

EVIDENCE SUPPORTING “BEST PRACTICES”: EXPERT JUDGMENT AND META-RESEARCH

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“Toward a Research Agenda for Understanding and Improving the Use of Research Evidence,” a study of the thinking and practices of educational leaders by the William T. Grant Foundation of NYC, reports that policy makers do not put very much stock in research as the basis for making significant school decisions. Among other things, they concluded that research could be more useful if it were packaged in easy-to-read briefs.

The review of “evidence” in this chapter re literacy/learning at home and across the curriculum is an effort to respond to these policy makers concerns by emphasizing, in particular, two categories of evidence: (1) highly regarded “expert opinion” of foundations, the 22 major professional education associations, experts in literacy education, outstanding thinkers in education and outstanding teachers and (2) Meta-evidence which analyses and summarizes multi-researches over the years that relate to teaching/learning/assessing literacy across the curriculum and across the grade levels. Also reported relevant to the issues dealt with in PT is research from long-term population achievement and convergence of highly regarded cross-disciplinary theory and research. Furthermore, specific studies of exceptional merit and relevance are reported throughout PT. Finally, the extensive bibliography indicates the breadth of sources that have influenced the development of PT.

The Carnegie Corporation Report

In its final report, *The Time to Act* (reported in Education Week, Sept 23 p. 12) the Carnegie Corp of NY Council for Advancing Adolescent Literacy exhorts “school leaders to structure their schools around literacy, hire teachers skilled at teaching it across all subjects, and help teachers build on those skills.” The report “...urges district leaders to ensure good professional development in literacy for all principals and teachers, help them analyze data to shape professional development in literacy and not shy away from ‘reorganizing’ their districts if that’s what it takes to make literacy the cornerstone of schools’ work.”

Meta-analysis of the Practices of Outstanding Classroom Teachers

The Select Committee of the National Research Council (“Preventing Reading Difficulties in Young Children,” 1998) conducted and reported their Meta-analysis of the practices of outstanding teachers. The committee included Catherine Snow, Marilyn Jager Adams, William Labov, Annemarie Sullivan Palanscar, Dorothy Strickland and the many other literacy notables. They found that outstanding teachers typically construct their pedagogy around a balance of literacy experiences that include:

- *Creating a literate environment in which children have access to a variety of reading and writing materials;*

- *Creating multiple opportunities for sustained reading practice in a variety of formats, such as choral, individual, and partner reading;*
- *Choosing instructional-level texts from a variety of materials, with a reliance on literature, big books, and link reading and writing activities;*
- *Adjusting the grouping arrangements and the extent of explicitness of instruction to meet the needs of individual students;*
- *Encouraging self-regulation through cognitive monitoring strategies, and*
- *Orchestrating explicit word study, both in “authentic contexts” of reading and writing and in ‘isolated practice’.*

Position Statement of 22 National Professional Education Associations

In their jointly commissioned document: *The Essentials of Education (1981)*, 22 national professional education associations called for a “renewed commitment to a more complete and more fulfilling education for all students.” Their choice of Dr. Morton Botel, author of PT, to write the chapter on Teaching/Learning/Assessment, indicated their support for a comprehensive literacy framework across the grade levels and across the curriculum.

Meta-analysis of Expert Opinion and Research Related to Reading/Writing/Talking Process 1, Reading: Transacting with Text

Regarding Comprehension/Vocabulary Instruction. The National Reading Panel of researchers (2002) made the following observations about the nature of comprehension:

Comprehension is a complex process. There exist as many interpretations of comprehension as there are of reading. This may be so because comprehension is often viewed as ‘the essence of reading’. Reading comprehension is further defined as ‘intentional thinking during which meaning is constructed through interactions between text and reader’. According to this view meaning resides in the intentional, problem-solving, thinking processes of the reader that occur during an interchange with a text. The content of meaning influenced by the text and by the reader's prior knowledge and experience that are brought to bear on it. Reading comprehension is the construction of the meaning of a written text through a reciprocal interchange of ideas between the reader and the message in a particular text.

The bulk of instruction of text comprehension research during the past two decades has been guided by the cognitive conceptualization of reading described above. Clearly the Panel regards comprehension as essentially a co-constructionist process. It is interesting to note that they did not, in fact, report directly on comprehension and vocabulary research,

because they found too few worthy studies to come to any ‘valid conclusions’ from that source. Nevertheless, as expert in literacy education they did endorse the following seven kinds of comprehension instruction and four kinds of vocabulary instruction.

