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#### ABSTRACT

This document is a report on a study of errors in spelling which high school students in 48 states, the District of Columbia, and Canada have made in their writing, with special reference to the words most frequently misspelled, their relative frequency, and the kinds of spelling errors which the student made. An analysis of the different words misspelled and the number of times each word was misspelled shows that most of the words were misspelled only rarely, while a comparatively few words were misspelled much more frequently. Five major groups of errors were noted: (1) misspelling of endings of words, (2) misspelling of vowels, (3) misspelling of homonyms or near homonyms, (4) misspelling of consonants, and (5) misspelling of prefixes and combining forms. An outline of the kinds of spelling errors made in grades 9-12 is included for reference. (CK)



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### MISSPELLING IN GRADES 9-12

#### Thomas Clark Pollock

This is a report on a study of errors in spelling which high school students in forty-eight states, the District of Columbia, and Canada have made in their writing, with special reference to the words most frequently misspelled, their relative frequency, and the kinds of opelling errors which the students made.

The raw data for this study were collected by 1,706 teachers in 846 high schools who responded to a request I made through the medium of the Teachers Service Bulletin in English of the Macmillan Company to send me the next fifty misspelled words which they met in the writing of one of their high-school classes. Some of the teachers sent fifty words, some fewer; but altogether they sent me a total of well over 50,000 words misspelled in grades 9-12. I winnowed the total list by setting aside spellings of unusual names; spellings such as judgement and useable which, although not the preferred American spellings, are regarded as acceptable by some American dictionaries; and a number of other words which, although presumably misspelled as the students wrote them, were spelled correctly in the transcriptions the teachers sent me. After this winnowing, the raw data consisted of 49,259 misspelled words.

Further analysis showed that these were 49,259 misspellings of 6.556 different words and that they contained 54,173 spelling errors, 20% of the misspellings came from grade 9, 27% from grade 10, 27% from grade 11. and 26% from grade 12.

Section I which follows concerns the words most frequently misspelled and their relative frequency. Section II presents an analysis of the kinds of spelling errors the student writers made.

An analysis of the different words misspelled and the number of times each word was misspelled shows that most of the words were mispelled only rarely, while a comparatively few words were misspelled much more frequently. More specifically:

- 2,511 words or 38% of the total, were mispelled only once.
  1,048 words, or 16% of the total, were misspelled only twice.
- 572 words, or 9% of the total, were misspelled only three times.
- 394 words, or 6% of the total, were misspelled only four times.
- Hence 4,525 different words, or nearly 70% of the total, were misspelled fewer than five times; and these different words account for

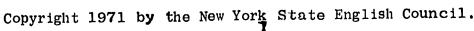
only about 9% of the misspellings.

On the other hand:

The 100 words which were misspelled most frequently, from 70 to 658 times each, account for 13,551 misspellings or nearly 28% of the

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total. That is, 1.5% of the different words account for nearly 28% of the misspellings.

The 388 words which were misspelled most frequently—each one at least 25 times—account for 25,254 of the misspelled words, or 51% of the total. This is, 6% of the different words account for 51% of the misspellings.

It is evident from this as well as from other studies that, whether or not it is pedagogically wise to speak of "spelling demons," a comparatively few words do account fo ra large percentage of misspellings in high school. It would seem clear that these words deserve special attention in any teaching of spelling in secondary schools.

The list of 388 words which occasioned more than half of the misspellings in grades 9-12 is given below. The letters in each word which caused most of the spelling errors are italicized. The words are arranged in order of decreasing frequency of misspelling. (Note that the "words" listed here include a few word-groups or elisions which frequently occasion misspellings, such as all right, it's, and you're, as well as words with alternate endings, such as "interest (ing)" and "description (ive)."

	•	•				
			nes		Times	
		Missp	pelled		MISS	pelled
1	their		658	31. to		131
	too		578	32. tr <i>uly</i>		129
	receive		450	33. does		128
	there		314	34. stopped(ing)		127
5.		_	309	35. recommend		125
6.		—	307	36. emba <i>rrass</i>		124
	believe		299	37. lose		124
	unti <i>l</i>		287	38. necessary		124
	coming		236	39. woman		123
	whether	•	221	40. different(cc)		120
11.	interest (ing)		219	41. probably		120
	writing	-	218	42. th <i>a</i> n		115
13.	tried(s)		206	43. where		115
	privilege	—	200	44. its	_	114
	decide (d)		197	45. clothes		113
16.	finally		192	46. convenient (cc)	<del></del>	109
17.	beginning		189	47. occurred (ing)		107
18.	charact <i>er</i>		188	48. similar	•	107
19.	surprise		178	49. tragedy	•	107
20.	humor(ous)	-	171	50. a <i>c</i> qu <i>ai</i> nt		106
21.	business		166	51. am <i>o</i> ng		104
22.	gramm <i>a</i> r	_	161	52. experience	<del></del>	104
23.	definite	—	158	53. pleasant	<del></del>	101
24.	disa <i>pp</i> oint	—	151	54. though $t$		101
25.	description(ive)	—	147	55. con <i>scio</i> us		98
26.	studying	—	143	56. government		98
27.	friend	-	136	57. always		97
	college	_	135	58. describe		96
	quiet		133	59. immediately	•	96
30.	occasion	-	132	60. rhythm		96

