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## ABSTRACT

A study has been examining current directions in state education agency efforts to reform the elementary school language arts curriculum in four large, geographically diverse states with different policy mechanisms--California, New York, Wisconsin, and Texas. To understand policy development and implementation and discern how advocates advance a specific policy agenda, the agenda-setting process for educational policy is being examined using an approach developed by A. M. McGill-Franzen (1993) in her study of early childhood education literacy policies. Advocacy efforts targeted at implementing a more "code-oriented"--or phonics emphasis--curriculum framework have been observed in all of the states, but, to date, such efforts have been more successful in California and Texas than in New York and Wisconsin. The common advocacy tool observed was research supported by the National Institute of Child Health and Human Development (NICHD) through the learning disabilities, cognitive, and social development program area. The agency chief and some NICHD-supported researchers have been active in providing expert testimony to policy-making bodies and in disseminating their research results to national audiences. Most of their research has been with reading disabled or dyslexic children, and intervention designs have often focused on developing improved phonological awareness, pseudo-word decoding skills, word recognition, and text reading achievement in reading disabled children. How to interpret the research results has been a topic of debate--the question being whether research on more severely disabled readers informs as to the nature of the most appropriate curriculum emphasis in general education settings. The most quoted research document, the "30 years of research..." (Grossen, 1997) version contains seven instructional recommendations for classroom teachers. This analysis focuses on a critique of four of the seven recommendations. (Contains a table, 3 notes, and 38 references.) (NKA)

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## **National Research Center on English Learning & Achievement**

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The Center, established in 1987, initially focused on the teaching and learning of literature. In March 1996, the Center expanded its focus to include the teaching and learning of English, both as a subject in its own right and as it is learned in other content areas. CELA's work is sponsored by the Office of Educational Research and Improvement (OERI), U.S. Department of Education, as part of the National Institute on Student Achievement, Curriculum, and Assessment.

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## **Adequacy of a Program of Research and a “Research Synthesis” in Shaping Educational Policy**

by Richard L. Allington and Haley Woodside-Jiron

We have been studying current directions in state education agency efforts to reform the elementary school language arts curriculum in four large and geographically diverse states with different policy mechanisms — California, New York, Wisconsin, and Texas. One aspect of this ongoing effort to understand policy development and implementation is studying the process of agenda-setting advocacy for educational policy using an approach developed by McGill-Franzen (1993) in her study of early childhood education literacy policies. We are particularly interested in discerning how advocates advance a specific policy agenda.

Stimulated by the federal Goals 2000 funding and the requirements of the Improving America’s Schools Act of 1996, educational standards development has occurred in each of the four states that we targeted for study. Literacy standards were, of course, part and parcel of this development process. Thus, a “window of opportunity” was opened for advocates to work to shape state educational policy in the form of new standards for teaching and learning. As we studied policy development in the four states, we observed advocacy efforts targeted at implementing a more “code-oriented” — or phonics-emphasis — curriculum framework in each of them.<sup>1</sup> To date, the code-emphasis advocacy efforts have been successful in shifting the tenor of state curriculum frameworks in two of the states (CA, TX), but have been less successful, to this point, in the other two states.

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<sup>1</sup> In addition to the Goals 2000 funding and the mandates of the Improving America’s Schools Act of 1996 there was also the summer 1996 release of the 1994 National Assessment of Educational Progress state-by-state achievement comparisons that listed California at the bottom of the rankings in reading achievement. Much has been written about the release of the NAEP data and the conclusions that could be reliably drawn from those data (e.g. McQuillan, 1996) but it seems sufficient to acknowledge the influence of that event in the ascendance of early reading curriculum to the top of the political agenda in California.

In each of the four states we also encountered a common advocacy tool — research supported by the National Institute of Child Health and Human Development (NICHD) through the Learning Disabilities, Cognitive, and Social Development program area. G. Reid Lyon, the Acting Chief and Director of this NICHD program of research, and several NICHD-supported researchers have been active in providing expert testimony to various policy-making bodies in at least two of the states (CA and TX) and are actively disseminating the results of their research to national audiences. According to NICHD officials, much of the NICHD reading research has been focused on children experiencing quite severe difficulties in reading acquisition — children identified as learning disabled or dyslexic: “Over the past two decades, NICHD-supported research has focused primarily on the study of children with learning disabilities ranging in age from five years to 18-years-of-age.” (Lyon, Alexander & Yaffe, 1997, p. 5). Central to this research has been a focus on phonological core deficits as a primary etiology of the difficulties experienced by those children. The intervention designs have most often focused on developing improved phonological awareness, improved pseudo-word decoding skills, improved word recognition, and improved text reading achievement in children identified as exhibiting or at risk of developing reading/learning disabilities.

