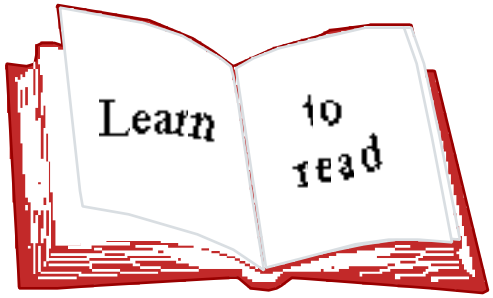
Summer Training Institute



Chapter 1
Introduction to Research, Demographics, and Context

Institute for the Development of
Educational Achievement
College of Education
University of Oregon

Oregon Department of Education

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"Those of us who read carried around with us like martyrs a secret knowledge, a secret joy and a secret hope: There is a life worth living where history is still taking place; there are ideas worth dying for, and circumstances where courage is still prized. This life could be found and joined, like the Resistance. I kept this exhilarating faith alive in myself, concealed under my uniform shirt like an oblate's ribbon; I would not be parted from it."

Dillard, Annie (1998). What reading does for the soul: A girl and her books. American Educator, 22, 88-96.

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"Reading has cognitive consequences that extend beyond its immediate task of lifting meaning from a particular passage. Furthermore, these consequences are reciprocal and exponential in nature. Accumulated over time--spiraling either upward or downward--they carry profound implications for the development of a wide range of cognitive capabilities."

Cunningham, A. E., & Stanovich, K. E. (1998). What reading does for the mind. American Educator, 22, 8-15.

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Sherlock Holmes and Watson were on a camping and hiking trip. They had gone to bed and were lying there looking up at the sky.
Sherlock said, "Watson, look up. What do you see?"
He answered, "Well, I see thousands of stars."
Sherlock asked, "And what does that mean to you?"

Watson replied, "Well, I suppose it means that of all the planets and suns and moons in the universe, that we are truly the one most blessed with the reason to deduce theorems to make our way in this world of criminal enterprises and blind greed. It means that we are truly small in the eyes of God but struggle each day to be worthy of the senses and spirit we have been blessed with. And, I suppose, at the very least, in the meteorological sense, it means that it is most likely that we will have another nice day tomorrow. What does it mean to you, Holmes?"

Sherlock replied, "To me, it means that someone has stolen our tent."

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- 70% teachers surveyed in 1994 said reading most important skill
  (Peter D. Hart Research Associates for American Federation of Teachers and Chrysler Corporation)
- 93% of parents surveyed in 1996 said reading critical to child's future
  (National Association of State Boards of Education & Scholastic, Inc.)
- 34% of students surveyed in 1993 ranked reading skills as most important
  (Peter D. Hart Research Associates)

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- 25% 13-year-olds & 22% 17-year-olds reported reading five pages or less per day in school and for homework combined
- 54% 9-year-olds read for fun everyday
- 32% 13-year-olds read for fun everyday
- 23% 17-year-olds read for fun everyday

1994 National Assessment of Educational Progress (NAEP)

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NAEP 1998 State Comparisons - Top 5

State	% Proficient
• #1 Connecticut	46%
• #2 New Hampshire	38%
• #3 Montana	37%
• #4 Massachusetts	37%
• #5 Maine	36%

n = 39

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NAEP 1998 State Comparisons - Bottom 5

State	% Proficient
• Louisiana	19%
• Mississippi	18%
• California	20%
• Hawaii	17%
• District of Columbia	10%

n = 39

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NAEP 1998 State Comparisons

State	% Proficient
• #23 Maryland	29%
• #24 Utah	28%
• #25 Oregon	28%
• #26 Delaware	25%
• #27 Tennessee	25%

n = 39

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NAEP 1998

- Proficient readers remain a minority.
- Problems are particularly severe for disadvantaged students (50% of 4th grade students whose parents graduated from college were proficient/advanced compared to only 10% of 4th graders whose parents did not finish high school).
- Lower income and minority students lose significantly greater literacy skills in the summer than students from higher income families (NAEP, 1998).

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"Overall, national longitudinal studies show that more than 17.5 percent of the nation's children--about 10 million children--will encounter reading problems in the crucial first three years of their schooling" (The National Reading Panel Progress Report, February 22, 1999)

Approximately 75% of students identified with reading problems in third grade are still reading disabled in 9th grade. (Shaywitz et al., 1993; Francis et al., 1996, Journal of Educational Psychology, cited in National Reading Panel Progress Report, February 22, 1999)

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Table 1
Demographics and Societal Trends

- Schools are facing a period of rising enrollments after a long period of decline. (Indicator 38, Conditions of Education, 1996)
- Many more disabled students, particularly those with learning disabilities, are receiving special services. (Indicator 43, Conditions of Education, 1996)
- Many more students speak a language other than English at home and have difficulty speaking English, a likely indication that even more students may have difficulty reading and writing English.
- Many children live in poverty (21% or 15.3 million), and these children typically live in neighborhoods and attend school together. (Indicator 44, Conditions of Education, 1996)
- In 1970 there were 6.7 million single parents; in 1992 there were 15 million. Conversely, there are relatively few stereotypic families."... a working father, housewife mother, and two children of public school age was 6% of all households for most of the decade" (Hodgkinson, 1992, p. 3).
- The fastest growing demographic group in the country from 1980 to 1990 was the prison population, which increased 139% (Hodgkinson, 1992), with recent rates estimated at 300%. There were 1,000,000 people in prison in 1994, twice that of just ten years before. The U.S. has the highest prison population in the world.

