



Spelling Progress

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The Diagnostic Spelling Potential Test

John Arena and Rick Brownell

Approximately four percent of the total school population of the United States is classified as learning disabled. This means that about 1.8 million children have been identified as requiring special educational treatment for their unique learning needs. While spelling is not one of the seven categories specifically identified by Public Law 94-142 for testing, it is an important part of written language and as such should be evaluated accurately.

The primary rationale upon which the *Diagnostic Spelling Potential Test* is based is that spelling, much like reading, handwriting, and arithmetic, is hierarchical in nature. Children hear the language, match auditory language to visual language, read simple meaningful words, and then begin to write the language. At the writing stage, an interplay of whole-to-part and part-to-whole learning takes place. That is, the discrete elements of writing, the phonemes and graphemes, assume an identity of their own. They must be learned, integrated, applied, and generalized.

A secondary rationale for the *DSPT* is that special education personnel, specifically teachers, are expected to do a certain level of testing. Because of time limitations, it is important that they derive as much information as possible from the time available for testing.

It was because of these factors that the *DSPT* (Arena, 1982) was standardized and published. The process required ten years of clinical study and research and has resulted in an instrument that is both practical and psychometrically sound.

The *DSPT* is an individually administered test that consists of four subtests, five norm-referenced scores, and one clinical score. By using the results of the *DSPT*, the diagnostician is able to identify strengths and weaknesses in the child's language

and spelling abilities and then proceed with a logical approach to remediation.

- Subtest 1 is a standard spelling test in which a word is pronounced, used in a phrase, and then pronounced again.
- Subtest 2 is a word decoding test that yields two scores, one for immediate identification and the other for delayed or phonetic analysis.
- Subtest 3 is a visual recognition test in which the word is presented in four different spellings, one of which is correct.
- Subtest 4 is an auditory-visual test in which the student must match the auditory stimulus to the correctly spelled word.

Analysis

The comprehensive analysis that is the outcome of the *DSPT* is its unique offering to those involved in the testing and remediation of spelling disabilities. It is best described by reviewing the results of Tim Jones, an eleven-year-old youngster with a full scale WISC-R IQ of 126.

Figure 1 (p. 16) presents the Fact Sheet of the *DSPT*. It has three elements:

1. The Score Box shows Tim's raw scores converted to standard scores, percentile ranks, and grade ratings. By reviewing it, one can note the range of grade-level equivalencies as well as the ranges of the other normative data. Tim, obviously, is not doing well in spelling.
2. The Profile Chart is a graphic representation of Tim's standard scores, placed according to standard deviations. This profile shows that while actual spelling performance is below average, his performance in the other areas is at the average level.
3. The Spelling Error Analysis Chart shows that there was no phonetic pattern to the majority of his errors and suggests a weak phonetic understanding of spelling.

Figure 2 (p. 16) is the *DSPT* Profile Analysis Chart in which the standard scores from the Score Box above are transferred. It is in this presentation that



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Tim's needs become dramatically apparent. As evidenced by a difference of seven standard score points, there are significant inconsistencies between several abilities:

- spelling and sight recognition
- spelling and phonetic recognition
- spelling and visual recognition
- spelling and auditory-visual recognition
- sight recognition and visual recognition
- sight recognition and auditory-visual recognition
- phonetic recognition and visual recognition
- phonetic recognition and auditory-visual recognition.

Discussion

Tim's primary problem appears to be his inability to apply phonetic principles to both encoding and decoding. The profile suggests that he is able to draw upon strong visual (Subtest 3) and auditory (Subtest 4) recall systems, but his performance breaks down quickly when confronted with unfamiliar words. This failure to utilize phonetic principles is also readily apparent from an inspection of the two scores from Subtest 2. The minimal difference between Sight and Phonetic decoding verifies this inability. It is of further interest to note that Tim's teacher, Alma Miller, wrote in her request for testing that "Tim's comprehension in silent reading is quite good and at grade level. His oral reading, however, leaves much to be desired." One would guess that Tim, as a bright youngster, is doing some excellent guessing in silent

reading, using context whenever possible to identify unknown words.

It is not clear whether Tim has been unable to integrate phonetic generalizations presented to him or simply has not received a balanced program of instruction in phonetic principles. What is clear, based on the results of this evaluation, is that he needs help applying phonetic generalizations when he is called upon to spell a word.

The eight significant differences between subtest scores listed above offer the teacher, Miss Miller, eight unified but different approaches to remediating Tim's problems. Teachers have at their disposal, for example, dozens of formal and informal activities to enhance and strengthen the relationship between spelling and sight recognition of words. The same applies to spelling and phonetic recognition and so on down the list.

The *Diagnostic Spelling Potential Test* is more than just another spelling test. It offers diagnosticians, remedial specialists, and other educators a logical, organized way to identify specific spelling needs and to tie these needs to meaningful remedial practices. The *DSPT* will not solve all the spelling problems encountered by students but when used sensibly will go a long way toward helping students become better spellers. ☒

Reference

Arena, John. *Diagnostic spelling potential test*. Novato, California: Academic Therapy Publications, 1982.



A Taxonomy of Phoneme-Grapheme Correspondences

Larry Gentry

The taxonomy of phoneme-grapheme correspondences that is featured on pages 4 and 5 owes its genesis to the pioneering research of Hanna, Hanna, Hodges, & Rudorf (1966), Dewey (1971), and Richard Venezky (1970).

Perhaps the taxonomy's most noteworthy departure from earlier lists is the reclassification of a number of final *e* spellings. For example, where both Dewey and the group led by Hanna would hold that the final *e*'s in *college* and *voice* are vowel markers, I contend that they reflect consonant correspondences. The final *e* in *college* has no relationship to the preceding vowel, but indicates that *g* is pronounced /j/ and not /g/. Similarly, the final *e* in *voice* indicates that the final consonant is pronounced /s/ instead of /k/.