How the results of this research are best interpreted has been a principal topic of debate in several professional venues (e.g. conference sessions, listserv conversations, professional newsletters and journals). Perhaps because the summaries of the NICHD-supported work (Lyon, 1994; 1995; 1996) have often contrasted the outcomes of code-emphasis interventions with “contextual,” “meaning-emphasis,” or “whole language” approaches, the debate has often taken on the flavor of the historical “Great Debate” in reading (Chall, 1967).

Often it seems that some proponents of a code-emphasis orientation are quick to classify any approach other than those with a code-emphasis as a “meaning-emphasis” or “whole language” approach. For instance, in Felton (1993), the 1986 Houghton-Mifflin basal reader series is described as a “meaning-emphasis, or context... literature-based” approach. While it would seem that Houghton-Mifflin cannot be accurately described as a code-emphasis approach, the series is not a literature-based series (though the Houghton-Mifflin 1989 and 1991 series could be so described) and surely represents little of the whole language philosophy. In addition,

Felton (1993) notes that both curricula used in the study (Houghton-Mifflin and Lippincott) introduced the same phonic elements albeit in different sequences and intervals. However, Felton's study has been used by Lyon (1994; 1995; 1996) in his summary of NICHD-supported research as evidence that "phonics instruction results in more favorable outcomes for disabled readers than does a context-emphasis (whole-language) approach." (p. S125) This equating of the traditional Houghton-Mifflin skills-based basal reader series to a "whole language" approach represents an unfortunate misrepresentation of the contrasts studied. However, recent summaries of the NICHD research findings do not include this inappropriate contrast (Lyon, 1997a; Lyon, Alexander & Yaffe, 1997).

Whether research on rather more severely disabled readers informs us as to the nature of the most appropriate curriculum emphasis in general education settings is openly debated (e.g. Coles, in press) even if one finds such NICHD-supported research results compelling. It is obvious that many educators have not found that research compelling, if only because the NICHD-supported intervention studies have more often produced reliable, replicable gains for a specialized population only on measures of phonological processing and pseudo-word pronunciation tasks, while reliable, replicable gains on word reading, fluency, and prose comprehension have been more difficult to generate (Lyon & Moats, 1997; Torgeson, Wagner & Rashotte, 1997b). In addition, because the NICHD-supported intervention research has primarily offered an add-on remediation to students with disabilities or other at-risk student populations, further questions have been raised about the generalizability of its findings to the broader application of using the results to influence the direction of general education curriculum reform.

Those who are promoting broader application of NICHD research often describe it as following "the most rigorous scientific procedures" (Grossen, 1997), as having "established a new standard for scientific rigor in educational research" (Carnine, 1996) and "truly distinctive because of its methodological rigor..." (Lyon & Kameenui, 1997). The NICHD-supported researchers themselves have been described as "highly competent... outstanding scientists" (Winick, 1997). The critical point here is that much has been said and written about the "scientific" nature of the NICHD research, often contrasting the experimental rigor of the NICHD studies with the "anecdotal" evidence found in educational research journals. But the

rigor of the research or the quality of the researchers is not the primary question that is being examined and debated. Instead, the pertinent question has to do with the adequacy of the NICHD program of research for producing generalizations about reforming the early literacy curriculum generally — the classroom curriculum experienced by virtually all children.

Nonetheless, the NICHD-supported research has been used in both California and Texas as a “policy lever” by those advocating for a code-emphasis curriculum for general education. This research has been referenced by a variety of policy-makers, and NICHD officials and NICHD-supported researchers were invited to testify before policy making bodies and education summits concerned with general education curriculum reform.<sup>2</sup>

But, we also found another troubling aspect of this advocacy effort. In addition to the direct activity of the NICHD-supported researchers in policy advocacy, our research repeatedly turned up a document (“30 Years of Research: What We Now Know About How Children Learn to Read”) that is being offered as a summary of the NICHD research (the preparation of this document was not supported by the NICHD). Because we found it so frequently and in so many forms, we traced the availability and influence of this document in both California and Texas (and its more recent appearance in NY and WI and other sites nationwide). The document offers

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<sup>2</sup> Our research documents a number of instances where NICHD-supported researchers were invited to provide expert witness and where NICHD-supported research has been cited by influential policy makers. Examples are listed below.

#### **California**

Copies of “30 Years of Research...” distributed statewide by the Center for the Future of Teaching and Learning.  
Research summary distributed with California Reading Initiative (CRI) training.  
Cites/summaries in material distributed by National Right to Read Foundation.  
Invited speakers, SBE task force/Commission.  
Cited by SBE Congressional testimony; in letter to professional association.  
Cites/summaries posted on the Center for the Future of Teaching and Learning website.  
Media cites of research and research summary.  
Appearances on CRI videotape presentations distributed to all LEAs.