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Increased Expectations for Diverse Learners

- National Council of Teachers of Mathematics: "... we believe that all students can benefit from an opportunity to study the core curriculum specified in the Standards" (Commission on Standards for School Mathematics, 1989, p. 259).
- The National Center for History in the Schools: "... a reformed social studies curriculum should be required of all students in common, regardless of their 'track' or further vocational and educational plans" (The National Center for History in the Schools, 1992, p. 9).
- The National Science Education Standards: "... the commitment to science for all implies inclusion not only of those who traditionally have received encouragement and opportunity to pursue science, but of women and girls, all racial and ethnic groups, students with disabilities, and those with limited proficiency in English" (The National Science Education Standards, 1993, p. 1).
- The Standards Projects for English Language Arts: ... promote equality of educational opportunity and higher academic achievement for all students" (The Standards Projects for English Language Arts, 1993, p. 2).
- Goals 2000 : "... challenging national performance standards that define what all students should know and be able to do in core subject areas such as science, math, history, geography, language, and the arts, and support local reform efforts to make those standards a reality in every classroom" (Goals 2000, p. 2).

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Emergence of the Problem

Actual Differences in Quantity of Words Heard

In a typical hour, the average child would hear:

Welfare:	616 words
WorkingClass:	1,251 words
Professional:	2,153 words

Actual Differences in Quality of Words Heard

Professional:	32 affirmations; 5 prohibitions
WorkingClass:	12 affirmations; 7 prohibitions
Welfare:	5 affirmations; 11 prohibitions

Hart., B. & Risley, T. R. (1995). Meaningful Differences in the Everyday Experience of Young American Children. Baltimore: Paul H. Brookes.

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Language is very difficult to put into words.

Voltaire (1694-1778)

1. Printed school English, as represented by materials in grades 3 to 9, contains 88,533 distinct word families (Nagy & Anderson, 1984).
2. 88,533 word families result in total volume of nearly 500,000 graphically distinct word types, including all proper names. Roughly half of 500,000 words occur once or less in a billion words of text (Nagy & Anderson, 1984).
3. An average student in grades 3 through 12 is likely to learn approximately 3,000 new vocabulary words each year, assuming he or she reads between 500,000 and a million running words of text a school year (Nagy & Anderson, 1984).
4. Between grades 1 and 3, it is estimated that minority students' vocabularies increase by about 3,500 words a year and middle-class students' vocabularies increase by about 5,000 words a year.
5. Children's vocabulary size approximately doubles between grades 3 and 7.
6. Massive vocabulary growth appears to occur without much help from teachers.

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Variation in Amount of Independent Reading

Percentile Rank	Minutes Per Day		Words Read Per Year	
	Books	Text	Books	Text
98	65.0	67.3	4,358,000	4,733,000
90	21.2	33.4	1,823,000	2,357,000
80	14.2	24.6	1,146,000	1,697,000
70	9.6	16.9	622,000	1,168,000
60	6.5	13.1	432,000	722,000
50	4.6	9.2	282,000	601,000
40	3.2	6.2	200,000	421,000
30	1.8	4.3	106,000	251,000
20	0.7	2.4	21,000	134,000
10	0.1	1.0	8,000	51,000
2	0	0	0	8,000

Anderson, R. C. (1992)

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Table 1

Selected Statistics for Major Sources of Spoken and Written Language (Sample Means)

		Rank of Median Word	Rare Words per 1000
I.	Printed texts		
	Abstracts of scientific articles	4389	128.0
	Newspapers	1690	68.3
	Popular magazines	1399	65.7
	Adult books	1058	52.7
	Comic books	867	53.5
	Children's books	627	30.9
	Preschool books	578	16.3
II.	Television texts		
	Popular prime-time adult shows	490	22.7
	Popular prime-time children's shows	543	20.2
	Cartoon shows	598	30.8
	Mr. Rogers and *Sesame Street*	413	2.0
III.	Adult speech		
	Expert witness testimony	1008	28.4
	College graduates to friends, spouses	496	17.3

Adapted from Hayes and Ahrens (1988).

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The Stability of the Problem

In a sample of 54 students, Juel (1988) found the probability of being a poor reader in 4th grade given you were a poor reader in 1st grade was .88.

"...a longitudinal study of students with poor word identification skills in the third grade (Felton, in press; Felton & Wood, 1992) indicated that most of these students failed to significantly improve their basic reading skills by the end of eighth grade." (Felton & Pepper, 1995).

"...time spent reading books was the best predictor of a child's growth as a reader from the second to the fifth grade.".

Anderson, R. C., Wilson, P. T., & Fielding, L. G. (1988). Growth in reading and how children spend their time outside of school. Reading Research Quarterly, 23(3), 285-303.

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Matthew Effects

Matthew XXV:29--For unto every one that hath shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath.

- Children who can crack the code, read more words, learn more vocabulary, comprehend more, are motivated to read, and enjoy reading.

- Children without adequate word recognition skills read less, read slowly, have slower development of vocabulary, and are less motivated to read.

The Matthew effects refers to a self-fulfilling prophecy. The rich get richer; poor get poorer phenomenon.

Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. Reading Research Quarterly, 21, 360-406.

