues that the weakness of educational decision making is its vulnerability to such faddish swings. In his view, it is the failure of policy makers to base decisions on empirical research, and their uncritical acceptance of the glib assurances of gurus, which has led to the current dissatisfaction in the wider educational community. He proposes that competing claims to knowledge should be evaluated according to three criteria. First, findings should be published in refereed journals. If research is to be useful, it must be well-

designed and able to justify its findings. When peer review is part of the process of research the well-known taunt "research can prove anything you want" becomes less valid. Poorly designed studies are rejected (often to appear in unrefereed journals). Second, reported results should be replicated by independent researchers. One feels more comfortable when research findings are repeated in studies where the researchers have no particular stake in the outcome. Third, there is a consensus within the appropriate research community about the reliability and validity of the findings. This last criterion requires considerable reading across the field, but the frequency with which a particular study is cited, and accepted as legitimate, in journal articles provides one measure.

Whilst the use of these criteria cannot guarantee infallibility, it does offer reasonable consumer protection against spurious claims to knowledge. For example, were such tests used over the past 15 years to determine best practice, we would never have accepted the claims that learning to read is as natural and effortless as learning to speak; or that good readers use contextual cues to guide their reading, using print only to confirm their predictions. Yet these unsubstantiated (and demonstrably false) claims were accepted and a generation of teachers were pressured through initial teacher-training and subsequent Ministry sponsored in-service to implement practices derived from them. Such erroneous practices have been especially damaging to vulnerable students—those who aren't self-sustaining, who can't afford ineffective strategies, who rely on teachers rather than their parents to educate them.

Teachers, too, have been put in an invidious position. Taught that reading is a process that naturally unfolds, some have been loath to do much more than provide immersion in authentic literature. Having been assured in their training that children will learn to read when they are developmentally ready, teachers have little choice but to give bland assur-

ances to parents concerned about their child's progress in Years 1 and 2. If the issue is pressed by parents, some teachers will defensively claim the authority of their training and inform them that their knowledge is outdated—that they should leave reading to the experts. It is often not until Year 4 (or later) that teachers acknowledge the validity of parental concern. Then it is tempting to blame genetic inheritance, or a lack of home-based reading (a supreme irony) for this suddenly urgent problem. This sad teacher-parent scenario has been described by countless parents over the past 10 years.

There are effective, well-designed programs available in the educational community, but progress is hard-won, and often the resources of schools are already over-taxed or the programs don't sit easily with the school's policy on reading.

Of course, by Year 4, reading independence is presumed, and little time is available for basics. Besides, many children have developed an additional hurdle by then—acute print allergy, and left to their own devices will make no detectable progress in reading skill for the remainder of their school career. There are effective, well-designed programs available in the educational community, but progress is hard-won, and often the resources of schools are already over-taxed or the programs don't sit easily with the school's policy on reading. One welfare agency, Orana, has recognized this problem and is successfully using direct instruction programs for children from schools in its local community. The RMIT Bundoora Psychology Clinic has assisted schools to set up and monitor the effectiveness of such programs. In addition, it has provided training for parents of children when schools have been unable to assist. A number of Catholic schools in the northern and western suburbs have also begun to use these programs—particularly a series known as *Corrective Reading*. It has very strong empirical

support both from Australia and overseas, and has a significant advantage over one-to-one tutoring programs such as *Reading Recovery*, and *Success for All*, that is, the programs can be effectively implemented with group sizes up to 15. Given this advantage, it is strange that *Corrective Reading* has not been included as worthy of trial in the initiative recently reported by the Minister for Education.

The research supporting *Reading Recovery* has been equivocal—some very positive, and others much less so. Britain has recently discontinued funding the program because of a lack of evidence for effectiveness. There have also been concerns that it cannot assist the lowest quarter of students referred for it. Further, some researchers have reported that the beneficial effects “wash out” after 1-2 years. Some interesting New Zealand studies have noted the significant improvement in outcomes when phonemic awareness is systematically taught, rather than incidentally as in a normal *Reading Recovery* program. *Success For All* appears to be a well-conceived model, offering systematic phonics teaching with controlled vocabulary, though still in a meaningful context. It makes use of direct instruction teaching methodology, particularly in the teaching of meta-cognitive learning strategies. One advantage of *Success For All* lies in its careful integration with the school reading program, though because of its relative newness, independent replication of results, and research community consensus about effectiveness have yet to accrue.

The major problem with each of these two tutor-based approaches to literacy is that they are too labour-intensive to be funded adequately. Our system is continuously creating a pool of students (probably between 10-16% of each intake) who have such major difficulty in mastering a skill deemed essential by society, that individual help is now considered necessary. If we adopted the findings of empirical research (particularly in the areas of phonemic awareness and effective teaching) we could have a system of teaching reading which was effective for perhaps 96% of our students rather than 84-90%. Whilst remedial initiatives are to be applauded, should we not address the problem at its source—the quality of initial instruction? ♦

School Failure: A Debilitating Condition

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A version of the following article appeared in The Age, October 22, 1996, as "Reading Help is a Matter of Social Justice."

The interest in reading failure within the school and wider community has led to a number of initiatives designed to redress the problem. These initiatives have spread to secondary schools, as teachers have become even more aware of the particular importance for secondary students of adequate reading skills. In the secondary system, reading is a major vehicle for gaining information in almost any subject, and students with underdeveloped skill are prevented from gaining access to a large part of the curriculum. It has even been argued that access to knowledge through reading is essential for continued intellectual development, and that those students unable to gain such access experience an intellectual decline.

Chronic school failure is arguably analogous to child abuse. In both cases, the child is a relatively powerless element in a social system, and his/her position in the system is inescapable. As with other forms of abuse, the individual is likely to suffer real and serious damage.

Consider David, a student in Year 7. Neither he, nor his teachers and parents, have fond memories of his primary school career. At Kinder he was quite active, didn't share very well, and his teacher was worried about his language development. In his early primary years, his teachers usually had to explain things to him several times, and he was rarely able to finish tasks by himself. Reading was very slow to develop, and David's mother remembers that he was reluctant to bring his reader home, or to read with his parents, or read for pleasure. As he reached middle and upper primary he became increasingly difficult to motivate, and his parents were called to the school from time to time to discuss his behaviour. In the early years, his parents were told that David was simply a little slow to develop, but would surely catch up later on. In his later years, they were told that the main problem was his lack of effort.

Teacher comments and secondary school screening-test results indicate that David can only cope comfortably with text of a Year 3 difficulty level. His problems with texts are especially evident when he is presented with assignments, and this occurs in most of his subjects. His reading is characterised by slow, halting, error prone, word-by-word decoding. He has great difficulty in understanding what he reads mainly because of his lack of fluency, and he avoids reading where possible. David's written work is of a very low standard—rushed, shallow, and sloppily presented (barely legible, with multiple spelling and punctuation errors). He is tending to mix with a group whose values don't emphasise learning and cooperation. Some of his friends have been suspended from school recently, and David's parents are concerned that he may not survive very long in his school, although they are aware that the Department is encouraging students to stay longer in school to complete their secondary education.

Although the details vary, this scenario occurs regularly and predictably in our education system. At any given time, a percentage (usually between 10 and 20%) of students may be experiencing high levels of failure. Chronic school failure is arguably analogous to child abuse. In both cases, the child is a relatively powerless element in a social system, and his/her position in the system is inescapable. As with other forms of abuse, the individual is likely to suffer real and serious damage. School failure has been linked with reduced self-esteem, anti-social behaviour (delinquency, aggression, and withdrawal), truancy, early school leaving, and even suicide.

Some schools view failure as a normal and inevitable outcome of teaching children in grades. From this perspective, failure may be attributed to a less than generous genetic endowment, illness or accident, family problems, or temperament. Unfortunately, such an attitude is often accompanied by a devaluation of the capacity of good teaching to make a significant difference. Hence, if Johnny doesn't have "it," he won't make it. This attitude is strengthened by those who view children's development as akin to that of plants flowering, that is, at

different times, in response to some internal clock which is unlikely to be hurried (and may be harmed) by intervention. Further, the view that children should take greater responsibility for their own learning is often misunderstood, and used as a rationale for not intervening with highly dependent learners. Of course, students can gradually accept greater responsibility for learning when first their competence, and thus their self-esteem as learners, is developed. However expecting at-risk learners to initially assume such responsibility is to consign them to a cruel and unconscionable fate.

When the problem of chronic systemic school failure has been recognised, attempts to address it have often been piecemeal, and the approach reactive. Spending an extra 10 minutes twice a week with Alice in Year 5, on simultaneous reading, or three-letter blends, is unlikely to be rewarding for a teacher, parents, peer tutor, volunteer, or for the student in question. In addition there is often little attempt to systematically diagnose and teach the skills with which the child is struggling, or to evaluate the effectiveness of the attempts.

Many of the schools that have become aware of the extent of the problem of reading failure wish to do more than simply increasing exposure to quality literature; however, there are relatively few opportunities in most classrooms at mid-primary and above for instruction in decoding as part of the general curriculum. This vacuum can be effectively and efficiently filled through the use of Direct Instruction programs, in particular, Corrective Reading.

There are characteristics commonly ascribed by teachers to failing children. These may be some, or all, of the following: distractibility, inconsistency, slowness to grasp new concepts, limited recall, and difficulty in applying new skills in appropriate settings. Observation of failing children reveals that they are frequently unable to gain meaning from their school experiences unless those experiences are carefully structured to elicit understanding, that is, the message is made clear and unambiguous. They may require a longer period of teaching to gain mastery, and especially, may require more practice than most children do if they are to retain newly

acquired concepts and skills. Paradoxically, failing children usually complete only a few practice examples of new skills or knowledge while successful students complete many.

One approach that has addressed these issues is Direct Instruction. It is a highly structured, teacher-directed approach to teaching basic skills such as reading, language, math, spelling, and expressive writing. It is an empirically-based model which draws on three areas of research—how to provide a stimulating, orderly learning environment, how to logically organise knowledge to allow efficient teaching, and how to logically design the teacher-pupil communication to avoid ambiguity and ensure effective learning occurs. One major assumption of the model is that failure to learn should be viewed as failure to teach effectively. Hence it is not students who fail—one does not need to look for reasons within the student (e.g., dyslexia), but rather one identifies those elements of the program that have been ineffective. The focus is on the task, not the learner. Success is typically immediate and continuous because precise pre-skill analysis ensures that students begin any program at a point at which they are already competent, and because teaching occurs in small sequential steps. Programs usually take place in small groups (5-12, depending on the program) with children of similar skill levels. Given the number of children typically in need of help it is essential that our interventions can be presented in group format. One-to-one tutoring programs can also be effective, but can never be efficient, being too expensive for sufficient funding ever to be provided. Daily lessons contain review of previously learned skills, continuous assessment and feedback, and presentation of new tasks. Massed and spaced practices have been found to be essential for students with a history of problems in learning basic skills, and careful attention is paid to these elements. In fact, careful attention to detail is often put forward as a major reason for the success of these programs. There is ample evidence, amassed over a long period of time and with a diverse range of problem learners, that these programs are successful. The commitment to detail extends to providing scripted lessons, and this has the additional advantage of allowing non-teachers a role in working with students experiencing failure (usually a one-to-one role). This facility has been particularly useful for Integration Aides responsible for disabled students, and the clear educational objectives also allow Integration Support Groups to set and monitor precise educational goals. In addition, parents can be shown how to use the programs when schools are unable to do so.

Typically, a lesson will comprise the following teaching functions—review, teacher presentation, guided practice, correction and feedback, independent practice, weekly and monthly review. The programs provide for the teaching of general case strategies rather than rote learning, and they emphasise the importance of transfer of learning across relevant situations. This implies that skills learned in a reading class, for example, are also used outside that setting. An important research finding is that at-risk learners do not automatically use new skills in all the circumstances in which they are appropriate unless they are specifically taught to do so.

These programs have been successfully implemented for failing Year 7 and Year 8 students, especially in reading, but also can be provided in the primary setting. Adolescents may have experienced many years of failure, and their disaffection with learning, combined with an acute lack of confidence, introduces a secondary obstacle sometimes more difficult to overcome than the original basic skill problem. Whilst success is usually achieved in terms of measured outcomes and parent and teacher reports, it has sometimes required initial and even continuous teacher support from an educational psychologist or experienced consultant. Changes of strategy, the addition of parent participation, and the employment of external reinforcement are some of the issues that may need to be considered to maintain the cooperation of particularly disaffected students. When a group of troubled readers is assembled in a secondary school, there is a significant likelihood that some will also display problematic behaviour. Best results in this eventuality are obtained with teachers who have a strong sense of the importance of an orderly classroom and who are prepared to exert their influence in the best interests of the students in their care.

By introducing programs earlier in the students' careers some of these problems can be reduced, as the primary years represent a period when students are more easily enthused, more amenable to the teaching approach, and less perturbed by their briefer exposure to failure. Many of the schools that have become aware of the extent of the problem of reading failure wish to do more than simply increasing exposure to quality literature; however, there are relatively few opportunities in most classrooms at mid-primary and above for instruction in decoding as part of the general curriculum. This vacuum can be effectively and efficiently filled through the use of Direct Instruction programs, in particular, *Corrective Reading*.

Involvement at the early primary level is even more promising. Selecting students for assistance in their Prep year is not difficult. Often they have been children who have needed to repeat Kinder, or have siblings with similar problems. Usually Kinder and Prep teachers are able to select the group at risk of failure. In addition, early screening tests are becoming quite accurate at identifying who among a group of beginners will experience failure if left unaided. Preventing failure is not only more humane, but also cost-efficient, as the effort and expense needed is less, and student-resistance has yet to develop. In a fair proportion of cases, students have returned to the regular program within their first year of Direct Instruction with much increased competence, and the confidence to make progress under traditional classroom arrangements. Other (usually older) students have been withdrawn for 30-40 minutes/day for more than a year, and followed several levels of a reading program before rejoining one of the regular reading groups and being considered able to "stand alone." Labeling can be reduced by having different reading groups going to different rooms at the same time so the Direct Instruction group is only one more group. Interestingly, students appear much less concerned than do adults about the potential for labeling—a fear which withdrawal programs sometimes provoke. Usually, once they have begun to experience success, students report that they see themselves as good learners, and hence have no reason to feel ashamed about their withdrawal.

It is a matter of social justice that such students do not remain neglected, particularly when there are programs which can have a major, and beneficial, effect on those students unfortunate enough to be in such an invidious situation.

Reading is the basic skill area most often chosen by schools adopting Direct Instruction because it is pivotal to other curriculum areas, and is the first real test of whether a child will be a success in his/her class, or one of the "slowies" to be patronised, or made the butt of jokes. There are of course other approaches relevant to relieving or preventing failure in the classroom, for example, *Reading Recovery*. When schools are trying to decide which approach is most suited to the needs of their school, they might do worse than examine the literature for research

and evaluative studies on the particular approaches, which interest them. Decisions based on well-collected data are more likely to repay the investment in time and money required, than are those based on hunch or persuasion. Finally, effective and broadly based evaluation which examines student outcome as one of its emphases, should be an integral part of planning any such school change. Some of the techniques commonly used include parent, student, and teacher(s) questionnaire, brief tape recordings of reading before and after the program, and formal and informal student reading assessment.

The problems of reading acquisition should be addressed at the preschool and prep levels to prevent the debilitating effects of chronic school failure. However, even if such a welcome state of affairs commenced immediately, schools would still have a cohort of students with the problems described above. It is a matter of social justice that such students do not remain neglected, particularly when there are programs which can have a major, and beneficial, effect on those students unfortunate enough to be in such an invidious situation. ♦

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The Gulf Between Educational Research and Policy: The Example of Direct Instruction and Whole Language

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Abstract: *The failure of the school system to effectively provide for the basic skill development of each of its pupils is of concern to both the general and research communities. It is especially salient for those inclined towards empiricism as there are behavioral approaches to teaching, with excellent research support, that could make a major contribution to the prevention and alleviation of this distressing problem. Unfortunately, the evidence for the effectiveness of such programs is largely ignored by educational decision-makers. One example of this group of behaviorally-based models is known as Direct Instruction. It is contrasted with the currently popular approach to teaching called Whole Language, one with little empirical support and major theoretical weaknesses. The broader issue, examined within the context of this educational problem area, concerns researchers' responsibility for the dissemination and application of their work within the community.*

Student failure in the education system has received a great deal of publicity in recent years. This increased interest may have resulted from a rise in consumerism among parents, and a parallel fall in the community regard held for the teaching profession (this loss of mystique is also evident among other professions, such as law, and medicine). In addition, education policies in recent times have encouraged parent participation in school management, and also in the classroom. Further, parents have been requested to take greater responsibility for their child's educational progress, particularly in the critically important area of reading development. When students experience failure parents have begun to ask schools and governments for explanations.