#### **Texas**

Invited testimony: SBE committees, Governor’s Business Council, Governor’s Reading Initiative.  
Statewide NICHD conference in Austin.  
Documents posted in SBE member website.  
Works cited in Texas Reading Initiative handbook.  
Invited reviewers of new state curriculum frameworks.  
Cites/summaries in material distributed by National Right to Read Foundation.



a series of general education classroom instructional recommendations that are said to have been drawn from thirty years of reading research funded by the NICHD. However, as we point out below, the recommendations have little, if any, basis in the NICHD-supported research — a conclusion we reached after analysis of the original NICHD-supported research studies. Thus, it would seem that in at least two states, general education early literacy policy has been influenced by a program of research that offered little actual data on general education curriculum effects. A primary vehicle for disseminating recommendations to educational policy makers was a widely distributed document that misrepresented NICHD research in several ways, including proffering general education recommendations that were not supported by the NICHD research cited. That document (and the inextricably linked NICHD-supported research) are examined in some detail below.

### **The “30 years of research...” document**

One difficulty in developing this critique is that we have, to date, located three substantively identical versions of the “30 years of research...” document. The earliest version we obtained was published in the Summer 1996 issue of *Effective School Practices* (vol. 15, no. 3, pp. 33-46), a quarterly publication of the Association for Direct Instruction, edited by Bonnie Grossen. That version lists the Center for the Future of Teaching and Learning (CFTL) as the author. The second version was downloaded from the CFTL website on December 20, 1996. That version lists no author but opens with a boxed quote from “Douglas [sic] Carnine, Professor, University of Oregon” about G. Reid Lyon. The third version was downloaded from the CFTL website in April, 1997 and that version lists Bonita Grossen as author. In addition, text available on the CFTL website indicates that the report represents a consensus of a group of researchers (unidentified) brought together by the CFTL.

Each of the three versions of the “30 years of research...” document has a slightly different title and the first page front matter differs modestly in format and, to a lesser extent, in content. The titles of the various versions are, respectively:

“Thirty years of NICHD research: What we now know about how children learn to read.” From *Effective School Practices*, Summer 1996.

“A synthesis of research on reading from the National Institute of Child Health and Human Development.” From CFTL website, December, 1996.  
[[www.ksagroup.com/the\\_center/](http://www.ksagroup.com/the_center/)]

“30 years of research: What we now know about how children learn to read.”  
(A synthesis of research on reading from the National Institute of Child Health and Human Development commissioned by The Center for the Future of Teaching and Learning with funding support from the Pacific Bell Foundation). From CFTL website, April, 1997. [[www.cftl.org](http://www.cftl.org)]

Each version opens with a section entitled, “A note about the NICHD research program.” Each introduces a set of virtually identical (to the word) instructional recommendations as follows: “The research findings indicate that to prevent reading problems classroom teachers should do the following.” The earliest version offers five numbered recommendations, the next offers six, and the latest offers seven, but the additional recommendations were created by dividing earlier single recommendations into separate items. The December 1996 CFTL version contains identical sections to the other versions, but these are ordered differently. All versions contain a listing of the NICHD research sites, but these take different forms (two different tables and a common list). The December 1996 CFTL version incorporates a final section entitled “Technical Notes” that offers a summary of NICHD-supported research buttressing each recommendation, information that is incorporated into the body of the later version. The “Technical Notes” approach and, to a lesser extent, content (several identical paragraphs are present) are similar to that found in another Grossen (n.d.) product — *The research base for Reading Mastery, SRA* — distributed by the publisher of that commercial reading instructional material.

In an attempt to make our analyses as clear as possible, we have focused on the most recent version of the "30 years of research..." document, the one distributed both on their website and in hard copy format by the CFTL during the Spring of 1997. All excerpts that follow are from that version and the page numbers listed correspond to the page numbers of the version we downloaded from the website. This is the version that lists Bonita Grossen, research associate with the National Center to Improve the Tools of Educators (NCITE), as author. This is also the version that was distributed, in hard copy format, to a wide audience of policy makers in California early in 1997 and to a smaller audience in Texas during this same period. We attribute the statements from the document to Grossen because she is listed as author of this version.

As noted above, the Grossen (1997) version contains seven instructional recommendations for classroom teachers. These follow a four-page review of a number of NICHD-supported and non-NICHD-supported research studies. The recommendations are introduced with this statement:

Below are the seven key principles of effective reading instruction identified in the research along with concrete examples of what these principles mean. The examples are taken directly from the research studies. (Grossen, 1997, p. 9)

In our analysis, none of the Grossen recommendations were adequately supported by the NICHD research cited, but examining each of the seven recommendations would produce a long and necessarily redundant article. Thus, we focus our critique on four of the seven recommendations (recommendations numbered 2, 3, 5, and 7 in the document). However, each of the seven recommendations are displayed in Table 1 along with selected text segments that follow each in the document.

