

# **A Lexical Analysis of Informal Reading Inventory Graded Word Lists**

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As assessment of children's reading abilities becomes of more concern to teachers, the use of informal reading inventories has become of interest to researchers and policy makers alike (Paris & Carpenter, 2003; Paris, Paris, & Carpenter, 2001; Paris & Hoffman, 2004). The use of the IRI has been suggested for assessing children's oral reading rate, accuracy of decoding, fluency, comprehension, and retelling (Paris, Paris, & Carpenter, 2001; Tompkins, 2003). Although the content of these inventories varies, virtually all contain graded word lists in some form (Cooper & Kiger, 2005).

Graded word lists can be used for various purposes. According to Richek, Caldwell, Jennings, and Learner (1996), a student's performance on word lists can provide important diagnostic information about word recognition abilities. (p. 50) Tompkins (2003) states that students read the lists until they reach a point that is too difficult for them indicating the level at which the graded passages are begun (p. 80). Bader (2002) states, "...a graded word list may be used as a starting point in administering graded reading passages or to gain additional insight into the types of word recognition errors made." (p. 20).

Accordingly, the purpose of this paper is to describe the similarities and differences between words included in the graded lists on six different informal reading inventories published after 2001 through a formal lexical analysis. This analysis seeks to describe how the word lists differ in length of words, inclusion of words at multiple levels, and the words that appear on different inventories.

## Development of Word Lists in Informal Reading Inventories

Without question, the learning of words from lists is a staple of early reading instruction. Beginning with Thorndike in 1921 to Dolch in 1932, these lists of words have been used for both instruction and assessment (Kauffman, 2000). According to McCormick (2003), informal inventory word lists are generally used for two purposes: 1) to determine the level of passages to be read in oral reading assessment, and 2) to provide information about the student's ability to decode words in isolation without the context of phrases and sentences (p. 96).

Among the various informal inventories reviewed there is not consistency in reporting how word lists are developed. Some authors of inventories used in this study carefully describe the process by which the word lists in the inventories were composed. For example, Johns (2001) provides an in depth explanation of how the 20 word lists in the Basic Reading Inventory were constructed. His word lists were derived in part from the EDL Core Vocabularies and Basic Skills Work List: Grades 1-12 (pp. 112-117). The usability of the lists was also assessed in a pilot study described in the manual. Leslie and Caldwell (200) state that the sight words that comprise the QRI-3 lists came from the passages and were checked for readability level using the Standard Frequency Index (p. 414).

On the other hand, other authors provide little of no technical information about the development of the word lists in their assessments. This was the case with the Classroom Reading Inventory, Ninth Edition (Silvaroli & Wheelock, 2001). In the appendix of their inventory, Woods and Moe (2003) provide information on the development of the passages but not the word lists (pp. 263-268). Bader (2002) indicated the use of graded word lists (unspecified) and "readers that appeared to be appropriate to

each level” (p.159). Bader further reported that a comparison of her word lists to the Slosson Oral Reading Test and found a correlation of 0.92 (p. 159).

### Method

Six informal inventories were selected for analysis based on year of publication and inclusion of word lists between Pre-Primer (PP) and grade 6. If an inventory included word lists for grades seven and eight, these were not used in the analysis. The inventories selected for this study were the *Critical Reading Inventory* (Applegate, Quinn, & Applegate, 2004), the *Bader Reading and Language Inventory* (Bader, 2002), the *Basic Reading Inventory* (Johns, 2001), the *Qualitative Reading Inventory* (Leslie & Caldwell’s 2001), the *Classroom Reading Inventory* (Silvaroli & Wheelock, 2001), and the *Analytical Reading Inventory* (Woods & Moe, 2003).

To prepare the lists for analysis, each sight word list (grades PP-6) was entered into an Excel spreadsheet. This enabled the investigator to alphabetize the lists for review, and to count the letters of each word as well as to determine average length of words per grade. Each list was coded according to grade level and inventory title. This allowed the investigator to compare the lists more easily. To frame the analysis in this study, the author was informed by the work of Hiebert and Martin (2004). In their discussion of children’s word learning they differentiate between uniqueness in highly meaningful words, highly regular words, and high frequency words. Of particular interest were the identification of unique words--words that appeared only in one inventory list--and the identification of duplicated words--words that appeared on more than one inventory list. Further, among the identified duplicated words, the investigation sought to identify at what grade levels these words appeared. Finally, the corpus of unique words

was compared to the original 220-word Dolch List (1945) to ascertain what percentage of this list was used in the inventory lists evaluated.

