How to Improve Reading Achievement

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Literacy is Important

Literacy attainment has strong impact on overall academic achievement (ACT, 2006; Baer, Cook, & Baldi, 2006)

Literacy attainment has strong impact on economic well being (Ritchie & Bates, 2013; U.S. Department of Labor, 1992)

Literacy attainment affects civic involvement (Venezky, Kaestle, & Sum, 1986)

Literacy attainment affects health (Baker, et al., 1996; National Center for Education Statistics, 2006)

Literacy attainment affects social participation (Venezky, Kaestle, & Sum, 1986)

Literacy Levels Languish

But nationwide literacy levels aren't appreciably higher than in 1971 (NAEP)—though they are higher than in 1992

Only 37% of American students are proficient or higher in reading

Early literacy performance usually persists throughout schooling Cunningham, & Stanovich, 1997; Duncan, Dowsett, Claessens, Magnuson, et al., 2007; Juel, 1988; Smart, Prior, Sansor, & Oberkind, 2005; Snow, Tabors, & Dickinson, 2001

Need to achieve higher levels of literacy than in the past—both individually and for the society

Pretest

1. What is the most powerful alterable determinant of student literacy learning?

2. How much daily literacy instruction should students receive?

3. Which is most effective in phonics instruction: (A) scrupulously following a program of phonics or (B) teaching phonic elements as they are needed?

4. Is children's early vocabulary development important when they are learning to read?

Pretest (cont.)

5. It is a good idea to teach reading comprehension strategies to older students, but not to younger ones. True or false?

6. It is a mistake to put a great emphasis on oral reading practice because our goal is to develop effective silent readers. True or false.

7. What is the most powerful thing that we can do with writing in the school curriculum?

8. What's the most important quality of instruction variable?

What does it take to improve achievement?

How to Make Improvements?

What is the appropriate source of information for making school improvements?

Publishers and other for profit companies?

Gurus?

Teacher lore?

Fads?

Research?

How to Make Improvements?

Publishers and other for profit companies?

Gurus?

Teacher lore?

Fads?

Research?

Let's turn to the research—but which research?

- Idea that research can prove anything
- Not all research is equal
- Research can differ in its suitability to answer questions (descriptive vs. experimental research)
- Research can differ in its quality

Preventing Reading Difficulties

National Research Council appointed a group of literacy experts to provide research-based recommendations on how to address early literacy

They issued a report in 1998 focused on preschool, kindergarten, and primary grade reading instruction and support

COMMITTEE ON THE PREVENTION OF READING DIFFICULTIES IN YOUNG CHILDREN

CATHERINE SNOW *(Chair),* Graduate School of Education, Harvard University, Chair

MARILYN JAGER ADAMS, Bolt, Beranek, and Newman Inc., Cambridge, Massachusetts

BARBARA T. BOWMAN, Erikson Institute, Chicago, Illinois

BARBARA FOORMAN, Depart of Pediatrics, University of Texas, and Houston Medical School

DOROTHY FOWLER, Fairfax County Public Schools, Annandale, Virginia

CLAUDE N. GOLDENBERG, Department of Teacher Educ, California State University, Long Beach

EDWARD J. KAME'ENUI, College of Education, University of Oregon, Eugene

WILLIAM LABOV, Department of Linguistics and Psychology, University of Pennsylvania

RICHARD K. OLSON, Department of Psychology, University of Colorado, Boulder

ANNEMARIE SULLIVAN PALINCSAR, School of Education, University of Michigan, Ann Arbor

CHARLES A. PERFETTI, Department of Psychology, University of Pittsburgh

HOLLIS S. SCARBOROUGH, Brooklyn College, City University of New York, and Haskins Laboratories, New Haven, Connecticut

SALLY SHAYWITZ, Department of Pediatrics, Yale University

KEITH STANOVICH, Ontario Institute for Studies in Education, University of Toronto

DOROTHY STRICKLAND, Graduate School of Education, Rutgers University

SAM STRINGFIELD, Center for the Social Organization of Schools, Johns Hopkins University

ELIZABETH SULZBY, School of Education, University of Michigan, Ann Arbor

National Reading Panel

In 1998, Congress asked for a review of what works in reading instruction

U.S. Department of Education and the National Institute of Child Health and Human Development appointed a panel

Panel reviewed more than 500 studies on reading instruction (K-12)

National Reading Panel

Donald Langenberg, University of Maryland, Chair

Gloria Correro, Mississippi State University

Linnea Ehri, City University of New York

Gwenette Ferguson, Houston Public Schools

Norma Garza, parent

Michael L. Kamil, Stanford University

Cora Bagley Marrett, University of Massachussetts-Amherst

S.J. Samuels, University of Minnesota

Timothy Shanahan, University of Illinois at Chicago

Sally E. Shaywitz, Yale University

Thomas Trabasso, University of Chicago

Joanna Williams, Columbia University

Dale Willows, University of Toronto

Joanne Yatvin, Portland State University
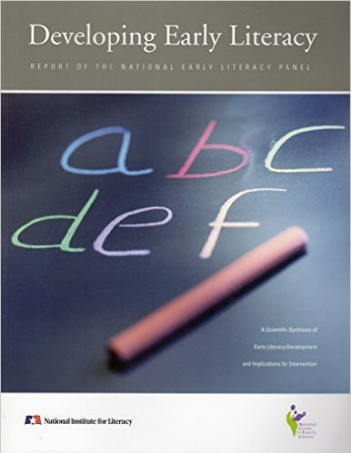
National Early Literacy Panel

National Early Literacy Panel (2003-2008) reviewed research on the teaching of reading in preschool and kindergarten

Largest meta-analysis of research data on the teaching of reading during these years (examined 400-500 studies)

Set out to determine which skills needed to be taught early on and what confers literacy learning advantages to young children

National Early Literacy Panel
Timothy Shanahan, University of Illinois at Chicago, Chair
Anne Cunningham, University of California Berkeley
Kathy C. Escamilla, University of Colorado
Janet Fischel, State University of New York at Stony Brook
Susan Landry, University of Texas Health Science Center at Houston
Christopher J. Lonigan, Florida State University
Victoria J. Molfese, University of Louisville
Chris Schatschneider, Florida State University
Dorothy Strickland, Rutgers University
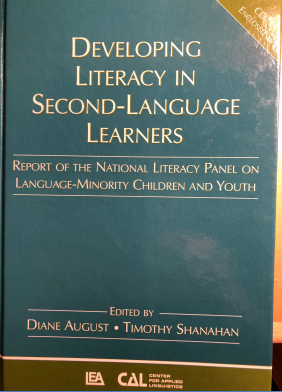
National Literacy Panel for Language Minority Children and Youth

National Early Literacy Panel (2003-2006) reviewed research on the teaching of reading to children (ages birth to 18) from language minority families

Largest analysis of research data on the teaching of reading during this population

Set out to make a wide range of determinations concerning what facilitates the English-langauge literacy learning of non-English speakers (including young children)