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**Table 1**  
**Instructional recommendations**  
**and selected supporting commentary from Grossen (1997),**

“30 years of research: What we now know about how children learn to read.”  
(A synthesis of research on reading from the National Institute of Child Health and Human Development commissioned by the Center for the Future of Teaching and Learning with funding support from the Pacific Bell Foundation).

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1. Begin teaching phonemic awareness directly at an early age (kindergarten). There is little correlation between developmental stages and phonemic awareness. Every school child is ready for some instruction in phonemic awareness... Phonemic awareness skills and other important skills are learned and do not develop naturally. (p. 9)
2. Teach each sound-spelling correspondence explicitly. Not all phonics methods are equally effective. Telling the children explicitly what the single sound a given letter or letter combination makes is more effective in preventing reading problems than encouraging the child to figure out the sounds for letters by giving clues... Explicit instruction means that a phoneme is isolated for the children. For example, the teacher shows the children the letter m and says, “This letter says /mmm/.” In this way a new phoneme is introduced... phonemes the children have learned should be briefly practiced each day, not in the context of words, but in isolation... (p. 10)
3. Teach frequent, highly regular sound-spelling relationships systematically. The most effective instructional programs teach children to read successfully with only 40 to 50 sound-spelling relationships. The chart below is not taken from any particular program but represents the 48 most regular letter-phoneme relationships...[Table then appears in text]. To teach systematically means to coordinate the introduction of the sound-spellings with the material the children are asked to read. The words and stories the children read are composed of only the sound-spelling relationships the children have learned, so all the children must be taught using the same sequence... (p. 11)
4. Show children exactly how to sound out words. After the children have learned two or three sound-spelling correspondences, begin to teach them how to blend the sounds into words. Show them how to move sequentially from left to right through spellings as they “sound out” or say the sound for each spelling... (p. 11)
5. Use connected, decodable text for children to practice the sound-spelling relationships they learn. The findings of the NICHD research emphasize that children need extensive practice applying their knowledge of sound-spelling relationships to the task of reading as they are learning them. This integration of phonics and reading can only occur with the use of decodable text. Decodable text is composed of words that use the letter-sound correspondences that the children have learned to that point and a limited number of sight words that have been systematically taught... The use of predictable text... might allow children to use prediction to figure out a passage. However, this strategy would not transfer to real reading... Predictable text gives children false success... (p. 12)

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**Table 1 (continued)**  
**Instructional recommendations**  
**and selected supporting commentary from Grossen (1997),**  
**“30 years of research: What we now know about how children learn to read.”**

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6. Use interesting stories to develop language comprehension. The use of interesting authentic stories to develop language comprehension is not ruled out by this research. Only the use of these stories as reading materials for nonreaders is ruled out... During this early stage of reading acquisition, the children can still benefit from stories that the teacher reads to them... (p. 13)
  
  7. Balance, but don't mix. The comprehension instruction and decoding instruction should be separate from each other while children are learning to decode, but both types of instructional activities should occur. In other words, comprehension and decoding instruction should be balanced. A common misconception regarding the balance that is called for by the research is that the teacher should teach sound spelling relationships in the context of real stories. This mixture of decoding and comprehension instruction in the same instructional activity is clearly less effective, even when the decoding instruction is fairly structured.... After the children become fluent decoders, the children can apply these comprehension strategies to their own reading. (p. 13)
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For each of the recommendations we analyzed we briefly review the key NICHD-supported research cited in the “30 years of research...” document as the basis for the recommendation and contrasted Grossen's (1997) “synthesis” of these studies with both our analyses and the conclusions of NICHD officials and NICHD-supported researchers who authored the studies cited by Grossen<sup>3</sup>.

Recommendation 2: Teach each sound-spelling correspondence explicitly. Grossen offers fourteen separate citations to support this recommendation. However, only about half of these are reports of research studies, while the remaining are commentaries or reviews. Of the cited reports of original published research, only three were NICHD-supported (based on acknowledgments accompanying the articles or chapters). A fourth article, a review by

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<sup>3</sup> The Grossen (1997) summary reported several NICHD-supported studies as “in press.” We obtained copies of those reports for our analysis. However, several of these papers have been published in recent months. Therefore, in this paper we have cited the published versions of the reports whenever possible and cited the page numbers of quotations from those published versions in an attempt to facilitate reader access.

Foorman, Francis, Beeler, Winikates, & Fletcher (1997a), is quoted extensively in the document and so we included that in our critique as well.