For Comprehension Instruction

- *Comprehension monitoring--in which the reader learns how to be aware or conscious of his or her understanding during reading and learns procedures to deal with problems in understanding as they arise*
- *Cooperative learning--in which readers work together to learn strategies in the context of reading*
- *Using graphic and semantic organizers—in which the reader represents graphically (write or draw) the meanings and relationships of the ideas that underlie the words in the text*
- *Question answering--in which the reader learns to answer questions about the details and inferences of the text*
- *Question generating--in which the reader learn to generate and answer inferential questions*
- *Apprehending Story Structure--in which readers improve their memory and identification of the aspects of story structure*
- *Summarizing--in which readers improve their identification and memory for main ideas*

For Vocabulary Instruction

- *Vocabulary should be taught directly and indirectly.*
- *Vocabulary should be taught through multiple exposures.*
- *Vocabulary should be taught in rich context.*
- *Vocabulary should be taught through active engagement.*
- *Vocabulary can be acquired through incidental learning.*
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Meta-analysis of Teaching for Fluency

The NRP defined fluency as requiring learners' rapid use of punctuation and the determination of where to place emphasis or where to pause to make sense of the text. The research in this category suggests that:

1. *Readers must carry out these aspects of interpretation rapidly—and usually without conscious attention. Thus, fluency helps enable reading comprehension by freeing cognitive resources for interpretation.*
2. *'Repeated oral readings' meets the standard as a specific method for teaching fluency. This kind of reading is generally done in guided oral reading where students are reading comfortably at their instructional or independent reading levels. Variations of the practice include teachers modeling fluent reading, engaging children in "echo reading" and practice in paired reading with peers until they are able to perform for the teacher or class with considerable fluency. The Panel regarded the all too common practice of "Round Robin" oral reading with distain.*

The NRP reported extensive correlation evidence indicating that students who are the best readers, as compared with struggling readers, had been read to and talked with about books thousands more hours in their pre-school and school years. Over and over again, leaders in literacy education such as Trelease, Anderson, Heibert and Wilkinson have concluded from the correlation research that reading aloud to children is the most important factor in promoting reading comprehension and fluency. And as indicated earlier, Meta studies of the practices of outstanding teachers indicate that they read aloud to children regularly.

**Meta-analysis of Research on Teaching Reading/Writing/Talking
Processes Two and Four:
Writing: Composing Text and Investigating Language**

A Google search on "Facts" re the Teaching of Writing and Grammar revealed the following:

Research over a period of nearly 90 years has consistently shown that the teaching of school grammar has little or no effect on students. (George Hillocks & Michael Smith, 1991).

Background

The most common reason for teaching grammar as a system for analyzing and labeling sentences has been to accomplish some practical aim or aims, typically the improvement of writing. For decades, however, research has demonstrated that the teaching of grammar rarely accomplishes such practical goals. Relatively few students learn grammar well, fewer retain it, and still fewer transfer the grammar they have learned to improving or editing their writing.

What doesn't work: The research

* *"Diagramming sentences . . . teaches nothing beyond the ability to diagram" (1960 Encyclopedia of Educational Research).*

* *"The impressive fact is . . . that in all these studies . . . the results have been consistently negative so far as the value of grammar in the improvement of language expression is concerned. Surely there is no justification in the available evidence for the great expenditure of time and effort still being devoted to formal grammar in American schools" (DeBoer, 1959).*

* *"None of the studies reviewed for the present report provides any support for teaching grammar as a means of improving composition skills. If schools insist upon teaching the identification of parts of speech, the parsing or diagramming of sentences, or other concepts of traditional grammar (as many still do), they cannot defend it as a means of improving the quality of writing" (Hillocks, 1986).*

* *For most students, the systematic study of grammar is not even particularly helpful in avoiding or correcting errors (Elley et al., 1976; McQuade, 1980; Hillocks, 1986).*

* *"The teaching of formal grammar has a negligible or, because it usually displaces some instruction and practice in actual composition, even a harmful effect on the improvement of writing" (Braddock, Lloyd-Jones, and Schoer, 1963).*