In another departure from earlier studies, I have taken the liberty of adding phoneme-cluster categories where they seemed essential to accurate classification. These categories include /wä/ as in *memoir*, /wu/ as in *once*, /yər/ as in *accurate*, /gzh/ as in *luxury*, /ksh/ as in *section*, and /ts/ as in *schizophrenia*.

Any systematic examination of English orthography is, of course, heavily influenced by the researcher's choice of a dictionary. The present study

thus offers the advantages (and disadvantages) proffered by the paperback edition of the *American Heritage Dictionary* (1977). Hanna's group analyzed some 17,000 words, using *Webster's New Collegiate Dictionary* (1961) as a guide; Dewey's investigation apparently included the entire corpus of the 132,000-word *Random House American College Dictionary* (1966). Since the primary purpose of my study was reclassification rather than expansion, the 55,000-word corpus provided by *American Heritage* was deemed adequate.

Excluded from the study were proper names, contracted word forms, hyphenated words, abbreviations, archaic words, and foreign phrases (e.g., hors d'oeuvre). Given this limitation, the tables on the following pages can be considered a taxonomy of phoneme-grapheme correspondences of everyday English. ■

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Vowel Correspondences

/a/	eo people	eaux trousseaux	u.e secure	Vowels Controlled by /r/
a at	ey key	eo yeoman	/oo/	
aa baa	hy dinghy	ew sew	eu sleuth	/ar/
a..e morale	i ski	o old	ew crew	aer aerial
ah dahlia	i..e machine	oa boat	hou silhouette	air chair
ai plaid	ie grief	o..e home	ieu lieutenant	aire millionaire
au laugh	is debris	oe toe	o do	ar canary
i meringue	it esprit	oh oh	oe shoe	are care
/ā/	oe amoeba	oo brooch	oo too	ear bear
a able	ois chamois	ore forecastle	ooh pooh	eir their
a..e ate	ue dengue	os apropos	ou you	er wherever
ae maelstrom	y city	ot depot	ou..e route	ere there
ai mail	/i/	ou shoulder	oue denouement	erre daguerreotype
ai..e aide	a spinach	ou..e cantaloupe	ough through	heir heir
aigh straight	a..e pirate	ough thought	oui bouillon	
ait parfait	ae caesarean	ow own	oup coup	/ir/
au gauge	ai portrait	owe owe	ous rendezvous	ear hear
e cafe	e pretty	/ô/	out ragout	eer deer
ea break	ee been	a all	u truth	eir weird
e..e crepe	ei counterfeit	ao extraordinary	u.e rule	er period
ee matinee	hea forehead	au haul	ue true	ere here
eh eh	hi exhibit	au..e vaudeville	ui fruit	ier pier
ei vein	i if	augh caught	uo buoy	iere boutonniere
ei..e seine	ia marriage	aw saw	/yoo/	ir souvenir
eigh eight	i..e favorite	awe awe	eau beautiful	
er dossier	ie mischief	hau exhaust	eu feud	/ur/
et ballet	o women	ho exhort	eue queue	ear learn
ey they	u busy	o off	ew few	er her
ez rendezvous	u..e minute	oa broad	ewe ewe	er..e berkelium
ie lingerie	ui build	o..e gone	hu..e exhume	ere were
/ä/	y myth	oo door	ieu adieu	err deterrent
a father	/ī/	ou cough	ou coupon	eur masseur
aa bazaar	ae maestro	ough bought	u union	her herb
a..e are	ai shanghai	ow toward	u..e mule	ir bird
ah hurrah	ai..e aisle	/oi/	ue value	irr squirrel
at eclat	aille canaille	oi oil	ui nuisance	ol colonel
e sergeant	ay bayou	oi..e voile	ut debut	or worm
ea heart	aye aye	oy boy	uu vacuum	orr worry
i lingerie	ei stein	oy..e gargoyle	/ə/	our journey
/wä/	eigh height	uoy buoyancy	a about	ur fur
oi memoir	ey geyser	/ou/	ah cheetah	ur..e nocturne
oi..e repertoire	eye eye	au gaucho	ai mountain	urr current
ois bourgeois	i find	hou hour	anc blancmange	yr syrup
/e/	ia diamond	ou out	au epaulet	yrrh myrrh
a any	i..e like	ough drought	e open	
ae aesthetic	ie pie	ow owl	ei sovereign	/ər/
ai said	igh high	/u/	eo luncheon	ar sugar
ay says	is viscount	o won	ha gingham	aur restaurant
e end	oy coyote	o..e come	he vehement	er after
ea head	uy buy	oo flood	hi vehicle	eur chauffeur
e..e cigarette	y by	ou young	i pencil	her shepherd
ei heifer	y..e type	u but	ia parliament	ir confirm
eo leopard	ye dye	/wu/	i..e engine	oar cupboard
ie friend	/o/	o once	ie mischievous	oir avoirdupois
oe roentgen	a want	o..e one	io fashion	or honor
u bury	eau bureaucracy	/oo/	o lion	our glamour
/ē/	ho honest	eu pleurisy	o..e welcome	r iron
ae algae	o hot	o woman	oi porpoise	re acre
agh shillelagh	o..e omelet	oo book	ou dangerous	ur surprise
ay quay	oh johnnycake	ou would	u circus	ure picture
e me	ow knowledge	u push	ua victual	yr martyr
ea eat	yo beyond	u..e sure	u..e fortune	
e..e theme	/ō/	/yoo/	wa..e gunwale	/yər/
ee see	ao curacao	u refugee	y analysis	ur accurate
ei ceiling	au chauffeur	/yø/	/yø/	ure figure
ei..e caffeine	eau plateau	u regular	u regular	