The NICHD-supported research of Vellutino, Torgeson, Foorman, and Fletcher is cited as supporting Recommendation 2 (and Lyon [1995] included the NICHD-supported work of Felton in this area also). Each of these researchers has recommended direct instruction on the alphabetic principle in a balanced beginning reading program. However, these authors have noted (as have Lyon & Moats, 1997) that the NICHD studies that have implemented direct phonics instruction have found it easier to enhance phonemic awareness and non-word pronunciation performances than to influence word reading, reading rate or fluency, or comprehension achievement. For instance, Torgeson, Wagner & Rashotte (1997b) review the findings from their NICHD-supported research and note:

We still do not have convincing evidence that the relative differences in growth on phonetic reading skills produced by certain instructional approaches led to corresponding advantages in orthographic reading skills and reading comprehension for children with phonologically-based reading disabilities.

(p. 230)

Also undermining the Torgeson citation as supportive of instructional Recommendation 2 is the special population studied (lowest achieving 10 percent of Kindergarten population), the add-on, pull-out nature of the year-long intervention, and the limited range of reading behaviors effected (pseudo-word pronunciation the only significant effect). In other words, to accept this study as support for the general education instructional recommendation offered by Grossen, one has to be willing to accept that;

- improvement in "phonetic reading" (pseudo-word pronunciation),
- fostered by a daily 20 minute tutorial pull-out intervention,
- with children identified as exhibiting phonologically-based reading disabilities,

is sufficient evidence to support reforming the early general education literacy curriculum.

In a second line of NICHD-supported research Scanlon & Vellutino (1997) report on the Kindergarten classroom environments that resulted in at-risk children acquiring normal reading achievement. They found no significant differences in the quantity of letter-sound, decoding, word identification, or text meaning activities in the more- and less-effective classroom settings.

The more effective classrooms did engage children in significantly greater quantities of phonemic awareness activity (nine percent of time versus six percent). However, they noted:

[N]one of the teachers were employing any experimental or published program currently available for phoneme awareness. Rather, phoneme awareness activities generally occurred in the context of writing, typically as sound analysis in the service of “figuring out” the spellings of words used in more meaning-based writing activity... (p. 204) The data as they are currently summarized in our coding system, do not allow for an evaluation of the independent contributions made by writing and phoneme-awareness activities to success in reading. (p. 205)

Thus, these NICHD-supported researchers indicate letter-sound instruction in early school environments was not the critical instructional difference in fostering early reading achievement in the at-risk children studied. Classrooms that provided the opportunity for children to engage in larger amounts of meaning-oriented composing activity, where developing a sense of internal word structure was supported, were what might be more appropriately recommended. In other words, supporting children's emerging literacy during “invented spelling” activities — modeling and demonstrating “sound stretching,” for example — provided powerful facilitation for developing phonemic awareness.

The Foorman et al. (1997a) report that Grossen cites is an overview article that presents the research design and general findings from several of their NICHD-supported studies (reports of some of these studies have since been published, some have been accepted for publication, and some submitted for editorial review). The Foorman et al. (1997a) paper offers the following findings, first for a study of phonological awareness training in kindergarten: “When differences between treatment groups in language and demographics were controlled, only phonological analysis continued to show evidence of significant treatment effects.” (p. 65) Another study summarized in Foorman et al. (1997a) examined the effects of daily 60 minute small-group pull-out sessions using the synthetic phonics curriculum of Alphabetic Phonics, the sight word training of the Edmark Reading Program, and a modification of Recipe for Reading that offered analytic phonics with a focus on onset-rime training. The results are reported (Foorman et al., 1997a) as: “However, in the models where confounding variables were controlled, the only treatment contrast that remained significant was the superiority of synthetic



phonics over sight word in growth in phonological skills.” (p. 66) This finding plus the small observed effects on achievement prompted the authors, in the report of the original research (Foorman, 1997b), to note: “Concluding from these results that research-based interventions are not effective would be premature, even though the mean standard-score gains exhibited on the WJ-R decoding were modest.” (p. 273)

A third study is also summarized in Foorman et al. (1997a) and quoted by Grossen. In this third study an attempt was made to determine the relative effects of participation in a year-long, classroom-based, direct instruction phonics curriculum as compared to the effects of an embedded phonics classroom curriculum and a meaning-emphasis curriculum (which the authors label Whole Language based on the district’s labeling) each accompanied by small group or tutorial interventions that either matched the classroom curriculum emphasis or did not. Foorman et al. (1997a) report a significant positive effect for direct instruction phonics intervention on “basic reading” (a combination of letter-word identification and pseudo-word pronunciation) and on “broad reading” (a combination of letter-word identification and cloze comprehension) on a standardized test. The direct instruction group achieved average “broad reading” performances at the 46th percentile, the embedded phonics at the 35th, and meaning-emphasis at the 31st, but no significant differences between groups on a text reading-comprehension measure. There was no effect for the tutoring/small group match/mismatch comparisons. In the longer unpublished original research report of this particular study (Foorman, Francis, Fletcher, Schatschneider & Mehta, n.d.) the authors conclude:

Nonetheless, none of the interventions demonstrated major effects on reading comprehension. Such effects may take a longer period of intervention to emerge. (p. 24) The critical issue is the extent to which earlier development of decoding skills is associated with improvement in reading comprehension and spelling, which remains an open issue. (p. 25)