National Panel for Language Minority Children and Youth

Timothy Shanahan, University of Illinois at Chicago, Chair

Diane August, Center for Applied Linguistics

Isabel L. Beck, University of Pittsburgh

Margarita Calderón, Johns Hopkins University

David J. Francis, University of Houston

Georgia Earnest García, University of Illinois at Urbana-Champaign

Fred Genesee, McGill University

Esther Geva, University of Toronto

Claude Goldenberg, California State University, Long Beach

Michael L. Kamil, Stanford University

Keiko Koda, Carnegie Mellon University

Gail McKoon, Ohio State University

Robert S. Rueda, University of Southern California

Linda S. Siegel, University of British Columbia

What Works Clearinghouse
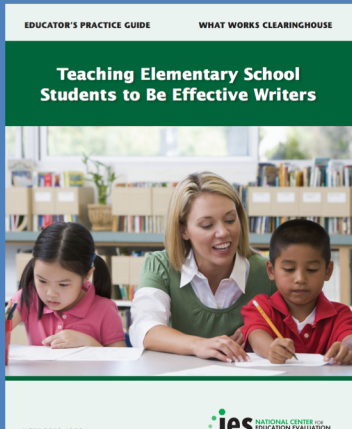
U.S. Department of Education

Panels of experts assembled based on particular topics

Panels can make any recommendations that they choose, but WWC evaluates supporting research and indicates the strength of the underlying evidence

What Works Clearinghouse Panelists (sample)

- Carol Connor, Florida State University

- Janice Dole, University of Utah

- Nell Duke, Michigan State University

- Jill Fitzgerald, University of North Carolina

- Barbara Foorman, Florida State University

- Steve Graham, Arizona State University

- Laura Justice, Ohio State University

- Michael L. Kamil, Stanford University

- James Kim, Harvard University

- P. David Pearson, University of California, Berkeley

- Timothy Shanahan, University of Illinois at Chicago

- Joe Torgesen, Florida State University

Carnegie Corporation Meta-Analyses

For the most part, government reports have focused on reading alone, with little consideration of writing

Carnegie has supported Steve Graham's meta-analyses on writing instruction (and he has done additional ones)

All of these have been published in high quality, rigorously reviewed journals
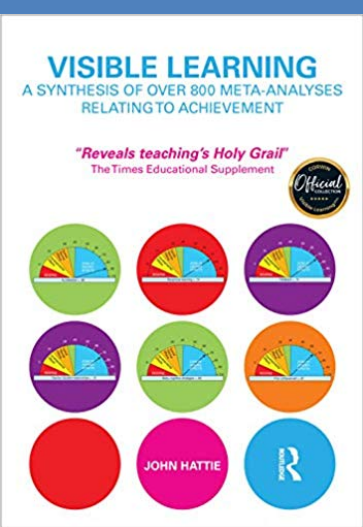
Visible Learning

Compendium of over 800 meta-analyses relating to achievement (Hattie, 2008)

Used as a source of data – not depending on Hattie's synthesis of these

This Presentation

Will rely heavily on the evidence included in these public reports

Along with recent studies

And my own experience as Director of Reading for the Chicago Public Schools

Learning is Individual

- We learn through our own experiences (and when it comes to academic learning, the only thing that matters is our academic experiences)
- The only actions that can enhance learning are actions that alter experiences in some way

Three Aspects of Experience

- Amount of instruction or experience
- Content or focus of that experience
- Quality (effectiveness or efficiency) of that experience

Amount of Instruction

Research suggests that amount of instruction is the single most important alterable determinant of learning

Amount of Teaching

- What evidence is there that amount of teaching/experience makes a difference?
- Evidence of increases in learning due to increases in amount of instruction/academic experience is extensive, consistent, and overwhelming

Amount of Teaching

- What evidence is there that amount of teaching/experience makes a difference?
- The "immediate, powerful" positive impact of amount of instruction and study time on learning is the most "consistent finding of all psychological research on academic learning" (Walberg, 2002)
- Evidence of increases in learning due to increases in amount of instruction/academic experience is extensive, consistent, and overwhelming

Disparities in Early Vocabulary Experience

Child's Cumulative Vocabulary (Words)

1200

600

200

30 million word gap

Professional Families

Working Class Families

Welfare Families

16 mos.   24 mos.   36 mos.

Child's Age (Months)
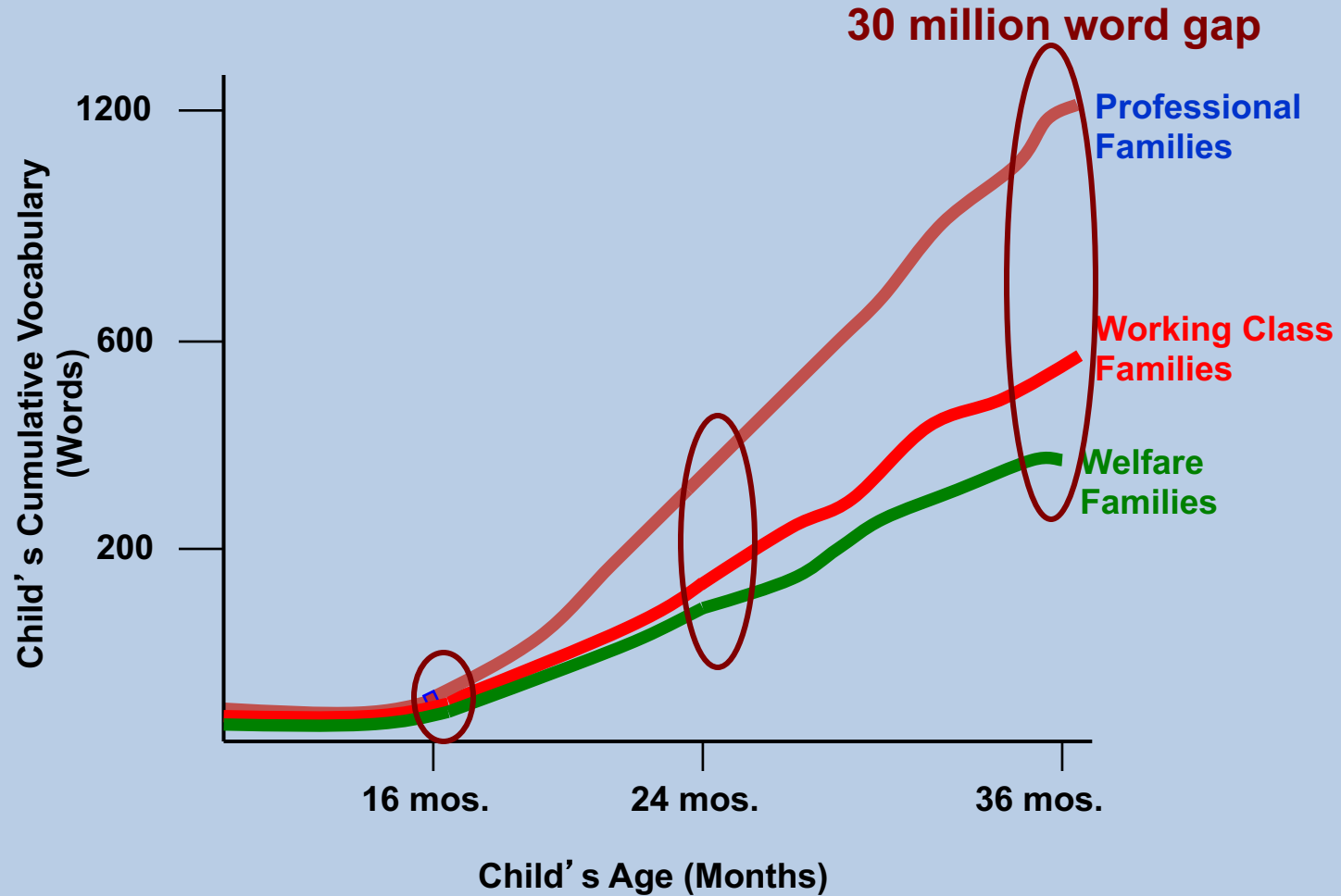
Source: Hart & Risley (2003)