Consonant Correspondences

/b/		j jar	p pet	tter chitterlings
b big			pp apple	tw two
bb rabbit	/k/	c can		z pizza
bh bhag	ca forecastle	cc occupy	/r/	
pb cupboard	cch saccharine	ch chorus	ar quandary	/ts/
	ck back	cq acquaint	er every	z schizophrenia
/ch/	cu lacquer	rh rhyme	l colonel	
c cello	g length	r red	or laboratory	/th/
ch child	k kite	rps corps	rh rhyme	h eighth
che avalanche	kh khaki	rr arrow	rs velours	th think
h posthumous	kk chukka	rrh myrrh	rt mortgage	the absinthe
t picture	lk talk	rs velours	wr write	
tch match	q queen	rt mortgage		/TH/
te righteous	qu liquor	wr write		dh edh
ti question	que clique			th the
ts catsup	x except			the soothe
		/s/		
/d/		c cent	/v/	f of
d dog	/ks/	ce dance	lv calves	lve salve
dd add	x box	ps psalm	v very	ve give
dh jodhpurs	/ksh/	rs worsted	vv divvy	w edelweiss
ed called	x sexual	s set		
id could		sc science	/w/	hu marihuana
	/l/	sce convesce	ju marijuana	o choir
/f/	all practically	sch schism	u queen	w well
f farm	gl intaglio	se house		
ff off	l let	ss miss	/y/	e azalea
ft often	le turtle*	st listen	i million	j hallelujah
gh laugh	ll bell	sth isthmus	ll bouillon	n cognac
lf calf	ln kiln	sw sword	y yes	
pf hasenpfeffer	ol chocolate	tsw boatswain		/z/
ph phone	sl island	z waltz	cz czar	es goes
pph sapphire			s is	se please
v veldt	/m/	/sh/	si business	sp raspberry
	am brougham	c appreciate	ss dessert	sth asthma
/g/	gm phlegm	ce ocean	thes clothes	tsar
ckgu blackguard	lm palm	ch chef	x xylophone	z zoo
g game	m man	che mustache	ze sneeze	zz buzz
gg egg	mb climb	chsi fuchsia		
gh ghost	mm summer	ci social	/zh/	g regime
gu guess	mn autumn	i anxious	ge garage	j jabot
gue league		psh pshaw	s usual	sh cashmere
	/n/	s sure	si vision	ti equation
/gz/	g cognac	sc fascism	z azure	zi glazier
x example	gn gnaw	sch schwa		
	kn know	sci conscious		
/gzh/	mn mnemonic	se nauseous		
x luxury	mp comptroller	sh she		
	n not	si mansion		
/h/	nd handsome	ss pressure		
h his	ng chitterlings	t initiate		
j junta	nn funny	ti station		
wh who	on colonel			
	pn pneumonia	/t/		
/wh/	sne demesne	bt doubt		
wh when		cht yacht		
	/ng/	ct indict		
/j/	n ink	d apartheid		
d education	nd handkerchief	dt veldt		
dg midget	ng sing	ed looked		
dge bridge	ngue tongue	pt ptomaine		
di soldier		t ten		
dj adjust	/p/	th thyme		
g giant	gh hiccough	tt better		
ge large				
gg exaggerate				
gi legion				



Research and Development in Spelling Reform

Valerie Yule

Part I: English Spelling as Communication Technology

If we consider English to be one of the components of modern communication technology, then we can subject it to the same principles of research and development that have transformed the transmission of information over the years. Three major principles apply.

First, if you cannot change the people to fit the equipment, change the equipment to fit the people. Make it "user-friendly." This principle of human engineering in spelling improvement can alert researchers to how people would like to spell. In determining exactly which spellings are preferred by the users of the language, that is, which changes would make English spelling user-friendly, researchers should consider several factors.

Children who are first learning to write use "invented spellings" that are often logical yet depart significantly from conventional forms. Typically, this early writing is economical rather than elaborate and follows generalized rules rather than invidious auditory distinctions.

Dictionaries don't reflect how people really spell. If they did, they would include the most common spelling mistakes as permissible alternatives. Although spelling errors can be weird and wonderful, as people try to emulate the conventional model, the most common mistakes tend to be simplifications, for example, *exilarate* or *vally*.

Most of the spelling changes in commercial advertising and brand names are shortenings made not only for the impact of novelty, but also because they are easier to read when quickly scanning shop shelves or advertisements and can be read by the semiliterate masses. Even public notices that must be read quickly by motorists contain shorter spellings, for example, *hiway*, *thruway*, and *dubl*.

One direction for spelling improvement that is becoming popular is to drop letters that can be shown experimentally to serve no purpose in indicating meaning or pronunciation of words—beginning particularly with omissions that would not be missed

and are usually hardly even noticed, for example, *rememberd*, *shoud*, *comunication*.

The press at times has seen this as advocating a wider use of shorthand. Shorthand is not desirable as the standard form of spelling. To be read, it must be reconstituted, and it has to be learned, as a special code has to be. It presents too many difficulties to young learners and foreigners. Some languages have spellings that omit vowel symbols; a study of comparative spelling can observe the disadvantages as well as advantages.

Others have taken up the idea of removing clutter enthusiastically, as if the motto was to cut as much as possible, to the bare bone. However, that is not the primary aim; what we need is to find what sort of spelling change could be most helpful and most welcomed now.

We learn to speak our language by intuitive generalization of rules we never really learn. A good deal of the work we do in school in grammar is to undo the generalizations we have made that do not apply to our irregular forms of verbs, nouns, and so on. We have to unlearn patterns we have inaccurately generalized, such as *sing-sang-sung* therefore *bring-brang-brung* and *fling-flang-flung*; and *I show*, *I showed* therefore *I go*, *I goed* and *I know*, *I knowed*.

A spelling that is consistent would require learning only basic patterns; everything else would be obvious, because even small children have a remarkable ability to generalize language rules. This already is the case in Spanish and Italian. For example, the teaching method of Paulo Preire allows peasants, with few exceptions, to read and write anything they like after learning to spell about twenty words. In English spelling as it is, all words must be individually learned or assigned to some limited spelling pattern that probably does not cover other similar words as might be expected.