Thus, each of the NICHD-supported researchers cited by Grossen (1997) seem to acknowledge that an early emphasis on code-oriented activities enhances performance on both phonological awareness and pseudo-word pronunciation tasks but that such an emphasis did not produce reliable, replicable achievement gains on text comprehension, nor in most cases on word reading or reading fluency. Such pseudo-word pronunciation advantages might suggest to some that an



early emphasis on letter-sound correspondences is recommended, but there is little in the comments of the NICHD researchers that indicates broad, consistent advantages in general reading achievement are reliably fostered by an instructional emphasis on explicit sound-spelling correspondence that includes daily practice with isolated phonemes as Grossen contends.

Grossen (1997) also cites non-NICHD-supported research as supporting her Recommendation 2. But one of the key studies she cites (Lovett, Borden, DeLuca, Lacarenza, Benson & Brackstone, 1994) is reviewed by Torgeson et al. (1997b) who comment;

First, the actual improvement in level of phonetic reading skill shown by the children in the strongest group was very small. Their final score on a standardized measure of phonetic reading corresponded to the 1.9 grade level. Although, according to their age, they should have been reading at the 4.1 grade level, they finished the study still more than two years below grade level in phonetic reading skill [pseudo-word pronunciation]... A second concern is that the gains in phonetic reading skill shown by these children in the group that received direct instruction in these skills did not translate into differential improvement in real-word reading ability. (p. 220)

Clearly this NICHD-supported researcher offers a more modest appraisal of the significance of the available code-oriented intervention research. Grossen's summary overstates the research and exaggerates the actual findings of the NICHD-supported studies. That is, her recommendation goes quite beyond the actual data and the conclusions of the authors of the NICHD-supported research, especially when she uses this research to advocate for general education curriculum reform.

Recommendation 3. Teach frequent, highly regular sound-spelling relationships systematically.

There are several different principles embedded here. There is the a) "frequency" and b) the "regularity" of the sound-spelling relationships and c) the effects of teaching sound-spelling relationships "systematically." It is difficult to know just where to begin an analysis. Especially difficult because there are no data in any of the cited NICHD-funded studies on just which sound-spelling relationships were taught — frequent or infrequent, regular or irregular. Grossen (1997) provides a list of the "48 most regular sound-letter relationships" (which one assumes

would be similar to a list of the 48 sound-spelling relationships). No study is cited as a source for this listing and none of the NICHD studies cited investigated or reported on this issue. There is little evidence that Grossen (1997) derived these aspects of the principle from the NICHD studies.

To “teach systematically means to coordinate the introduction of the sound spellings with the material the children are asked to read... all the children must be taught using the same sequence.” (p. 11) There are some data in the NICHD-funded studies on teaching letter-sound relationships (e.g. Felton, 1993; Foorman, Francis, Novy & Liberman, 1991; Lovett, et al., 1994; Torgeson, et al., 1997a; Vellutino, et al., 1996). But there is little unity across the studies on just how this was done. In some NICHD studies the research team employed basal reader series identified as code-emphasis readers (e.g. Lippincott, Economy, Open Court) or as context-emphasis readers (e.g. Houghton-Mifflin, Scott Foresman). Other NICHD studies used supplementary programs, some commercial (e.g. Educators Publishing Service, Edmark, Auditory Discrimination in Depth), and some locally developed. But rather few details are offered in the published research papers on just how these programs organized sound-spelling relationship instruction or whether the sound-spellings taught were coordinated with the material children were reading. None of the NICHD studies report attempting to isolate or manipulate the a) sequence of sound-spelling instruction or b) the coordination of the introduction of sound-spellings with the materials being read. Further, some studies used a replacement design, where the research team controlled all reading instruction offered, while other studies offered an add-on design where targeted at-risk children were provided with add-on supplementary instruction. In other words, we found it impossible to draw any principles about how sound-spelling instruction might be best organized from the NICHD studies.

There are no specific data in the NICHD studies cited that could be construed as support for the “teaching systematically” as defined in Recommendation 3 and no specific research support for teaching the “frequent, highly regular sound-spelling relationships” as identified and organized by Grossen (1997).