The systematic measurement of school achievement has not been seriously addressed in Australian education until recently. It has been argued (Conway, 1994; Heaney, 1993; Pennington & Speagle, 1993) that this reluctance was partly because of a disdain for standardised measurement held by influential teacher-training and teacher-union officials, and perhaps because, for governments, the results of national testing might prove financially expensive. While systematic, nationally compiled figures may not be available, there is now a general acceptance that our school system is unable to guarantee a

successful education in basic skills for between ten and twenty-five percent of our children (Australian House of Representatives Enquiry, 1993; Prior, 1993; Richards, 1995). These students are often described as at-risk students because, unless special provision is made for them, their future is, sadly, bleakly predictable.

Currently, the school system fails at-risk children in several related and cumulative ways, involving faults of commission and omission. Stone (1996) argues that the former involves the uncritical acceptance of methodologies unsupported by empirical research. In this category he cites whole language, the open classroom, inquiry learning, and practices aimed at accommodating individual differences, such as learning styles. In his view the valuable approaches being ignored include mastery learning, the Personalized System of Instruction, direct instruction, positive reinforcement, cues and feedback, and explicit teaching. This paper focuses on two of those approaches to teaching and learning: Whole Language and Direct Instruction.

Empiricism and the Whole Language Model

Goodman (1986) describes whole language as a philosophy rather than as a series of prescribed activities. Thus whole language teaching consists of

those activities a teacher with a thorough understanding of the philosophy would use. The teacher aims to provide a proper environment that will encourage children to develop their skills at their own developmentally appropriate pace. This makes it difficult to describe what actually occurs in a whole language classroom, or whether there is any consistency from classroom to classroom that would enable an observer (other than one imbued with the philosophy) to recognize that the approach was indeed whole language. This reticence about detail is still evident in a selection of recent journal articles (Smith, 1991; Newman, 1991; Johnson & Stone, 1991). There is a strong emphasis on principles, e.g., the benefits of a natural learning environment (Goodman, 1986), and of exposure to a literate environment (Sykes, 1991). Mills and Clyde (1990, cited in Johnson & Stone, 1991) provide an outline of the whole language philosophy as evidenced in classrooms: "Highlight authentic speech and literacy events; provide choices for learners; communicate a sense of trust in the learners; empower all participants as teachers and learners; encourage risk taking; promote collaboration in developing the curriculum; be multimodal in nature; capitalize on the social nature of learning; encourage reflection" (p.103).

The Whole Language approach treats children as natural learners, and teachers as benign guides rather than as active directors of learning. The consequence of such a philosophy is a view that intrusion in a child's literacy development (or lack of it) is unproductive, and possibly counter-productive (Smith, 1978). Thus when children are failed by this system, the outcome may be explained to parents as a normal consequence of the individual differences between children.

The above-mentioned prescriptions do give the flavour if not the substance of what may occur in classrooms, and are consistent with a view of child development that combines a Rousseauian perspective of naturally unfolding development with an assumption that learning to read is essentially equivalent to learning to speak. Rousseau believed that children had an innate developmental script that

would lead them (though perhaps at differing rates) to competence. Thus unfettered maturation would allow the child to develop knowledge unaided (Weir, 1990). His ideas gained scientific respectability in the 19th century when they were seemingly supported by a theory of evolutionary biology. This long since discredited theory asserted that the evolutionary journey from amoebae to human infant was replayed in every pregnancy, and the wisdom and knowledge of the parents (and of necessity, beyond) were present in the brain of the new generation. In Rousseau's view humans were, by nature, good but were turned by societal interference. His argument that society should not interfere in the natural development of children generally was paralleled by his view of the role of education. "Give your pupil no lesson in words, he must learn from his experience" (Rousseau, 1964 cited in Weir, 1990, P. 28). The whole language philosophy noted above that assigns to the teacher the role of concerned facilitator, and that decries teacher-directed instruction as harmful or unproductive, can be readily sourced to the Rousseauian view.

Whole Language is a model endorsed and promulgated in Australia and elsewhere by government education bodies, yet many researchers consider that Whole Language is educationally unsound (Adams & Bruck, 1995; Liberman & Liberman, 1990), and that it particularly disadvantages at-risk students (Bateman, 1991; Yates, 1988). Vellutino (1991) and other contemporary researchers (Ball, 1993; Bateman, 1991; Blachman, 1991; Byrne, 1991; Byrne & Fielding-Barnsley, 1989; Eldredge, 1991; Gersten & Dimino, 1993; Groff, 1990; Liberman & Liberman, 1990; Nicholson, Bailey & McArthur, 1991; Rayner & Pollatsek, 1989; Solman & Stanovich, 1992; Stahl & Miller, 1989; Tunmer & Hoover, 1993; Weir, 1990) are in agreement that Whole Language is not a comprehensive approach to reading instruction, and contributes to the literacy problem.

The Whole Language approach treats children as natural learners, and teachers as benign guides rather than as active directors of learning. The consequence of such a philosophy is a view that intrusion in a child's literacy development (or lack of it) is unproductive, and possibly counter-productive (Smith, 1978). Thus when children are failed by this system, the outcome may be explained to parents as a normal consequence of the individual differences between children. After some years of observing their child's failure many parents become less accepting of such explanations as individual differences and maturational lag. They become more forceful in assisting their school to acknowledge the existence

of the problem. Too often, however the school's response is to neatly reassign the cause of the problem to the child's home background. Because the extent of the system-wide problem outweighs the scarce resources assigned to schools to deal with it, it is unsurprising that they tend to respond defensively.

There are more effective ways of teaching beginning reading to at-risk students, and retrieving older students whose progress has stalled. This knowledge of alternative approaches more effective than currently endorsed models derives from an enormous body of educational research. Unfortunately, this research is yet to play a major role in educational policy-making.

Of those schools able to find resources to help these students, there is a strong likelihood of additional exposure to the model of instruction that failed the first time. However, by this time (often Year Four), many students have developed "acute print allergy" (Hempenstall, 1995). This condition, an understandable consequence of extended failure at a societally-valued task, is often a more formidable hurdle to overcome than the reading problem. It involves a passive or active resistance to assistance with reading development, and an avoidance of print whenever possible, presumably because of disillusionment and discomfort. Understandable then, but inexcusable for an education system, is the finding of a Melbourne University study that such students typically make no progress in reading between Year Four and Year Ten (Richards, 1995).

Our system is contributing to the failure of students at each step of the way—from beginning reading instruction in the early years, through to the absence of reading assistance in upper-primary and secondary schools. There are more effective ways of teaching beginning reading to at-risk students, and retrieving older students whose progress has stalled. This knowledge of alternative approaches more effective than currently endorsed models derives from an enormous body of educational research. Unfortunately, this research is yet to play a major role in educational policy-making.

The idea that the results of empirical research should play a strong part in decision-making and

policy-development in any important area of human service is probably neither novel nor in need of justification to readers of this journal. In the field of education, as in a number of areas of human services, there is relatively little weighting given to research (Gable & Warren, 1993). Rather, broad philosophical principles such as developmentalism (Stone, 1996) have been the determining factor in the direction taken, most evidently in the fields of teaching and learning. This preference for dogma over pragmatism has been noted in a number of countries besides Australia (Stanovich, 1994), and has led to the current domination of the Whole Language philosophy in policies on teaching and learning. The Australian House of Representatives Enquiry "The Literacy Challenge" (1993) noted that Whole Language has Australia-wide support and ".... virtually all curriculum guidelines on primary school literacy teaching produced are based on this approach. ... Virtually all teachers have undertaken the inservice training course, Early Literacy Inservice Course (ELIC), which is also based on a whole language approach to learning and literacy" (p.25).

Thus far, Whole Language philosophy itself has been relatively impervious to the results of research. In fact, McCaslin (1989) notes, some Whole Language advocates assert that the research perspective itself is responsible for inappropriate teaching practices. Edelsky (1990) argues that "... procedural rigour in research design is no more than a thinly disguised demand that Whole Language be translated into terms that fit a skills model of reading and a positivist model of research" (p.10). Others consider research irrelevant — "It seems futile to try to demonstrate superiority of one teaching method over another by empirical research" (Weaver, 1988, p.220), or limit the types of research that may be relevant — "Only one kind of research has anything useful to say about literacy, and that is ethnographic or naturalistic research" (Smith, 1989, p.356). These perspectives are presumably responsible for the dearth of quantitative research by Whole Language advocates on the effectiveness of the approach (Klèsius, Griffith, & Zielonka, 1991).

There are a number of researchers (Adams & Bruck, 1995; Chaney, 1990; Fields & Kempe, 1992; Gersten & Dimino, 1993; Heymsfeld, 1989; Mather, 1992; McCaslin, 1989; McGinitie, 1991; McKenna, Robinson & Miller, 1990a, 1990b; Spiegel, 1992; Stahl & Miller, 1989; Stanovich, 1994) who consider that the investment in Whole Language is too great for it to be completely displaced, and who seek a rapprochement, allowing Whole Language to take advantage of effective practices and still retain its

flavour. However, Whole Language stalwarts view such gestures as reactionary, as they consider a skill development model incompatible with the essence of Whole Language (Edelsky, 1990; Heymsfeld, 1989; Goodman, 1989).

There is, then, a vast gulf separating empirical approaches to teaching and learning from those currently favoured in our schools. The gulf transcends mere disagreement about effective strategies, the differences are at a more fundamental level and represent a significant challenge even to find a mutually acceptable framework to allow dialogue.

Ball (1993) also notes the conflict between the Whole Language perspective and research. In her view the pedagogical battle between empiricists and whole language supporters is reflective of a broader debate evident in many of the social sciences. The major debate is between those who support a reductionist, positivist philosophy of science and those who rebel against that position adopting a holistic, post positivist, relativistic stance. To relativists, such as Weaver (1988), all empirical research is futile in determining teaching practice because in performing the research we cannot avoid affecting the outcome, thereby confounding results. Relativists view reality as phenomenological, that is, it has no existence independent of our unique individual perspective. They tend to favour ethnographic approaches such as case studies and classroom observation as the appropriate means of enquiry. Empiricists view reality as "essentially cognitive transcending" (Rescher, 1982, as cited in Groff, 1990), and see ethnographic research as useful for raising, not answering, questions about teaching practice.

There is, then, a vast gulf separating empirical approaches to teaching and learning from those currently favoured in our schools. The gulf transcends mere disagreement about effective strategies, the differences are at a more fundamental level and represent a significant challenge even to find a mutually acceptable framework to allow dialogue.

Empiricism and Knowledge Claims

Those who support behaviorally-based models are likely to agree with Stanovich (1994) when he proposes that competing claims to knowledge (such as about models of teaching) should be evaluated

according to three criteria. Firstly, findings should be published in refereed journals. If research is to be useful it must be well designed, and able to justify its findings. When peer review is part of the process of research the well-known taunt "research can prove anything you want" becomes less credible. Poorly designed studies are rejected (sometimes to appear in un-refereed journals). Secondly, reported results should be replicated by independent researchers. One feels more comfortable when research findings are repeated in studies where the researchers have no particular stake in the outcome. Thirdly, there is a consensus within the appropriate research community about the reliability and validity of the findings. This last criterion requires considerable reading across the field, but the frequency with which a particular study is cited, and accepted as legitimate, in journal articles provides one measure. Although the use of these criteria cannot guarantee infallibility it does offer reasonable consumer protection against spurious claims to knowledge.

One of the most thoroughly researched educational models is Direct Instruction. There is ample evidence of its effectiveness for a wide range of student learning problems. It differs from Whole Language in its assumptions about the teaching process, about learner characteristics, and about the means of syllabus construction; in fact, it could be described as the antithesis of whole language. By contrast, the Whole Language approach fails to meet Stanovich's criteria yet has achieved international acceptance on a broad scale. Obviously such criteria do not guide educational decision-makers, as the Direct Instruction approach has had very little impact upon the Australian school system.

Although their [whole language] theories lack any academically acceptable research base they continue to dominate educational policy. Direct Instruction models are ignored notwithstanding the huge body of research that indicates that direct instruction is vastly superior if basic skills and knowledge are the goal. (Weir, 1990, p. 30)

Empiricism and the Direct Instruction Model

The Direct Instruction model had its beginnings in the early 1960's through the work of Carl Bereiter and Siegfried Engelmann. The subsequent involvement of Wes Becker and Doug Carnine among others led to the publication of a number of teaching programs in 1969. The programs share a common teaching style readily observable to any classroom

visitor. The instruction takes place in small groups with a teacher directing activities with the aid of a script, and students are actively involved in responding to a fast paced lesson during which they receive constant feedback. Programs are designed according to what, not whom, is to be taught. Thus all children work through the same sequence of tasks directed by a teacher using the same teaching strategies. Individual differences are allowed for through different entry points, reinforcement, amounts of practice, and correction strategies (Gregory, 1983).

There are a number of important characteristics of Direct Instruction programs (Becker, 1977). It is assumed that all children can learn and be taught, thus failure to learn is viewed as failure to teach effectively (Engelmann, 1980). Children who are behind must be taught to learn faster—this implies a focus on features of teaching designed to improve efficiency. These features derive from the design of instruction, and from process variables such as how the curriculum is implemented. Curriculum is designed with the goal of "faultless instruction" (Engelmann, 1980), that is, sequences or routines for which there is only one logical interpretation. The designer's brief is to avoid ambiguity in instruction—the focus is on logical-analysis principles. These principles allow the organisation of concepts according to their structure and the communication of them to the learner through the presentation of positive and negative examples.

Engelmann (1980) highlighted four design principles:

1. Where possible, teach general-case strategies, that is, those skills that when mastered can then be applied across a range of problems for which specific solutions have not been taught (e.g., decoding regular words). These generalisations may be taught inductively by examples only, or deductively by providing a rule and a range of examples to define the rule's boundaries.
2. Teach the essentials. The essentials are determined by an analysis of the skills necessary to achieve the desired objective. There is an underlying assertion that, for reading, it is possible to achieve skilled reading by analysis and teaching of subskills in a cumulative framework. Advocates of a whole language perspective would disagree with the possibility, or desirability, of teaching in this manner.
3. Keep errors to a minimum. Direct Instruction designers consider errors counter-productive, and time-wasting. For remedial learners a high success rate is useful in building and maintaining motivation lost through a history of failure. This low error rate is achieved by the use of the instructional design

principles explained in a ground-breaking text (Engelmann & Carnine, 1982), and by ensuring students have the pre-skills needed to commence any program (via a placement test).

4. Adequate practice. Direct Instruction programs include the requirement for mastery learning (usually above 90% mastery). Students continue to focus on a given task until that criterion is reached. The objective of this strategy is the achievement of retention without the requirement that all students complete the identical regimen. The practice schedule commences with massed practice, shifting to a spaced schedule. The amount of practice decreases as the relevant skill is incorporated into more complex skills. Advocates of Direct Instruction argue that this feature of instruction is particularly important for low-achieving students and is too often paid scant regard (Engelmann, 1980). Although this emphasis on practice may be unfashionable, there is ample supporting research, and a number of effective schools are increasingly endorsing its importance (Rist, 1992): "The strategies that have fallen out of style, such as memorizing, reciting and drilling, are what we need to do. They're simple—but fundamental—things that make complex thinking possible" (p. 19).

It is these principles of instructional design that set Direct Instruction apart from traditional and modern behavioral approaches to teaching. However the model does share a number of features with other behavioral approaches (e.g., reinforcement, stimulus control, prompting, shaping, extinction, fading), and with the effective teaching movement (mastery learning, teacher presentation skills, academic engaged time, and correction procedures). These latter features have been researched thoroughly over the past 20 years and have generally been accepted as comprising "direct instruction" (note lower case letters) (Gersten, Woodward & Darch, 1986). Rosenshine (1979) used the expression *direct instruction* to describe a set of instructional variables relating teacher behavior and classroom organization to high levels of academic performance for primary school students. High levels of achievement were related to the amount of content covered and mastered. Hence the pacing of a lesson can be controlled to enhance learning. Academic engaged time refers to the percentage of the allotted time for a subject during which students are actively engaged. A range of studies (Rosenhine & Berliner, 1978) have highlighted the reduction in engagement that occurs when students work alone as opposed to working with a teacher in a small group, or as a whole class. The choral responding typical of Direct Instruction programs is one way of ensuring high

student engagement. As an example, the author counted 300 responses in the 10 minutes of teacher-directed decoding activity in a Year 7 reading group (Hempenstall, 1990a).

A strong focus on the academic was found to be characteristic of effective teachers. Non-academic activities, while perhaps enjoyable or directed at other educational goals, were consistently negatively correlated with achievement. Yet in Rosenshine's (1980) review of studies it was clear that an academic focus rather than an affective emphasis also produced classrooms with high student self-esteem and a warm atmosphere. Less structured programs and teachers with an affective focus had students with lower self-esteem. Teacher-centered rather than student-centered classrooms had higher achievement levels. Analogously, teachers who were strong leaders and did not base their teaching around student choice of activities were more successful. Solomon and Kendall (1976, as cited in Rosenshine, 1980) indicated that permissiveness, spontaneity and lack of classroom control were "negatively related, not only to achievement gain, but also to positive growth in creativity, inquiry, writing ability, and self esteem for the students in those classrooms" (p.18).