Explanation of Hart & Risley Results

- Major concerns about the Hart & Risley study: small size, methods that may have suppressed language of lowest SES population

- Gilkerson, et al. (2015): replicated the study, but with a larger sample of kids (329) and greater amount of data (and without researchers present—LENA); found that lower SES kids vocalized less than other kids and this explained 7-16% of the variance in oral language development---found a 4 million word gap by age of three

- Sperry, Sperry, & Miller, (2018): no differences (but didn't include a high SES group and counted ambient language)

Effects of full-day kindergarten

- Full-day kindergarten increases academic experience by about one month per year
- Full-day kindergartens consistently outscore half-day kindergartens on achievement tests
- Full-day kindergarten has stronger, longer lasting
benefits for children from low-income families or with few educational resources prior to kindergarten

Number of Instructional Days in School Year by Country

International
Average = 193
School
Days/Year

	Korea	Japan	China	Australia	Russian Federation	Netherlands	England	Canada	UNITED STATES
	225	223	221	196	195	191	190	188	180
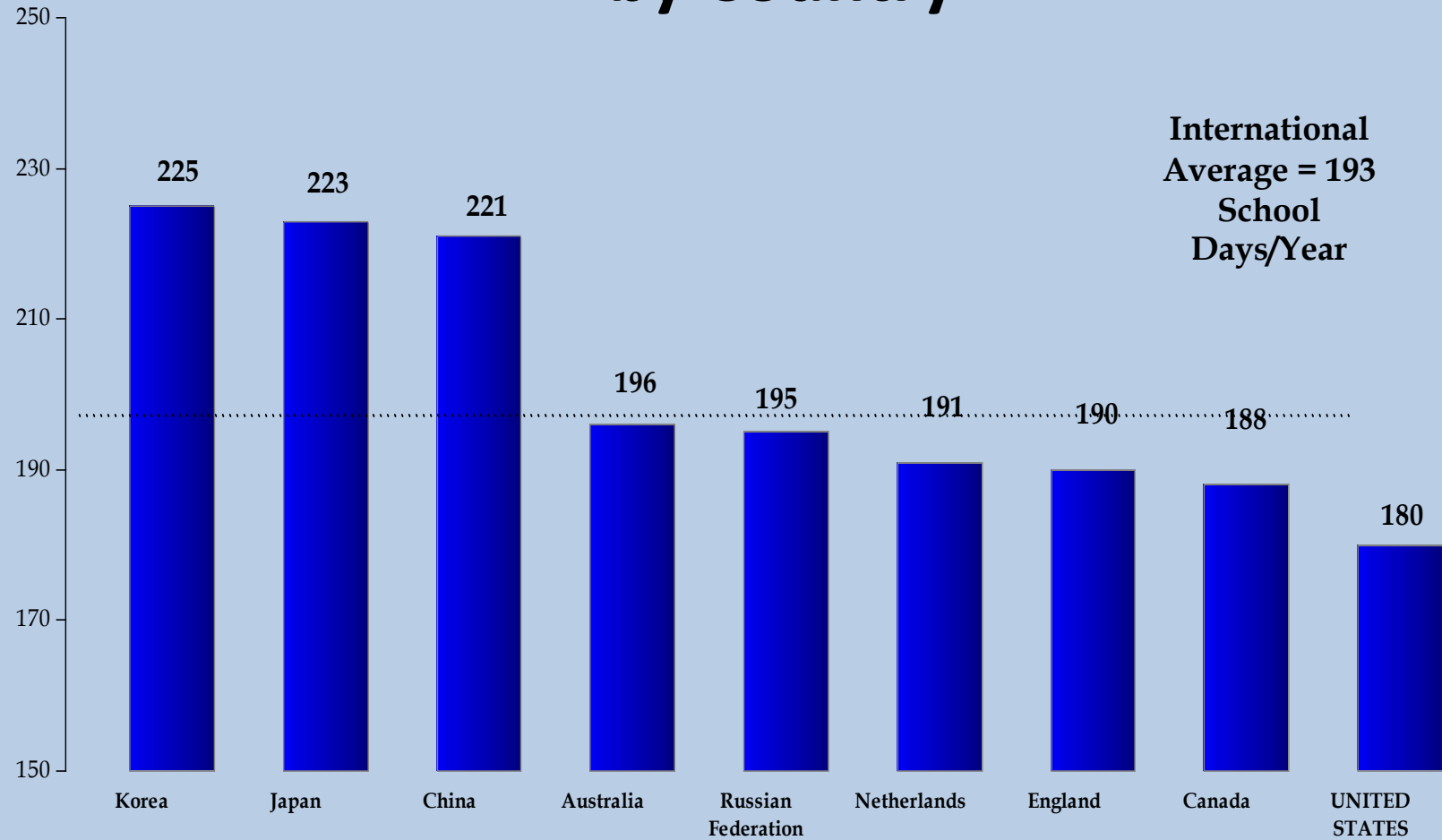
SOURCE: Trends in International
Mathematics and Science Study (TIMSS) 2003

Extended school year

- In a study in Chicago, extending the school year by 30 days led to increases in student learning in reading and math (Frazier & Morrison, 1998)
- This study increased kindergarten by 30 days and raised reading achievement by about 1 full year in reading over comparison children

Use of School Day

- Concept of Academic Learning Time (Fisher, Marliave, Filby, 1978)—big differences in the use of time from class to class

- Beat the odds comparisons showed that effective teachers in grades K-3 keep students on task/engaged 96% of the time, students of less effective teachers only 63% (Taylor, 1999, 2006).

Kennewick School

Annual Growth for All Students... Catch-up Growth for Those Who are Behind by Lynn Fielding, Nancy Kerr, and Paul Rosier

Tells of experiences in Kennewick, WA school that successfully raised reading achievement

They estimate that 60-80 minutes of reading instruction (per day/per year) will raise achievement one year

So, a youngster who enters 3rd grade 2 years behind in reading, will need about 240 minutes of instruction daily to catch up