Recommendation 5: Use connected, decodable text for children to practice the sound-spelling relationships they learn. Grossen (1997) offers this recommendation with no direct citation of supporting research. She simply writes:

The findings from the NICHD research emphasize that children need extensive practice applying their knowledge of letter-sound relationships to the task of reading as they are learning them. This integration of phonics and reading can only occur with the use of decodable texts. (p. 11)

With no specific research cited, the task of evaluating the support for this recommendation was difficult. Nonetheless, having reviewed the set of NICHD-supported studies that Grossen cites throughout “30 years of research...,” we found no evidence to support the recommendation. None of the NICHD-supported studies isolated or manipulated the decodable text variable. While some of these studies reported using materials that could be described as decodable texts (e.g. Lippincott readers in the Felton study) most NICHD-supported studies provided an intervention that was an add-on instructional service so that participating children were also exposed to classroom reading instruction materials and practices. Rarely, if ever, was the classroom material described as decodable text. Grossen describes the Foorman et al. (1997a) study materials as providing “extensive practice in decodable text” (p. 7). However, the authors of the study provide the following description:

For the Direct Instruction (DI) curriculum we used Open Court's (1995) Collection for Young Scholars. We describe this program as a direct instruction, balanced approach because it provides teacher-directed, systematic instruction in a balanced program of reading instruction which includes phonemic awareness, phonics, and literature. (p. 67)

In the report of the original study the authors (Foorman et al., n.d.) make no mention of attempting to isolate or manipulate the availability and use of decodable text in their intervention study. While the earliest levels of the selected commercial curriculum material include decodable texts, these levels also include a variety of meaning-emphasis activities (including composing written messages, big books, read alouds), as indicated by the authors of the study. But, because the Foorman et al. (n.d.) study was not designed to manipulate or isolate

a decodable text variable from the milieu of instructional activities that children participated in, it is not possible to estimate the impact, if any, of the use of decodable texts that occurred.

This limitation of the Foorman et al. (n.d.) study and of other available research seems to have been recognized by the NICHD officials. Recently, Lyon (1997) announced that:

The relative importance of using decodable and predictable text formats for readers who differ on each of these components is not yet well understood and NICHD research is now underway to explicate this issue. It is conceivable that a combination of both types of text formats will be necessary to foster adequate development at different stages of reading. (Lyon, August, 1997, personal communication)

But the limited evidence did not deter Grossen in the development of her “synthesis” of NICHD research. Indeed, there exists no NICHD-supported, or other, research that has isolated and demonstrated the advantages of using decodable texts in beginning reading programs. Grossen (n.d.), in her summary of the research supporting the design of the SRA *Reading Mastery* direct instruction curriculum, cites earlier content analyses (e.g. Beck & McCaslin, 1978) that indicated that most beginning reading materials were not “decodable texts.” But, neither these older studies nor their more recent resurrections (Beck & Juel, 1995) offer any evidence supporting the premise that creating such texts and using them extensively or exclusively with children would offer any measurable advantages in learning to read.

We found Grossen’s (1997) recommendation for the use of decodable texts a fitting example of a rhetorical practice she has argued against:

And finally, educational literature can mislead by referencing data that have nothing to do with the teaching practices under discussion. For example, there is research documenting that many students aren’t very good at critical thinking. This is often cited in support of particular teaching strategies which are said to help turn students into critical thinkers. But the data that exist only describe the problem; they say nothing about any specific instructional procedures that might help solve it. (Grossen, 1996, p. 8)

One cannot synthesize the available NICHD-supported research and arrive at the conclusion that “the integration of phonics and reading can only occur with the use of decodable text.” Nor can one arrive at the conclusion that “children need extensive practice” in such materials, not from

the research currently available. We concur with Lyon — the roles that decodable and predictable text might play in beginning reading are simply not well understood. What is easily understood, however, is that none of the research cited by Gossen (1997) supports this recommendation.

Recommendation 7: Balance but don't mix. To quote Gossen (1997), "A common misconception regarding the balance that is called for by the research is that the teacher should teach sound-spelling relationships in the context of real stories" (p. 13). Here Gossen again cites NICHD-supported studies by Foorman et al. (1997a, 1991) and Torgeson et al. (1997a). However, as noted above, these researchers, and Lyon, the director of the NICHD branch that supports their research, do not offer support for Gossen's (1997) interpretation. In fact, Lyon (1997) testified before Congress that:

NICHD researchers have found that classroom instruction that explicitly addresses the connections between letters and sounds within a literature-rich classroom environment [emphasis added] can make a difference between reading failure and reading success. (p. 4)

We don't take issue with that part of Lyon's statement that indicates the need for explicitly addressing the connections between letters and sounds; our own reading of a wide range of research suggests that most children do benefit when we help them understand the alphabetic principle (e.g. Cunningham, 1995; Dahl & Freppon, 1995; McIntyre, 1995; Moustafa, 1995; Purcell-Gates & Dahl, 1991). However, as Scanlon & Vellutino (1997), Richgels, (1995) and Dahl & Freppon (1995) have so admirably demonstrated, providing instructional scaffolding of this sort during children's initial attempts at composing written messages seems a powerful medium for fostering an integration of knowledge of the alphabetic principle (outside the use of decodable texts). In addition, Lyon's (1997) testimony would seem to contradict Gossen's (1997) assertion about the use of "real stories." In fact, none of the available evidence supports the Gossen recommendation for delaying the use of "real stories" until "after children become fluent decoders..." (p. 13) and none indicates a "mixture of decoding and comprehension instruction in the same instructional activity is clearly less effective..." (p. 13).