What works better: The research

* *Studying formal grammar is less helpful to writers than simply discussing grammatical constructions and usage in the context of writing (Harris, 1962).*

* *Learning punctuation in the context of writing is much more effective than studying punctuation marks and rules for punctuation in isolation (Calkins, 1980).*

* *Usage, sentence variety, sentence-level punctuation, and spelling are applied more effectively in writing itself when studied and discussed in the context of writing, rather than through isolated skills instruction (DiStefano and Killion, 1984).*

* *Systematic practice in combining and expanding sentences can increase students' repertoire of syntactic structures and can also improve the quality of their sentences, when stylistic effects are discussed as well (Hillocks and Smith, 1991).*

For learners of English as a second language, research suggests that extensive reading may promote the acquisition of grammatical structures better than explicitly studying or practicing such structures (Elley, 1991). Indeed, for both first and second language learners, extensive reading significantly promotes

grammatical fluency and a command of the syntactic resources of the language (Krashen, 1993).

Implications for teaching grammar as an aid to writing

** Teach only the grammatical concepts that are critically needed for editing writing, and teach these concepts and terms mostly through minilessons and conferences, while helping students edit.*

** Help students expand their syntactic repertoire and explore style by considering effective examples, then experimenting and discussing the results. Grammatical terminology can be used, but need not be taught as an end in itself.*

** Have students experiment with and discuss various activities in sentence combining, expanding, and manipulating (Strong, 1986; Killgallon, 1987; Daiker, Kerek, & Morenberg, 1990).*

** Give students plenty of opportunities and encouragement to write, write, write: for a variety of purposes and real audiences. Teacher response should include assistance with sentence structure and the mechanics of writing, during both revision and editing (Rosen, 1987).*

** Give students plenty of opportunities and encouragement to read, read, read.*

** Read aloud to students, choosing at least some selections that have more sophisticated sentence structures than the literature that the students would ordinarily read by themselves.*

The clear implication of the research is that guided writing instruction produces far better writers than does the formal study of traditional grammar rules.

(While research tells us that the teaching of *traditional* grammar is not supportable as the basis for teaching students to write better, many believe with the author of PT that the formal teaching of ‘grammars’ is a legitimate subject in its own right like teaching geometry or the history or art. As a formal subject, students would study its content seriously from a comparative and critical perspective of two or more grammar theories among which are traditional, structural and transformational. But it is a subject that should probably be taught no earlier than eighth grade level and as an elective, not as a requirement.)

**Meta-analysis Supporting Reading/Writing Talking Process Three:
Extending Reading and Writing**

The National Reading Panel (2006) reported that correlation research supporting the practice of having students choose and read books in sustained silent reading periods is overwhelming:

There are literally hundreds of studies that find that the best readers read the most and that poor readers read the least; they include the National Assessment for Educational Progress, which has found such relationships with both elementary- and secondary-age students. It appears--from the correlations--that the more that you read, the better your vocabulary, your knowledge of the world, your ability to read, and so on.

Other national reports such as *Becoming a Nation of Readers* (1985) have recommend at least several hours of independent reading.

There is also a considerable body of experimental research supporting self-selected, sustained silent reading. Krashen reported in his meta-analysis of that research in his book *The Power of Reading* that there are

... a total of 41 studies of the value of sustained silent reading in school. In 38 out of the 41 comparisons, readers in sustained silent reading did as well or better on tests of reading than children who spent an equivalent amount of time in traditional instruction. I found nine studies that lasted longer than one year; sustained silent reading was a winner in eight of them, and in one there was no difference.

Clearly, the message from prestigious national panels and both Meta correlation and Meta experimental research is that a balanced literacy curriculum should include regular blocks of time for choosing and reading self selected books.

Further Meta-analyses of Reading/Writing/Talking Process Four: Investigating Language at the Syllable, Word and Sentence Levels

The evidence above in Reading/Writing/Talking Process Two indicates that students will learn about words and sentences best through guided writing, word making, sentence making and sentence combining investigations rather than through study of grammar rules and rote practice. The following review amplifies those findings

The National Reading Panel concluded from its review of research on word study that

- *The practice of phonemic analysis/phonics should be directly and systematically taught in K/1 where such instruction has the biggest impact on comprehension.*
- *NRP couldn't make valid recommendations beyond those grade levels suggesting that teachers will need to make that judgment.*
- *Teaching children to manipulate phonemes and letters simultaneously is more effective than methods limiting manipulation to spoken words. In short, phonemic*

analysis is best taught in the process of teaching phonics, not as a separate and precondition for teaching phonics.