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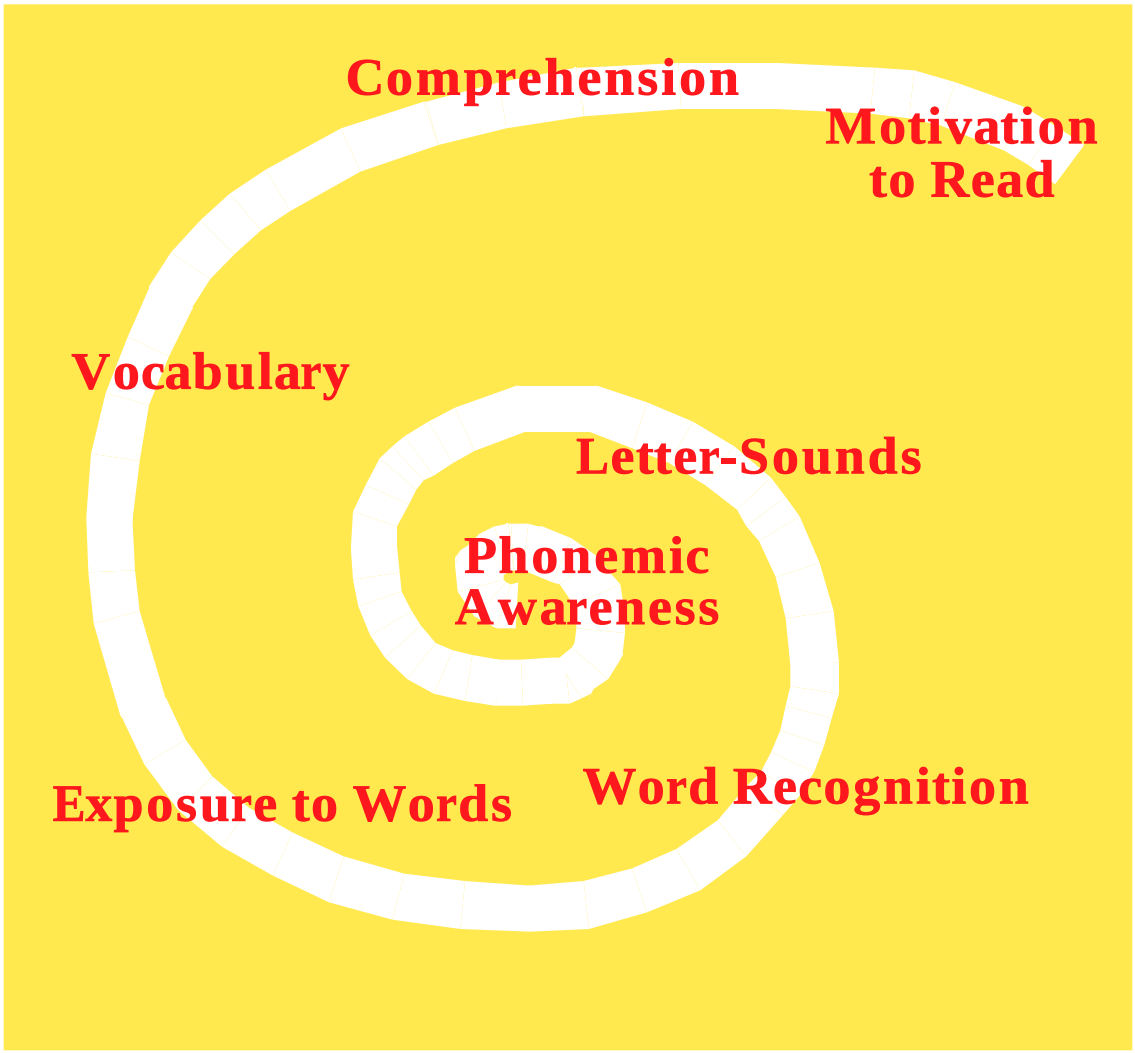
Snowballing consequences of early reading failure



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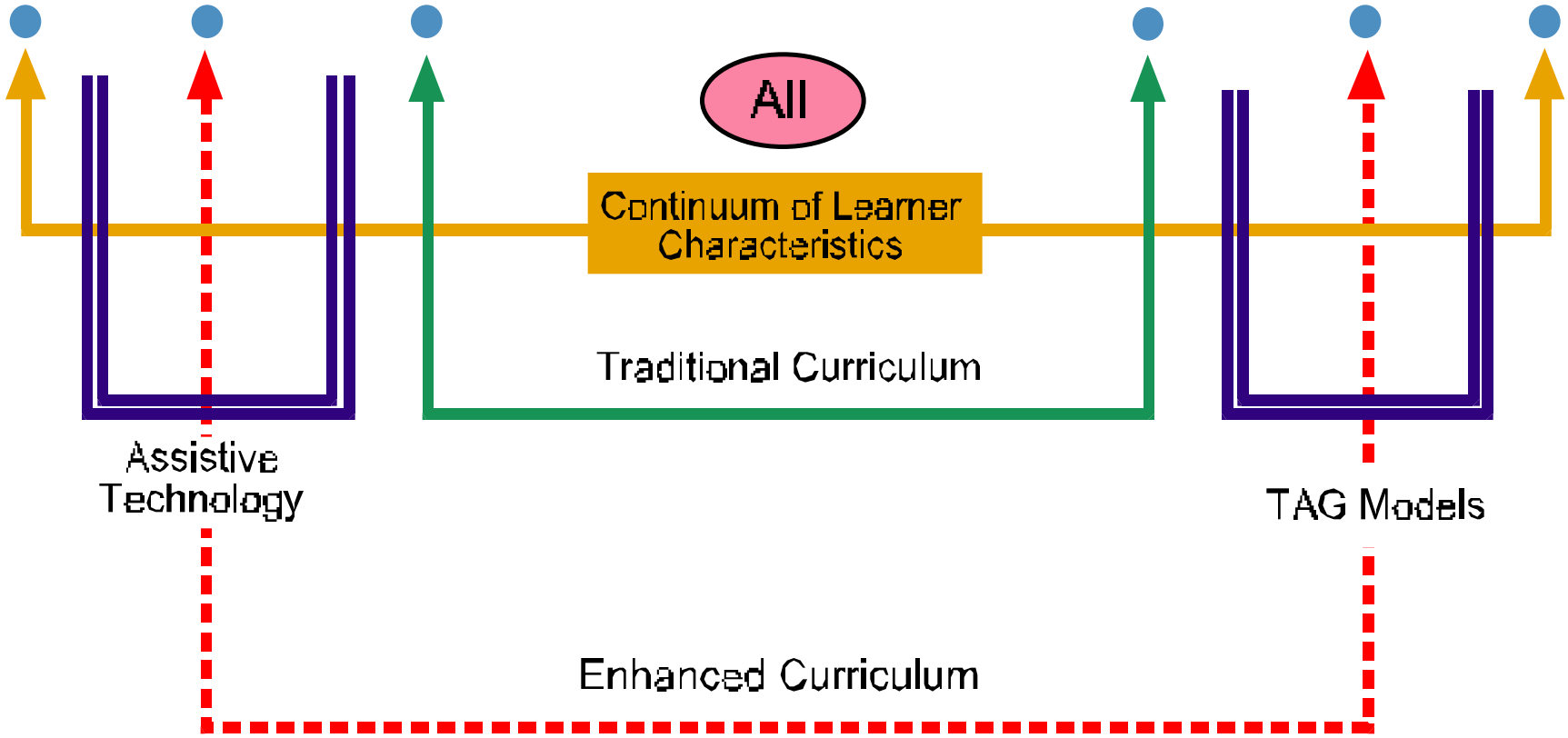
Diversity of Learning Characteristics