Second, test your assumptions. Almost every modern invention has challenged common-sense assumptions; for example, the airplane was considered a miracle because few people thought that anything heavier than air could fly.

Let us examine some of the assumptions that have been impeding the improvement of English spelling. Some are assumptions about the nature of written language, and some are about the abilities of human beings.

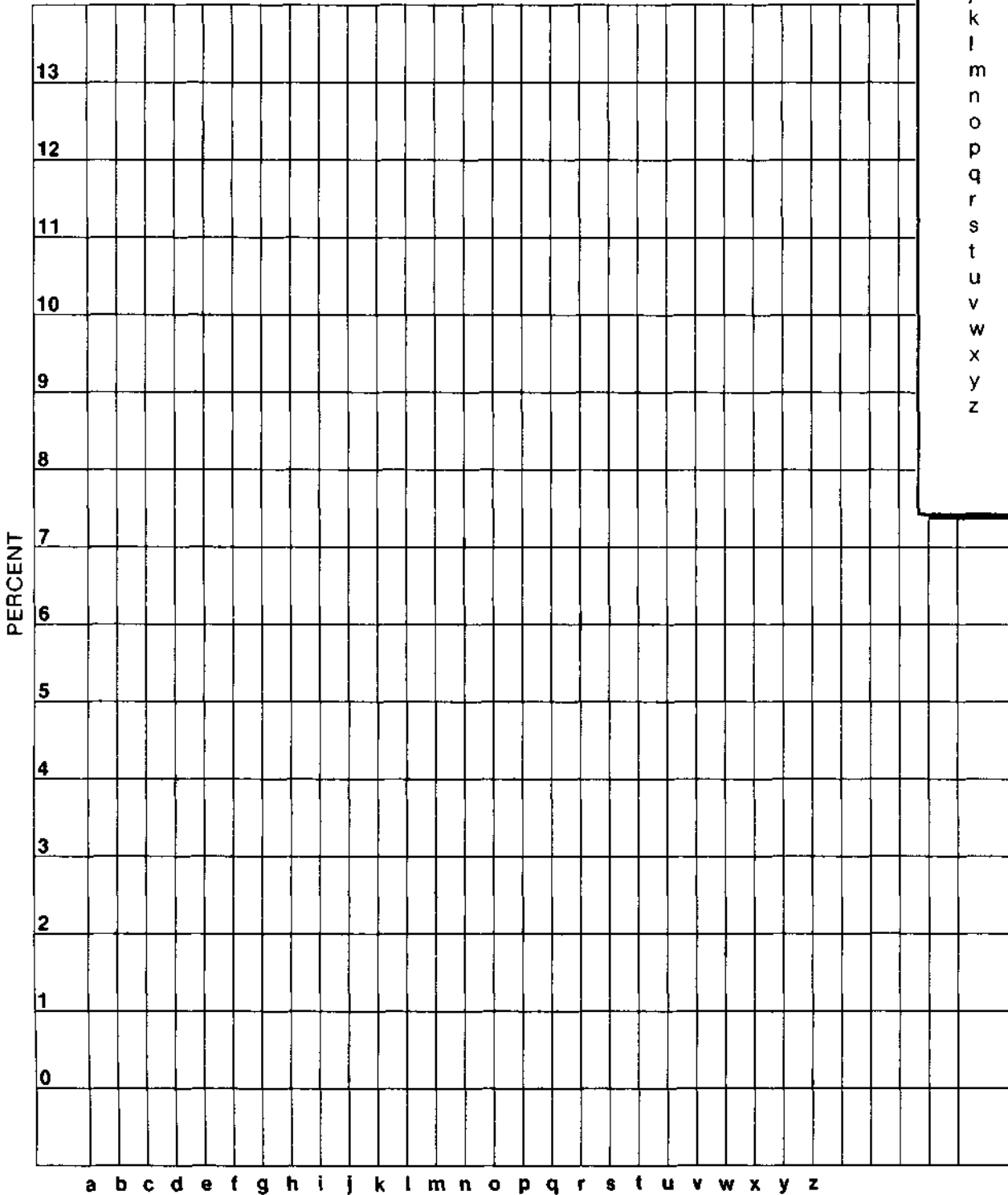
It is often thought, for example, that if a spelling were easy to learn, it would be difficult to use. If it were easy to write, it would be difficult to read. If suitable for machines, it would be difficult for humans. If easy for dull people, it would slow down

Continued on page 12

Relative Frequency of Letter Used in English

Each point on the chart represents the percentage of use for a particular letter. The letter *e*, for example, accounts for 12.62 percent of the total number of letters used in written English. From Solso, R. and King, J. Frequency and versatility of letters in the English language. *Behavior Research Methods and Instrumentation*, 1976, 8, 283-286.

a	7.61
b	1.54
c	3.11
d	3.95
e	12.62
f	2.34
g	1.95
h	5.51
i	7.34
j	.15
k	.65
l	4.11
m	2.54
n	7.11
o	7.65
p	2.03
q	.10
r	6.15
s	6.50
t	9.33
u	2.72
v	.99
w	1.89
x	.19
y	1.72
z	.09