t For a summary of comparable findings in other studies, see the excellent analysis by J. Stephen "Sherwin in Chapter 2, Eggys, Egges, Eyren: The Problem of Spelling," in his Four Problems in Teaching English: a Oritique of Research, published for the National Council of Teachers of English by International Textbook Co., Scrunton Pa. 1969.



		Tim Misspe				Time Misspe	
61	a <i>th</i> letie		93	191	. author		64
	disappear		92		foreign	_	64
	so <i>pho</i> more		92	123.	soldier		64
	sincer <i>ely</i>		90	124.	suppose		64
	piecc		89 88	125.	exaggerate	_	63 63
	because across	_	87		excitement perform	_	63
	appearance		86		since		63
69.	it's		86	129.	. lab <i>ora</i> tory		62
70.	restaurant		86		meant	-	62
71.	success principal		86 84		escape remember	_	$\frac{61}{61}$
	then	_	84	133.	argument	_	60
<b>74</b> .	course		83	134.	profession	—	60
	planned (ing)		81		professor		60
	possess(ed, ion, ive)		81 81	130.	scene(s) beauty	_	60 59
	us <i>ual</i> w <i>hic</i> h	_	81		before	_	59
	sense		80		library		59
80.	together		80	140.	suspense	-	59
	criticism		79 70		independent(ence)	•	57
82. 83	minute(s) whose		79 79		prejudice accommodate	<del></del>	57 56
	paid	_	78		benefit	_	56
85.	fascinate		77		niece		56
	forty		76	146.	parliament	—	56
	o <i>ppo</i> rtunity		76 76		chose(n) know		55 55
	writer accept	_	76 75		written		55
	appreciate(ion)		75		and		54
91.	especially		<b>75</b>	151.	dropped(ing)	—	54
92.	recognize		<b>75</b>	152.	enou <i>gh</i>	_	54
	shining speech	_	75 75		two doctor	_	54 53
	existence		74		everybody (day, one,	thing,	00
96.	during	—	72		where)	- 0,	53
97.	excellent(ce)		72 70	156.	equi <i>pm</i> ent		53
	really village		72 72		ning <i>azi</i> ne ninety(een)		53 52
	opinion	_	70	159.	against	_	51
101.	accident <i>ally</i>		69	160.	commit		51
102.	quite		69		February		51
	you' <i>re</i> cert <i>ai</i> n		69	163	salety(ly) equipped		51 50
	imagine	_	68 68	164.	forearm (cast, fathers	 s.	00
106.	mischievous		68		going, head, man, n	nost,	
107.	realize	—	68		noon, saw, see, seen	١,	
	secretary		68	105	shadow, sight, tell)		50
	villain cemetery		68 67		hungry jealous	_	50 50
	succeed	_	67		marriage		50
112.	thorough(ly)	-	<b>67</b>	168.	prison		50
113.	through		67		sentence		50
114. 115	weather were		67 67		carrying first		49 49
	article	_	66		prairie		49
117.	environment		66	173.	descend(t)		48
118.	literature		66	174.	famil <i>t</i> ar		48
	stories captain	_	66 65		governor laid	-	48 48
	oup turn		UU	110.		_	
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			imes spelled			Tin Missp	
177	parallel		48	237.	apology		37
	possible		48		appear(ed)		37
179.	already		47		lonely		37 37
180.	intelligent (ce)		47 47	240.	v <i>ery</i> Brit <i>ai</i> n		36
181. 189	!-isure principle		47		conscience		36
	usually		47	243.	immediate		36
184.	almost		46		lightning		36
	amateur		46 46	245.	peculiar practically		36 36
	disease knew		46 46	247.	running		36
	chief(s)		45	248.	trouble		36
189.	diner(ing)		46		afr <i>ai</i> d		35
	month(s)		45 45		control criticize		35 35
191.	Saturday they		45		fourth		35
193.	happier (est, ly, ness)		44	253.	innocent		35
194.	proceed		44	254.	prophecy	_	35
	servant		44 44		repetition search	_	35 35