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Reading: A Multidisciplinary Research Effort

Pediatricians
Neurologists
Pediatric Neurologists
Cognitive Psychologists
Linguists
Psycholinguists
Educational Demographers
Behavioral Psychologists
Reading Specialists
Early Childhood Development Specialists
Special Educators
Educational Psychologists
Experimental Psychologists
School Psychologists
Developmental Psychologists
Speech Pathologists
ElementaryTeachers
Statisticians
Curriculum Specialists
School Administrators

Research Agencies

- *Office of Special Education Programs (OSEP), U. S. Department of Education*
- *National Institute for Child Health and Human Development (NICHD), National Institutes of Health (NIH)*
- *Office of Educational Research and Improvement (OERI), U. S. Department of Education*
- *National Reading Research Center (NRRC), University of Georgia and University of Maryland*
- *Center for the Study of Reading, University of Illinois, Urbana-Champaign*
- *Center for Research for Mothers and Children*
- *National Center to Improve the Tools of Educators (NCITE)*
- *National Academy of Sciences, National Research Council (NAS/NRC)*

Professional Organizations

- International Reading Association (IRA)
- Orton Dyslexia Society
- National Center for Learning Disabilities (NCLD)
- National Right to Read Foundation
- National Dyslexia Research Foundation
- Council for Exceptional Children (CEC)
- Association for Supervision, Curriculum, & Development (ASCD)
- American Educational Research Association (AERA)
- The National School Boards Association (NSBA)
- American Federation of Teachers (AFT)
- National Education Association (NEA)

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Committee on the Prevention of Reading Difficulties in Young Children

National Academy of Sciences

National Research Council
Commission on Behavioral and Social Sciences and Education
Division on Education, Labor and Human Performance
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A project sponsored by The Department of Education, Office of Special Education Programs, Office of Educational Research and Improvement [Early Childhood Institute], and National Institute in Child Health and Human Development [Human Learning and Behavior Branch].