### Results

The first step in the analysis was to count the total number of words used at each grade level across the six different inventories. Next, at each grade level, duplicate words were removed from the total count to determine the number of unique words. As defined here, an unique word would be one that appears on only one inventory. These results are presented in Table 1 below:

Table 1. Total number of words and total number of unique words by grade level.

Grade Level	Total Words	Unique Words	Percentage of Unique Words
Pre-Primer	184	104	56.52%
Primer	250	157	62.80%
One	272	200	73.53%
Two	268	234	87.31%
Three	272	258	94.85%
Four	269	253	94.05%
Five	270	255	94.44%
Six	266	258	96.99%
TOTAL	2051	1719	83.81%

As may be expected, the six inventories use many of the same words at the beginning grade levels. From grade three and higher, the inventories show virtually no

overlap in word selection. Duplicated words were evaluated in two ways. First, the goal was to compare individual words across grade levels. This analysis looked at the words that appeared on more than one inventory at the same grade; for example, appearing at grade three on two different inventories. In all, 242 words were identified (See Appendix A). This is approximately 14% of the words identified. At the lower levels, a set of four words--he, the, saw, went--appeared on all six inventories

The next step in the analysis was to identify words that appeared on more than one list, but at different grade levels. In all, 175 individual words were identified that were present on more than one grade level list (See Appendix B). This represents a little more than 10% of the words reviewed. The most extreme example was the word “morning.” This word appeared on five different inventories. At the lowest, this word was included on a pre-primer list. At the highest, it was included on a grade 4 list.

Next, using the average length of words was evaluated using only unique words. The results of this analysis are shown in Table 2 below:

Table 2. Total number of unique words and average length by grade level.

Grade Level	Unique Words	Percentage of Unique Words
Pre-Primer	104	3.60
Primer	157	3.95
One	200	4.50
Two	234	5.09
Three	258	5.84

Four	253	6.66
Five	255	7.03
Six	258	7.94

As illustrated in Table 2, the length of the words increases by grade level. Word length is one indicator of linguistic complexity. Ability to read longer words has been correlated to spelling achievement and recognition of contextual vocabulary (Fry, 1977).

The final level of analysis was to compare the words on the inventories to the original list by Dolch (1945). There are 220 words on the standard Dolch List. Roughly 78%, or 171 of these words were included on one or more of the inventories evaluated (See Appendix C). As would be expected, many of these appeared in the first three grades. Of the words that appeared at more than one level, 41% came from the Dolch List.

### Discussion

The purpose of the present study was to compare word lists from six representative informal reading inventories. The lists were compared based on uniqueness of the words selected by the inventory authors, the average lengths of the words, placement of the words on more than one grade level, and inclusion of Dolch words. As reported, the following summarizes the findings of the analysis:

1. There was more duplication of word selection at the lower grade levels. Given the finding that 78% of words included in the Dolch list were identified, this finding makes sense. The Dolch list is designed for readers below grade 3.

2. The average length of words included on the lists increases with grade level. Since word length is a factor in many readability formulas, this also appears to be a predicted finding.
3. More unique words are identified in the upper grades. As previously stated, the inclusion of words from the Dolch list at the lower level accounts for the duplication of words at these levels. Accordingly, in the upper grades (three and higher), the lists appear to be more unique.
4. A relatively low percentage of words were found on more than one grade level—a little more than 10%.
5. The Dolch list is highly represented. 78% of the words on the Dolch list were included in one or more of the word lists. Of the duplicated words, 41% came from the Dolch list.

Informal reading inventories (IRIs) are a staple component in reading assessment. Each is unique based on their individual word lists, reading passages, and other types of informal assessment protocols. As a result of this investigation, one should question whether informal inventories are interchangeable. That is, are the results on one likely to reliably predict results on another? With regard to the word lists on the six inventories investigated, the answer is likely to be “yes and no.” The results of word list reading at the lower grades are more likely to be reliable across inventories due to the relative high degree of duplication—especially in regard to Dolch words. On the other hand, due the high number of unique words at the higher grade levels, comparing performance on these lists may be less reliable.