## Summary

The NICHD-supported studies do seem to offer reasonably consistent evidence that a) 15-20 percent of American school children experience difficulty with phonological processing, b) that this difficulty is associated with difficulties in early reading acquisition and c) that phonological awareness difficulties are largely remediable. It also seems clear from the NICHD studies that several procedures exist for identifying the children who experience such difficulties and that several sorts of code-emphasis training produce reliable, replicable gains in pseudo-word pronunciation in children with reading disabilities. However, in our estimation, the available NICHD-supported research does not provide sufficient guidance to recommend whole-scale reform of the general education early literacy curriculum. More importantly, the NICHD studies cited in the “30 years of research...” document provide no support for the instructional recommendations offered.

Comparative content analysis of the “30 years of research...” document contrasted the classroom instructional recommendations offered by Grossen (1997) with the words of the NICHD-supported researchers who authored the studies cited, the testimony of the Acting Chief and Director of the NICHD branch that oversees this research, and with our analyses of those studies. The NICHD-supported research does not provide support for the recommendations we analyzed and we would argue that a similar case could be made about the inadequacy of the NICHD-supported research for supporting the remaining Grossen (1997) recommendations in the “30 year of research...” document.

### **“Sed quis custodiet ipsos custodes?”\***

In contrast to the very specific principles Grossen (1997) offers as derived from the NICHD-supported research, G. Reid Lyon (1997), in his recent Congressional testimony, summarized the NICHD research findings as follows:

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\* The question is, “But who will guard the guardians themselves?”

We have learned that no single method, approach, or philosophy for teaching reading is equally effective for all children... (p. 10) The real question is which children need what, when, for how long, with what type of instruction, and in what type of setting. (p. 12)

We concur. But for us the imperative question is: How is it that the Grossen (1997) misrepresentation of the NICHD research came to be so widely accepted and so influential in so many educational and political venues? We have tracked the influence of the “30 years of research...” document on the development of state curriculum frameworks and educational legislation in two states (CA and TX). We have accessed the “30 years of research...” document on a variety of websites ranging from those of members of state boards of education in California and Texas to the CFTL. We have heard from the offices of the Governor or state education commissioner in each of the four states about the Grossen (1997) “summary” of NICHD research. We have noted the influential nature of the “30 years of research...” document in a number of high-level policy-making settings and we remain puzzled.

The learning disability/dyslexia research supported by the NICHD has provided several insights into the nature and incidence of reading disability. This work has also explored the effects of various educational interventions with children experiencing difficulty in reading acquisition. More recently, the NICHD has initiated studies that will explore the complex relationships between classroom instruction and tutorial add-on programs. Lyon & Moats (1997) note:

Certainly our current NICHD-supported intervention studies are now beginning to address the more global issues of the types of classroom programs that have the greatest benefits for low-achieving children, the type of tutorial assistance that is preferable in relation to classroom instruction, and what needs to be done to help older children with chronic and severe reading difficulties. However, limitations remain with respect to our current knowledge of why specific prevention and/or remediation protocols produce or do not produce robust effects with children with reading difficulties. (p. 8)

However, no published NICHD studies have attempted to contrast the effects of different general education core curricula on the development of literacy proficiencies in the general student population. Thus, in our view, the available NICHD research has a limited potential, at



best, for guiding a restructuring of general education classroom reading and language arts instruction.

The numerous incidents of testimony before policy-making bodies, the wide media coverage, and the frequent citing of NICHD research in both California and Texas over the past eighteen months, however, set the stage for the use of the NICHD research as a policy lever. The Grossen (1997) document exploited this visibility, misrepresenting apparently personal preferences for curriculum design as recommendations drawn from a synthesis of the NICHD research. That exploitation was successful in shaping the nature of curriculum reform and teacher training in both states.

We remain puzzled because the document seriously misrepresents the NICHD-supported research findings and even a quick reading of the original research reports demonstrates much of the misinterpretation we have attempted to document in this analysis. But both politicians and, more importantly, high-ranking education officials, have accepted the “30 years of research...” document and Grossen’s (1997) recommendations for the redesign of general education literacy instruction at face value. Even when confronted with some of the very evidence we have offered here, some officials have defended the document and their use of it.

It is one matter to offer a detailed accounting of one’s own preferences for the design of early literacy instruction or to defend the design of a particular intervention plan or commercial curriculum material. But it is another matter to baldly assert that such preferences are based in research that follows “the most rigorous scientific procedures,” especially when those preferences cannot be supported by the research cited. Sadly, this is not simply a case in which children’s reading instruction has been effected but one in which the very substance of academic discourse has been undermined.



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