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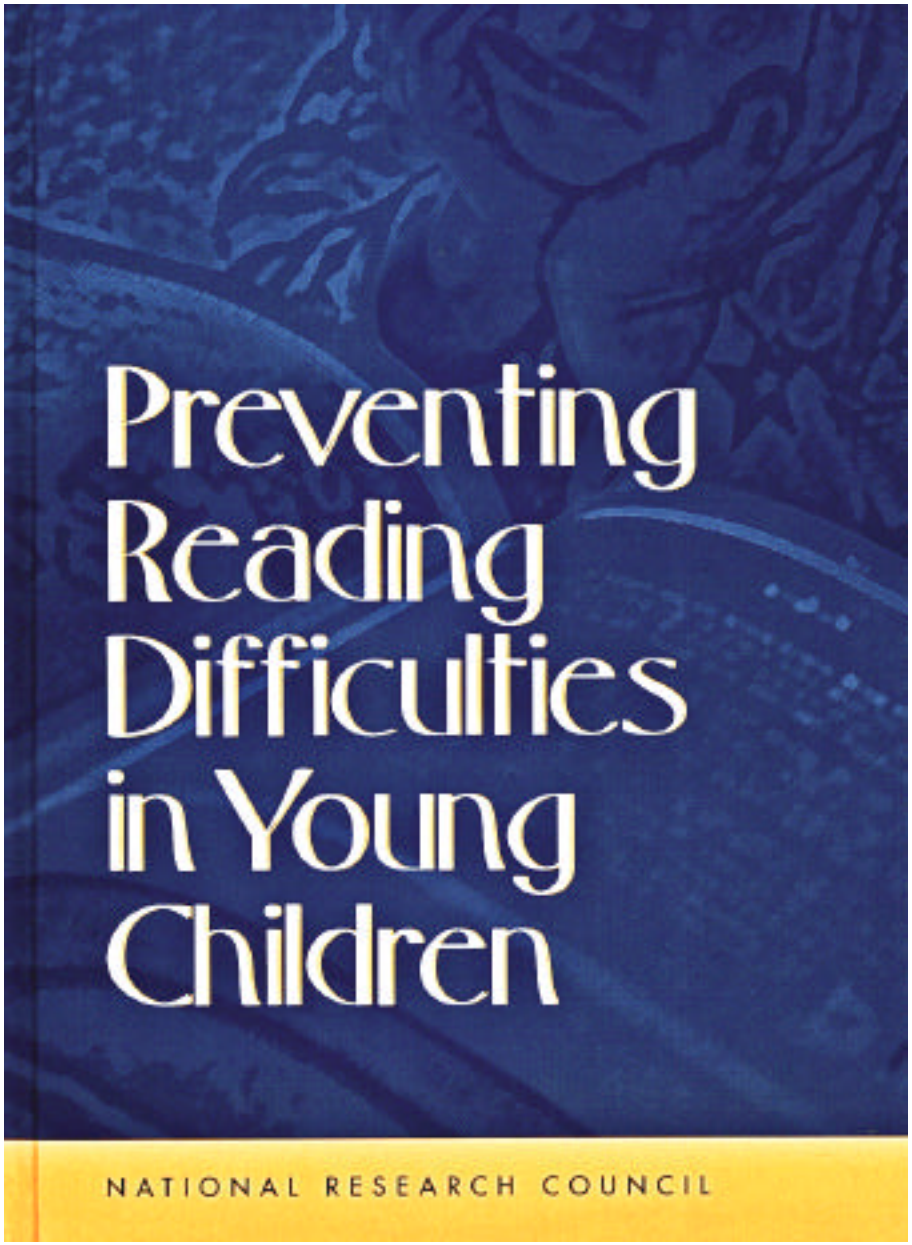

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Learning to Read

- Speech is ontogenetically prior to print.

  Almost all children learn to speak naturally, but not all children learn to read.

- Human language processing and human memory systems are structured to rely on speech-based coding.

- Phonological processes in reading are natural products of human cognition.

- A skilled reader 's encounter with most printed words in any writing system leads to phonological activation.

- Activated phonology serves memory and comprehension.

Perfetti, C. A., & Zhang, S. (1996).

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What Reading Gets You

- Learning to read increases the number of orthographically addressable words and modifies individual word representations.
- What a child knows about words is represented by specified strings of letters, phonemes, and whole words in an interconnected network.
- For a skilled reader, there is representation of the words with its position-correct letters, the phonemic values of those letters, and the pronunciation of the word as a whole.
- The representation of words develop in two ways with increased competence:

∞ *specificity*—the number of position-correct specific letters in a lexical representation.

∞ *redundancy*—redundant phonemic representations contained in a lexical entry.

Learning to read is a question of a child's acquisition of increased specificity and increased redundancy in lexical representations.

Perfetti, C. A., & Zhang, S. (1996).

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yxx cxn xndrstxnd whxt x xm wrxtxng xvxn xf x rxplxcx xll thx vxwxls wxth xn "x"

Pinker, S. (1995). The language instinct: How the mind creates language. New York: HarperCollins.

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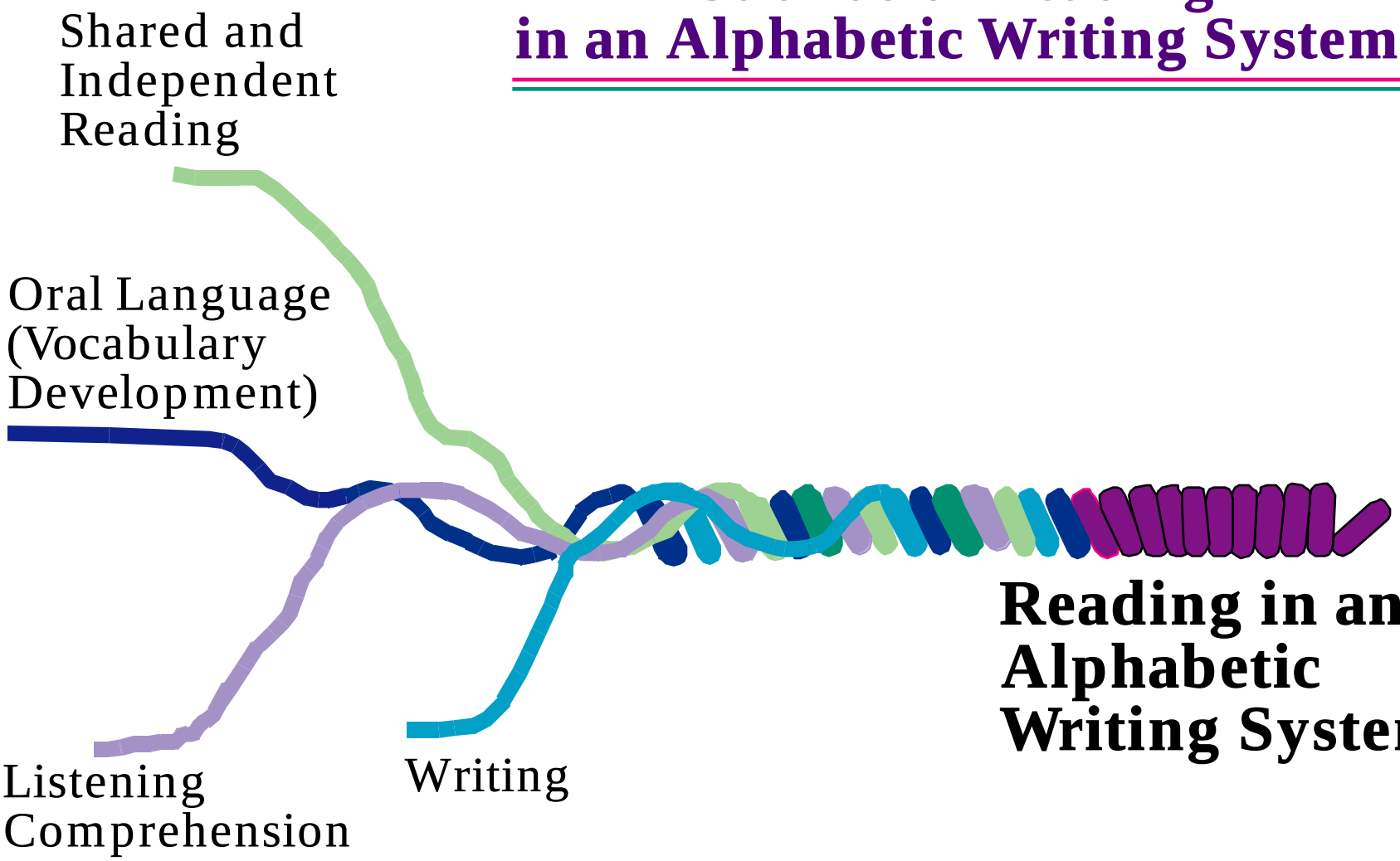
Strands of Reading in an Alphabetic Writing System