Washington Elementary School

Growth in % of 3rd grade students meeting grade level standards

School Year

95   96   97   98   99   00   01   02   03   04   05   06

Percent at Grade level

57   72   72   68   78   94   96   99   94   98   99   98

Working harder and more effectively at 3rd grade

Began providing intensive interventions in the afternoon to many students

Result of improvement at both 2nd and 3rd Grade

Baseline year

Began testing in 2nd grade and focusing on earlier improvement
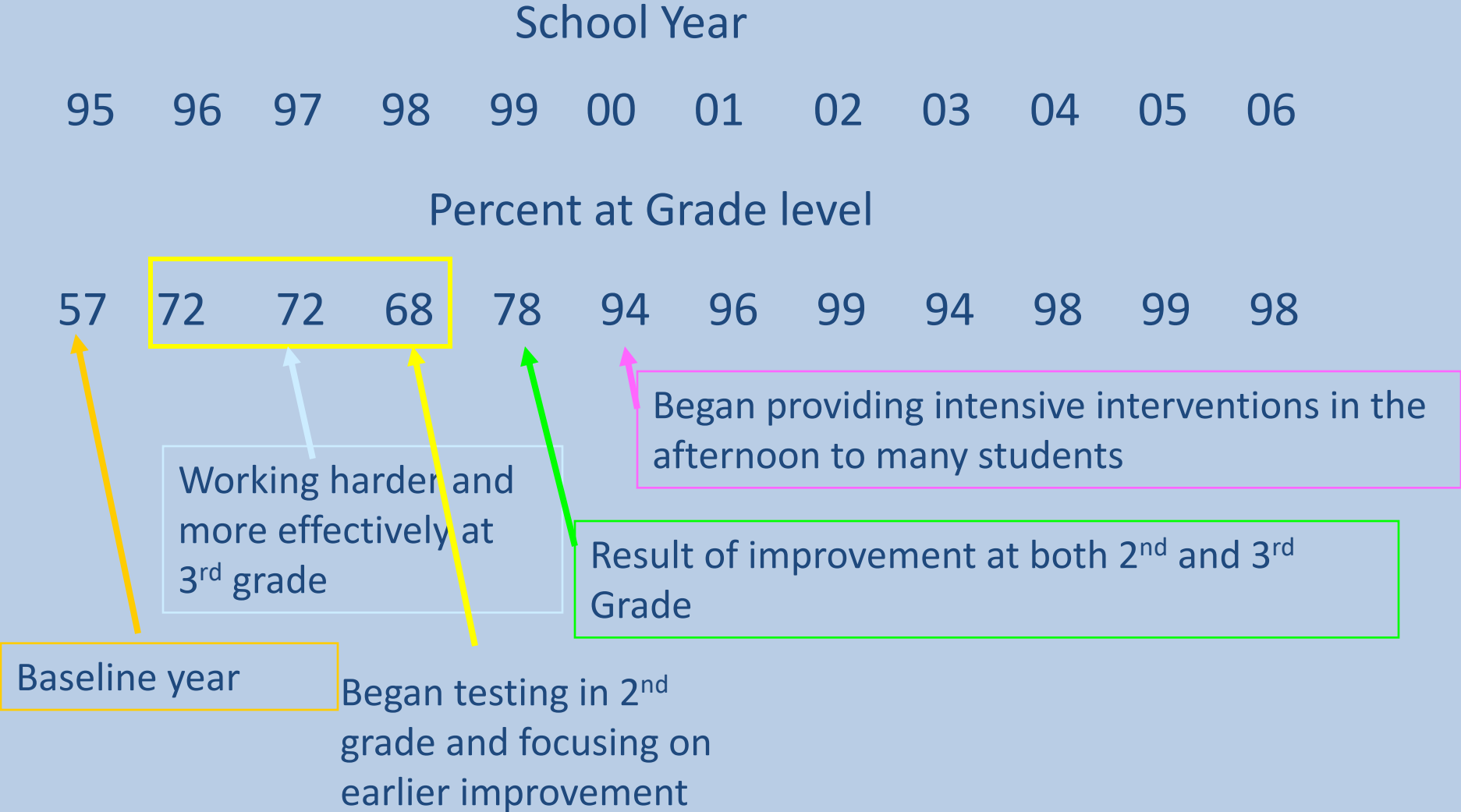
Remedial instruction

When students are struggling in reading, schools often provide them with "pull-out" instruction (e.g., Title I reading, RtI)

Unfortunately, a large percentage of those programs replace one form of reading instruction with another (rendering these programs ineffective)

Evaluation of RtI Practices for Elementary School (Balu, et al., 2015)

School
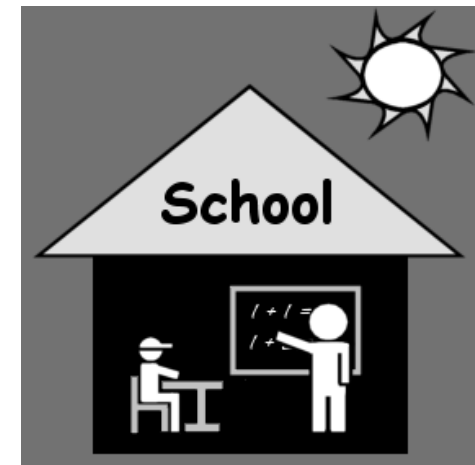
Independent reading

Teachers love kids and want to encourage kids to read—and there are plenty of "experts" saying that kids should be reading on their own

However, do students learn more when they read on their own or when they work with a teacher on reading?

Research suggests 4-8 times the learning benefit from instruction than from independent reading (NICHD, 2000; Hattie, 2008; Yoon, 2002)

Get kids to read on their own away from school

Minimize unnecessary repetition

Small group instruction is more effective than whole class teaching

However, that isn't the appropriate comparison (since students get less teaching when they work in small groups)

When amounts of instruction are equalized, there is no consistent benefit from small group teaching

Don't teach individually what can be accomplished equally well in small group, don't teach small group what can be accomplished equally in whole class

Don't organize time around size of group, but what you are trying to teach

Other time data

Preschool

Absenteeism

After-school programs

Summer school programs

Snow days

Days with unplanned teacher absences

How much teaching do our kids get?

- How much reading instruction do the students get at your school?

- How does amount of reading instruction differ by grade level?

- How much reading instruction do the lowest kids receive?

- Does Tier 2 instruction increase the amount of teaching received by all students?

Content of Instruction

The second biggest determinant of school learning is content coverage—what we teach
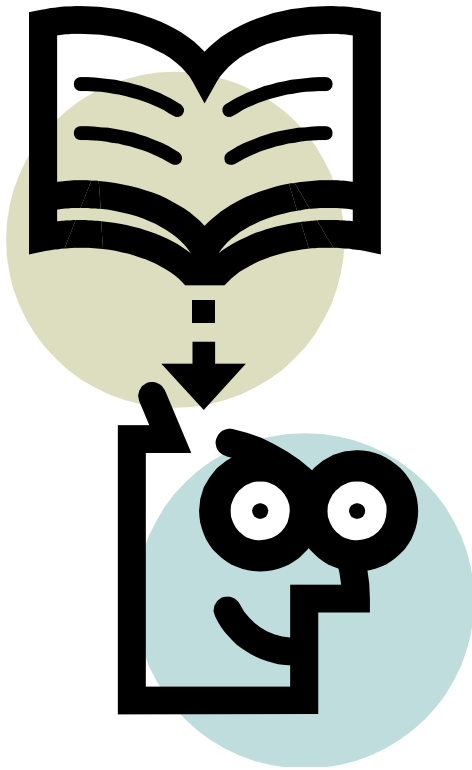
What needs to be taught?

- Teach those things that research has supported… what needs to be learned to make someone a reader?
- Long lists of skills and standards…. Unwieldy, unmanageable…
- Organize into clusters and divide the time roughly equally among them

Components of Literacy

Knowledge of Words and Parts of Words (phonological awareness, phonemic awareness, alphabet, phonics, spelling, sight vocabulary, morphology, word meaning)

Oral Reading Fluency (accuracy, speed, prosody)

Reading Comprehension/Learning from Text (reading comprehension strategies, text structure, cohesion, grammar, learning)

Writing (narration, exposition, argument, writing process, summarization, analysis, synthesis, coherence, elaboration, focus, voice, diction, conventions)

Phonological Awareness

Phonological Awareness is the ability to hear and manipulate language sounds including word and syllable separations and the phonemic within spoken words

Phonemic Awareness refers to the ability to hear and manipulate the smallest sounds within words (it is a part of Phonological Awareness)

PA is not phonics

Development of PA progresses from gross sounds (words, syllables) to finer-grained sounds (phonemes)

The instructional goal is to enable children to be able to easily and quickly fully segment the phonemes within words

Phonological Awareness (cont.)