The instructional procedure called demonstration-practice-feedback (sometimes, model-lead-test) had strong research support. This deceptively simple strategy combines in one general model three elements of teaching directly related to achievement. It comprises an invariant sequence in which a short demonstration of the skill or material is followed by guided practice, during which feedback is provided to the student (and further demonstration if necessary). The second phase usually involves response to teacher questions about the material previously presented. It would appear that the overlearning this phase induces is particularly valuable. The third phase, that of independent practice, is later evaluated by the teacher. Medley's (1982) review indicated the efficacy for low SES students of a controlled practice strategy involving low cognitive level questions, a high success rate (above 80%), and infrequent criticism. The popularity among many teachers of high cognitive level questions implicit in discovery-learning models is difficult to justify empirically. These high level questions require students to manipulate concepts without having been shown how to do so. Research on discovery approaches has indicated a negative relationship with student achievement. Winnie's (1979) review of 19 experimental studies on higher order questions made this point very strongly, as does Yates (1988).

To summarize the findings of research into teacher variables with a positive impact on student learning, Rosenshine and Berliner (1978) provide a definition for direct instruction, a concept related to but distinct from Direct Instruction.

Direct instruction pertains to a set of teaching behaviors focussed on academic matters where goals are clear to students; time allocated for instruction is sufficient and continuous; content coverage is extensive; student performance is monitored; questions are at a low cognitive level and produce many correct responses; and feedback to students is immediate and academically oriented. In direct instruction, the teacher controls the instructional goals, chooses material appropriate for the student's ability level, and paces the instructional episode. (p.7)

Empirical Support for the Direct Instruction Model

A major educational study was federally funded in the US. in the late 1960's. It arose because of a concern about poor educational outcomes for disadvantaged students. Entitled Follow Through, it was aimed at the primary school stage, and was designed to determine which methods of teaching would be most effective for disadvantaged students throughout their primary school career. It followed an early intervention project called Head Start, that had as its goal the overcoming of educational disadvantage prior to school entry, that is, at the kindergarten level. The results of Head Start interventions unfortunately were not durable, and Follow Through was to assess how best to maintain and build on Head Start's gains. This huge study involved 75,000 children in 180 communities over the first three years of their school life. There were nine major sponsors covering a broad range of educational philosophies. They included child directed learning, individualized instruction, language experience, learning styles, self-esteem development, cognitive emphasis, parent-based teaching, direct instruction, and behavioral teaching. The models can be reduced to three distinct themes—those emphasizing basic academic outcomes, cognitive development, or affective development. The models that emphasised the systematic teaching of basic skills (Direct Instruction and Behavior Analysis) performed best. In reading, the Direct Instruction model, which also has a strong phonic emphasis, had the most impressive results. There were criticisms that variability in

implementation across sites made judgements of model superiority dubious, and that overall effects were too small to be pleased about (House, Glass, McLean & Walker, 1978). Nevertheless when the data was re-analysed by several groups (Bereiter & Kurland, 1981; House et al, 1978; Meyer, Gersten & Gutkin, 1983) the Direct Instruction model still produced the best gains. Later follow-up studies (Becker & Gersten, 1982; Gersten, Keating & Becker, 1988) were completed over the following 10 years and add support to the argument that the superiority of the Direct Instruction model was real, significant, and lasting.

Even if one disregards the Follow Through results, evaluation of Direct Instruction programs has been very extensive. For example, Fabre (1984) compiled an annotated bibliography of almost 200 studies completed prior to 1984. For the most part research findings have been very impressive. Notable positive reviews of outcome research are provided by Gregory (1983), Lockery and Maggs (1982), Gersten (1985), White (1988), Kinder and Carnine, (1991). Contrary views are discussed later.

Whereas Direct Instruction was originally designed to assist disadvantaged students, its emphasis on task characteristics and effective teaching principles transcends learner characteristics, and has been found valuable across a range of learners. Lockery and Maggs (1982) reviewed research indicating success with average children, those with mild, moderate or severe skill deficits, those in resource rooms, withdrawal classes and special classes in regular schools, disadvantaged students (including aboriginal and children whose first language is not English), students in special facilities for mild, moderate and severe intellectual disability and physical disabilities. Gersten (1985) in his review of studies involving students with a range of disabilities concluded that Direct Instruction tended to produce higher academic gains than traditional approaches. He also suggested that the mastery criterion (in excess of 90%) may be particularly important for special education students, and called for more formative evaluation where only one instructional variable is manipulated; and more instructional-dimensions research to highlight which variables alone, or in company, are associated with academic gains. Gersten (p.55) describes the Leinhardt, Zigmond and Cooley (1981) study with 105 learning disabled students. The authors noted three teaching behaviors were strongly associated with student progress in reading—the use of reinforcers, academic focus, and a teacher instruction variable involving demonstration, practice and feedback. Each of these is critical to the definition of direct instruction

(Rosenshine, 1979), and supports the notion that there are teacher behaviors which transcend student characteristics. This study was the first to demonstrate that specific direct instruction principles have value for learning disabled students.

White's (1988) meta-analysis of studies involving learning disabled, intellectually disabled, and reading disabled students restricted its focus to those studies employing equivalent experimental and comparison groups. White reported an effect size of 0.84 standard deviation units for the Direct Instruction over comparison treatments. This is markedly above the 0.25-0.33 standard for educational significance of an educational treatment effect (Stebbins, St. Pierre, Proper, Anderson & Cerva, 1977). White concluded that regardless of the disabling condition, whether mild, moderate, or severe, and regardless of the students' age, the Direct Instruction approach was effective in all the skill areas research has addressed.

Further support for the approach comes from Kavale (1990). His summary of research into direct instruction and effective teaching concludes that they are five to ten times more effective for learning disabled students than are practices aimed at altering unobservable learning processes such as perception. Binder and Watkins (1990) describe Direct Instruction (along with Precision Teaching) as the approaches best supported by research to address the problems of teaching found in the English-speaking world.

Recently Hendrickson and Frank (1993) provided this bold prediction:

The decade of the 1990's will witness, in classrooms serving students with mild mental retardation, the implementation of a group of instructional methods often referred to as effective teaching practices or direct instruction, if we heed the literature published in this area over the past 15 years. (p.11)

Criticisms of Direct Instruction

Despite the long history of empirical support for Direct Instruction, unsurprisingly there have also been criticisms. These have been based on a number of different grounds, and are of varying credibility.

1. Direct Instruction is an IBM (the former publisher) conspiracy to oppress the masses (Nicholls, 1980).
2. Direct Instruction causes delinquency (Schweinhart, Weikart & Lerner, 1986). Further, its "side effects may be lethal" (Boomer, 1988, p.12).
3. Its view of the reading process is wrong

(Gollash, 1980).

4. It is incompatible with other more important principles:
 - (a) Normalization (Penney, 1988).
 - (b) The wholistic nature of reading (Giffen, 1980; Goodman, 1986).
 - (c) A naturalistic educational paradigm (Heshusius, 1991).
 - (d) Flexible reciprocal child-teacher interaction (Ashman & Elkins, 1990).
 - (e) Teacher professionalism (McFaul, 1983).
5. The success of Direct Instruction is illusory, based on tests that do not measure reading (Cambourne, 1979).
6. Other approaches are more effective, e.g., Whole Language (Weaver, 1991), discovery learning (Bay, Staver, Bryan & Hale, 1992); or as effective as Direct Instruction (Kuder, 1990; O'Connor, Jenkins, Cole, Mills, 1993).
7. It may be inappropriate for certain sub groups.
 - (a) Those in special education (Heshusius, 1991; Kuder, 1991; Penney, 1988).
 - (b) Those with certain learning styles, for example, internal locus of control (McFaul, 1983; Peterson, 1979).
 - (c) Those of high ability (Peterson, 1979).
8. Its use is best restricted to basic skill development (Peterson, 1979).
9. It is best used in conjunction with other approaches (Delpit, 1988; Gettinger, 1993; Harper, Mallette, Maheady, Brennan, 1993; Spiegel, 1992; Stevens, Slavin & Farnish, 1991).
10. Students might not find it acceptable (Reetz & Hoover, 1992).

Of the literature critical of the model, much is based on philosophical issues concerning reality and power, on theoretical issues such as the nature of the learning process, the role of teaching, or issues of measurement. Of the few empirical studies in which alternative approaches have proved equivalent or superior, issues of treatment fidelity have arisen. For example, it is not always made clear whether the model described is the Direct Instruction model or a direct instruction variant of unknown rigor. When the Direct Instruction model is used it is rarely specified whether the program presenters have the training necessary to follow the approach faithfully. Further the relative rarity of such findings compared to the vast literature supportive of the approach allows some sanguinity about such exceptions.

It is of interest that the debate on Direct Instruction has become much more widespread in recent years. An issue of *Education and Treatment of Children*

Of the literature critical of [Direct Instruction], much is based on philosophical issues concerning reality and power, on theoretical issues such as the nature of the learning process, the role of teaching, or issues of measurement.

(Becker, 1988) was devoted to Direct Instruction. The National Reading Conference in the US has regular sessions on the pedagogical impact and appropriateness of Direct Instruction (Kameenui & Shannon, 1988). *The Journal of Learning Disabilities* (1991) devoted two issues (Vol 24, Nos 5, 6) to "sameness analysis"—an instructional design principle central to Direct Instruction (Englemann & Carnine, 1982). In recent years writers of texts on teaching (Becker, 1986), special education (Cole & Chan, 1990; Gable & Warren, 1993; Greaves & McLaughlin, 1993; Scruggs & Wong, 1990; Wolery, Ault & Doyle, 1992), and educational psychology texts (Joyce, Weil & Showers, 1992; Kameenui & Simmons, 1990; Tuckman, 1991) have included Direct Instruction as a legitimate approach to a range of educational problems. This represents the increasing academic acceptance of the model that until the mid-1980's was virtually ignored by researchers and writers other than advocates from, or influenced by, the University of Oregon. From one of the most respected writers and researchers on the problems of learning disability (a term coined by Kirk and Bateman in 1962) comes the highest praise. "The documented success of Siegfried Engelmann and his colleagues' direct instruction reading programs with thousands of hard-to-teach and high risk children is unsurpassed in the annals of reading history" (Bateman, 1991, p.11).

Despite the controversy, Direct Instruction research and program development continues. It no longer has a sole emphasis on instructional design for basic skills such as reading, spelling, math, language, and writing—but has broadened its area of application to include higher order skills e.g., literary analysis, logic, chemistry, critical reading, geometry and social studies (Carnine, 1991; Casazza, 1993; Darch, 1993; Grossen & Carnine 1990b; Kinder & Carnine 1991). Use has been made of technology through computer-assisted instruction, low cost networking and videodisc courseware (Kinder & Carnine, 1991); and, researchers have begun to test

the model in non-English speaking countries, for example, third world countries (Grossen & Kelly, 1992), and Japan (Nakano, Kageyama, & Kioshita; 1993). It has also shown promise in recent research on teaching a most challenging group of students—school-aged children with TBI, traumatic brain injury (Glang, Singer, Cooley & Tish, 1992).

There seems little doubt that Direct Instruction will continue to be a viable and productive model throughout the 1990's. The major hurdle continues to be its lack of attractiveness for educators, and resultant absence of penetration into classrooms.

Problems of Acceptance in Education

The prediction of Hendrickson and Franks (1993) about the increasing use of Direct Instruction is brave because despite its impressive research support, Direct Instruction has made relatively little impact in regular or special education thus far. Maggs and White (1982) wrote despairingly, "Few professions are more steeped in mythology, and less open to empirical findings than are teachers" (p. 131). Their lament emphasizes the general lack of acceptance of research-based programs in education, of which Direct Instruction is but one example. Murphy (1980) considered that behavioral consultants should be the agents of change, but are generally naive about the politics of change in organizations, and thus unable to influence decision-makers. He suggests that an improved understanding of organizational contingencies would enhance the likelihood of successful implementation. Barnes (1985) suggested five reasons for the approach's lack of acceptance in education.

1. The phonic emphasis in reading conflicts with the popular "Whole Language" philosophy.
2. The model's highly structured scripted lessons are viewed as demeaning to trained teachers.
3. It over-emphasizes basic skills and ignores higher order goals.
4. The emphasis on the teacher's responsibility for learning outcomes threatens those teachers holding the view that student performance is largely determined by the child's genetic or family history.
5. The structure requires a routine that bores teachers. Students become bored either for the same reason, or because of the teacher's resultant lack of enthusiasm. Barnes does not accept the validity of these objections but highlights them as obstacles to be overcome.

Fields (1986) posits the "practicality ethic" as the key characteristic of programs likely to be readily adopted. Can the recommendation be easily trans-

lated into practice in the classroom? Is the recommendation congruent with the teacher's philosophy or goals? How difficult in time and effort is implementation? Fields sees problems for Direct Instruction in each of these areas and recommends fall-back positions: accepting levels of implementation—from the ideal, school-wide adoption designed to lift overall student achievement, through to the simple acceptance of an active teaching style, that is, practising some elements of direct instructional strategies in a teacher's classroom. Hempenstall (1990b) argues that a pilot program successfully provided for a few, or even one, student in a school can be the springboard upon which subsequent more extensive program installation may follow. In his view consultants need to "get their hands dirty" by assisting with timetabling problems, being available to support the teacher(s), providing both hard and soft data to ameliorate inevitable resistance, and being the critical friend to ensure program fidelity—particularly lesson regularity in the face of competing demands on schools to include interesting but educationally marginal activities. He sees the absence of a Direct Instruction teacher training infrastructure as a hurdle to replicating the impressive results obtained when programs are faithfully implemented.

Riddell and Sperling (1988) express concern at the gulf between literacy research findings and teachers' practice. They call for research aimed at discovering why empirically proven practices are "thwarted, undermined, or ignored in the classroom" (p. 319). The concern is even more impelling if one accepts Rogers' (1983, as cited in Ruddell and Sperling) assertion that there is often a period of 25 to 35 years between a research discovery and its serious implementation.

Solity (1991) further notes some aspects of Direct Instruction unappealing to teachers; however, he views the problem within the wider context of the negative view many teachers have of behavioral approaches in general. He considers the method of introduction of behavioral concepts as crucial to acceptance, and cites examples of "softer" language being more acceptable. Gersten and Guskey (1985) argue that teachers' methods have evolved largely through experiences in their own classroom, and a model that requires a significant change from that practice will evoke reluctance. In their studies, teachers' philosophies that were generally antithetical to Direct Instruction became consonant with those of Direct Instruction following successful program implementation. Hence attitude change followed rather than preceded behavior change. They argue that trying to change attitudes through, for example,

presenting research data alone is unlikely to be successful. Consonant with Hempenstall's (1990b) position, they argue that a well organized pilot program in the school, run by a respected teacher with good consultant support, is likely to produce gains difficult to ignore in children personally known to the teachers. The salience of change in children known to teachers, combined with strong instructional leadership from the school administration, increases the likelihood of a change in teacher behavior. As in Gersten and Guskey's study, a teacher's initial reluctance may be transformed into a new energy-giving direction in teaching.

Lindsley (1992) is quite scathing in addressing the general question of why effective teaching tools aren't widely adopted. He considers that teachers have been

... seduced by natural learning approaches Most educators have bought the myth that academic learning does not require discipline—that the best learning is easy and fun. They do not realize that it is fluent performance that is fun. The process of learning, of changing performance, is most often stressful and painful. (p. 22)

Researchers may view teachers as unnecessarily conservative and resistant to change, whereas teachers may consider researchers as unrealistic in their expectations, and lacking in understanding of the school system and culture. Teachers may also respond defensively to calls for change because of the implied criticism of their past practices, and the perceived devaluation of the professionalism of teachers (in that other professions are determining their teaching practices).

Gable and Warren (1993) have also noted that the potential role of behavioral science in general, but with particular emphasis to education, has been largely ignored by decision-makers and even by many practitioners. They refer to Carnine's (1991) lament that decision-makers lack a scientific framework and are inclined to accept proposals based on good intentions and unsupported opinions. Meyer (1991, cited in Gable & Warren), however, blames

the research community for choosing restricted methodology (e.g., single subject design), and for being too remote from classrooms. She believes greater attention will be paid when credibility of research is improved. On the other hand, perhaps it is the tendency of empiricists to place caveats on their findings, as opposed to the wondrous claims of ideologues and faddists unrestrained by scientific ethics, that makes decision-makers wary. Fister and Kemp (1993) consider several likely obstacles, important among them being the absence of an accountability link between decision-makers and student achievement. Such a link seems unlikely without a regular mandated state or national test program. They also apportion some responsibility to the research community for failing to appreciate the necessity nexus between research and its adoption by the relevant target group. The specific criticisms include a failure to take responsibility for communicating findings clearly, and with the end-users in mind. Researchers have often validated practices over too brief a time-frame, and in too limited a range of settings to allow general program adoption across settings. Without considering the organizational ramifications (such as staff and personnel costs) adequately, the viability of even the very best intervention cannot be guaranteed. The methods of introduction and staff training in innovative practices can have a marked bearing on their adoption and continuation.