2ND LETTER

Bigram Rank Matrix

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	
1ST LETTER	a	436	127	65	67	344	226	132	324	89	337	183	24	106	5	370	143	425	21	26	8	188	130	229	295	113	308	
	b	149	311	475	440	45	560	501	501	195	305	550	119	386	483	126	501	578	189	266	319	125	358	499	578	154	578	
	c	53	517	232	490	44	508	578	46	118	578	150	163	463	450	33	550	383	165	297	80	174	578	560	578	269	487	
	d	155	397	413	252	34	416	276	380	66	357	483	262	309	354	135	463	419	196	179	416	180	307	349	578	239	539	
	e	36	289	70	11	74	159	190	284	145	382	285	50	85	9	235	147	256	4	13	68	292	112	171	139	148	373	
	f	146	492	539	539	122	166	517	530	108	550	525	234	508	490	56	578	578	129	388	215	199	578	472	578	350	578	
	g	157	456	578	447	84	428	273	110	161	578	530	240	352	243	158	501	578	133	249	302	222	560	483	578	310	530	
	h	23	364	402	421	2	408	495	445	28	560	501	316	328	280	51	463	475	213	322	153	220	501	365	578	255	494	
	i	121	214	40	97	88	137	111	451	432	449	244	60	95	3	38	211	323	99	16	17	329	115	467	300	513	236	
	j	282	539	578	499	259	578	578	578	389	578	578	578	578	578	245	578	578	413	578	578	230	578	578	578	578	578	578
s	k	296	443	517	460	107	392	412	377	191	478	472	312	422	237	337	456	578	399	254	431	407	560	401	578	332	578	
	l	57	355	346	102	30	246	363	410	43	578	278	42	274	367	81	291	530	326	173	192	174	272	313	578	58	478	
	m	48	203	460	487	32	378	478	478	100	578	517	374	209	336	91	131	578	265	202	439	176	530	463	578	242	578	
	n	103	376	82	10	35	250	22	335	94	333	238	224	290	205	61	362	370	340	62	27	221	257	359	400	185	396	
	o	223	200	160	142	258	20	218	288	210	356	219	90	47	7	109	128	443	12	105	69	25	138	87	320	264	372	
	p	101	478	501	508	59	422	483	217	170	530	454	114	306	468	96	168	578	73	248	216	197	560	440	578	341	578	
	q	578	578	578	578	578	578	578	578	578	578	578	495	578	530	578	578	578	578	578	578	578	169	560	550	578	578	578
	r	41	281	193	140	6	275	206	298	39	517	201	198	156	151	37	260	451	187	72	92	178	241	325	495	123	455	
	s	120	345	167	351	29	314	424	86	49	539	251	227	228	318	78	141	331	386	79	19	104	440	270	578	253	475	
	t	52	391	261	426	15	347	418	1	14	560	487	182	277	347	18	403	578	77	98	134	124	525	225	578	136	381	
u	181	212	144	208	172	301	162	436	194	462	408	93	177	71	330	164	508	55	63	64	451	403	550	375	359	390		
v	184	578	560	525	31	578	578	578	117	578	560	525	578	560	233	550	578	471	448	560	406	550	578	578	366	560		
w	54	420	468	367	83	436	539	76	75	578	427	315	434	204	116	430	578	268	271	367	410	578	539	578	395	560		
x	286	550	283	578	304	472	578	384	279	578	578	470	560	539	397	231	513	517	539	263	385	560	492	530	405	578		
y	303	339	343	378	186	456	415	433	267	550	445	317	287	327	152	299	578	333	207	293	434	513	353	578	539	428		
z	294	513	578	578	247	560	517	517	321	578	495	394	539	578	361	578	578	530	550	560	456	508	525	578	393	342		

200 Most Common Syllables in the English Language
Ranked in the Order of Frequency

RANK	SYLLABLE	RANK	SYLLABLE	RANK	SYLLABLE	RANK	SYLLABLE	RANK	SYLLABLE
1	the	51	oth	101	could	151	side		
2	a	52	all	102	ber	152	fer		
3	of	53	out	103	did	153	dif		
4	to	54	we	104	ty	154	round		
5	and	55	ry	105	see	155	pa		
6	in	56	your	106	num	156	let		
7	ing	57	when	107	day	157	tions		
8	er	58	there	108	time	158	just		
9	is	59	how	109	most	159	work		
10	i	60	said	110	make	160	know		
11	be	61	up	111	peo	161	our		
12	you	62	de	112	its	162	ther		
13	it	63	ver	113	ble	163	through		
14	that	64	ex	114	than	164	try		
15	y	65	each	115	af	165	fore		
16	on	66	en	116	ers	166	called		
17	he	67	which	117	may	167	great		
18	for	68	do	118	word	168	est		
19	was	69	she	119	first	169	fa		
20	ly	70	their	120	mer	170	good		
21	an	71	them	121	wa	171	used		
22	as	72	if	122	ten	172	la		
23	are	73	will	123	been	173	land		
24	with	74	di	124	who	174	part		
25	ter	75	him	125	ment	175	car		
26	his	76	bout	126	use	176	el		
27	at	77	com	127	now	177	think		
28	or	78	ple	128	ti	178	n't		
29	they	79	u	129	pro	179	much		
30	al	80	then	130	down	180	si		
31	ed	81	her	131	find	181	set		
32	es	82	no	132	ar	182	ent		
33	this	83	words	133	me	183	ven		
34	from	84	these	134	ma	184	ev		
35	one	85	con	135	new	185	too		
36	have	86	way	136	lit	186	men		
37	e	87	per	137	made	187	old		
38	by	88	would	138	get	188	same		
39	man	89	low	139	ri	189	ac		
40	tion	90	un	140	thing	190	ca		
41	had	91	like	141	eve	191	does		
42	not	92	long	142	us	192	sound		
43	but	93	has	143	sen	193	fol		
44	can	94	two	144	read	194	right		
45	so	95	my	145	come	195	place		
46	re	96	more	146	came	196	ful		
47	some	97	go	147	where	197	son		
48	what	98	write	148	ture	198	na		
49	o	99	der	149	look	199	tain		
50	were	100	tle	150	back	200	ning		

200 Most Common Syllables Listed in Alphabetical Order

a	fa	much	their
ac	fer	my	them
af	find	n't	then
al	first	na	ther
all	fol	new	there
an	for	ning	these
and	fore	no	they
ar	from	not	thing
are	ful	now	think
as	get	num	this
at	go	o	through
back	good	of	ti
be	great	old	time
been	had	on	tion
ber	has	one	tions
ble	have	or	tle
bout	he	oth	to
but	her	our	too
by	him	out	try
ca	his	pa	ture
called	how	part	two
came	i	peo	ty
can	if	per	u
car	in	place	un
com	ing	ple	up
come	is	pro	us
con	it	re	use
could	its	read	used
day	just	ri	ven
de	know	right	ver
der	la	round	wa
di	land	ry	was
did	let	said	way
dif	like	same	we
do	lit	see	were
does	long	sen	what
down	look	set	when
e	low	she	where
each	ly	si	which
ed	ma	side	who
el	made	so	will
en	make	some	with
ent	man	son	word
er	may	sound	words
ers	me	tain	work
es	men	ten	would
est	ment	ter	write
ev	mer	than	y
eve	more	that	you
ex	most	the	your

clever people. If it were a clear guide to pronunciation, it would prevent fast visual scanning for meaning (Frith, 1981; Gillooly, 1972; Smith, 1972).