National Early Literacy Panel (2008) reviewed nearly 70 studies showing that phonological awareness was a strong predictor of later reading achievement

PA remains a significant predictor even controlling for age, SES, alphabet knowledge, oral language, IQ, or prior decoding ability

Phonological Awareness (cont.)

NELP meta-analyzed approximately 50 studies finding that instruction in PA in pre-K and/or K (alone, combined with AK, combined with phonics) led to significant impacts on PA, AK, Reading, Spelling

Age/developmental level made no difference in the benefits of this kind of teaching, but what was taught varied (larger to smaller units)

NRP meta-analyzed more than 51 studies finding that phonemic awareness instruction in K, 1, and remediation led to significant improvements in phonemic awareness, decoding, reading comprehension, and spelling (NICHD, 2000)

NLP (2008) found that phonemic awareness instruction was beneficial for second-language students

Instruction of PA

- Initially, it must be done orally; students have to hear the sounds (without text clues)—but it is reciprocal so letters will come into this
- Brief intensive instruction
- Instruction should emphasize 1-2 skills at a time
- Progression is from grosser sounds to smaller sounds (words-syllables-phonemes)
- Should be combined with alphabet instruction
- Individual or small group (or with monitoring and follow up)

Phonological Awareness Skills

- Word separation
- Syllable segmentation
- Onset/rime
- Phoneme identity
- Phoneme isolation

- Phoneme blending
- Phoneme segmentation
- Phoneme addition
- Phoneme substitution
- Phoneme deletion

Examples of PA Skills

PA Skill	Example
Word separation	The---man---ran---up---the---hill.
Syllabic segmentation	Ti--mo--thy--Shan--a--han
Onset/rime	b—ig; m—an; r—ug; l--amb
Phoneme identity	ball, game, baby, bat
Phoneme isolation	p—an, pa—n
Phoneme blending	/p/-/a/-/n/
Phoneme segmentation	m/a/p, t/a/b/l
Phoneme addition	re, red, redea, redeam, redeams
Phoneme substitution	map, cap, pap, rap, sap—sam, sad, saf, sag
Phoneme deletion	Ready, read, re, r

Alphabet Letters

Letter name knowledge is one of best predictors of later reading achievement (Adams, 1990; Hammill, 2004; Scarborough, 1998; Schatschneider, et al., 2004; National Early Literacy Panel, 2008)

Letter name knowledge is an important indicator of later reading disability (Gallagher, et al., 2000; O'Connor & Jenkins, 1999; Torppa, et al., 2006)

Alphabet knowledge remains significant even when controlling for age, SES, oral language, phonological awareness, or IQ (NELP, 2008)

Alphabet Letters (cont.)

There are studies of the teaching of alphabet knowledge, but none of these studies have reading outcomes

However, studies suggest that letter name teaching **in combination** with phonological awareness or decoding is beneficial to reading achievement—and phonological awareness development is more rapid when letter names known (Kim et al, 2010)

Studies show the best letter name learning progress occurs when the instruction is combined with letter sounds (Piasta & Wagner, 2010) and that it is important to separate similar letters (visual and aural)

Phonics

- Phonics refers to instruction aimed at teaching the alphabetic system of English; includes sound-symbol correspondences and the relationships between spelling patterns and pronunciations of words. Decoding from print to pronunciation.

- There has long been controversy over phonics: the controversy is not whether students need to decode or not, just whether such instruction is needed to enable such decoding (Barr, 1972; Biemiller, 1970)

Phonics (cont.)

NELP examined 70 studies on decoding instruction (includes those PA studies noted earlier); found that such instruction in preschool and kindergarten had moderate to large impacts on students' reading and spelling development and on various emergent literacy skills

NRP examined 38 studies on phonics instruction and found that such teaching in grades K-2 and with older remedial readers had a positive impact on decoding and fluency and on reading comprehension and spelling as well K-2.

Phonics (cont.)

NLP found explicit decoding instruction to be beneficial to English learners as well (though there are only a few studies with this population and the effect sizes were smaller than for native English speakers)

No point during these PreK-2 years when code-focused instruction is not beneficial to students (and the benefits appear to be long lasting)

Phonics (cont.)

Effective phonics instruction was explicit and systematic

Multiple years of phonics instruction were better than single years

Virtually all programs of phonics work with young children (NRP, WWC)—however, thoroughness matters

No single phonics sequence did better than any other

Phonics instruction should include lots of opportunity for students to decode and encode words

Important to develop a "mental set for diversity"

Spelling is part of this, too

Phoneme-Grapheme Correspondences

Phoneme	Word Examples	Common spellings
/p/	pit, spider, stop	p
/b/	bit, brat, bubble	b
/m/	mitt, comb, hymn	m, mb, mn
/t/	tickle mitt, sipped	t, tt, ed
/d/	die, loved	d, ed
/n/	nice, knight, gnat	n, kn, gn
/k/	cup, kite, duck, chorus, folk, quiet	k, c, ck, ch, lk, q
/g/	girl, Pittsburgh	g, gh
/ng/	sing, bank	ng, n
/f/	fluff, sphere, tough, calf	f, ff, ph, lf
/v/	van, dove	v, ve
/s/	sit, pass, science, psychic	s, ss, sc, ps

Phoneme-Grapheme Correspondence

Phoneme	Word Examples	Common spellings
/z/	zoo, jazz, nose, as, xylophone	z, zz, se, s, x
/th/	thin, breath, ether	th
/th/	this, breathe, either	th
/sh/	shoe, mission, sure, charade, precious, notion, mission, special	sh, ss, s, ch, sc, ti, si, ci
/zh/	measure, azure	s, z
/ch/	cheap, future, etch	ch, tch
/j/	judge, wage	j, dge, ge
/l/	lamb, call, single	l, ll, le
/r/	reach, wrap, her, fur, stir	r, wr, er/ur/ir
/y/	you, use, feud, onion	y (u, eu), i
/w/	witch, queen	w, (q)u
/wh/	where	wh
/h/	house, whole	h, wh