NRP also recommended that

- *The whole literacy program needs to be balanced.*
- *Instruction in phonemic analysis and phonics should be limited to 30 minutes a day.*
- *Since teachers know their children, they have right and need to determine how to teach phonemic analysis/phonics in a balanced literacy program.*
- *Systematic instruction should include word play, rhymes and inventive spelling.*

The research supports the teaching of graphophonic skillfulness as an aspect of a comprehensive literacy program. As Courtney Cazden has put it. “Immersion in rich literacy environments is necessary but not sufficient for the majority of children. They need deliberate, well-planned help in attending to parts as well as wholes.”

Further support for having students conduct investigations at the word level is found in the theories and research of such cross-disciplinary leaders as Jerome Bruner, Stephen Gould, the team of Gleitman, Gleitman and Shipley and the team of Eleanor Gibson and Harry Levin.

Bruner, surely the most distinguished theoretician and researcher in cognitive studies, as early as 1973, provided the methodological theory for co-constructionist investigations when he described an inquiry approach to teaching/learning that he calls “combinatorial playfulness.” In the following paragraph Bruner sums up that theory:

Emphasis on discovery in learning has precisely the effect on the learner of leading him to be a constructionist... Emphasis on discovery, indeed, helps the child to learn the varieties of problem solving, of transforming information for better use, and helps him to learn how to go about the very task of learning...Discovery results most often from a succession of constructing representations of things. We do something that is manipulative at the outset—literally; provide a definition of something in terms of action...that is a start. But it is a start that provides the material for a second step. For having acted...we are then able to turn around on our own actions and represent them. Manipulation and representation, then, in continuing cycles are necessary conditions for discovery. They are the antithesis of passive, listener-like learning.

Stephen Gould, the evolutionary biologist, reinforced Bruner’s theory by reminding us that explorations, play and flexibility, are intrinsic qualities of children. He says that, given opportunities to construct and reconstruct the physical world, they will come to discover its regularities, patterns and relationships.

Consider the conclusions reached by Gleitman, Gleitman and Shipley (1975) in their Meta analyses of cognitive, linguistic, speech perception and psychoacoustic studies:

...We believe that the major problem in early reading acquisition is the complex and abstract relationship between alphabetic writing and speech; that understanding of this relationship is hard to come by, and ordinarily has to be taught explicitly.

...we demonstrated that while tacit knowledge of the relevant categories (phonemes) can be shown from oral language use to exist in the head, this is insufficient to form the basis for reading acquisition: the prospective reader must achieve phonological awareness, or quite explicit access to the phonological mechanisms or principles at work in his speech system...we concluded on the basis of evidence from speech-perception, cross-cultural studies of reading, and other sources that, within phonology, syllables are easier to access (apprehend, talk about, manipulate) than are phonemes. In general, syllables are the smallest coherent units of speech: they tend to be physically undissectable, they are the smallest separately pronounceable units of speech...

In their analysis, they emphasize the importance of focusing on the syllable in early reading instruction by what they call the "The puh-ah-tuh problem:"

The fact that the syllable is a much more accessible unit than the phone (or phoneme) is illustrated by the difficulty the reading teacher has when trying to tell the child what features of the spoken language are represented by the letters p and t, as is in pat. It is impossible even to give instances of these entities without adding a vowel (thus, "puh") for it is in the nature of the speech mechanisms that we can say nothing "smaller" than whole syllables (this is certainly the case for the stop consonants, at least). The child must somehow discern that in the model "puh" or "tuh" the "uh" was an articulatory artifact, and only the "p" or "t" was intended. To get this obscure point across, the teacher often tries such tricks as saying "Puh-ah-tuh, say-it-very-fast, PAT!" But "puh-ah-tuh," regardless of speed, never will sound like "pat".

They conclude that

...the child learning to read has available to him two concrete, physically realized, systems: the utterable syllables and the written texts, There is no way to represent concretely the unspeakable phone units (rendered by the alphabetic letters) that in alphabetic writing mediate the relations between the two concrete systems. These units must be inferred from tacit language knowledge, and made explicit in consciousness. The difficulty of this inference is a fundamental cognitive barrier to alphabetic reading acquisition.