Some may want to use sight word lists to determine a student’s reading level. There should be questions about this approach, however. In some IRIs, for instance,

students are simply asked to read lists of words in an untimed condition while in others words are to be presented in a timed condition. Given this variance, it might best not to make decisions about reading levels from word lists but instead to follow the testing procedures of most inventories. In these cases the word lists are used to determine beginning reading levels for passage reading and to provide information about a student's decoding abilities. In not one of the six inventories investigated did the authors indicate that their word lists could be used to determine instructional reading levels. (For research findings in which *flashed* word recognition scores predict instructional reading levels, see Frye and Trathen [2005] in this volume.)

With regard to contemporary practice, how should we view these word lists? First, as indicated above, the word lists function as a critical component of the inventories in which they are found. Second, they do provide a sampling of words to be used for assessing word recognition and decoding skills. As such, and as one of multiple measures, the lists provide practical information. Further, one may use word lists for initial screening—followed by more formal assessment of reading skills and strategies. Finally, in the words of Dolch (1945), “if a child has difficulty in recognizing common words, it is a good thing to discover how many he knows of the 220 words which make up about two-thirds of easy school reading material” (p. 101). This kind of information is not insignificant—and maybe everything old is truly new again.

#### References

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Appendix A: Duplicated Words at Grade Level  
 (#) Number of inventories on which the words appear.

PrePrimer	Primer	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
he (6)	saw (6)	before (5)	always (4)	story (3)	nervous (3)	furnish (3)	accomplishment (3)
the	went	children (4)	anyone (3)	arithmetic (2)	concern (2)	bravely (2)	ridiculous
and (5)	day (4)	hear	garden	bread	decorate	embarrass	consideration(2)
can	house	after(3)	teacher	danger	disturb	error	definite
get	little	again	through	food	dozen	guarantee	graceful
like	put	began	afraid (2)	forest	government	ignore	minimum
see	they	could	bad	half	jealous	indication	minor
to	what	drop	beautiful	hang	ocean	magical	nephew
at (4)	are (3)	farm	birthday	honor	official	operation	psychology
go	around	friend	branch	human	prairie	plantation	reluctant
you	came	made	clean	moan	sample	prevent	research
do (3)	come	never	cowboy	nurse	settlers	terrific	technical
in	green	next	dragon	passenger	slope	typical	undergrowth
not	have	there	elephant	removed	vicious	vision	accomplishment
that	new	where	guess	rib	windshield		ridiculous
will	now	airplane (2)	hide	wisdom			consideration
with	out	another	I'd				definite
a (2)	play	bear	job				graceful
about	two	coat	light				
all	want	cry	mile				
am	about (2)	farm	mountain				
but	all	feet	old				
dog	away	find	part				
down	big	food	remember				
good	boy	from	should				
have	call	give	such				
her	did	grass	turn				
here	father	hand	unhappy				
house	from	happy					
I	funny	how					
is	give	hurry					
look	had	ice					
man	help	laugh					
me	him	leg					
my	into	long					
no	is	men					
one	just	met					
said	know	morning					
she	like	new					
stop	many	night					
was	mother	off					
we	not	pet					
	of	please					
	other	ready					
	our	school					
	red	shoe					
PrePrimer	Primer	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
	said	sound					

	said	sound					
	show	story					
	some	surprise					
	something	town					
	soon	water					
	take	wish					
	then	work					
	thing						
	trees						
	was						
	who						
	with						
	work						
	yes						
	your						

Appendix B: Words that appear on more than one grade level.

Number of Levels	Word	Lowest Grade	Highest Grade
5	morning	pp	4
4	because	p	5
4	through	2	5
3	before	p	2
3	came	pp	1
3	could	pp	1
3	down	pp	1
3	find	pp	1
3	from	pp	1
3	have	pp	2
3	here	pp	1
3	know	pp	2
3	make	pp	1
3	out	pp	p
3	school	pp	1
3	street	pp	2
3	these	p	2
3	thought	1	4
3	will	pp	1
3	with	pp	1
3	work	pp	1
2	about	pp	p
2	afraid	1	2
2	after	p	1
2	again	p	1
2	and	pp	p
2	animal	p	1
2	are	pp	p
2	argument	5	6
2	attractive	4	6
2	away	pp	p
2	ball	p	1
2	be	pp	p
2	been	pp	2
2	big	pp	p
2	bike	1	4
2	birthday	p	2
2	blue	p	1
2	book	pp	p
2	boy	pp	p
2	bread	1	3
2	brown	p	1
2	business	4	5
2	but	pp	p
2	can	pp	p
2	chief	3	4
2	children	p	1
2	choice	3	5
2	college	5	6
Number of Levels	Word	Lowest Grade	Highest Grade
2	come	pp	p
2	communicate	4	6