Fister and Kemp (1993) argue that researchers have failed to meet their own criterion by not incorporating research-validated staff-training procedures, and organizational analysis in their strategies for promoting program adoption. Their final criticism involves the rarity of the establishment of model sites exemplifying excellent practice. When prospective adoptees are able to see the reality rather than the rhetoric of a program they are arguably more likely to take the (often uncomfortable) steps towards adoption. In addition, it is possible to discuss with on-site teachers the realities of being involved in the innovation.

Woodward (1993) points out that there is often a gulf between researchers and teachers. Researchers may view teachers as unnecessarily conservative and resistant to change, whereas teachers may consider researchers as unrealistic in their expectations, and lacking in understanding of the school system and culture. Teachers may also respond defensively to calls for change because of the implied criticism of their past practices, and the perceived devaluation of the professionalism of teachers (in that other professions are determining their teaching prac-

tices). Leach (1987) argues strongly that collaboration between change-agents and teachers is a necessary element in the acceptance of novel practice. In his view teachers need to make a contribution that extends beyond solely the implementation of the ideas of others.

Given that many researchers have neither the funding, the interest, nor perhaps the skill to promulgate their findings it is clear that the relationship between science, school practice, and government policy-making will remain vexed.

Hence there are three groups with whom researchers need to be able to communicate if their innovations are to be adopted. At the classroom level, teachers are the focal point of such innovations and their competent and enthusiastic participation is required if success is to be achieved. At the school administration level, principals are being given increasing discretion as to how funds are to be disbursed; therefore, time spent in discussing educational priorities, and cost-effective means of achieving them may be time well-spent, bearing in mind Gersten and Guskey's (1985) comment on the importance of strong instructional leadership. At the broader system level, decision makers presumably require different information, and assurances about the viability of change of practice (cost being fundamental). Given that many researchers have neither the funding, the interest, nor perhaps the skill to promulgate their findings it is clear that the relationship between science, school practice, and government policy-making will remain vexed. ♦

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The Role of Phonics in Learning to Read: What Does Recent Research Say?

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The role of phonics instruction in learning to read has always been controversial. It has been particularly so in the last 15 years in Australia given the dominance of the Whole Language movement in pre-service and in-service teacher education, and in education department policies. The Whole Language philosophy rejects explicit phonics teaching on principle because it teaches reading by emphasising units smaller than the whole word, that is, through individual letters, syllables and morphemes.

In the US, the Reading Excellence Act (1999) was recently enacted because of the unacceptably low reading achievement of students in US schools. It acknowledges that part of the responsibility rests with methods of reading instruction, and with policies that have been insensitive to developments in the understanding of the reading process.

In several English speaking countries, there is a strong momentum for reform of reading instruction. Dramatic legislation in the US and Britain in recent months may possibly lead to similarly far-reaching policy changes in Australia in the not-too-distant future. The changes have arisen because of an overwhelming concern over literacy in those communities, and because of evidence that the Whole Language model of reading, the same approach supported by governments throughout Australia, is exacerbating the problem.

International Directions

In the US, the Reading Excellence Act (1999) was recently enacted because of the unacceptably low reading achievement of students in US schools. It acknowledges that part of the responsibility rests with methods of reading instruction, and with poli-

cies that have been insensitive to developments in the understanding of the reading process. The Act attempts to bridge the gulf between research and classroom practice by mandating that only programs in reading that have been shown to be effective according to strict research criteria will be funded in future. This reverses a trend in which the criterion for adoption of a model was that it met preconceived notions of "rightness" rather than that it was demonstrably effective for students. Thus, the basis for adoption of programs formerly emphasised preferred process over student outcome.

Under the new Federal system, explicit phonics teaching is highlighted as an essential element in any beginning reading program. Teacher training institutes have long emphasised Whole Language as the model of choice, and few teachers have been provided with the skills necessary to teach in the newly prescribed manner, so massive teacher retraining programs are being introduced.

Under the new Federal system, explicit phonics teaching is highlighted as an essential element in any beginning reading program. Teacher training institutes have long emphasised Whole Language as the model of choice, and few teachers have been provided with the skills necessary to teach in the newly prescribed manner, so massive teacher retraining programs are being introduced. Of the programs thus far accredited for funding, two approaches are known in Australia: Direct Instruction (*Corrective Reading, Reading Mastery, Teach Your Child to Read in 100 Easy Lessons*), and Success For All. Both approaches emphasise early and systematic instruction in phonemic awareness and make use of explicit

phonics in the early stages of reading. Though unsupported by Department of Education funding, the Direct Instruction approach is now in use in an estimated 150-200 schools in Victoria. Its value in assisting those students who struggle with reading is being increasingly recognised by schools, most of which adopt the programs after viewing their use in other local schools.

In Britain, the National Literacy Strategy (1998) has 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 explicit phonics are to be introduced from the earliest stages of reading.

Current Practice in Australia

In Australia, some Whole Language purists consider phonic cues have no place at all in a reading program, though most would view them as worthy of mention as secondary strategies. They envisage reading as primarily a linguistic rather than a visual exercise; one of only sampling segments of the print and actively predicting what the words will be. If children need assistance, they are urged to predict more wisely by attending more closely to the context. This approach is disastrous for learners in difficulty, and has been gradually discredited by research over the last 15 years.

Even those who acknowledge a role for phonic cues in Whole Language approaches expect students only to identify a letter or two of a word so as to aid the confirmation of the guess. Further, Whole Language advocates argue that these phonic cues can and should be learned without explicit teaching. A central belief is that exposure to meaningful, authentic literature is all that is required to learn to read because learning to read entails similar processes as learning to speak—a natural process. Since we learn to speak without formal instruction, so we should learn to read the same way. Unfortunately, it isn't so. Mastering a written language is an achievement that far outweighs the requirements of speech production. Written language is an artificial, visually-based device quite distinctly more challenging than the biologically-wired, sounds-based processes of speech.

Phonemic awareness: The missing link?

An extensive amount of reading research over the past ten years has emphasised the critical role of phonemic awareness in successfully beginning reading. It is an awareness that words are made up of smaller sound segments or phonemes. It is this con-

scious reflection on the structure of words that allows us to decide that "sat" has three phonemes, and "splat" has five. This is a difficult task for young children—many even consider a spoken sentence as one continuous stream of sound. With appropriate help, they can learn to distinguish individual words despite the uninterrupted flow of a sentence. In stages, they learn to appreciate that it is possible to segment words into syllables (foot-ball); and, around Year 1, into phonemes (m-a-t). This awareness is critical in learning to read and spell an alphabetic writing system like ours. It is a skill that can be reliably and accurately assessed in children, it can be taught or (for the fortunate) it may be deduced by experience with print. Its absence is now considered a major cause of reading failure, though its presence alone does not guarantee success.

It is of little value knowing what are the building blocks of our language's structure if one does not know how to put those blocks together appropriately to allow written communication, or to separate them to enable decoding of a letter grouping.

The relationship between phonics and phonemic awareness is often misunderstood. Phonemic awareness is an aural/oral skill that (at least in part) can exist without contact with print. Until contact with writing however, there is no communicative value in developing such a skill, and many children do not routinely pay attention to these meaningless segments of speech, and hence do not develop this capacity. Other children become fascinated with rhymes and alliteration, Pig Latin, Spoonerisms, and they enjoy inventing words—constructing them from speech segments. Some children enter school with thousands of hours of valuable literacy experience through rhyming games, Sesame Street, Playschool, I-Spy, plastic letter games, stories read to them, and teaching dolly to read. Other children have had either little interest or lacked the opportunity for such exploration. Still others may have had such experiences but without taking the cognitive leap towards a conscious awareness. Students described as dyslexics, for example, may have a weakness (perhaps partly genetic) in this area, and require intensive structured teaching (as opposed to mere opportunities) to develop their phonemic awareness. A lack of phonemic awareness alone is not a primary language deficit, as it is unnecessary

for oral communication, and only becomes important when one is confronted with the reading task.

When print is encountered, the capacity to perform the phonemic operations described above becomes critically important. In order to develop the alphabetic principle (that units of print map onto units of sound), students must already have (or soon develop) phonemic awareness. It is the alphabetic principle that allows students to move beyond the early logographic stage of reading in which each word is a unique, indivisible shape to be recognised visually. Memory constraints make the logographic strategy of limited usefulness and the strategy does not assist students to decipher words previously unseen. When students enter a reading program with phonemic awareness they are part way towards appreciating the alphabetic principle. Reading becomes a task that "makes sense," not a confusing array of shapes jumbled together seemingly at random. When phonemic awareness and letter-sound knowledge are combined the effects are enhanced; that is, the children associate the shape of a letter with the sound in a word.

It is the understanding of the alphabetic principle that allows students to decipher novel words. Using the alphabetic principle as a cipher represents what Perfetti (1991) calls a productive process in contrast to the very limited process of memorising words. Share (1995) sees this phonological recoding process as critical to the development of skilled reading, and describes it as being "... a self-teaching mechanism, enabling the learner to acquire the detailed orthographic representations necessary for rapid, autonomous, visual word recognition" (p. 152). This point is also critically important in designing effective programs for older students. Tempting as it may be to teach whole word recognition to older struggling readers because the phonic strategies seem so "babyish," one cannot bypass the "sounding-out" stage. It is a necessary step on the path to automatic whole word recognition. It is only by practising these steps that "word pictures" arise.

Many students enter school with little phonemic awareness (Adams, 1990), and exposure to any one of a variety of forms of reading tuition may be sufficient to stimulate such awareness for them, thus making the alphabetic principle more readily conceptualised. However, in an unacceptably high number of students this process does not occur. The aim of phonics teaching is to make explicit to students this alphabetic principle. In a Whole Language classroom, in which phonics is viewed at best as one (subsidiary) strategy among others, to be used only when the prediction-confirmation strategy breaks down, there is considerably less emphasis

on student mastery of this principle.

Teachers may point out word parts to students in the context of authentic literature as the situation arises, but the limitations of such incidental phonics may impact most heavily on at-risk students (Simner, 1995). The major problem for at-risk students, argued by Byrne (1996) involves the risk for such learners of failing to be explicit and unambiguous. It might be prudent to tell children directly about the alphabetic principle since it appears unwise to rely on their discovery of it themselves. The apparent relative success of programs that do that (Bradley & Bryant, 1983; Byrne & Fielding-Barnsley, 1991, 1993, 1995) support the wisdom of direct instruction. (p. 424) Similar sentiments have been expressed by a number of researchers in recent years (Adams & Bruck, 1993; Baker, Kameenui, Simmons, & Stahl, 1994; Bateman, 1991; Blachman, 1991; Felton & Pepper, 1995; Foorman, 1995; Foorman, Francis, Beeler, Winikates, & Fletcher, 1997; Moats, 1994; Simmons, Gunn, Smith, & Kameenui, 1995; Singh, Deitz, & Singh, 1992; Spector, 1995; Tunmer & Hoover, 1993; Weir, 1990).

A fascination with authentic texts precludes the use of controlled vocabulary stories—the very ones that will build students' confidence in the decoding strategies that they have been taught.

Consensus remains to be achieved regarding the details of the strategies best able to ensure the understanding of the alphabetic principle; however, the cited authors acknowledge that direct instructional approaches are more likely to be successful than relying upon discovery or embedded-phonics approaches.

Phonics ain't phonics

If one accepts the value in teaching phonics, there are essentially two approaches that may be employed: implicit and explicit phonics instruction. What is the difference? In an explicit (synthetic) program, students will learn 40-50 associations between letters and their sounds. This may entail showing students the graphemes and teaching them the sounds that correspond to them, as in "This letter you are looking at makes the sound sssss." Alternatively, some teachers prefer teaching students single sounds first, and then later introducing the visual cue (the grapheme) for the sound, as in "You know

the mmmm sound we've been practising, well here's the letter used in writing that tells us to make that sound."

In an explicit program, the processes of blending ("What word do these sounds make when we put them together, *mmm-aaa-nnn*?"), and segmenting ("Sound out this word for me") are also taught. It is of little value knowing what are the building blocks of our language's structure if one does not know how to put those blocks together appropriately to allow written communication, or to separate them to enable decoding of a letter grouping. After letter-sound correspondence has been taught, phonograms (such as: *er, ir, ur, wor, ear, sh, ee, th*) are introduced, and more complex words can be introduced into reading activities. In conjunction with this approach 'controlled vocabulary' stories are employed—books using only words decodable using the students' current knowledge base.

Many students have great difficulty in appreciating individual sound-spelling relationships if their only opportunities to master them occur at variable intervals, and solely within a story context. In a story, the primary focus is quite properly on story comprehension not word structure; in this circumstance focussing on word parts is both distracting and ineffective.

Herein lies another problem for Whole Language purists. A fascination with authentic texts precludes the use of controlled vocabulary stories—the very ones that will build students' confidence in the decoding strategies that they have been taught. Flooding children with an uncontrolled array of words does no favours for struggling students; it forces them to guess from context (a strategy promoted by their Whole Language teachers). Even good readers find that contextual guessing is accurate on only about one occasion in four. Guessing is a hallmark of poor readers—good readers abandon it as moribund. The end result is that struggling students are burdened with a limp strategy—one that fails them regularly when they most need it.

The term "synthetic" is often used synonymously with "explicit" because it implies the synthesis (or building up) of phonic skills from their smallest unit (graphemes). Similarly, "analytic" is used synony-

mously with "implicit" because it signifies the analysis (breaking down) of the whole word to its parts (an analysis only necessary when a child cannot read it as a whole word). In implicit phonics, students are expected to absorb or induce the required information from the word's structure merely from presentation of similar sounding words ("The sound you want occurs in these words: *mad, maple, moon*"). The words may be pointed to or spoken by the teacher, but the sounds in isolation from words are never presented to children. A major problem with implicit phonics methods is the erroneous assumption that all students will already have the fairly sophisticated phonemic awareness skills needed to enable the comparison of sounds within the various words. More importantly, when the effects on readers of implicit phonics programs are compared with those of explicit programs, the differences are significant and favour explicit approaches (Foorman, et al., 1997).

The instructional process

There are also two approaches to the instructional process (as opposed to the instructional content)—"systematic" and "incidental." In systematic instruction, attention is directed to the detail of the teaching process. Instruction will usually be teacher-directed, based on an analysis of the skills required and their sequence. At its most systematic, it will probably involve careful demonstration, massed and spaced practice of those skills (sometimes in isolation), corrective feedback of errors, and continuous evaluation of progress.

Incidental (or discovery, or embedded) instruction shifts the responsibility for making use of phonic cues from the teacher to the student. It assumes that students will develop a self-sustaining, natural, unique reading style that integrates the use of contextual and graphophonic cues, avoiding the (argued) negative effects of systematic instruction.

In Whole Language literature is now something of an about-face. The new position is "But we've never disparaged phonics, only the teaching of it outside of the context of stories." Unfortunately, even if one accepted this sophism, such a restriction precludes many students from deriving benefit from phonics.

Purist Whole Language teachers have never felt comfortable with demonstrating to students precisely how words are composed of sounds. They were exhorted in their training not to examine words at other than the level of their meaning. Teachers who acceded to this stricture took meaning-centredness to extremes, unfortunately producing

an example of ideology precluding effectiveness. Other Whole Language teachers who could not accept such an extreme view, might have included some references to alliteration or rhyming words during a story. "Did you notice that 'cat' and 'mat' end with the same sound?" Sadly, for struggling students such well-intentioned clues are neither explicit enough, nor are they likely to occur with sufficient frequency to have any beneficial impact. This approach is sometimes called "embedded phonics" because teachers are restricted to using only the opportunities for intra-word teaching provided within any given story.

Many students have great difficulty in appreciating individual sound-spelling relationships if their only opportunities to master them occur at variable intervals, and solely within a story context. In a story, the primary focus is quite properly on story comprehension not word structure; in this circumstance focussing on word parts is both distracting and ineffective.

Activities in context or in isolation?