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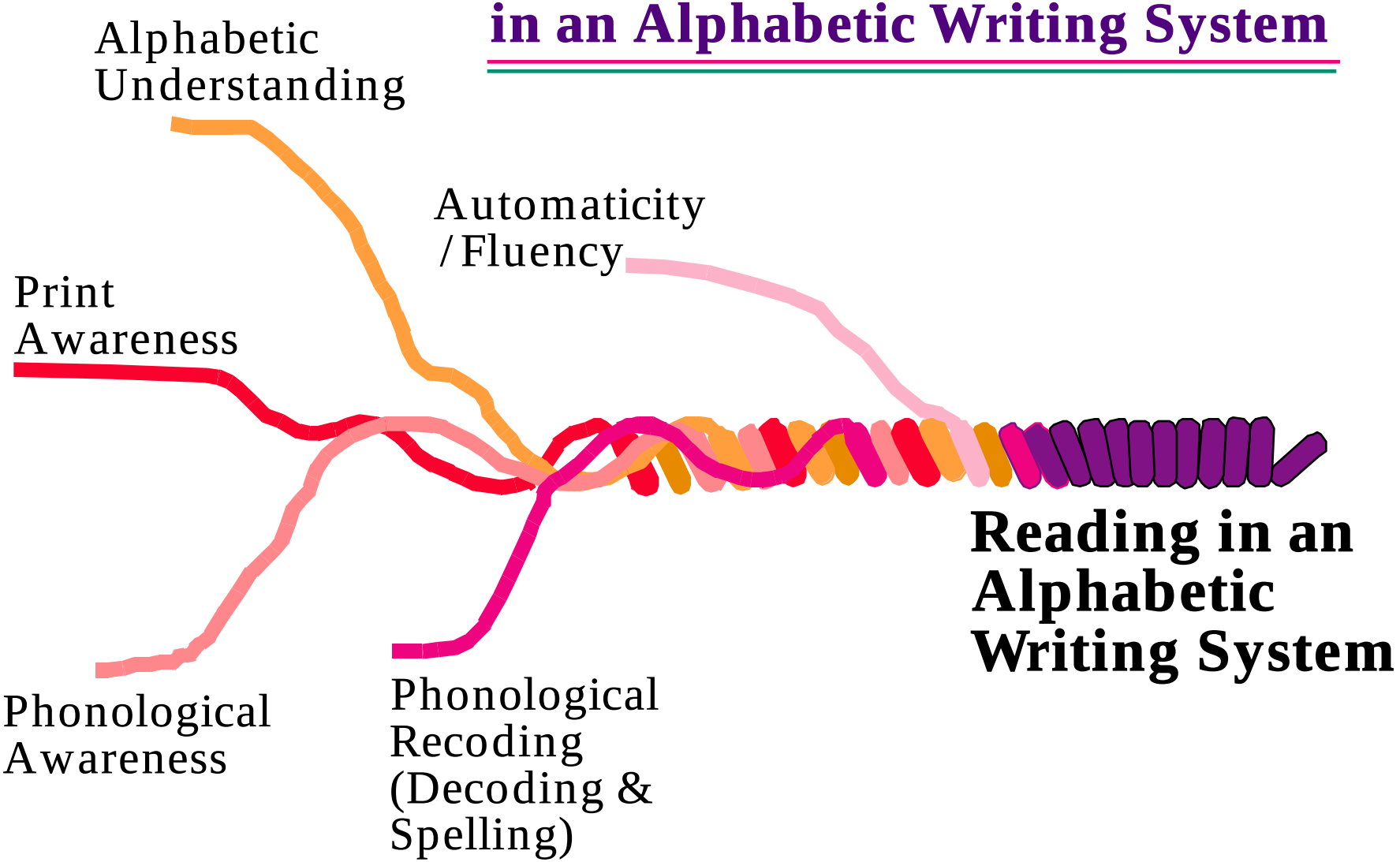
Strands of Reading in an Alphabetic Writing System