	they're 'athlete		43		committee		34
198.	deceit (ve, ved)		43	258.	completely		34
199.	grateful		43		courageous		34
200.	guard		43 43		field		34 34
	occur(s) weird		43		liospital knowledge		34
	career		42		mountain		34
204.	decision		42	264.	pronunciation		34
	group ,		42		wonder		34 34
206. 207.	misspell	_	42 42		women cha <i>lleng</i> e		33
	occurrence		$\frac{1}{42}$		cried(s)		33
209.	off		42	269.	discuss (ed, ion)		33
210.	pastime	_	42 41		families	_	33 33
	acquire affect		41	271. 979	fictitious forest		33
213.	approach		41		grabbed		33
214.	easily(er, est)		41	274.	m <i>oder</i> n		33
215.	height		41	275.	precede		33 33
	later quantity		41 41	276.	shep <i>h</i> erd str <i>et</i> ch		33
217.	squirrel	_	41	278.	buy		32
219.	summary (ize)		41	279.	choose		32
	incident		40		courteous		32 32
221.	na <i>rra</i> tive(ion) p <i>a</i> rticul <i>a</i> r		40 40	281.	curiosity enemy		32
	particular	_	40	283.			32
224.	schedule(s)		40	284.	sponsor		32
225.	excited (ing)		39		swimming		32 32
226.	family referred (ing)		39 39		Tomorrow wreck		32
228.	religion (ous)		39		again		31
229.	went		39	289.	bicycle		31
230.	children		38		calendar		31 31
	di <i>dn't</i> effect		38 38		conscientions extremely		31
	hoping		38		guarantee		31
234.	passed		38	294.	identify(ty)		31
235.	seize		38		loose(n, r)		31
236	, straight		38	296.	many		31
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		Time: Misspell				Time Misspel	
297.	maybe		31	343.	stre <i>ngth</i> en	-	27
298.			31	344.	themselves		27
299.	relief (ve)		31	345.	wond <i>er</i> fu <i>l</i>		27
	sergeant		31	346.	accuse(d)		26
301.	something		31		achieve	<del></del> .	26
302.	brilliant(ce)		30	348.	arctic		26
	Christian		30		associate		26
	defin <i>ite</i> ly		30	350.	con <i>c</i> entrate		26
305.			30		dissatisfy		26
	front		30	352.	entert <i>ai</i> n		26
307.			30		exp <i>eri</i> ment		26
	medicine(s)		30		horse		26
309.	noticeable		30	355.	night	—	26
310.	procedure		30		omitted		26
311.	reference	<del></del> .	30	357.	persuade		26
312.	studied(s)	-	30	358.	physical		26
313.	those	_	30	359.	preparation		26
314.	beautiful		<b>2</b> 9	360.	psychology(ical, ist)		26
315.	complete		29	361.	seeret		26
310.	countries		29		wait		26
	favorite		29		address		26
	further		29	304.	aggression (ive, or)		25
200	getting	_	29	365,	attendant (ce)		25
201	heroes receipt		29		a <i>tt</i> itude	—	25
200	speak	.—	29 29	307.	continue (ous)		25
	stepped(ing)		29 29	300.	destroy	_	25
324	think	<u></u>	29	309.	difficult		25
	around		28		formerly		25
	awful		28		hurrying	-	25
327	$\operatorname{clim} b(\operatorname{ed}, \operatorname{ing})$	<del></del> -	28		immensely miniature		25 25
328.	discipline		28	37/1	model	_	25 25
329.	Henry		28		neighbor	_	25 25
	instead		28		nervous		25 25
331.	interpret	<del>-</del>	28		now		25 25
332.	opposite		28		obstacle	_	25 25
333.	pamphlet		28	379.	other	_	25 25
334.	poison		28		parents		25
335.	pretty		28		period	_	25
336.	answer		27		permanent		25
337.	break		27		poem(s)	_	25 25
338.	corner	_	27		pursue(it)		25 25
339.	ha <i>pp</i> en		27	385.	suspicion		25
340.	interrupt		27	386.	temperament	<del></del>	25
341.	motor		27	387.	thief		25
342.	relative	•	27		write		25