The "We-do-phonics-in-context" model also implies that it is valuable to mix phonics instruction with comprehension activities. In the early years of schooling, students are vastly superior in oral comprehension compared to written comprehension. Most children enter school already knowing thousands of words, but it is some years before their written vocabulary matches their oral lexicon. Written and oral language development are each appropriate emphases for instruction, but given the wide initial disparity, it is more effective to address them separately. Thus, the use of teacher-read stories is an appropriate vehicle for oral comprehension, and allows for a level of language complexity that students could not attain if the stories were presented in written form. The relatively undeveloped decoding skill requires simpler text to allow the development of the competence and confidence needed for the ultimate objective—equivalent oral/written comprehension proficiency. Those arguing that the two are inextricable have confused process with objective, and compromise the development of both oral and written language.

What phonics elements should be included in a comprehensive reading program?

There are aspects of reading that are not well comprehended unless they are explicitly taught in isolation from meaningful text. Among these are letter-sound correspondences. Children must be taught the most common sounds that letters represent, and at-risk students especially require careful

systematic instruction in individual letter-sound correspondences ("This letter says *mmm*"). At-risk students also need ample practice of these sounds in isolation from stories if they are to build a memory of each sound-symbol relationship. Second, they must have the opportunity to practise these phonic generalizations in text that is controlled for regularity to a reasonable degree, otherwise they may fail to appreciate the benefits of this strategy. Phonics encourages children to seek patterns of letters they can recognise. It also focuses attention on all the letters, not only a few; we know from eye movement studies that skilled readers view every letter and do not sample only a few as some Whole Language theorists have claimed.

About 90% of reading problems occur at the level of the word (Stuart, 1995), not with the process of comprehension. Once children master the basics, subsequent progress is largely determined by their volume of reading experience.

Students also must be able to blend the letters or letter clusters. The beginning reader approximates the word by sounding it out, and then matching that approximation to a real word that fits the meaning of the sentence. This requires teaching and time allotted for adequate practice—children vary in the amount of practice needed to achieve mastery. Blends should be taught as continuous sounds where possible, e.g., "man" should be sounded "mmmaaann" not as "mmm-aaa-nnn". Continuous blends make it easier to telescope the sounds into a real word.

Oral reading practice provides the teacher with opportunities to provide corrective feedback to students. Every error (not only those altering meaning) is an opportunity for teaching; systematic correction is far more valuable for students than is waiting for self-correction, or worse, ignoring errors because of the erroneous view that correction may dishearten the child, or because of a faith that errors will eventually reduce through some presumed but undefined mechanism.

Automatic, rapid, context-free decoding occurs as the over-learned sequences of letters gradually begin to be perceived as syllables and words. Then skilled reading becomes so effortless that our limited attentional capacity can be devoted to comprehension of what we read. In contrast, children who continue to struggle at the level of print are using

most of their attention to decode, and have little left to devote to comprehension. About 90% of reading problems occur at the level of the word (Stuart, 1995), not with the process of comprehension. Once children master the basics, subsequent progress is largely determined by their volume of reading experience. Hence, our reading program should now be devoted to ensuring literature matches their interest and extends their higher order comprehension processes. To see children progressing in this way is exhilarating. To presume that the processes of skilled reading can be induced in children without their progressing through beginning stages is sadly misguided.

Does phonics mean enormous quantities of worksheet exercises, trying to remember large numbers of rules with dubious utility? Does it necessitate the use of such stilted stories as "Nan can fan Dan"? It certainly happened in past times when the purpose of reading became submerged under a fascination with the elements of the process. However, research has continued to separate the necessary from the marginal, and has increasingly defined the proper place of phonics in a comprehensive literacy program.

Phonics is the starting motor for an engine subsequently fuelled by confidence and enjoyment. Some starting motors turn sluggishly and demand a significant load from the battery (parents and teacher). If the battery fails, the journey may never begin. However, all phonics are not equal. It is possible to teach phonics carefully and with parsimony; it is possible to do so ineffectively and excessively; and it is possible to do it in name only. Questions such as "What/When/How much phonics?" continue to be examined, but not the question "Should we teach phonics?" for it has been answered resoundingly in the affirmative. ♦

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Words Should Be Heard And Seen

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DESCRIPTION OF THE MODEL

Sarah is looking forward to beginning school next year. Her Kinder year was fun but two hours was not enough time to do all the things she wanted to do, and learn all the things that schools can teach. Of course, she has already learned so much—she speaks clearly in well-constructed sentences, she gets along well with her age peers, having figured out, or been taught, the rules on games, sharing, listening, when to behave and when to “let go.” Sarah is especially keen to learn to read and has been primed by her parents. Since before she could remember, her parents have read to her for about thirty minutes each evening, she never misses Sesame Street or Playschool, and regularly tapes them on Kinder days. She spends about an hour a day watching them. Sarah loves rhymes and word games (especially when on car trips). She makes up letter strings with magnetic letters on the fridge; she copies letters on butchers’ paper using crayons; and she teaches her dolly how to hold a book and run her finger under the words. Sarah is also learning how to use the keyboard on the family’s computer so she can play games on it. Sarah will have spent perhaps 4000 hours on those experiences important for the development of reading skills before she even steps over the formal education threshold.

Johnny is the same age as Sarah. He is healthy, active (*Are you kidding?* says his mother) and can only be found indoors when he’s asleep, in trouble, or when Clint Eastwood/Arnie/Bruce Lee are on the box. He loves action—riding his BMX over home-made berms, shooting baskets, or creating his own version of Warne’s leggies. His parents used to read him stories, but he was always asleep within 2 minutes, or complained about them reading “baby stuff,” so it faded out, and besides, said Dad, he’s just a happy, healthy little boy, he’ll have plenty of time to learn stuff like reading at school. Johnny only watched Sesame Street or Playschool on really wet days when he wasn’t allowed to timeshift the NBL basketball. Johnny shows no interest in “girls games” like those Sarah enjoys, although he does have a good memory for statistics—who shot the most baskets on the NBA final, how many possessions Michael Long had in the AFL Grand Final.

Averaged out over his pre-school life, Johnny

spent about 6 minutes per day, or less than 200 hours total, on experiences important to the development of his reading skills. Johnny is looking forward to starting school—he will have lots more friends to play with—maybe even enough for a cricket team.

Sarah is advanced, attuned to the school system, and largely self-motivated. Johnny is naive about formal learning, attuned to active play, and not self-directed.

David is a quiet, serious boy. He has never had many friends and, being a bit uncoordinated, doesn’t play a lot of outdoor games. He seems more comfortable with adults, and can have a conversation of surprising sophistication. He enjoys Sesame Street and Playschool, but particularly likes the news and current affairs programs.

Researchers tell us the whole language methods we are using have little theoretical or research support to justify their use. Further, we may be doing worse than simply teaching ineffectively—we may be teaching the wrong strategies, thereby creating rather than resolving literacy problems.

David’s language development seems advanced and he speaks clearly except when he gets excited—then words just tumble out. He is a bit forgetful—when his mother asks him to get his brown socks and gray jumper, he often forgets one or the other, or brings the wrong colours. Although he tries to play word games, his little sister is much better at finding words that rhyme, or in finding “something starting with B.” She also beats him in the game “How many things in your bedroom can you name in 30 seconds?”

David arranges letters on the fridge in an odd jumble—has done so for several years. His parents have always enjoyed reading to him. They have taken pride in the ease with which his vocabulary has widened to include many of the words they have

introduced. They tried to get him to follow the words in the book while they read, but he soon lost interest in doing that. His parents are sure he will manage reading when he's ready because he is, after all, clearly a bright boy.

David's home has provided many hours of experience important for literacy development, and David is looking forward to having the opportunity to learn so much more about the world.

Given that children enter school with marked differences in maturity, experience, attitude and inheritance, how well does our system cope in achieving the goal of literacy for all? Recent newspaper headlines suggest that there may be at least a perceived problem. Literacy for all is a noble goal, but if it is a little unrealistic in the present economic climate, then at least we should be doing the best possible job with the dollars we have. We should be training our teachers both in pre-service and in-service courses to use methods which are known to be effective across the range of students who come under our care. There is increasing concern among parents, employers and tertiary teachers that we are not doing a good enough job. Researchers tell us the whole language methods we are using have little theoretical or research support to justify their use. Further, we may be doing worse than simply teaching ineffectively—we may be teaching the wrong strategies, thereby creating rather than resolving literacy problems.

Some educational theorists believe that all children have a natural desire and ability for learning, and that the role of teachers is to stand back and offer encouragement and stimulation—in other words, to offer a supportive learning environment in which children will choose activities which will enhance their learning. In this view, teachers who direct the learning—set goals, systematically instruct, offer sustained regular correction of errors, and provide ample practice—are considered to be out-of-date. The first approach seems to suit Sarah just fine. She is cooperative, socially skilled and has both the curiosity to want to engage in learning, and the confidence to risk making mistakes. Both her teacher and her parents are delighted with her progress. Johnny enjoys the freedom to choose, too, although his choices are always sports-related, and he is easily bored, becoming boisterous in class, and is sometimes asked to leave the room for a visit with the vice-principal. His teacher commented at a recent parent-teacher interview that Johnny will need to take responsibility for his own learning, but she is confident that he will do so, given time. David doesn't say much in his cooperative learning group,

and his teacher has to regularly remind herself to see how he is getting along. He sometimes wants to remain in class at recess, and in her conversations with him, he impresses as a studious, intelligent boy who seems to relate better to adults than to his peers. His teacher is a little concerned because, although he tries, his progress in the early stages of reading doesn't match his excellent vocabulary and oral expression. The class uses authentic literature, rather than graded readers or vocabulary control, and while many of the children are remembering some words that they've seen before, David is very inconsistent, and his invented spelling remains very immature. Still he is appreciative of the praise and encouragement given to him by his teacher.

The school has a strong commitment to the whole language approach to literacy. Most of the teachers have been trained in the philosophy, either at the teacher training stage, and/or through in-service programs provided and endorsed by the Department of School Education. This approach assumes that learning to read and write is just as natural as learning to speak. Just as speech develops readily in a supportive, language-rich environment (the home), so should the school try to recreate that environment for reading to similarly develop. We are not formally instructed how to speak—we learn to speak by speaking and being spoken to—so, the argument goes, we can learn to read without formal instruction, by reading and being read to. This is a very important assumption, for it guides what should, and what should not take place, in the classroom. If reading is much the same as speaking, then any activity involving oral language should help reading acquisition. Since the processes are similar, learning to read will occur just by language activities, and meaningful engagement with quality literature. In this approach, one doesn't, and shouldn't, go through all that bothersome phonics instruction which tries to break down reading into little bits and pieces, skills and subskills. Reading is wholistic; thus, teaching should also be wholistic.

What if the equivalence assumption is wrong? Researchers are now saying that the two processes are not the same. Speaking is indeed a natural system (all communities have speech), reflecting a biological specialisation for language. All speech systems are similar in that they are constructed by combining about 44 sounds. However only a minority of communities have a written form. They are artificial devices varying dramatically in their structure across different societies. They are an invention, the principle of which has to be discovered by, or taught to, every new reader. This principle, known

as the *alphabetic principle*, is deceptively simple. It involves being able to recognize and use the fact that letters in words can reliably represent sounds (phonemes). This principle in turn requires:

(a) some degree of phonemic awareness—that is, knowing that words are composed of sounds, can be broken down into sounds and that, by blending sounds, words can be constructed;

(b) some knowledge of the letter shapes and how they represent sounds in our alphabet;

(c) an ability to combine these two features. This is trickier than it at first appears. Speech comes before reading, and we do not think about sounds in words when we speak—it is an acquired skill. Speech is delivered in a more or less continuous stream, without pauses, yet words are separated in print through spacing. Some children have a great deal of difficulty in analysing speech in this way to help map it onto print.

Sarah, though, has little difficulty in comprehending this notion. She has been playing word games and rhyming, can sing or recite the alphabet, has recognized and used plastic letters, and knows print conventions. That her teacher has not made this principle clear to Sarah is of no consequence, she came to school with extensive literacy experience. Johnny has had far less experience and has still to discover the principle. Reading is a memory test, as every word has a different shape, so he tends to confuse words that are vaguely visually alike. He has no idea about words that he has not seen before, or even those he sees irregularly. It would be helpful if someone would teach him the principle, but that would involve teaching the subskills of reading, a practice completely at odds with the whole language philosophy. Johnny will probably get there eventually but he may never find pleasure in reading, because the task was made too difficult initially. On the other hand, he may continue to rely on memory and guesswork—strategies that collapse around Year 4 when the number of words he must recognise becomes overwhelming. David has little chance in this classroom. He has significant difficulty in recognizing the sounds in words. He will not thrive in such an unstructured, discovery-oriented environment. If he is to progress, he will need more intensive teaching over a longer period of time, with far more practice than Sarah, or even Johnny, requires. He is the least likely to overcome inadequacies in instruction.

David may be left to develop at his own rate, with the reassurance that he will catch up when he is ready. Sadly, this advice is misguided. By the time his parents become more assertive, David will be in upper-primary school and extra assistance, even if available, will be too little too late. He will be in a downward spiral, reading very little, error-prone and halting, with little comprehension, because it takes all his attention to decode words. While Sarah reads 2000 words a week in class and 20,000 words out of class, David reads 20 words a week in class and less than 2000 words out of class. Unfortunately after the early grades, the amount of reading affects not only vocabulary development—and thus comprehension—but it appears to influence the continued development of intellectual ability. David not only does not catch up; the gap between him and his peers widens over time.

The progress in reading of many children depends on the preparedness of Education Departments to confront the evidence and the errors in curriculum guidelines. It should be addressed as a matter of urgency.

What assistance might students be receiving in their whole language classroom? The teacher follows an approach which considers reading to be a type of guessing game, in which skilled readers glide over the print using as little visual information as possible. The idea is to extract meaning from print by a process of predicting upcoming words before they arise, and then using a few letters to confirm the identity of the word. There are two major problems with this model. If it were true that skilled readers did read this way, would it necessarily be the best way for beginning readers to attempt? Might they not need to progress through stages, using simpler strategies initially? In any event, the assertion about what skilled readers do is completely and demonstrably false. At the time it was proposed this assertion could not be tested, but eye movement studies have clearly shown that good readers do not only sample the text. Good readers use rapid, context-free, automatic decoding skills. They look at every letter of every word, and their decoding skills usually provide the meaning of what they see before prediction strategies can come into play. Whole language advocates believe that good readers use context strategies, and that poor readers

would become good if they could be taught to do so. This involves guessing words, using clues based on what word would fit, and still preserve the sentence's meaning and grammatical structure. Unfortunately, this is also false—poor readers use contextual strategies as often or even more frequently than do good readers when the passages that are read are of equally difficulty for each group. Over-reliance on context strategies for word identification is thus an indicator of inadequate decoding skills, and not a cause for celebration.

In Sarah, Johnny, and David's classroom, they are encouraged to guess words from their understanding of the sentence, and from the first letter or two. Sarah doesn't take much notice, because she has discovered that her guesses are wrong too often—even skilled readers guess accurately only about one in four times. To make matters worse the very words she tries to guess are the ones that contribute the most information to the sentence, and thus are the hardest to guess. Fortunately, Sarah makes fewer and fewer decoding errors, so rarely has to guess—she knows how to work out what unknown words say. If she doesn't know the unknown word's meaning from the sentence context, she will ask, or use her dictionary—further increasing her vocabulary. Johnny is encouraged to guess, but he doesn't really appreciate the advice, and often puts in outlandish, or risqué, words to get a laugh from his peers. He is just drifting along. Predicting from context hasn't helped David either; he tries desperately to avoid reading aloud, and even in silent reading, he derives neither understanding nor pleasure.

The most alarming aspect of this style of teaching is that it is endorsed by several State education authorities, teacher unions, and training bodies. There is something wrong with decision-making processes when such overwhelming educational evidence can be ignored because the approach sounds attractive, and fits the humanist ideal. The Sarahs and some of the Johnnies escape unscathed, but increasingly our failure to "make a difference" to perhaps 20% of our students is an indictment of the system. It is hard to imagine that parents will continue to be as sanguine as have policy makers thus far. Parents are being asked to produce more Sarahs through home-based pre-reading and reading activities. This has potential benefit, except that the sorts of activities suggested only parallel the methods that schools are supposed to use. There are specific activities related to phonemic awareness

with which most parents could profitably assist their children, but they tend not to be publicised. If parents took responsibility for the literacy development of their children, then schools could continue to offer whole language instruction without demur. On the other hand, if whole language advocates would become responsive to the outcomes of the practices derived from their theories, then the glaring shortcomings could be overcome. This may be a faint hope because whole language purists are ideologically, rather than outcome, driven.