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Strands of Reading in an Alphabetic Writing System

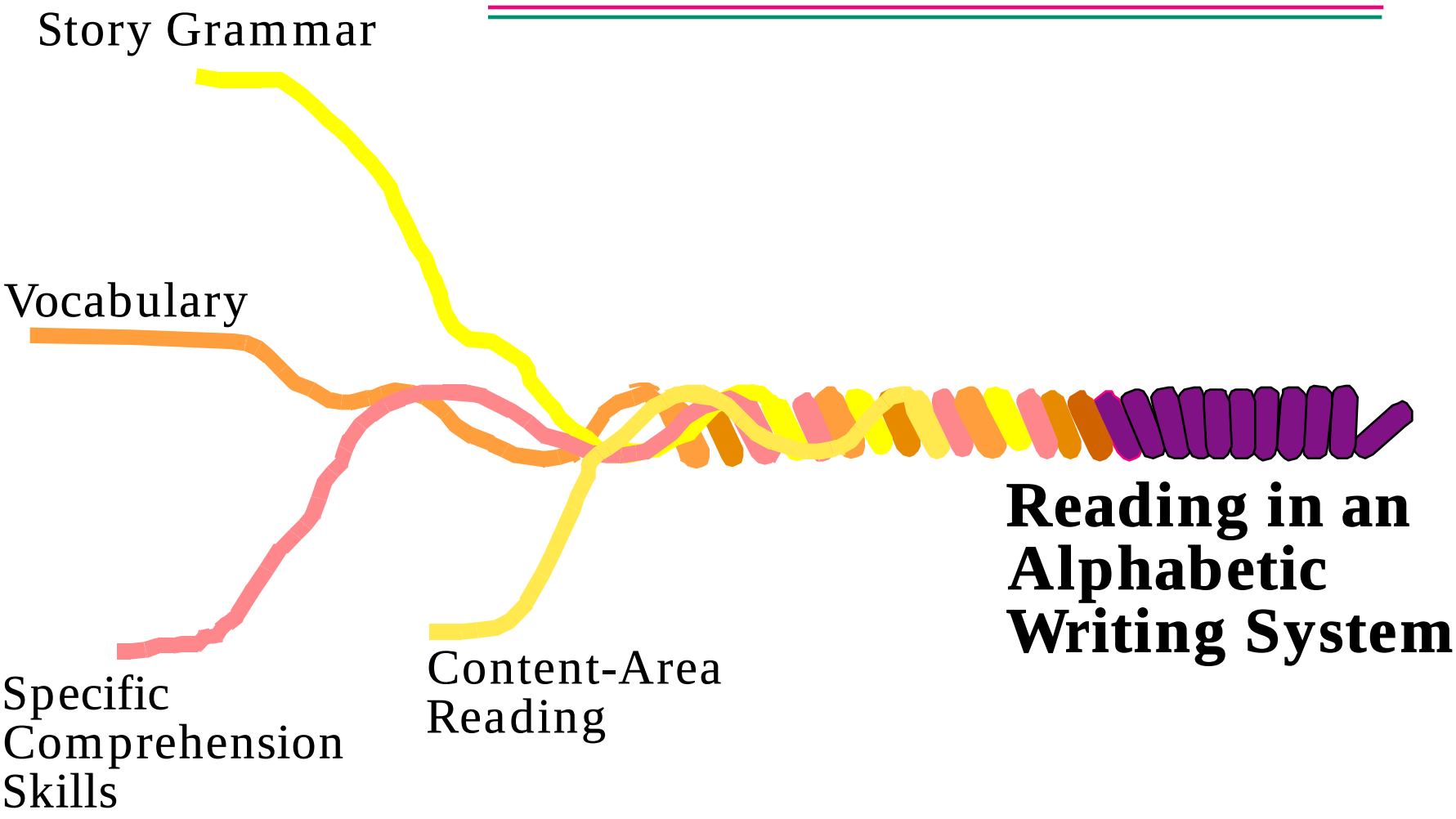

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TABLE 1

Correlations Between Decoding and Comprehension in the Connecticut Longitudinal Study

	DECODING								
Compre-hension	GR. 1	GR. 2	GR. 3	GR. 4	GR. 5	GR. 1	GR. 7	GR. 8	GR. 9
Grade 1	.89								
Grade 2	.75	.83							
Grade 3	.70	.74	.77						
Grade 4	.64	.71	.74	.73					
Grade 5	.58	.63	.68	.67	.70				
Grade 6	.59	.65	.67	.68	.66	.69			
Grade 7	.53	.61	.65	.65	.67	.68	.69		
Grade 8	.49	.58	.62	.62	.64	.65	.65	.63	
Grade 9	.52	.58	.60	.62	.60	.63	.63	.61	.63

Note. All correlations are significant at $p<.001$ and sample sizes range from 390 to 403.

(From Foorman, et. al., in press)

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How Children Become Automatic at Word Reading:

- Read a word successfully 4-14 times.
- Store the letter-sound connections and retrieve them.
- Read and reread large amounts of text.
- Read at their independent reading level (95% correct).

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Characteristics of Exemplary Phonics Instruction (English)

- Dynamic and active.
- Promotes insight into language structure.
- Makes reason for learning explicit.
- Links symbols to clearly delineated sounds.
- Skills are applied to word, sentence, and text reading many times.