Phoneme-Grapheme Correspondence
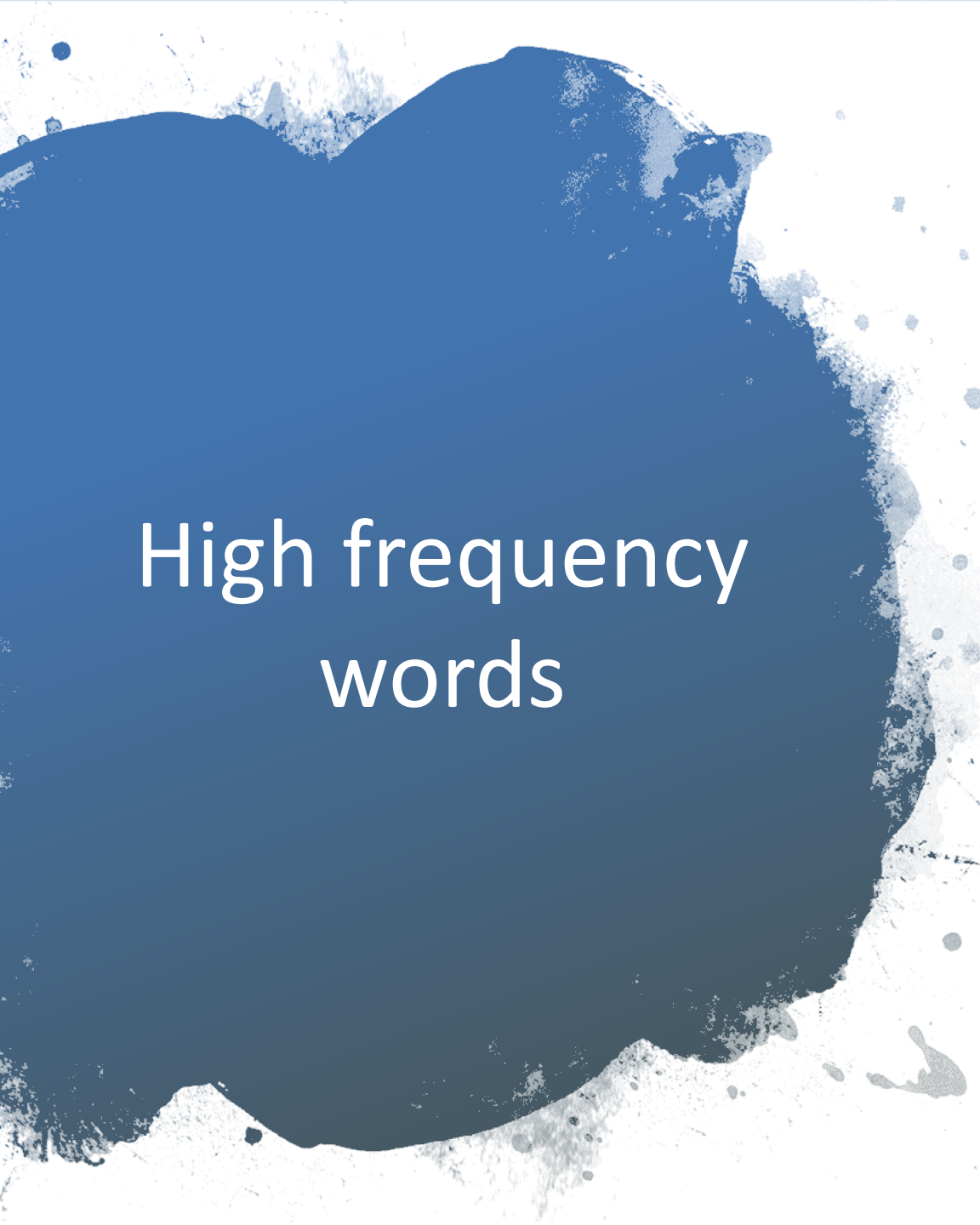
Phoneme	Word Examples	Common spellings
/ē/	see, these me, eat, key, happy, chief, either	ee, e__e, -e, ea, ey, -y, ie, ei
/ĭ/	sit, gym	i, y
/ā/	make, rain, play, great, baby, eight, vein, they	a__e, ai, ay, ea, -y, eigh, ei, ey
/ĕ/	bed, breath	e, ea
/ă/	cat	a
/ī/	time, pie, cry, right, rifle	i__e, ie, -y, igh, -i
/ŏ/	fox, swap, palm	o, wa, al
/ŭ/	cup, cover, flood, tough	u, o, oo, ou
/aw/	saw, pause, call, water, brought	aw, au, all, w, ough
/ō/	vote, boat, toe, snow, open	o_e. oa, oe, ow, o-
/ŏŏ/	took, put, could	oo, u, ou
/ū/ [ōō]	moo, tube, blue, chew, suit, soup	oo, u_e, ue, ew, ui, ou

Phoneme-Grapheme Correspondence

Phoneme	Word Examples	Common spellings
/y/ /ū/	use, few, cute	u, ew, u_e
/oi/	boil, boy	oi, oy
/ow/	out, cow	ou, ow
/er/	her, fur, sir	er, ur, ir
/ar/	cart	ar
/or/	sport	or

Syllable Patterns

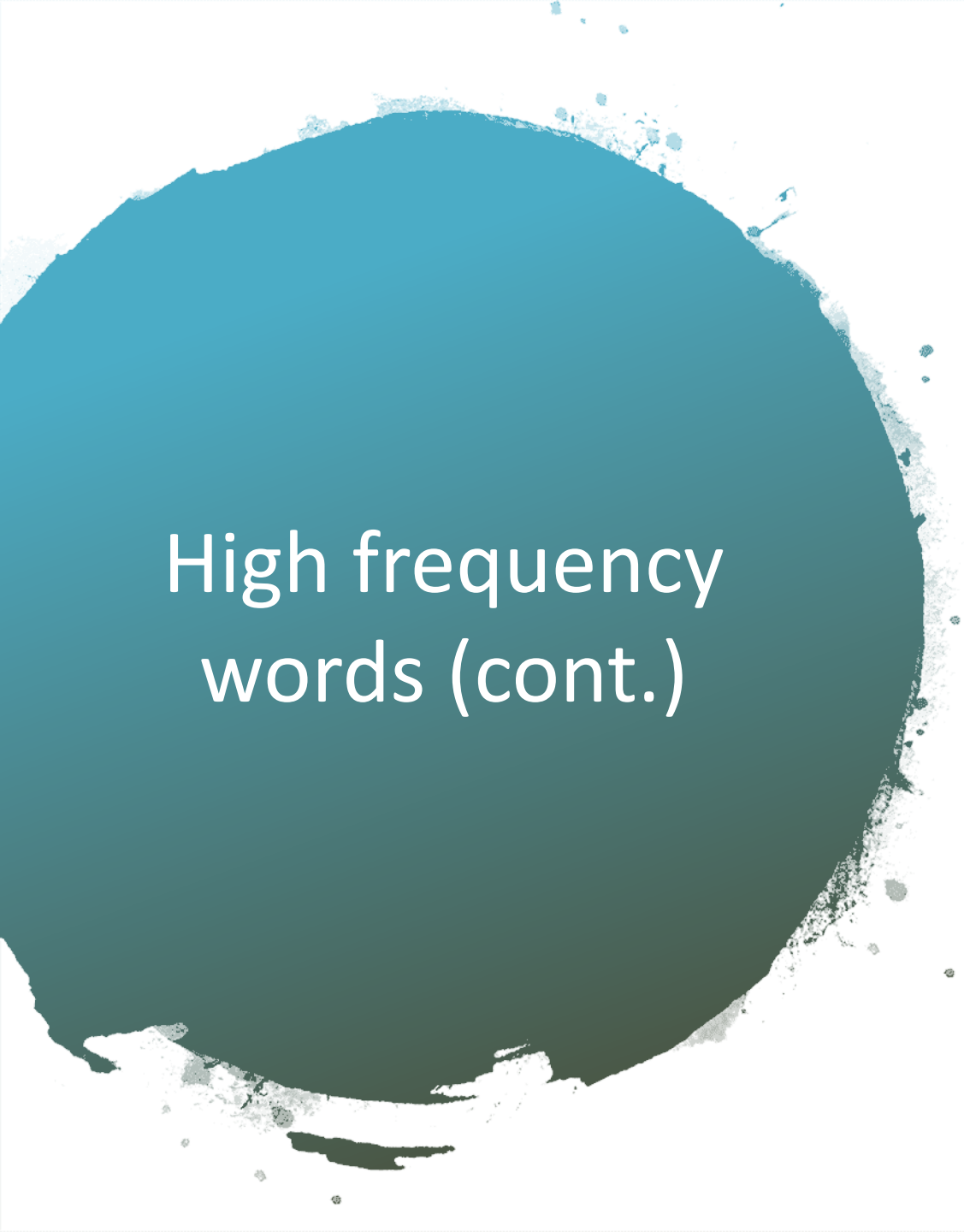| Syllable type	Definition	Examples
Closed	Syllable with short vowel spelled with a single vowel letter ending in one or more consonants	dap-ple, hos-tel, bev-erage
Vowel-C-e (Magic e)	Syllable with a long vowel spelled with one vowel + one consonant + silent e	com-pete, -des-pite
Open	Syllable that ends with a long vowel sound, spelled with single vowel letter	pro-gram, ta-ble, re-cent
Vowel team	Syllables that use 2-4 letters to spell the vowel	beau-ti-ful, train-er, con-geal, spoil-age
Vowel-r (r-controlled)	Syllable with er, ir, or ur	in-jur-ious, con-sort, char-ter
Consonant-le	Unaccented final syllable containing a consonant before /l/ followed by a silent e	drib-ble, bea-gle, lit-tle