# II

In addition to finding what different words were misspelled by students in grades 9-12 and the frequency of the misspellings of different words, the study analyzed the misspellings to find the kinds of spelling errors which the students had made in their writing and the frequency of different kinds of errors.

54,173 spellings errors were found in the 49,259 misspellings of 6,556 different words. Note that the number of spelling errors is higher than the number of misspellings. The reason, is, of course that

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one misspelled word may include two or more spelling errors. For example, the word *immediately* was misspelled "imedeat ly" by one student—three spelling errors in one misspelled word.

The largest group of spelling errors, 21,029 or 38.8% of the total, was made in the endings of words. This group of errors can be classified into three sub-groups.

- —(1) 4,438 or 8.2% of the errors were made in the spelling of a suffix. For example, one student wrote the suffix -ance in appearance as "appearence."
- —(2) 8,295 or 15.3% of the errors were made not in the spelling of the suffix itself, but in adding the suffix to the base word or root. For example, one student, in adding the suffix -ly to true, wrote "true-ly." Frequently this error consisted in incorrectly doubling or not doubling a consonant before a suffix, as in "comming." stoped," and writting."
- —(3) 8,296 or 15.3% of the errors were made in the spelling of a word-ending in which no suffix was involved. Examples are the misspellings "grammer" for grammar, "artical" for article, and "similiar" for similar.

The second largest group of errors, 10,742 or 20%, was made in the misspelling of vowels, that is vowel sounds plus the number 10,742, is in addition to any misspellings of vowels which were incidental to the misspellings of suffixes, prefixes. combining forms, homonyms, and near homonyms. This group of errors also can be classified into three sub-groups.

- —(1) 2,653 or 5% of the errors were made in the spelling of standard two-letter vowel graphemes, such as ai and ea. Examples are "afriad" for afraid, "jelous" for jealous, and "speach" for speech.
- —(2) Confusion between ei and ie led to 2,023 or 4% of the errors. as in "beleive" for believe, "recieve" for receive, and "theif" for thief. It may be worth noting that an unusually large proportion of these ie-ei errors (77% of the total) came in the 388 words which were misspelled 25 times or more.
- ---(3) An additional 6,066 or 11% of the errors arose from more varied difficulties with the spelling of vowels, as in "seperate" for separate, "piolet for pilot, and magizine" for magazine.

The third largest group of errors, 7,331 or 13.5%, was made in the misspelling of homonyms or near homonyms, such as to-too-two and weather-whether.

The fourth largest group of errors, 6,503 or 12%, came in the misspelling of consonants. These errors may be classified into four sub-groups.

- -(1) 1,096 or 2% came in the misspelling of two-letter consonant graphemes, such as gh and sc. Examples are "enought" for enough, "concious" for conscious, and "profecy" for prophecy.
- -(2) 1,761 or 3.3% came from problems of doubling or not doubling consonants, as in "embarass" for embarass, and "posess" for possess.



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—(3) 819 or 1.5% of the errors came from the omission of a silent letter, as in "climed" for climbed, "morgage" for mortgage, and "rythm" for rhythm.

—(4) 2,827 or 5.2% were other kinds of errors in spelling individual consonant sounds. Examples are "deside" for decide and "tradgedy" for tragedy. A number of these errors, such as "inenity" for indentity, "libary" for library, and reconize", for recognize are presumably related to mistaken pronunciation or hearing of the word.

The fifth largest group of errors, 5,024 or 9%, came from the misspelling of prefixes and combining forms, as in "bibliography" for bibliography, "discribe" for describe, and "preform" for perform.

In addition to the five major groups of errors indicated above, there was a miscellary of 3,544 or 6.5% of the errors which did not fall into any of these groups. Examples of these, many of which consist of the omission of syllables, are "opion" for opinion, "peroid" for period, and "rember" for remember.

The classifications above are not, of course, logically mutually exclusive. The spelling of suffixes or homonyms, for example, inevitably involves the spelling of vowels and consonants. The classifications have been made, however, in the effort to reflect what apparently were the general sources of the spelling errors. For example, "recieve" for receive was classified with the ei-ie errors, for obvious reasons; but "there" for their was classified with the homonym errors; and errors made in spelling stories were classified with the errors made in attaching a suffix to a base (story - stories). In doubtful cases, a careful examination of the actual misspellings of the word usually gave the clue. The misspellings of receive, for example, tended to be "recieve"; but the misspellings of stories tended to be, not "stores," but "storys" or "story's."

The following outline of the kinds of spelling errors made in grades 9-12 may be useful for reference.

grades	3-12 may be about for terestation	Number	Per cent
	Kinds of Spelling Errors in	Grades 9-12	
I.	Endings of Words  Errors in spelling suffix  Errors in adding suffix  Errors in non-suffix endings	4,438 8,295 8,296	8.2% 15.3% 15.5%
	Sub-Total	21,029	38.8%
II.	Vowel Sounds		
	Errors in two-letter graphemes (ai-ea, etc.) ie-ei errors Other errors in spelling vowels	2,653 2,023 6,066	5 % 4 % 11 %
	Sub-Total	10,742	20 %
III. 52	Homonyms and Near Homonyms	7,331 The English	13.5% H RECORD

IV.	Consonant Sounds							
	Errors in two-letter graphemes  (gh. sc, etc.)	1,096	2 %					
	Errors in doubling or not doubling letters	1,761	3.3%					
	Errors in silent letters	819	1.5%					
	Other errors in spelling consonants	2,827	5.2%					
	Sub-Total	6,503	12 %					
V.	Prefixes and Combining Forms	5,024	9 %					
VI.	Miscellany	3,544	6.5%					
	Total	54,173	99.8%					

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