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Summary of Best Practice in Word Recognition

- model and practice
- teach blending of sound-symbol links directly, systematically, explicitly, and sequentially (scope and sequence is necessary)
- include phoneme awareness in beginning lessons
- clarify the identity of sounds and symbols
- emphasize active, vocal learning
- teach high frequency words as well as regular patterns
- promote generalization: integrate skills into context
- check for fluent application

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The Role of Context in Word Recognition

- Poor readers overrely on context because letter sound knowledge is weak.
- Context allows us to decode accurately only one word in ten overall.
- The content words in a passage tend to be less common, not in the sight vocabulary, and must be decoded accurately.
- Context alone resolves ambiguity and sometimes supplies meaning for unfamiliar words.

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Six Curriculum Design Principles

PRINCIPLE	CRITERIA/FEATURES	PRINCIPLE	CRITERIA/FEATURES
Big Idea: Concepts, principles, or heuristics that facilitate the most efficient and broad acquisition of knowledge	1. Focus on important learning outcomes 2. Capture rich relationships 3. Have great potential for enabling children to apply what they learn in varied situations 4. Are central and fundamental to higher order learning. Form the basis for generalization and expansion.	**Strategic Integration:** Integrating knowledge as a means of promoting higher level cognition	1. Involve cognitive compounds 2. Results in a new and more complex knowledge structure 3. Should not be "forced" 4. Involve meaningful relationships
Conspicuous Strategies: Useful steps for accomplishing a goal or task	1. Planned 2. Purposeful 3. Successful 4. Of medium breadth	**Primed Background Knowledge:** Pre-existing information that affects new learning	1. Strategic 2. Proximal
Mediated Scaffolding: Instructional guidance provided by teachers or peers.	1. Varies according to learner need 2. Is appropriated for the task (not more than learner needs) 3. Comes in the form of tasks, content, and materials 4. Is eventually weaned or removed	**Judicious review:** When students are required to recall or apply previously taught knowledge	1. Sufficient 2. Varied 3. Distributed 4. Cumulative

Simmons, D. C., & Kame'enui, E. J. (1996). A focus on curriculum design: When children fail. Focus on Exceptional Children, 28(7), 1-16.

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Six Principles of Effective Instruction

Instructional Principle	Translation into Practice		
Big Idea	Is the skill/objective central and fundamental to later learning? Is the skill/objective central and fundamental as an end goal? How does the objective/skill you are teaching relate to the big idea?		
Conspicuous Strategy	What are the steps in the strategy? How do I model them conspicuously?		
Mediated Scaffolding	Do the activities/examples		
	a. Move from teacher-directed to student-directed activities?	Yes	No
	b. Provide multiple examples of target strategy prior to asking learner to perform skill independently?	Yes	No
	c. Begin with easy tasks and progress to more difficult?	Yes	No
	d. Separate potentially confusing information (are there concepts or ideas introduced in the lesson the learner may confuse?)		
	e. Introduce a manageable amount of information?	Yes	No
	f. Require the same requirements in independent practice as taught during lesson?	Yes	No

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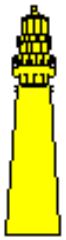
Principles for Designing Beginning Reading Curriculum for Diverse Learners



BIG Ideas: unifying curriculum activities that enable readers to translate the alphabetic code into meaningful language.

Mediated Scaffolding: external support provided by teacher, tasks, and materials during initial learning of sounds, letters, and words.

Conspicuous Strategies: sequence of teaching events and teacher actions that make explicit the steps in hearing, manipulating, and translating sounds and print.

Simmons, D. C., & Kameenui, E. J. (in press).

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Six Principles of Effective Instruction (continued)

Instructional Principle	Translation into Practice
Strategic Integration	a. What are the skills I need to connect prior learning and new learning? b. How do I explain the relation among components/parts of lesson? c. Is there a higher order concept/strategy the learner is able to perform based on integration of prior learning and new learning?
Background Knowledge	What "language" background knowledge is required of the task? What "component" background knowledge is required of the task?
Judicious Review	How do I schedule adequate review of the new skill/strategy <u>within</u> the introductory lesson? How do I schedule adequate review of the new skill/strategy <u>across</u> lessons?

Simmons, D. C. & Kame'enui, E. J. (1996)

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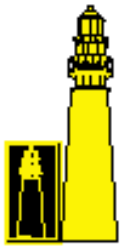
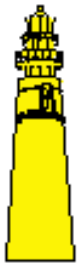
Principles for Designing Beginning Reading Curriculum for Diverse Learners (continued)

Strategic Integration: planful, consideration and sequencing of phonologic and alphabetic tasks to promote reading acquisition.



Primed Background Knowledge: relevant and essential skills and strategies with sounds and the alphabet that optimize new learning.



Judicious Review: sequence and schedule of opportunities readers have to apply and develop facility with sounds and the alphabet.

Simmons, D. C., & Kameenui, E. J. (in press).

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A man is flying in a hot air balloon and realizes he is lost. He reduces height and spots a man down below. He lowers the balloon further and shouts:

"Excuse me, can you tell me where I am?"
The man below says: "Yes, you're in a hot air balloon, hovering 30 feet above this field."
"You must be an engineer" says the balloonist.
"I am" replies the man. "How did you know?"
"Well" says the balloonist, "everything you told me is technically correct, but it's no use to anyone."

The man below says "You must be in management."
"I am" replies the balloonist, "but how did you know?"
"Well," says the man, "you don't know where you are, or where you're going, but you expect me to be able to help. You're in the same position you were before we met, but now it's my fault."

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