High frequency words

- Words differ in their frequency in the language (some words are used a lot and others appear rarely)

- In English, the 300 most frequent words in the language (and their derivations) make up about 75% of all the words one sees in texts—it can be useful to know these words especially well

- Also, the origins of our language are complex: the alphabetic properties of English are complex—this is particularly true of some of the most common words in the language (e.g., the, of, where); can be easier to memorize these rather than decoding them

High frequency words (cont.)

Sight vocabulary refers to words that someone can read "as if" they were not decoding—appears like they are effortlessly pulling them back from memory and recognizing them as a whole

Given the value of high frequency words it would make sense that students learn these as "sight words"

However, the story is more complex than that—student memory for words is highly dependent upon decoding (phonics makes words "stickier"); sight vocabulary is to a great degree an outcome of decoding (Ehri, 2005)—in other words sight vocabulary is a result of decoding ability

High frequency words (cont.)

Teaching a small number of sight vocabulary can improve fluency and comprehension (Griffin & Murtagh, 2015)

Teach words by focusing attention on the order of letters (not mnemonics, pictures, etc.) and work with them both in isolation—interval training—and in context (Browder & Lalli, 1991; Fossett & Mirenda, 2006)

High frequency words (cont.)

- Texts used in K-1 should include decodable text along with high frequency words

- Direct work on memorizing words should be minimal (lots of programs are overdoing this now)

- Kindergarteners should learn about 20 words

- By end of grade 1, kids should know the 100 most frequent words (and should be able to decode ~500 words)

- By end of Grade 2, and 300 most frequent by end of Grade 2

the	for	from	when	their
of	on	or	your	if
and	are	one	can	will
a	as	had	said	up
to	with	by	there	other
in	his	word	use	about
is	they	but	an	out
you	I	not	each	many
that	at	what	which	then
it	with	all	she	them
he	his	were	do	these
was	have	we	how	so

some	write	been	made	
her	go	call	may	
would	see	who	part	
make	number	oil	over	
like	no	now		
him	way	find		
into	could	long		
time	people	down		
has	my	day		
look	than	did		
two	first	get		
more	water	come		

Vocabulary

- A good deal of vocabulary learning is indirect (from listening, from reading, from learning, from media)

- Explicit teaching helps, too

- National Reading Panel reviewed 45 studies and found that direct instruction in words and/or the meaningful parts of words (morphology) has a positive impact on reading comprehension (studies from grades 1-12)

- NLP studies showed the special importance of vocabulary to second-language learners: effect size is bigger

Vocabulary (cont.)

- Vocabulary has the opposite relationship with reading comprehension as fluency (vocabulary explains a small amount of comprehension in the early grades, but this increases as students progress)

- Effective instruction is explicit, implicates oral and written language, rich/thorough, focused on relationships among words, personalization, and with adequate ongoing review

- Reading to young kids can be a prime source of vocabulary growth (dialogic reading)

Oral Language Predictors

Predictor Variable	Average Predictive Correlation		
	Decoding	Comprehension	
Language Composite	.58	.70	Decoding < Comp
Receptive Language	.52	.63	Decoding < Comp
Expressive Language	.48	.59	Decoding = Comp
Grammar	.47	.64	Decoding < Comp
Definitional Vocabulary	.38	.45	Decoding = Comp
Verbal Knowledge	.36	.45	Decoding = Comp
Verbal-IQ	.35	.35	Decoding = Comp
Receptive Vocabulary	.34	.25	Decoding > Comp
Listening Comprehension	.33	.43	Decoding < Comp
Vocabulary NOS	.33	.31	Decoding = Comp
Expressive Vocabulary	.24	.34	Decoding = Comp
Language NOS	.20	.31	Decoding = Comp

Oral Reading Fluency

Oral reading fluency refers to the ability to read text accurately, quickly, and with proper expression

National Reading Panel reviewed 52 studies and found that oral reading fluency instruction improved decoding, word reading, fluency, and reading comprehension in Grades 1-4 and with remedial students Grades 1-12

Fluency is best predictor of reading comprehension in lower grades (2nd: 73% of comprehension variance explained by fluency; this declines to 25% by grade 8)

Oral Reading Fluency (cont.)

NLP found that oral reading fluency was important with second-language learners, too

Effective instruction engaged kids in oral reading with feedback and repetition and with texts that were relatively difficult

Instructional approaches like paired reading, repeated reading, reading while listening, neurological impress, etc. worked

ORF is a bit of a mash up of fast decoding and initial reading comprehension

Initially we try to teach kids to be disfluent (finger-point reading), but from the time they can do this we teach fluency as defined)

Reading Comprehension

- National Reading Panel reviewed 204 studies of reading comprehension strategy instruction (K-12)
- What Works Clearinghouse (Shanahan, Carlson, Carriere, Duke, et al., 2010) concluded that reading comprehension strategy instruction was effective with students in the primary grades
- WWC also determined that "gradual release of responsibility" instruction was an effective method for improving reading comprehension with primary grade students

Reading Comprehension (cont.)

Effective instruction focuses on summarization, questioning, monitoring, visualization, story mapping/text structure analysis,

Multiple strategies are most effective (such as in reciprocal teaching)

Gradual release of responsibility has strong supporting research evidence (WWC)

Moderate evidence (WWC) supporting the role of motivation in comprehension instruction (choice, collaboration, challenge, control)

Reading Comprehension (cont.)

Other aspects of comprehension instruction with positive results

Vocabulary instruction is usually treated as part of comprehension work (and as already explained, vocabulary instruction improves comprehension)

Sentence combining (sentence reducing) improves understanding of syntax and transfers to comprehension

Text structure and cohesion work improves reading comprehension, too

Writing

- Writing—the ability to communicate one's ideas effectively through written/printed words
- Writing is important in its own right
- Emphasis here is on the value that writing has to reading achievement

Writing (cont.)