The classroom described above is one in which the teacher has whole-heartedly adopted the philosophy of whole language that was promoted in her training. Few teachers, particularly in primary schools, would be unaffected by the blossoming of this model in our schools, but how many teachers have accepted the model to this degree? It is difficult to know—teachers may tow the party line in promotion interviews—but privately include phonic skill lessons, because their classroom experience has demonstrated the need, especially for at-risk children. If they do so, they risk derision from some colleagues and consultants, and perhaps, jeopardise opportunities for advancement. There are a number of positive aspects to whole language, but its theoretical rigidity makes rapprochement with more traditional approaches very difficult. Nevertheless, some researchers have noted the benefits to children of supplementing whole language teaching with phonemic awareness activities in Prep, and with teaching letter-sound knowledge, blending and segmenting as individual children are shown to require it. The research evidence is very clear about the critical importance of these skills. Teachers should not feel intimidated by those who would disparage such direct teaching of reading skills. In fact, it is those who are most vociferously promote the Whole Language approach who have been shown to be incorrect in a number of important areas. The Federal Government report "The Literacy Challenge" pointed out that virtually all current curriculum guidelines on primary school literacy teaching are based on the Whole Language approach. It is unlikely to be abandoned in the short term, so it must be rescued. The progress in reading of many children depends on the preparedness of Education Departments to confront the evidence and the errors in curriculum guidelines. It should be addressed as a matter of urgency. ♦

A Model for Reading Assessment and Intervention in the RMIT Bundoora Psychology Clinic

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The RMIT Psychology Clinic has a dual function: that of a teaching clinic offering clinical experience to post-graduate psychology students, and that of providing a low cost psychology service to the community. At present, the post-graduate courses are directed towards child psychology, and the clinic treats a range of children's problems, in particular: educational problems, behaviour problems, enuresis and encopresis, fears and phobias. In recent times, the percentage of referrals for educational problems has increased markedly: from 10% of the total in 1991 to 57% in 1994. This has paralleled a decline in psychology services available to schools in the government system, and perhaps also reflects an increased community and school awareness of the Clinic's service. The rationale for the educational psychology component of the course should also find expression in the practice of the Clinic, and for this reason a model guiding clinical practice in the Educational Psychology Division was developed. Paralleling the course philosophy that empiricism should drive practice, the clinic model takes as its theme for assessment and intervention, practices that have sound theoretical and empirical support, with the added requirement that they be feasible in the real world. Masters students are provided with a scaffold that can guide them in their clinical work from initial interview to follow-up. All their sessions with clients are video-recorded, and supervisors provide feedback to students based on the viewing of the tapes. At times, particularly during the students' first semester, supervisors provide direct service to the client in the Clinic, but in most cases a particular client-clinician interaction (e.g., demonstrating a teaching procedure to a parent) can be satisfactorily simulated in the supervision session.

Initial Interview

1. The clinician obtains relevant developmental and medical history, and any recent school or psychological reports. These will have been requested

at the time of telephone contact, and assist in the direction taken during this interview.

2. The clinician discusses the Clinic's role and limitations in the areas of assessment and intervention.

3. The clinician obtains clear agreement about the possible outcomes of the referral, being wary of unrealistic expectations, either the clinician's or those of clients.

4. If there is to be an intervention phase following the assessment, the clinician raises the issue of who is to provide it—School teacher or aide, parent, tutor, volunteer, outside agency, or some combination? It is important that this decision is not delayed until the feedback session, particularly if the results present a "crunch" time for parents, as they sometimes do. If parents anticipate that some concerted action will follow, they are more likely to accept the sometimes dismal news about their child's current attainment. The parents' sense of hopelessness that sometimes follows such revelations may prevent them from participating in constructive planning at this time, so having an already-existing commitment to action is a decided advantage.

Intellectual Assessment

Such assessment is not very useful for instructional decisions, but provides an opportunity for psychologists-in-training to obtain practice—a legitimate objective for a teaching clinic, particularly when fee-for-service is low due to subsidies provided by the University department. Intellectual assessment has the potential for a destructive consequence if a school uses low measured intellectual ability as an excuse for its failure to teach the child effectively, and as a rationale for future inaction. Any report to schools that comments (however obliquely) about a child's intellectual ability, should also include some reference to the admirable assertion of Marilyn Jager Adams (1990): "*The bottom line is that the role of mental age is not one of limiting what a*

child can learn but of limiting the ways in which they can be effectively taught."

It is sometimes argued that intellectual assessment can uncover the bright non-reader—those who should be reading well, because they can do most other things well. What is often misunderstood is that reading and intelligence do not have such a strong correlation. Above a threshold, one is as likely to find low I.Q. good readers as high I.Q. poor readers. Stanovich (1991, 1993a) concludes that measured intelligence is a poor predictor of reading potential. Further, it is not useful in predicting which children with reading problems are most likely to make good progress (Goyen, 1992).

Despite the lack of value in assessing global I.Q. for instructional decisions, there are psychologists who consider that IQ sub-test analysis can inform practice. Prominent commentators have long warned about the dearth of evidence for such analysis. Examples are Anastasi (1990), "Several decades of research on these various forms of pattern analysis with the Wechsler scales have provided little support for their diagnostic value" (p. 481), and Sattler (1992), "Once one goes beyond the confines of the IQ's provided by the full, verbal, and performance scales, however, the ground becomes loose and wobbly" (p. 182). Miller and Walker (1981) suggested that such practitioners are perpetuating a myth because of the unremitting pressure on them to make classification decisions. There have been many papers written on this topic, but none has satisfactorily demonstrated any link between such subtest analysis and improvement in decisions about reading intervention (Goyen, 1992; Stanovich, 1993a, Swanson, 1993).

Intellectual assessment is occasionally of paramount importance when the referral involves consideration for integration assistance, that is, a classification decision must be made about whether a student is eligible for a specific funded program for students with an intellectual disability.

Assessment of Reading

The Beginning Reader

Early reading delay is sometimes viewed as indicative of a slow starter who will catch up later; however, this is a dangerous assumption. Juel (1988) reports a probability of 0.88 that a student classified as a poor reader at the beginning of Year 1 would remain so when retested at Year 4. Hence, early identification and intervention should be paramount issues for the sake of those children who are at present needlessly exposed to crippling, extended failure.

If there are concerns regarding potential reading failure prior to school commencement (family history, disability etc.) there are a number of useful screening subtests in the *Brigance Comprehensive Inventory of Basic Skills* under the heading of Readiness. If intellectual disability is suspected, or if the child is very young, the *Brigance Inventory of Early Development-Revised* may provide the educational assessment information at a more appropriate level. Among these tests letter-name knowledge is acknowledged as one of the best predictors of reading progress among beginning readers. (Chall, 1967)

There is near-complete consensus among researchers that phonemic awareness is the best single predictor of future reading progress, markedly better than is intelligence (Stanovich, 1991). As this awareness is also the major causal factor in early reading progress (Adams, 1990), assessment of current levels allows both a prediction of a child's likely progress in the absence of appropriate intervention, and a direction for any intervention to take.

Phonological awareness. *Phonological (or phonemic) awareness* is an auditory skill enabling the recognition that the spoken word consists of individual sounds. It follows a developmental sequence: from simple (Do *cat* and *comb* begin with the same sound?) to complex (blending, and then segmenting). In a huge study (Høien, Lundberg, Stanovich, & Bjaarlid, 1995), initial-phoneme and final-phoneme matching tasks (such as assessed by the *TOPA: Test of Phonological Awareness*) were by far the most potent predictors of early reading acquisition. There are a number of screening tests available, but few with norms as yet; the *TOPA* is one that is used in the Clinic and has an age range is 5.0-8.11 yrs). Another advantage of this test is its facility for group-testing.

Another test is the *Phonological Awareness Screening Test* (Henty, 1993) developed in Tasmania for which the author is attempting to obtain normative data. The *Sutherland Phonological Awareness Test* (Neilson, 1995) has norms (Australian) for Years P-3.

The *Lindamood Auditory Conceptualization Test* has norms for Years P-12, while informal un-normed tests are available in *A Sound Way* (Love & Reilly, 1995), *Sound Linkage* (Hatcher, 1994), *Phonemic Awareness Checklist* (Lewkowicz, 1980), among others. The *Yopp-Singer Test of Phoneme Segmentation* (Yopp, 1995a) is a brief test for Prep/Year 1 students, designed for early screening purposes.

Phonemic awareness becomes important when beginners are faced with the challenge of making sense of the English alphabetic system of writing. The degree to which students are able to use their developing phonemic awareness can be assessed

with the Word Attack subtest, *Woodcock Reading Mastery Tests-Revised*, 1987. The decoding of non-words is considered the most appropriate measure of phonological recoding (Hoover & Gough, 1990; Siegel, 1993; Wood & Felton, 1994). It provides an indication of the capacity to transfer the auditory skill of phonological awareness to the task of decoding print. There are other phonological skills besides phonemic awareness, and they are beginning to assume importance in the research literature because of their capacity to add discrimination power to screening batteries (Badian, 1994; Cornwall, 1992; Felton, 1992; Hurford, Darrow, Edwards, Howerton, Mote, Schauf, & Coffey, 1993; Hurford, Schauf, Bunce, Blaich, & Moore, 1994; Spector, 1992).

Some of these studies have demonstrated excellent results through including phonological tests in a battery to predict problems in reading acquisition. Hurford, Schauf, Bunce, Blaich, and Moore (1994) assessed 170 school beginners, and predicted with 100% accuracy which students would be diagnosed with a reading disability two years later. They used phoneme deletion, phonological discrimination, IQ, and pseudo-words. Badian (1994) assessed 118 preschoolers mid-year and successfully predicted 91% would be good or poor readers two years later. She used phonological awareness, naming speed, and an orthographic matching task.

Phonological recoding in lexical access. Humans store the internal representations of words in sound form known as phonological segments. These representations need to be clearly distinguishable from other stored sound segments, or else the wrong word may be selected when, for example, one is asked to name an object presented in a picture, or a written number, or letter.

Not only must the representations be distinct, but they must be quickly and accurately accessible. Students classified as dyslexic often display speed and accuracy problems even prior to experience with print. Naming speed for pictures or objects is slow, as is, subsequently, naming of (known) numbers and letters. A number of researchers have noted the predictive power of naming-speed tasks, using pictures, numbers, and letters. Both naming speed and sight word reading depend on rapid, automatic symbol retrieval. Bowers (1995) argues that slow naming speed is specific to reading disability, and not common to children with either *garden-variety* reading problems, or *Attention-Deficit Hyperactivity Disorder*.

Tests: RAN: *Rapid Automatized Naming* (Denckla & Rudel, 1974). BNT: *Boston Naming Test* (Kaplan, Goodglass & Weintraub, 1983). SNS: *Symbol Naming Speed* (Swanson, 1989). For children with automatic

letter-sound recognition a letter-naming test may be the best predictor, being conceptually closer to reading.

Phonological recoding in working memory. The beginning reader is required to decode a series of graphemes, and temporarily order them to allow the cognitively expensive task of blending to occur. This skill has been found to be an important determinant of early reading success. It is assessed by digit span (oral & visual) and sentence memory tasks.

Tests: *Wechsler Intelligence Scale for Children: Third Edition (WISC III)*: Digit Span subtest; *Wechsler Preschool and Primary Scale of Intelligence-Revised (WPPSI-R)*: Sentences; *Stanford-Binet: Fourth Edition (SB-FE)* Memory subtests; *Brigance*: Sentence Memory.

There do not yet appear to be published test batteries of the type discussed earlier that have demonstrated such excellent predictive power. At this stage, judgements concerning at-risk status are made through an examination of individual test results rather than through a score cluster. In the not too distant future, it is possible that accurate early identification will become a normal part of a school's literacy program.

The Remedial Reader

How delayed is this child's reading development?

The answer will provide an idea of the length of time it could take for the child to achieve a reasonable level of reading skill (i.e., to be able to adequately comprehend grade-level textbooks as a minimum outcome) given a good program, regularly and competently presented to a motivated student. Normed reading tests may be used for this purpose, bearing in mind the various problems they have in specifying absolute grade levels. In the Clinic, the most commonly used tests are the *Woodcock Reading Mastery Tests* (Revised, 1987), the *Neale Analysis of Reading Ability* (Revised, 1989), and various subtests of the *Brigance Comprehensive Inventory Of Basic Skills* (1992). The *Woodcock* has a significant advantage over the *Neale* because of its Word Attack subtest which indicates the degree to which the student can apply his phonemic awareness to the task of reading (sometimes called phonological recoding). The *Neale* allows for testing of reading rate, an important element in a student's progress, reflecting the level of automaticity or fluency achieved. Rate also provides information about the attentional capacity a reader has available to commit to the task of reading comprehension.

Does this child have only a decoding problem, or is his decoding ability actually commensurate with his other language skills?

Stanovich (1988b) describes the *dyslexic* child as one with a severe phonological problem, but (initially at least) no other language difficulties. He contrasts this child with the *garden variety* reading-problem student, who shares the phonological problem (though perhaps to a lesser extent) with his *dyslexic* colleague, but who also has other language difficulties, such as language comprehension, vocabulary, short-term memory, or attentional problems. The rationale for making such a discrimination revolves around the instructional decisions that need to be made consequent upon the assessment. For the *dyslexic* child, there is considerable consensus in the research community that the deficit lies in the area of phonological processing (Elbro, Nielsen, & Petersen, 1994; Yap & Van Der Leij, 1993), and that the intervention focus needs to be at the level of word decoding. Consistent with research findings (Adams, 1990), best Clinic results have come from reading programs that have a strong phonic emphasis and involve explicit instruction (Foorman, 1995; Perfetti, 1992), such as the *Corrective Reading Program* Decoding strand. The *garden variety* reading problem is also addressable by the same program, at least at the decoding level. This is a valuable intervention to introduce, as the increased facility for decoding reduces the attentional requirements needed at the level of print-decoding, thus freeing up valuable attentional capacity for the task of comprehension. However, this group of students may also need assistance with the comprehension of what they decoded, and additional intervention should be considered simultaneously with, or perhaps after, the decoding program. The *Corrective Reading Program—Comprehension* strand is a program that has been successfully used in primary and secondary settings and by parents (Clunies-Ross, 1990; Noon & Maggs, 1980) for this purpose.

The deceptively simple way to discriminate between these two (*dyslexic* and *garden variety*) groups of students is to compare their attainment on a reading comprehension task to that on a listening comprehension task. The *Brigance Comprehensive Inventory Of Basic Skills* has the capacity to provide such a comparison, with its reading comprehension and listening comprehension subtests (up to Year 9). This technique is now considered by many researchers as the most appropriate method of discriminating these two groups since the discrepancy-defined *dyslexia* model has fallen from favour in recent times. In this previous approach, *dyslexia* was assessed by the presence of a discrepancy between a child's intelligence and his reading attainment. However, it is now increasingly recognized that intelligence is

far from perfectly correlated with reading. Stanovich (1992) calculated a median correlation of 0.34 across 14 studies involving 26 measures whose correlations ranged from 0.10 to 0.66. The range of correlations relate to the choice of intellectual and reading tests. The lower figures are more likely when the reading measure has a strong word-decoding emphasis, and the higher figures when comprehension is the major focus. Given this only moderate correlation, any discrepancy may be more reasonably considered a normal statistical variation than a specific neurological deficit. More recently, the Spadafore Diagnostic Reading Test (1983) has been employed in the Clinic, as it is normed to Year 12.

Further, it is noted that the development of literacy is closely intertwined with the development of intelligence (Stanovich, 1993b). That is, the continued normal development of intelligence may rely on an adequate volume of reading. This assertion may be difficult to accept, but vocabulary development and higher-order comprehension skills are best advanced through reading (Nagy & Anderson, 1984) once the beginning stages are passed. Thus, as children with reading difficulties grow older, their lack of reading could be expected to *reduce* the initial gap between intelligence and attainment. That is, over time, *dyslexic* students measured intelligence may come to more closely resemble that of their *garden-variety* colleagues, as problems additional to the phonological core develop (Stanovich, 1988a). Sadly, the intelligent under-achiever may appear to become less intelligent because of our educational system's failure to adequately address his needs at the critical early stage.

The other major problem with discrepancy-defined *dyslexia* is that a different group (between 2%-35% of the population) is described by different intelligence tests, and through different subtest-analysis. For example, there has been debate over whether verbal or performance (or both) scales should be used—the use of one over the other certainly defines a different group as *dyslexic*. There is also disagreement over how large a discrepancy (e.g., 1, 1.66, or 2 SD) is needed for a diagnosis of *dyslexia*; over the minimum intelligence level needed for a *dyslexia* classification; and, over the type of reading test chosen to define the reading deficit. Given the slippery nature of such assessment choices, it is unsurprising that such a model is falling from favour, although it still has currency in some educational circles.