Most of this argument is based on assumptions about what sort of spelling would be easiest to learn or to use. It has generally been assumed that any reform of English spelling must result in a system of "spelling as you speak." In fact, I have often been chagrined to find my own work described in the media under this heading, and it is often accompanied by editors' examples of what they think looks like funny "spelling as she spoke."

One assertion that has not been supported by research is that the best has already been achieved. Yet many people still agree with Chomsky's belief (1970) that English orthography, despite its often cited inconsistencies, comes remarkably close to an optimal orthographic system for English. Repeated demonstrations by a series of researchers show that the examples provided by him and by Carol Chomsky (1970) are hardly more than anecdotal, since most of the unpredictable spellings in English represent no underlying lexical structure at all. Downing (1983) summarizes much of the contradicting research.

A more fruitful approach to improving English spelling is to look at the supposed advantages of both present spelling and proposals for reform. We can then test out which principles would in fact be of greatest advantage and perform all the functions a spelling should.

What would English spelling look like if it really did show how words with similar meaning are related, as suggested by Chomsky's notion of deep structure? Suppose we did have *fli/ flies/ flite/ flu, speke/ speche/ spoke, strategy/ strategem, slepe/ slept, hi/ hite*, and so on? Would it really be of greater benefit to all? Would consistent representation of grammatical markers such as *-s, -d, -n* for plurals and participles really aid fast visual scanning for meaning? Is redundancy valuable in every situation? Do letters that indicate neither meaning nor pronunciation of words serve any purpose except to clutter the spelling and hinder fast reading and easy learning? All these questions should lead us to look at other assumptions about the capacity of humans to acquire spelling and use it in reading and writing.

Volume upon volume of research in spelling concentrates on either analyzing the features of present spelling or identifying what may be wrong with those who fail to learn it. Only recently have psychologists begun examining the abilities of those who can learn. Perhaps we should reanalyze existing research for what it can tell us about a new spelling system that everyone could learn and use easily.

It has been generally assumed that everyone can learn to read and spell if only they try hard enough. Failure indicates lack of diligence or inadequate teaching; those who still fail must have some peculiar

medical defect. The occasional cases reported of bilinguals who are dyslexic only in English are described as if they are fascinatingly peculiar, when it very well may be English spelling that deserves that description.

Our picture of spelling abilities is rather unbalanced because research has been unbalanced. The test material most commonly consists of single words rather than everyday reading and writing tasks, and subjects are usually either highly skilled or unskilled. There has been little real investigation of the skills of the average person with average verbal abilities. It is only when large-scale surveys reveal the extent of adult illiteracy, semiliteracy, and exliteracy (that which is lost through disuse) that we realize that perhaps ten years of expensive compulsory education in Anglo-Saxon countries is not cost effective and that the path to fluent literacy may have been too much of a minefield. Even university entrants can be found today with reading speeds of less than a hundred words a minute for simple narrative. This may be a key reason for subsequent failure and high dropout rates. Slow readers can read less, and it is also harder for them to read with comprehension because the beginning may very well be forgotten by the time the end is reached.

The arbiters of spelling are people of high verbal ability and are usually allied with good visual memory and above average intelligence. They are like acrobats in the psycholinguistic guessing game of reading and find it difficult to realize that others may need a steady set of steps to even get off the ground.

On the other hand, highly literate adults assume that once they have learned one spelling system, learning to read another would be far too difficult. They believe that English spelling itself is so complicated and unpredictable that any other form of spelling would involve the same difficulty. They do not stop to consider that when they set out to learn Spanish, Italian, German, Indonesian, and so on, they can master the single page of spelling rules in twenty minutes. Accent and intonation apart, they can then read aloud what they cannot yet translate, and well enough to be understood by a native speaker. The average English reader also automatically adjusts to reading English whether it is in upper or lower-case, print or manuscript, a hundred varieties of type styles, and even more varieties of handwriting.

Third, unless it is a radically new development, an invention makes sense only if it can fit in with what already exists. This is the principle of backward capability.

Experiments based on the work of John Beech test how English speakers can adapt to changes in spelling. Such experiments reveal that adaptation to more regular forms of present spelling can be almost immediate in reading tests and requires only a few hours' practice in writing tests. Even the more drastic

change of a pure phonemic "spelling as you speak" would hardly slow anyone down for more than a few weeks in reading. Dabblers in spelling reform can write with equal care in present spelling and in some invention of their own. In countries like Australia, which accept both English and American spellings, few notice which is used; signs in a television shop window can read both *color* and *colour*.

Improvements that are in the same direction as current trends could be used on the electronic screen, and the changes would barely be noticed. Individuals can use alternative spellings as they like. Firms can change their house rules to the degree they wish simply by modifying the dictionary on their word processors. Schools can experiment with improvements such as initial learning spellings even if this means immediate transition to reading present spelling. With Pitman's Initial Teaching Alphabet, the transition to reading present spelling is postponed.

English spelling should be designed to be optimal for use on visual display screens, in computer languages and in speech-print and print-speech computer transliteration in microfiche, and in language translations by machine. It needs to be streamlined for the most efficient use of time, money, energy, storage, and materials.