2	creature	4	5
2	cry	1	2
2	curious	3	5
2	different	2	5
2	doctor	2	3
2	eat	p	1
2	eight	1	3
2	electric	3	4
2	escape	3	4
2	family	1	2
2	farm	pp	1
2	fast	1	2
2	father	p	1
2	fight	1	2
2	fish	p	1
2	fly	p	1
2	food	1	2
2	friend	pp	1
2	get	pp	p
2	giant	1	5
2	girl	pp	p
2	give	p	1
2	goat	pp	p
2	good	pp	p
2	government	4	5
2	graceful	5	6
2	green	p	1
2	had	pp	p
2	happy	pp	1
2	has	pp	1
2	heard	1	3
2	help	p	2
2	her	pp	1
2	home	pp	p
2	house	pp	p
2	human	3	4
2	if	pp	p
2	in	pp	p
2	invitation	4	5
2	is	pp	p
2	island	3	4
2	jungle	4	5
2	law	2	3
2	liberty	4	5
2	light	1	2
2	like	pp	p
2	little	p	1
2	live	p	1
2	love	1	2
2	man	pp	p
Number of Levels	Word	Lowest Grade	Highest Grade
2	matter	2	3
2	medicine	4	5
2	moan	3	5
2	mother	p	1

2	mountain	2	6
2	much	p	1
2	my	pp	1
2	necessary	5	6
2	need	p	2
2	never	p	1
2	new	p	1
2	no	pp	p
2	not	pp	p
2	now	pp	p
2	of	pp	p
2	old	1	2
2	on	pp	p
2	open	1	2
2	or	pp	1
2	other	pp	p
2	over	pp	p
2	painful	5	6
2	parachute	4	5
2	party	pp	1
2	passenger	3	4
2	people	2	4
2	pet	1	2
2	picnic	1	3
2	pilot	3	4
2	precious	3	4
2	put	p	1
2	ride	p	1
2	run	p	1
2	said	pp	p
2	saw	p	1
2	see	pp	p
2	seventeen	4	6
2	she	pp	p
2	should	2	3
2	silence	3	4
2	some	pp	p
2	song	1	2
2	soon	pp	p
2	sound	1	2
2	stop	pp	p
2	story	1	2
2	take	pp	p
2	telephone	2	3
2	that	pp	p
2	there	p	1
2	thermometer	5	6
2	they	p	1
Number of Levels	Word	Lowest Grade	Highest Grade
2	thing	p	1
2	think	p	3
2	thirty	2	3
2	this	pp	p
2	three	p	1
2	together	1	3

2	top	1	2
2	train	pp	p
2	turn	p	2
2	under	p	1
2	unhappy	2	3
2	vehicle	5	6
2	violet	4	6
2	wagon	p	1
2	was	pp	p
2	water	1	3
2	went	pp	p
2	what	pp	p
2	when	1	2
2	who	pp	p
2	wish	pp	1
2	yesterday	3	4

Appendix C: Dolch words that appear in the inventory word lists.

a	did	help	new	show	want
about	do	her	no	sing	warm
after	does	here	not	sleep	was
again	done	him	now	so	we
all	don't	his	of	some	went
always	down	hurt	off	soon	what
am	drink	if	old	start	when
an	eat	in	on	stop	where
and	eight	into	one	take	which
are	every	is	open	ten	white
around	far	it	or	thank	who
as	fast	its	our	that	why
ask	find	jump	out	the	will
at	first	just	over	their	wish
away	fly	keep	own	then	with
be	for	kind	play	there	work
because	from	know	please	these	would
been	funny	laugh	pull	they	write
before	gave	light	put	think	yes
big	get	like	ran	this	you
black	give	little	read	those	your
blue	go	live	red	three	
brown	going	look	ride	to	
but	good	made	round	today	
call	green	make	run	together	
came	grow	many	said	under	
can	had	me	saw	up	
clean	has	much	say	upon	
come	have	my	see	us	
could	he	never	she	walk	