In short, the evidence shows that the syllable and manipulations within the syllable, kept intact, offers the best basis for acquiring phonological/phonemic awareness Gibson and Levin (1975), in a Meta analysis of the research as it related to learning to decode and spell, concluded that the investigatory or constructionist mode of teaching/learning had four advantages over teacher telling and related practice and drill:

First, it appears that if a child has a conscious set to look for structure it can be developed (albeit with difficulty) and can transfer to new problems.

Second, learning to abstract spelling patterns involves active participation by the child, not memorizing a verbal rule or simply being shown.

Third, as his economy of processing increases, so does the child become more aware of what he is doing, how he is controlling his own intellectual processes in an auto regulatory fashion. He is learning, in short, how to learn on his own.

Finally...getting the student to arrive at a generalization on his own has value in addition to its transferability, and that is its motivational

The reason for the above extended review is to emphasize the significance in decoding and spelling instruction of investigations at the syllable level rather than on the individual phonemes as is so common in current programs.

Conducting Investigations at the Sentence Level

To amplify briefly the research cited earlier under Reading/Writing/Talking Processes Two and Four, Elray L. Pederson reported in the ERIC system (ED178909, 1979) that

Sentence combining (SC) training has been found to consistently stimulate improvement in the syntactic fluency and overall quality of student writing. Affirmative findings derived from investigations of these issues would be considered adequate for concluding that SC training is a highly powerful, broadly influential tool for improving the writing of students.

In general, experimental evidence indicates that experimental groups made significantly greater gains in syntactic fluency than the control groups that studied traditional grammar. Syntactic fluency is defined as the number of structurally elaborated, more mature sentences students write.

Meta-analysis of Reading/Writing/Talking Process Five Metacognitive Research: Learning to Learn

In her Meta research summary: Metacognition and Reading to Learn (ERIC Digest, ED376427, 1994) Norma Decker Collins reports that

Researchers consistently posit that metacognition plays an important role in reading. Metacognition has been defined as "having knowledge (cognition) and having understanding, control over, and appropriate use of that knowledge" (Tei & Stewart, 1985). Thus, it involves both the conscious awareness and the conscious control of one's learning.

Thus, learner characteristics, like texts, tasks, and strategies, are age and experience dependent. The development of metacognition appears to be linked to proficiency in learning. A related conclusion about metacognitive development is that knowledge precedes control. The researchers suggest that learners must first become aware of structures of text, as well as knowledge of the task and their own characteristics as learners, before they can strategically control the learning process to optimize the influence of these factors (Armbruster, 1983).

Awareness of metacognitive skills can be gleaned through instruction. Teachers can help their students learn from reading: they can encourage students to take an active role in reading. The goal is to develop active, independent learners. Integrating metacognitive skills into classroom instruction can make that goal attainable.

Meta-analysis of International Comparative Research

International comparative research has consistently reported that the 14 year-old students of New Zealand have the highest levels of literature comprehension and interpretation in the English-speaking world. Of particular significance here is that the pedagogy of typical elementary and middle grade teachers of these countries is the same as that of outstanding teachers in America.

Meta-analysis of National Comparative Research

The National Assessment of Educational Progress (NAEP) tells us that despite the tremendous amount of money and effort directed at improving reading performance over the last decade, there has been no significant improvement on the average of students in the USA. Moreover it reports that a fourth grade plateau, or lack of significant growth in reading at that level, continues as it had in earlier decades. Reading scores are characterized by a greater spread between students at the top and bottom over this decade confirming the finding of the international studies noted above. And this spread widens in subsequent grades. There seems to be no doubt in the review above that these two phenomena are a function, in large measure, of overemphasis in most of our schools on learning isolated, low-level skills and under emphasis on the co-constructionist teaching/learning with focus on the super skills across the curriculum.

A Final Word

As Sharon Begley, Newsweek's science editor, has noted in its June 29th, 2009 edition: "More telling than individual studies is the weight and quality of the cumulative evidence." On this basis, cumulative studies, expert opinion and Meta research cited in this chapter provide very strong support for all five Reading/Writing/Talking Processes.