One suggestion for reducing the machine's difficulty with homophones has been to turn the homophones into words with slight sound and print differences; for example, to pronounce *to*, *too*, and *two* as they are spelled, and similarly for *sun* and *son*, *for* and *four*. It would also be possible simply to eliminate the less familiar word in some homophone pairs and use a different word instead—the language is rich enough. It would be interesting to design a thesaurus that performed this task.

Spelling reformers have sometimes imagined that an acceptable reform need only be designed, and that it will at once either be adopted in schools or by a government commission or both. The aim however is not merely to improve the present English system; that is easy. Anyone can design a better spelling system in an afternoon, and many people have. The aim must be for the best possible representation of language, one that will best satisfy many different criteria and constraints, including the following:

- learning from international comparative spelling research and from examinations of possible reforms;
- testing with every variety of user, including machines, and across age, social class, IQ, educational level, regional dialects, and various types of linguistic handicaps;
- testing immediate and long-term adaptation, speed and accuracy, and the advantages compared with present spelling;
- investigating its feasibility (How easily and inexpensively can it be implemented?);
- determining how it shapes up as a component of

modern communications technology.

We are at present approaching a situation when the only question will be "Who will dare first to bell the cat?" and take the risk as well as reap the potential rewards.

But in the communications industry, risk-takers have always been found. Indeed, following a familiar precedent, the first use of tested and improved English spelling could well be by the Japanese, for reasons of international commerce. ☒

The following paragraphs are taken from this article and have been rewritten with the omission of letters that "would not be missed."

Improvements that are in the same direction as current trends could be used on the electronic screen, and the changes would barely be noticed. Individuals can use alternative spellings as they like. Firms can change their house rules to the degree they wish simply by modifying the dictionary on their word processors. Schools can experiment with improvements such as initial learning spellings even if this means immediate transition to reading present spelling. With Pitman's Initial Teaching Alphabet, the transition to reading present spelling is postponed. . . .

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Fundamentals of Spelling Instruction

Myrna J. Walters

Direct instruction in spelling is a necessary part of the elementary curriculum. It promotes vocabulary development, enhances reading skills, and teaches students about the structure of our language. Most importantly, spelling is one of the foundations upon which writing is based, so students should have as many opportunities as possible to use in their writing the words that constitute their spelling lessons.

The basis of spelling instruction is the word list which should include high-frequency or high-utility words. One of the best word lists consists of the thousand most common words and can be found in the April 1979 issue of *The Reading Teacher* and *Spelling: Basic Skills for Effective Communication* (Barbe et al., 1982).

Once the basic list has been compiled, the words need to be introduced and taught systematically. Research suggests that the test-teach-test method is the most effective.

It is also important that students learn spelling rules, especially that "for every rule there is an exception." Spelling rules, even though they are fallible, give students a set of guidelines that they can use to attempt words they cannot spell.

What follows is a list of these rules. As was mentioned previously, the rules are not perfect, but they are a great improvement over the "best guess" method many students seem to employ.

Forming Plurals

The incorrect spelling and usage of plurals appears early in students' writing, so it is vital to focus on the rules of forming plurals. A lesson on plurals should include words representing all *s* and *es* rules, and students should have several opportunities to classify the words by pattern.

• Add *s* to

- most nouns. (*bags, safes, radios*)
- nouns ending in *y* following a vowel. (*days*)
- some nouns ending in *f* or *fe*, after changing the *f* or *fe* to *ve*. (*thief, thieves; knife, knives*)

• Add *es* to

- nouns ending in *s, x, ch,* and *sh*. (*buses, boxes, branches, dishes*)

-some nouns ending in *o* following a consonant. (*heroes*)

-nouns ending in *y* following a consonant, after changing the *y* to *i*. (*family, families*)

One of the most baffling aspects of the English language is the words that have irregular plural forms.

<i>man men</i>	<i>foot feet</i>
<i>woman women</i>	<i>goose geese</i>
<i>child children</i>	<i>tooth teeth</i>
<i>ox oxen</i>	<i>mouse mice</i>

Equally confusing is the discovery that some singular words don't change at all in their plural forms.

<i>sheep</i>	<i>swine</i>
<i>deer</i>	<i>fish</i>
<i>moose</i>	<i>bison</i>

Possessives

Possessives often give students difficulty. Direct instruction and the memorization of the following rules should minimize the problem.

- First, write the word, and then add the 's or the apostrophe to make it possessive (Hillerich, 1976).

- To form the possessive of singular nouns, add 's.

<i>cat cat's</i>	<i>class class's</i>
------------------	----------------------

- To form the possessive of plural nouns, add only an apostrophe.

<i>cats cats'</i>	<i>classes classes'</i>
-------------------	-------------------------

- To form the possessive of irregular plurals of words, add 's.

<i>woman women women's</i>
<i>child children children's</i>

Adding Suffixes

Adding suffixes correctly is a challenge to most students. It requires patient, consistent instruction over a long period of time. Again, memorization of the rules for adding suffixes is important.

Final Consonant Rules

- If a word ends in *x* (*fix*) or two or more consonants (*help*), merely add the suffix. (*fixed, helping*)

- If a word ends in a consonant following a vowel, double the consonant before adding a suffix that begins with a vowel.

<i>r u n</i>	<i>r u n n i n g</i>
<i>v e</i>	<i>v e c v</i>

Silent e Rules

- If a word ends in *e*, drop the *e* and then add the suffix if the suffix begins with a vowel. If the suffix begins with a consonant, do not drop the *e*; merely add the suffix. (*excited, excitable, exciting*)
- Do not drop the *e* after soft *c* or *g* if the suffix begins with *a* or *o*. (*changeable*)

Rules for Words Ending in y

- To add a suffix to most words ending in *y*, change the *y* to *i* and add the suffix. (*easy, easily*)
- To add the suffix *ing*, do not change the *y* to *i*. (*studying*)
- To add a suffix to most words ending in *y* following a vowel, do not change the *y* to *i*; merely add the suffix. (*play, played, playing*)

Homophones, words that sound alike but are spelled differently, confuse even the best spellers. Frequently, a student will spell homophones correctly on the weekly test but misspell them in a composition thirty minutes later. This is the student's way of saying, "I haven't had enough experience applying these words in my writing to use and spell them correctly." Rather than responding by providing additional practice featuring the words in isolation, give the student opportunities to use the words in a written assignment. It is also helpful to separate the homophones and to teach them emphasizing the different meanings rather than the similar pronunciations.