Comparing the results of listening comprehension to reading comprehension also makes intuitive sense, because listening comprehension tasks are

much more closely related to reading than are the more global tasks involved in intellectual assessment. It offers the capacity to define those children who have a major problem only at the level of print. They will perform well on the listening comprehension tasks, using their impressive general language skills to answer questions about a story read to them. On the reading comprehension task however, they will do relatively poorly as their under-developed decoding skills prevent them bringing into play their well-developed general language skills. When required to decode a passage unassisted, they struggle, as did their *garden-variety* peers. On the other hand, the *garden-variety* students would be expected to perform similarly on both tasks. Their reading problems are general rather than specific, and they may not have any particular reading subskill restricting their development. Their decoding skill is commensurate with their other language skills, such that if they know the meaning of a word (or phrase, or sentence), they can comprehend it whether it is presented orally or in print. The consequence for the high LC (listening comprehension)-low RC (reading comprehension) child should be intensive assistance at the decoding level. For the low LC-Low RC child, intensive assistance at both the decoding and comprehension levels is indicated.

Other possible outcomes are high LC-high RC, a result predictable from an all-round good reader; and low LC-high RC, a rare result, possibly from a student with acute attentional, hearing, or short-term memory problems. In this case, the permanence of text would allow the student to use his intact language comprehension skills, whereas the ephemeral nature of the spoken story precludes such access. *Hyperlexic* students (a rare sub-group with excellent word recognition, but poor reading comprehension) would not be detected by this discrepancy analysis, because their listening comprehension parallels their reading comprehension (Sparks, 1995).

This LC-RC discrepancy represents an alternative definition of the group known as *dyslexic*; however, as with the IQ discrepancy-defined *dyslexic*, an issue is how great a discrepancy should be considered significant. Some (including the Clinic) have considered two years to be very significant (Anderson, 1991) given the extent of commonality of the tasks; although this is clearly an arbitrary figure, its significance being higher the younger the age of the child. As the term *dyslexia* is unlikely to disappear (at least in the short term), and parents almost always ask questions about it, the Clinic policy is to make use of the listening comprehension-reading

comprehension discrepancy in discussions with parents. This is its major value since the techniques employed include systematic phonics whether the difficulty is described as *dyslexic* or *garden-variety*. The *dyslexic* classification does, however sensitize clinicians to the possibility that *dyslexic* students may be more treatment-resistant (Berninger & Abbott, 1994) than *garden-variety* students, and may also require additional direct phonemic awareness instruction

Why are so many students referred from about Year Four?

At about Year 4, there is a marked increase in the number of children referred for reading assistance to the Psychology Clinic. This may represent the dawning of recognition for a teacher that the maturational-delay hypothesis can no longer be used to explain the lack of reading progress. More salient perhaps is the generally unacknowledged explosion of new words in textbooks at about that time (Carnine, 1982). Many students who have relied upon whole-word memory recognition as their mode for storage and retrieval find the strategy collapses in Year 4. Whereas a word recognition capacity of 400 words is adequate for coping with text up to this time (and many children's visual memory can manage such a load), the demand increases dramatically to about 4000 words around that year (Carnine, 1982), and up to 7000 words by Year 6, what Share (1995) describes as an "orthographic avalanche." For the student who relies primarily on word shape, the task is similar to that required in visually memorizing 7000 telephone numbers. Students who cannot access the phonological route to identify these words do obviously struggle and progress grinds to a halt. In truth, they had difficulties before this time, but perhaps managed to disguise them in classrooms where careful continuous assessment of word attack skills was unavailable. Unfortunately, this appears to be even more likely for girls, as their rate of referral for assistance (about 1 in every 4 referrals) does not match the prevalence (about equal with males) of reading problems among females in our society (Alexander, Gray, & Lyon, 1993).

A low *Woodcock*: Word Attack score suggests this scenario in students at (or beyond) Year 4. For younger students it is predictive of their reading future. Inability to decode pseudo-words is indicative of the need for an intensive, carefully designed program that provides at least a reasonable opportunity for the accelerated progress needed if a student is to make headway against his peers. If a student is two years behind his peers he must de-

velop in reading at a rate twice as fast as they do, if he is to catch them by the end of primary school (as they will improve by at least two years over that period). While this conception of reading progress is rather crude it does give the flavour of just how immense a task it is. It also helps explain the chilling finding from a Melbourne University study (Hill, 1995), that for most students in this position there is no discernible improvement in reading between Year 4 and Year 10. Most students do not have access to intervention, and their prognosis is grim. For those students who do receive help it is incumbent upon us to provide the best and most efficient intervention available at the time. This implies that the most salient content must be delivered to students in the most effective manner possible.

The use of a well-constructed, direct instruction phonics program should be the first line of attack for most students. There is ample evidence to support this emphasis (Felton, 1993), although there is no reason why it could not be introduced alongside a *whole language* program (Adams & Bruck, 1993). The principles of effective teaching, such as task analysis, appropriate initial placement, mastery learning, demonstration-practice-feedback as a major teaching strategy, rapid pacing, well-defined correction procedures, attention to academic learning time, adequate massed and spaced practice, and high rate of success - are variables associated with rapid progress independent of learner characteristics (Rosenshine, 1986). Both the content and delivery principles outlined above are exemplified in Direct Instruction programs, which also have excellent empirical support in addition to their strong theoretical base (Adams & Engelmann, 1996; Gable & Warren, 1993; White, 1988). Even with well-designed and regularly presented reading instruction, the reader with delayed development rarely makes miraculous progress. It has taken some years for the student to reach this invidious position, and it may well take some years of intensive assistance for him to develop age-appropriate reading facility (Felton, 1993). Quick-fix cures usually occur only in the realm of tabloid television. The road back is fraught with pitfalls, and the difficulty of the task should not be minimized when discussing an intervention with parents.

Reporting Back

Reporting back usually involves the preparation of a written report, and discussion of this report and its ramifications with parents, and possibly with the student's school. This can occasionally be a difficult experience for all concerned, though planning can

alleviate unnecessary distress. First, the issue of intervention (and who is to implement it) should have been addressed from the beginning. Thus, the impact of a report that is potentially distressing is attenuated because the possible need for intervention has already been discussed and planned for. The parent is not left solely with sad news, but with a strategy for addressing the problem. Second, the report is usually sent to parents prior to their interview to allow time to comprehend the contents and any ramifications, and to prepare any questions. Preliminary discussion of the findings usually occurs progressively over the assessment period (several one-hour sessions), hence there are unlikely to be any complete surprises within the report. This procedure also provides time for any initial upset to dissipate, and for parents to re-orient themselves toward addressing the future. If the parents have no information prior to the report's presentation at the interview it is possible for them to be quite perturbed and less able to comprehend or remember either the content or any subsequent discussion or decisions. Alternatively, they may not have enough time to fully understand the report, and the goals of the session regarding feedback and clarification are unmet. At the very least, parents should be left alone for 10-15 minutes to give them some opportunity to read the report prior to discussion. A common response to feedback about a child's lack of attainment is anger, and asking pointed questions as to how this problem could have been either undiagnosed or ignored for so long. In most cases, it is prudent to focus on the future, and work towards harnessing energy for the long haul, rather than feeding acrimony towards schools or the Education system. In some cases however, anger may preclude productive action initially, and time needs be spent in assisting parents to come to terms with the future and the past.

Reading Intervention

A Clinic intervention usually includes recommending a relevant program, lending it to the client, teaching the responsible person how to use it, monitoring its use, and finally, evaluating the outcome. The Direct Instruction programs, recommended because of their history of success, have an additional advantage in their high level of structure. Program presenters do require administrative skills, commitment and endurance, but the content and presentation script provided in the programs remove the need for presenters to be expert in teaching reading. While this may appear to over-simplify the issue of who can or should teach reading, it is ultimately an

empirical question, and the experience in the Clinic supports the success of the model. It is fortunate that this approach can be successful as many parents find there are few resources in the schools or wider community to alter the likely outcome for their children. Interestingly, there has been a marked increase in the number of schools requesting information about the programs used by the parents. They often express surprise at the progress made by formerly intractable students (that is, students with whom the schools have failed). In a number of cases, schools have subsequently sought assistance to commence the implementation of the *Corrective Reading* program in their own school.

The Beginning Reader

In the Clinic, success has been achieved with the *Teach Your Child To Read In 100 Easy Lessons* program (Engelmann, Haddox & Bruner, 1983). This program is written for parents, and is based on the teacher-directed programs, *Reading Mastery 1 & 2* (Engelmann & Bruner, 1969, 1984, 1995). In the Clinic, and at schools, training has been provided to parents, volunteers, and teachers to successfully implement either of these programs in an individual or group format. Apart from initial training, the Clinic provides monitoring of the presenters' skills, on-going support, and a variety of pre- and post-test evaluation strategies. The success of the program is heavily dependent upon treatment fidelity; thus the necessity of continued support. This overseeing role has an important secondary effect of enhancing the endurance necessary to achieve success. Experience has suggested that without this continued Clinic role, programs are often discontinued prematurely, or are altered to the extent that success is jeopardised. In addition, parents are sometimes pressured by schools not to implement such a program because it is not consistent with the school's existing language policy. Whilst there is no valid reason why the approaches need be seen as incompatible, contact with the school regarding the programs may be advisable to allay any of their concerns.

The approach to training involves the following sequence: the clinician provides information about the program; the clinician demonstrates the program while the parent initially acts as the student. This is followed by a role-reversal, in which the parent teaches the clinician (who provides feedback). Then the clinician teaches the student, and, finally the parent teaches the student (with clinician feedback). This process of *demonstration-practice-feedback* continues until the clinician is satisfied that the parent is able to correctly present the program.

Usually two complete sessions are devoted to this sequence, and often another session (one week later) is scheduled before the parent is asked to commence the 5 times per week program implementation at home. During the intervening week, the parent (or preferably, parents) practise the various tasks in the first couple of lessons with someone other than the student. The training of two parents is advantageous because it reduces the load on one parent, reduces the problems of possible student reluctance, and allows for supportive collaboration—all of which enhance program endurance and fidelity.

Follow-up sessions are (typically) weekly for the first two weeks, fading to fortnightly for two subsequent visits, then monthly until the program is completed. The amount of support that parents require varies from case to case, depending upon their rate of progress in presentation facility. Parents who are well-organised and able to be assertive and task-focussed with their children typically make rapid progress. Parents are asked to tape-record the first, 50th and 100th lesson, as such recordings can provide a more dramatic indication of progress than the standardised pre- and post-test results. One major difference between the above-mentioned programs is the increased opportunity in *Reading Mastery* for practice with stories. This practice can be added to the *100 Lessons* program by including use of the *Distar Library* series. A sheet has been developed that indicates the stories from *Distar Library* appropriate to any given lesson in the teaching program.

Although the *Teach Your Child To Read In 100 Easy Lessons* program has a strong emphasis on the phonological skills of blending and segmenting, some students may make better progress if first directly taught an oral phonemic awareness program either prior to, or in conjunction with the reading program (Juel, 1993). A number of such programs have been published in recent times. Those currently in the Clinic are:

A Sound Way: Phonological Awareness: Activities for Early Literacy, Love & Reilly, 1995;

Auditory Discrimination in Depth, Lindamood & Lindamood, 1975;

Metalinguistic Awareness Program, Department of Education, Queensland, 1990;

Phonemic awareness in young children, Adams, Foorman, Lundberg, & Beeler, 1998;

Phonemic Awareness Training, Solomons, 1992;

Phonological Awareness Training for Reading, Torgesen & Bryant, 1994;

Sound Foundations, Byrne & Fielding-Barnsley, 1991;

Sound Linkage: An Integrated Programme for Over-

coming *Reading Difficulties*, Hatcher, 1994; *Sounds Abound*, Catts & Vartiainen, 1992.

To assist parents who would like to extend such a program to the home, an annotated bibliography of suitable texts to enhance phonemic awareness is to be found in Yopp, 1995b. In fact, there has yet to be a case in the Clinic in which it was found necessary to take the step of temporarily halting the reading program to introduce a dedicated phonemic awareness program.

The Remedial Reader

For students in Year 3 and above, the program found particularly valuable in the Clinic is the *Corrective Reading Program: Decoding Strand*. Placement testing determines the appropriate level, and the teaching methods parallel those described earlier. The method of introduction to presenters is also similar to that described above. One difference is the likelihood that years of failure have left the student with at least some degree of resistance to addressing a task long ago solved by the student's age-peers. This resistance may be active or passive, but can certainly threaten the viability of the program, especially when (as is often the case) the mother alone has the responsibility for motivating the child daily over a significant period of time. There have been cases when it has been more fruitful for two parents to *swap* children for the purposes of implementing the program. This option may also be considered when parents are unable to present the program to their child without being punitive, but are quite patient with a child other than their own.

A number of parents with resistant children have found it useful to plan an incentive program to address the problem of student resistance. There are a number of options. One can use the motivational points system incorporated in the program, and develop an associated reward menu suited to both the needs of the child and any family constraints; or an individual incentive program can be designed in conjunction with the Clinic, as simple or as complex as the situation requires. As with the *100 Lessons* program, a progress sheet is used as part of the intervention. This sheet fulfils several roles: (a) as a guide for feedback between clinician and parent on progress and problems; (b) as a subtle spur to maintain lesson frequency—the clinician's interest in this aspect helps parents appreciate the importance of frequency, as it is always discussed in sessions; (c) as a means of increasing the amount of free-reading achieved by the student. Research (Stanovich, 1988; Adams & Bruck, 1993) has demonstrated the importance of increasing the student's volume of reading.

It provides additional opportunity to practise the skills taught in the program (thus supporting generalization), and to learn new words. This is especially important as there are far more opportunities to increase vocabulary through reading than through conversation, or television (Stanovich, 1993).

In some cases it may not be possible to use the *Corrective Reading Program*, or the *100 Lessons Program* as the intervention. Although it is a less effective option, a program that aims solely at increasing the volume of reading achieved may still be a worthwhile compromise. The Clinic offers a parent-monitored *Increasing Reading Program* using a simply designed record sheet.

Avoiding Pitfalls

An important general consideration in planning interventions is a careful analysis of the situation in which the intervention is to occur. Specifically, one should attempt to predict which aspects of the situation are supportive of the plan, and which aspects threaten the viability of the plan. An assumption implicit in the program rationale described earlier is that the recommended programs will be implemented in their prescribed form. These programs have much theoretical support (Adams, 1990; Hempenstall, 1996; Tunmer & Hoover, 1993; Wood & Felton, 1994), and also empirical support (Adams & Engelmann, 1996; Baker, Kameenui, Simmons, & Stahl, 1994; Bateman, 1991; White, 1988), but have no magical qualities. They are effective probably because of the almost obsessive attention to detail in their construction and field testing, and the same attention to the instructions for the presentation of the program. The old dictum *when all else fails, read the instructions* certainly applies here. These programs invariably feel odd to novice presenters, being scripted and highly structured. Parents and teachers alike have commented that it may take 20 lessons before a reasonable level of comfort is established. The initial discomfort may cause presenters to alter elements of the program to suit their personal style, usually to the detriment of the program. The most common adjustments are to the frequency of lessons, and to the wording of instructions. Awareness of this possibility enables the clinician to take steps to alleviate, or even preclude the problem by careful explanation prior to the program commencement, and equally careful monitoring during the initial stages. Other common hazards (mentioned earlier) include student resistance, teacher resistance, and parent role-conflict.

Student clinicians are encouraged to examine these important, but often neglected, aspects of an inter-

vention within a wider framework. Attention to these aspects may be considered as the *art* of being a clinician, as opposed to the *science* involved in designing and assessing programs. The conceptual framework detailed below attempts to integrate these clinical skills into a hierarchical structure.

This structure is relevant to other fields of intervention besides reading. The first level recognizes that clinicians must be able to relate to other people. *Basic interpersonal skills* are necessary to engage people in conversation, to conduct an interview that successfully obtains client cooperation and relevant information, to gain children's confidence sufficiently to allow accurate assessment, to liaise with teachers and other professionals, to sensitively handle the assessment feedback session, and to gain and maintain parent cooperation during the intervention phase. Clinicians vary in the degree to which they display the interpersonal skills needed to perform these tasks, and to some degree this variance represents personality differences. These basic skills provide a focus for further development, the necessity more obvious for some than for others. In a humanistic model of counseling, this represents the primary focus of training, as the therapeutic relationship is seen as a more appropriate focus than technique. In the above hierarchy, *basic interpersonal skills* are necessary, but insufficient.

In the Clinic, it is assumed that interventions chosen will have theoretical and empirical support. It is accepted that approaches which have proved successful over a range of situations, and with many individuals have a greater chance of success than either randomly chosen interventions, or those based on relationship development alone. It is further assumed that there is usually sufficient commonality between people to allow similar interventions to be successful. That is, although it is accepted that people and their environments are unique, nevertheless problem-similarity is the best determiner of intervention type. In the development of the clinician's *knowledge of interventions*, the major emphasis is study of the intervention research across the range of problems presenting in the Clinic. The operational sequence involves a careful investigation of the problem type, followed by a matching process in which the optimum intervention strategy is assigned on the basis of it having the best support for its effectiveness in similar situations.