Writing and reading are closely correlated (Shanahan, 2016)

Reading and writing can explain about 75% of the variation in each other

Magnitude of relationships are consistent from grade level to grade level, but the nature of relations change (decoding and spelling overlap more in the early grades, and writing structure/vocabulary and reading comprehension connect more later on)

An example

- Studies show a close relationship between reading and writing in the primary grades
- The major overlaps at these ages are between the phonological and orthographic aspects of reading and writing
- Specifically, decoding skills are related to encoding skills
- Engaging students in spelling invention or developmental writing in which children spell words as they think they are spelled is valuable practice

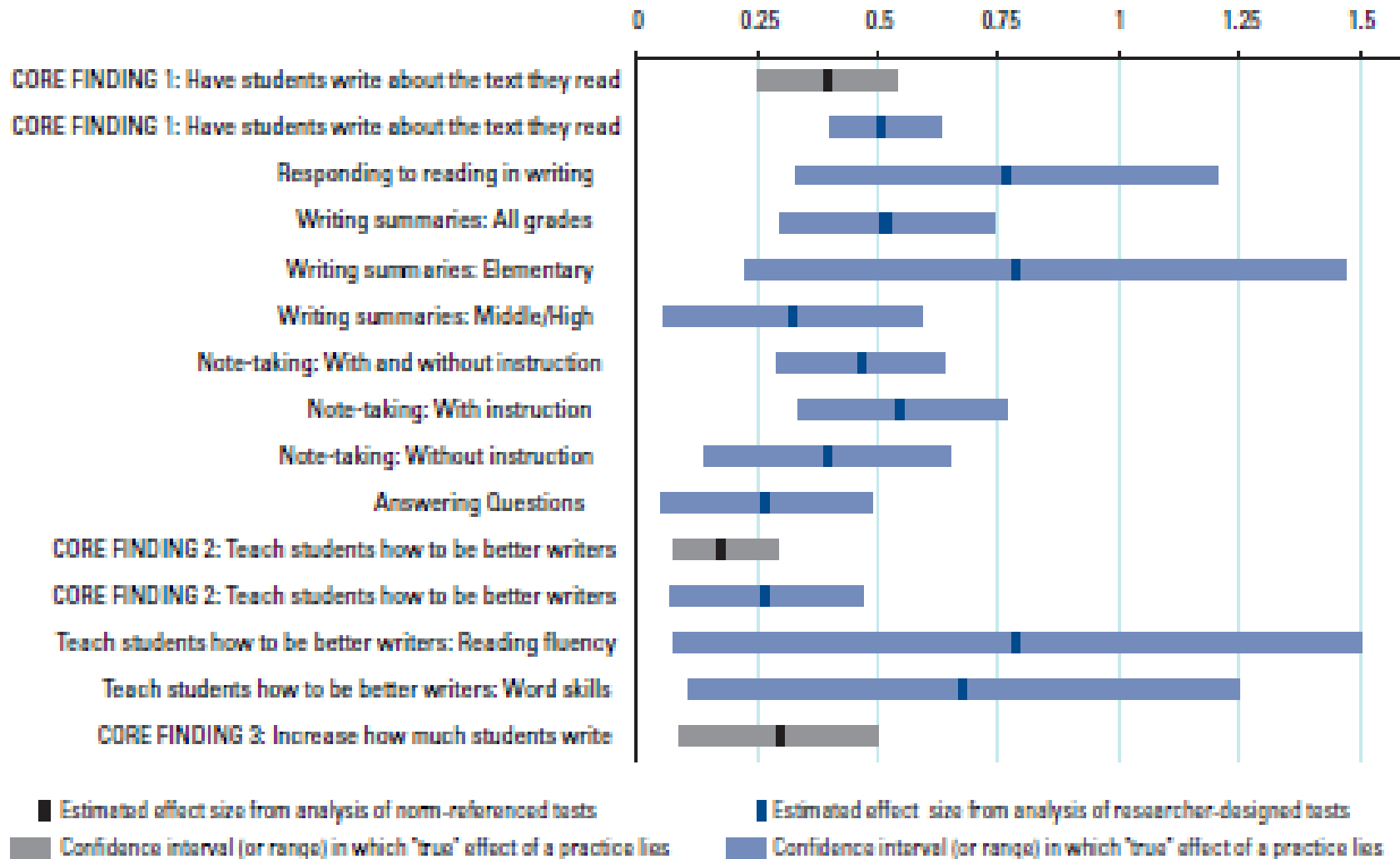# First-grader's attempt to represent 59 phonemes

Writing about Text

Graham & Hiebert meta-analyzed more than 100 studies that required students to write about text

93% of the findings were positive

Writing about text was better than just reading the text, better than reading and rereading, better than reading and discussing in terms of improving comprehension and learning from text

WRITING TO READ EFFECT SIZES WITH CONFIDENCE INTERVALS

Legend:
- Estimated effect size from analysis of norm-referenced tests
- Estimated effect size from analysis of researcher-designed tests
- Confidence interval (or range) in which 'true' effect of a practice lies
- Confidence interval (or range) in which 'true' effect of a practice lies

Writing about Text

Modeling

Summarizing

Analysis/critique

Synthesis

Research shows clear causal relationship between teaching the following and reading achievement:

- Phonological awareness (including letters)
- Phonics (including sight words)
- Vocabulary
- Oral Reading Fluency
- Reading comprehension strategies
- Writing

How much teaching for each?

- How much time daily should be devoted to:

    -- word knowledge (PA, decoding, spelling, high frequency words, morphology, word meanings)?

    -- oral reading fluency?

    -- reading comprehension?

    -- writing?

How well are we doing?

	Amount of Teaching	Quality of Program	Quality of Teaching	Results
Phonemic awareness				
Decoding				
Vocabulary/oral language				
Oral reading fluency				
Reading comprehension				
Writing				

Quality of Instruction

There are quality factors in teaching as well—and they too can have an impact on achievement

Quality of Instruction

Only a negative definition of this

Instructional features that influence learning without increasing amount of instruction or altering the content to be taught

Quality of Instruction (cont.)

- Clear purposes

- Amount of reading/language use within lessons

- Thoroughness/intensity of instruction

- Amount of interaction

- Depth of information

- Quality of explanation

- Motivation

Quality of Instruction (cont.)

- Clear purposes (Hattie's meta-analyses)
- Lessons with clear learning goals are most effective
- Lessons should have clear goals and students should know what those goals are
- Improves teaching
- Improves learning

Quality of Instruction (cont.)

- Amount of reading within lessons
- Studies show the importance of amount of reading
- This gets confused as just having kids read on their own (which is fine outside of school)
- The important reading in school is done within lessons (teacher selected materials, teacher guidance)

Quality of Instruction (cont.)

- Thoroughness/intensity of instruction
- Are the lesson's goals being met?
- If not, what is the follow up?
- How much opportunity to respond is there for individual children?
- How much re-teaching?

Quality of Instruction (cont.)

- Depth of information
- Reading comprehension depends on knowledge, not just reading skill
- The texts that students read should be worth reading (rich in information—social and natural world)
- Are kids learning that information?
- What about in science, social studies, math, the arts, etc.?

Quality of Instruction (cont.)

- Quality of explanation
- Reading is a skilled activity
- How well teachers can explain a concept or a skill can make a big difference in their learning (Duffy, et al.)
- Clarity, efficiency, effectiveness of explanations matters

Quality of Instruction (cont.)

- Motivation
- Lessons are more effective if students are trying to learn than if they are resisting
- Collaboration, curiosity, choice matter in motivation

Quality of Instruction (cont.)

- Text appropriateness
- Avoiding too much "predictable text"
- When kids can read a beginning second-grade level are then in texts that are hard enough

Post-Test

1. What is the most powerful alterable determinant of student literacy learning?

2. How much daily literacy instruction should students receive?

3. Which is most effective in phonics instruction: (A) scrupulously following a program of phonics or (B) teaching phonic elements as they are needed?

4. Is children's early vocabulary development important when they are learning to read?

Post-Test (cont.)

5. It is a good idea to teach reading comprehension strategies to older students, but not to younger ones. True or false?

6. It is a mistake to put a great emphasis on oral reading practice because our goal is to develop effective silent readers. True or false.

7. What is the most powerful thing that we can do with writing in the school curriculum?

8. What's the most important quality of instruction variable?