Errors are helpful to learning and diminish with time and practice. Graves (1983) advocates using compositions to diagnose students' spelling problems. He suggests that "a line should be drawn under words that are almost spelled correctly and a circle placed around words that the student suspects are way off in spelling" (Graves, 1983, pp. 202-203).

But of what value is a lesson of ten or twenty words if after the lesson the student can spell only those words? The goal of spelling instruction is to provide each student with fundamental spelling skills that should give the student clues to spelling new or unknown words.

Procedure for Spelling an Unknown Word

- Say the word to yourself.
- Determine the number of syllables in the word.
- Decide if the word includes a suffix and if any changes were made to the word before the suffix was added.
- Give your best try—write it.
- If it looks incorrect, try the dictionary.
- If all else fails, ask for help.

Summary

Spelling requires structured, systematic instruction on a regular basis. High-frequency and high-utility words need to be learned, because they will serve as

the foundation for writing. Basic rules for plurals, possessives, and suffixes should also be learned, as they will provide students with the tools they will need to unlock new words. Direct spelling instruction is essential, but so, too, is the opportunity to apply correct spelling and usage in composition. This combination of direct instruction and application will help students develop into competent users of our language. ☐

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What does the teacher do?

1. Provide direct instruction for spelling skills. Check yourself or have a colleague check to make sure you are instructing, not assigning.
2. Schedule daily skill lessons that are 10 to 15 minutes long.
3. Provide time each day for students to apply their skills in spelling by writing.
4. Provide a composition checklist that includes spelling skills (Walters, 1984).
5. Change grading techniques by identifying the number of incorrect words in a line or page, and have the student identify and correct them.
6. Assist the students in using time wisely so they have more time on task.
7. Provide more vocabulary development activities.
8. Provide for different learning modalities. Visual students need to see words spelled correctly, auditory students must hear words spelled orally, and kinesthetic students have to write the words.
9. Select appropriate spelling words from students' compositions.
10. Provide meaningful repetition and memorization practice.
11. Direct the student to list any misspelled words in a personalized dictionary.
12. Post a chart listing the procedures for spelling an unknown word.
13. Provide immediate and positive feedback for each student on a regular basis (Flood and Salus, 1984).
14. Be enthusiastic and expect correct spelling.

Name: *Tom Jones* Date: *83* yr *10* mo *17* day
 School: *Riverside Elem* Date of Birth: *72* yr *7* mo *12* day
 Teacher: *Alma Miller* Age: *11* yr *3* mo *5* day
 Examiner: *Edward Burnham* Grade: *6* yr *3* mo Sex: *M*

Score Box

TYPE OF SCORE	WORD RECOGNITION			SPELLING RECOGNITION	
	Spelling	Sight	Phonetic	Visual	Aud-Vis
Raw Score	16	45	52	68	71
Standard Score	79	87	89	108	111
Percentile Rank	8	19	23	70	77
Grade Rating	3.2	4.0	4.2	8.2	8.7

Profile Chart

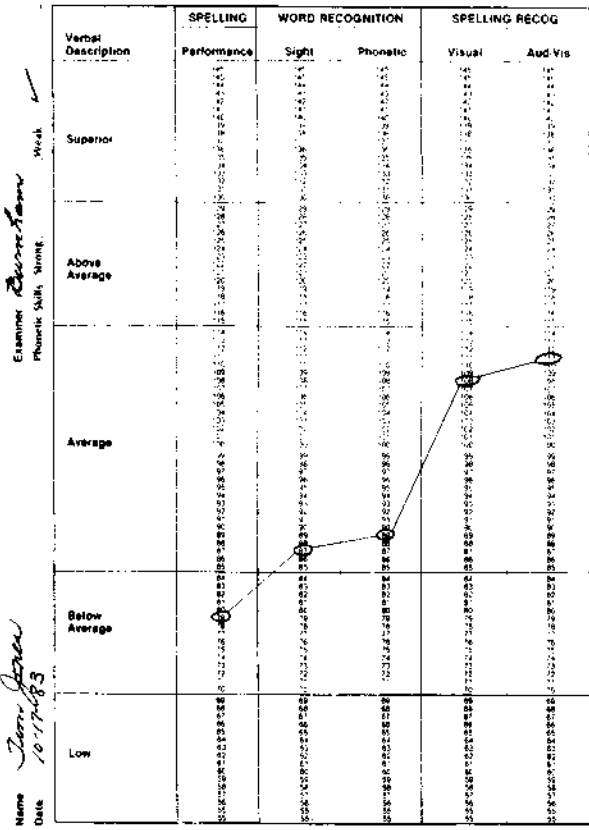
Verbal Description	Standard Score	Spelling	WORD RECOGNITION		SPELLING RECOGNITION		Percentile Rank
			Sight	Phonetic	Visual	Aud-Vis	
Superior	130 and above						98 and above
Above Average	115-129						84-97
Average	85-114		X	X	X	X	16-83
Below Average	70-84	X					2-15
Low	69 and below						2 and below

Spelling Error Analysis Chart

	Reversal or Transposition	Phonetic	Other
Number	0	3	7
Percent	0	30	70

Comments: *Tom was comfortable during testing. Teacher reports poor oral reading but silent reading comprehension is at grade level.*

DSPT Profile Analysis Chart



Author: Therapy Publications, Wright Publishing, 1982, p. 197

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