A clinician who is able to relate to clients, and who has developed a good understanding of appropriate strategies would seem to be well placed to be able to skillfully assist people to resolve life problems. Whereas these skills are necessary, there are

many occasions when they are insufficient to obtain the sought-after change. This level has been called *situational empathy* in recognition of the *art* involved in making an intervention work. The clinician asks the question—What may interfere with the effectiveness of the intervention in this situation? Put more positively—What steps should I take to give this intervention strategy the best possible opportunity to be successful in this situation? In order to list the potential obstacles to success, the clinician figuratively enters the environment of the client through client observation, client questioning, past experience, or through consultation with other experienced clinicians. This skill is a high-order one, and should continue to develop across one's career. The proviso is that the clinician maintains this mental set, and remains committed to evaluation, otherwise similar mistakes may continue to be made without the clinician ever becoming aware of them. One outcome of this latter scenario is a tendency to blame the intervention *content* rather than the intervention *delivery*. Thus one may lose faith in an effective approach when the problem lies in a different domain. An example of this phenomenon is sometimes seen when parent reading programs are introduced without examining the household situation. Some factors that may intrude are previous daily time-commitments, work schedules, parent literacy skills, parent-child relationship, parent assertiveness, student levels of resistance, marital relationship, between-parent support, parent mental health. There are many such potential problems capable of scuttling an otherwise well-researched and presented program. One may be tempted to discard a particular program instead of recognizing the true source of the problem. Even worse is the possibility that blame may be shifted to the client to account for the intervention failure. Whereas the clinician's acceptance of responsibility for ensuring that interventions are successful does provide an added burden on the clinician, it has a positive side in increased effectiveness, and in a clearer understanding of the complexities of one's profession. Such a model also allows the recognition of those situations in which no effective interventions are possible given the time and circumstances currently existing. This may appear unnecessarily pessimistic; however, it is preferable for all parties to avoid interventions doomed to failure. Such ventures cause great disappointment to clients who, because of the result, may avoid subsequently seeking assistance at a time when success might have been achievable. In addition, the Clinic's limited resources could more profitably have been used in assisting other clients.

Evaluation

Evaluation of the intervention involves several issues. Firstly, was the chosen program appropriate to the objectives negotiated with the family? That is, assuming the program itself was successful, is the outcome what the family expected? Are they satisfied with the outcome?

Secondly, was the program a success? Did the anticipated changes eventuate? These changes may be judged through in-program mastery tests; program behavioural-objectives analysis; pre- and post-test criterion-referenced and standardized assessment; video- and audio-taped reading behaviour.

Thirdly, was the program appropriately implemented? Was treatment fidelity obtained? Without it one cannot be sure that any success was due to the program itself. If there were alterations to the program, are you able to assess their impact? You may gain information useful in future interventions.

Fourthly, were social-validity expectations met? If there have been noticeable changes, do they also occur outside the home or clinic situations? In particular, can it be shown that reading has improved at school? Is there a genuine, easily recognizable change in the reading ability and attitude of the child as a consequence of the intervention? ♦

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What A Difference a Teacher Can Make!

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A version of the following article appeared in The Age, Nov 5, 1996, entitled "Tale of two teachers."

John and David are similar in many ways. They are active boys sharing a love of outdoor activities, and are easily bored indoors. The boys have learned to manipulate their parents with whining and disobedience when they are restricted, and only allow their parents peace when they get their own way. Though their parents are often embarrassed by the public displays of disobedience, they see the situation as temporary, and frequently console themselves with the knowledge that their children are also very loving, are sure to grow out of their disobedience, and have never been in any real trouble. The boys began school in the same year and are in different classrooms at their parents' request. Interestingly, they have been placed in contrasting classrooms in which the teachers have quite different educational philosophies, and beliefs about the role of the teacher in the education system.

John's teacher, Amanda, is a relatively recent graduate, and is imbued with the modern approach to teaching. She views students as natural learners and sees the teacher's role broadly as that of facilitator. She expects that children will learn most school skills in a natural way as long as she can provide an enjoyable, challenging and stimulating classroom. That they learn at different rates is of no great moment—most will catch up later when they see the benefits of doing so. Amanda is convinced that learning cannot be forced, instruction is usually counter-productive, and that children are largely the determiners of what they will learn, and when they will learn it. Thus, she provides an enormous variety of experiences for her students—visiting dance troupes, excursions to historical sites and museums, and weeklong class themes on topical events ranging from elections to Grand Prix. Students in her class develop projects based on these themes, often in groups. Extended discussion of such events is seen as valuable language work, which will lead to children wanting to learn to read and write. In her view children's attitudes to reading, and to learning in general, are far more important than their attainment in these areas. She places great emphasis on students feeling comfortable in her classroom, so they will be prepared to take risks in

learning. Since Amanda sees learning as student-directed she is careful not to risk damage to their esteem as learners; hence, she does not enforce systems of discipline, or correct their errors. The students' effort is all important to Amanda—issues like accuracy in word reading or convention in spelling are best left until later years when students are less vulnerable to disillusionment and its resultant opting-out of learning. She believes that error-correction is a very destructive process, reducing the preparedness of students to attempt tasks for fear of failure. She considers that errors are merely an indicator of growth, a phase of development which precedes a gradual increase in self-correction. By a process of closer and closer approximations, children's reading, writing, and spelling will come to meet society's conventions.

Amanda is concerned that John appears not to be progressing, but is prepared to wait until her strategy, that of inviting John to see himself as a learner, has begun to take effect. John's parents are becoming increasingly anxious about his lack of basic skills—especially that he demonstrates no conception of the purpose of print. When he can be cajoled into looking at a book, he guesses the story's meaning from the accompanying picture, and if asked to follow the words with his finger, the words he uses bear little resemblance to the print. Amanda has explained to John's parents that story meaning is negotiated between author and reader and that John is actively transacting with the print—not mindlessly regurgitating the author's words. John's parents are most uneasy about this notion, especially John's mother. In her daytime occupation she recently produced a workshop safety manual for a new machine, and she hopes her words will be read quite literally, rather than depend on the life experiences of the reader for its ultimate meaning. The parents feel intimidated by Amanda's enthusiasm and reassurances, and they feel out of their depth when Amanda argues that teaching reading today has come a long way from the old days when they themselves were taught to read using crude methods, long since abandoned. Amanda is unsupportive of John's parents' request for a plan to assess and

teach him the skills he needs to cope with school. In her view, every instructional decision must be made at the time, and in the classroom, by the teacher who is observing and interacting with the process of education. Planning implies the development of an artificial environment, hardly appropriate for the authentic experiences available to the student when the teacher is responding sensitively with moment-by-moment judgments. The school sees John's behaviour as his major problem and the reason for his lack of progress. John's parents are considering whether a new start in another school would help, feeling angry and powerless about what they see as uncaring treatment from their local school.

In the meantime, David has been a member of Monica's class. She has been a teacher for ten years, and her early training was quite different to Amanda's; although, she did participate in an in-service course with an approach similar to that in which Amanda was trained. Monica derived considerable benefit from her in-service course. It challenged her beliefs and she decided to try it wholeheartedly several years ago. A number of its features have remained part of her practice, but she found the approach incomplete and based on vague philosophical principles rather than the "whatever works" pragmatism with which she felt more comfortable. Monica noticed, for example, that a sizeable proportion of her students (like David) displayed little evidence of their being natural learners, and she felt that it would be unconscionable on her part if she were to wait to see whether they would ever become so. She had, over the years, noticed that early lack of progress was strongly predictive of students' continued failure in her school, and she even looked at research which confirmed that her observations matched those of many researchers and teachers. Monica has become alert to students who do not make progress in her class, and more recently has tried to determine who they might be, even before they have the opportunity for failure. Her reading of research extended to a list of warning signs, which she routinely checks for all new students. Some of these involve informal observation, and some formal but simple tests. She is interested in their mastery of basic language concepts such as colours, position in space, understanding of time. She wants to know whether they can follow the language of the classroom—those words that teachers use regularly on the assumption that their students are familiar with them. Monica is interested in students' developing understanding of the structure of language—especially rhyme, alliteration, and knowledge of the alphabet. She tried to obtain this information from

David's previous teacher, but was frustrated by the lack of information upon which to make her judgments. At her school, she has found that some teachers' observations are vague, unsystematic and made irregularly. Despite this difficulty, her own observations were sufficient to decide that David was a student at risk. If one believes that learning is a natural process and consequently direct intervention is not helpful, then careful record keeping of achievement can be seen as less important than information about attitude and self-esteem.

Monica, however, believes that David's progress at this stage is largely her responsibility. She certainly does have students who are mainly self-directed learners, and she has a similar goal for David; however, she recognizes that at present a structure must be provided to ensure David's movement in that direction. Currently, David has neither the behavioural self-management skills, nor the basic academic skills to bootstrap himself up to the level of his peers. Because he needs assistance to ensure his attention to the task of learning, Monica developed a clear set of rules and consequences for each of those daily activities during which David has difficulty cooperating. In fact these are simply a more explicit version of those she maintains for her whole class—designed to create the orderly conditions within which, her experience tells her, learning is more likely to occur. An agreement between Monica, David and his parents involves daily two-way communication (at least initially) for the purposes of enhancing the behaviour-stabilising effects at both home and school, keeping David's parents informed about progress (behavioural and academic), and allowing them to talk about what actually happens day-by-day. David has always been close-mouthed about his school day, and this has frustrated his parents who desperately sought a genuine partnership with the school to help him progress. They are also able to provide a home-based incentive for David to help maintain his effort over the term. As he accrues achievement-stickers he pastes them on a chart at home and receives support and encouragement from his family. At the conclusion of this venture, when the chart is full, a new pair of batting gloves is the negotiated reward.

David is beginning to appreciate that his minute-by-minute behaviour throughout the whole day contributes towards his desired objective—an important insight for him as he journeys toward self-responsibility. Monica has never felt comfortable about providing such incentives for students who should really be responsible for their own behaviour and effort. However, she considers that she must

accept David's inability to do so at present, and her resultant responsibility for providing the framework. She intends to phase out this artificial structure as David's appropriate behaviour begins to become habitual—maintained by improved school progress, teacher and parent encouragement, and his own developing self-esteem. Monica's experience with students similar to David had convinced her that as David is not yet able to manage himself behaviorally, she should step in, and provide the conditions in which self-management is more likely to develop.

Just as Monica considers it her responsibility to assist a student to move towards behavioural self-management through her own direct intervention, she also adopts a similar approach to the teaching/learning process. She considers the process as a collaboration in which the degree of teacher input is high when the student has less to contribute. This division of load is not constant, but shifts as the student develops competence and confidence. She has noticed that David does not readily associate new learning with what he already knows unless this relationship is carefully pointed out to him. An array of experiences tend to remain just that, and because of the lack of associations made, can be easily forgotten, or are at least of less educational value than the teacher had hoped. Approaches based on a discovery learning model seem to make little impact upon his progress. To enhance his academic progress, Monica presents him with scaffolds and strategies for solving the various problems faced in class. She teaches him a series of concrete steps which, when memorised or provided in diagram form, outline procedures he must follow to achieve his objective. When given a relatively unstructured task such as *Write what you know about your favourite football team*, David stares fixedly at his blank sheet of paper, seemingly paralysed. In fact, he has not learned how to break a task down into its parts, and plan how to construct the requisite product. Monica has provided him with a template, which adds sufficient structure for him to attempt the task. One such approach involves a series of questions he must ask himself, the answers to which create the assignment which when viewed as a whole had seemed impossible. It is figuratively a sort of road map, which he has memorised, and has been taught to use in such circumstances, to travel from the question to the answer. For the essay, he is using visual imagery, and a story map. Both are task-specific rather than content-specific strategies, so he is able to use them in other similar tasks too.

Monica has noticed that the way in which she

designs any given teaching sequence has a marked effect on the ease with which students acquire the knowledge or skill. This applies to at-risk students like David, but also she is interested to see, to the learning of other students also. She is so pleased with the results when she incorporates certain principles that she has begun talking to her colleagues about some simple techniques often overlooked in the day-to-day rush of classroom teaching. Monica was asked to produce a summary checklist, which other teachers have begun to examine with interest. She describes her teaching approach thus:

I always tell the students very clearly what it is I am going to teach them, why and where it fits in with what they already know. I check that they do already have the pre-skills and knowledge that they need to comprehend today's teaching. I now present material in smaller steps than I used to do, and check for understanding after each step. I incorporate student practice after each step to reduce memory load, and I provide instant corrective feedback to the students in a cheerful way. I know that David may take longer to master any given step so I pre-teach the step to a small group of similar students earlier in the lesson. I also include the step in the parent-communication book so that David can obtain the additional practice at home needed if he is to incorporate this new skill into his armoury. In the past, I always felt frustrated that David completed fewer practice items than the grade's academic stars, when he really needed to complete several times as many as they did. I have found it important that the initial practice is supervised so that errors do not become entrenched. Adequate massed practice is crucial for David because it takes him longer than most to master anything new. Following this guided practice is independent practice; a step necessary if he is to remember what he has just mastered. The third step involves distributed practice, in which the skill is practised over the following weeks with increasing time in between. This last feature helps David develop the skill to automaticity—the ability to use it almost effortlessly.

My teaching has improved since I noticed that the rate at which I introduce material could help or hinder students' concentration and ease of learning. I keep to a brisk speed when possible because it helps maintain my student's attention, only slowing when I know

the task is difficult, or the feedback I receive indicates that they are finding it so. I am also very careful about the wording I use, so as not to introduce ambiguity. I was surprised to hear, on a tape-recording of one of my lessons presented several years ago, that frequently there were several possible interpretations. If there is more than one possible interpretation of what I said I know that David will adopt the wrong one. As regards correcting errors, I think I have done students a disservice in the past, as I was reticent about seeming too negative. I now believe that society's spelling and writing conventions should be explained to students as important objectives from the beginning. I feel that unless teachers are firm about this students develop the belief that accuracy is unimportant. I explain to the students that my feedback to them is a normal part of teaching, and they seem happy to accept that. I thought that error-correction might disillusion David, but I told him that when he makes a mistake I look for ways to teach better, not to criticise him. I now think that it is David's appreciation of his real progress, which is enabling him to take risks with his learning. Previously, no matter how attractive my classroom environment, I could not gain enthusiastic work from him. I have learned about a variety of corrections relevant to different types of error, and now feel that I was in error myself in being reticent about such feedback. My demeanour during correction is very important however, and I am careful to avoid irritation in my voice when the same error is repeated often. Earlier in my career I was attracted to the idea, that if I could improve David's self-esteem he would develop a desire to learn as a consequence. Over the years I have learned from my stu-

dents that their failure cannot be disguised by well-meaning, but ultimately condescending, self-esteem approaches. Certainly, when I tried the approach nothing much happened. Now that I am committed to ensuring learning happens, and continually focussing on what I do to achieve that aim, I find that David, and other students at-risk are learning much more readily, and that attitude and self confidence are improving as a consequence of improved competence.

David's parents are very pleased with his progress this year, and particularly with their close cooperative relationship with his teacher and school. They recognize that they have been very fortunate to meet a teacher of Monica's expertise and attitude. They are also aware that David's difficulties will not be resolved in one year, and are planning how to maximise the gains he has made this year. His parents are hopeful that Monica will again be available for David next year, although they have heard that Amanda may be the teacher assigned to that class.

It is interesting to note that both teachers share a similar view about the aims of education. Each wants their students to be capable of making their way in the world, to be able to participate fully as a member of, and even to make a significant contribution to, our society. Where they differ is in beliefs about the role of education in the achievement of those objectives, and stemming from that, the practices that are necessary to do so. Teachers, supported by an enlightened Government, have the capacity to make a significant difference to a range of at-risk students. Sadly, the most influential culture of education is at odds with the sort of practices that Monica describes. They are well supported by research; however, research has had only minimal impact on Government policies, and classroom practice. ♦

CONTRIBUTOR'S GUIDELINES

Effective School Practices provides practitioners and decision-makers with the latest research and development news on effective teaching tools and practices. The journal emphasizes practical knowledge and products that have proven superior through scientific testing. Readers are invited to contribute to several different columns and departments that will appear regularly:

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TIPS FOR TEACHERS: Practical, short products that a teacher can copy and use immediately. This might be advice for solving a specific but pervasive problem, a data-keeping form, a single format that would successfully teach something meaningful and impress teachers with the effectiveness and cleverness of Direct Instruction.

MANUSCRIPT PREPARATION

Authors should prepare manuscripts according to the third revised edition of the *Publication Manual of the American Psychological Association*, published in 1983. Copies may be ordered from: Order Department

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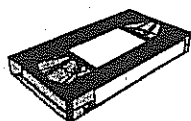
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- Keynotes from the 1995 Conference**—2 hours. Titles and speakers include: Anita Archer, Professor Emeritus, San Diego State University, speaking on "The Time Is Now" (An overview of key features of DI); Rob Horner, Professor, University of Oregon, 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 Carmine, 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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☐ **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 1998 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

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☐ **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

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