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Growth in Punctuation and Capitalization Abilities

James E. Goodman

College of William & Mary - School of Education

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GROWTH IN
PUNCTUATION AND CAPITALIZATION
ABILITIES

by

James H. Goodman

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS
OF
THE COLLEGE OF WILLIAM AND MARY
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MASTER OF ARTS
1931

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J.H.G.

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Chapter I

The Problem and Its Literature

The Problem

This study endeavors to determine:

- 1. The relative growth in ability to punctuate and capitalize correctly from grade to grade.**
- 2. The relative persistency of errors in punctuation and capitalization made by pupils in each grade from the fifth to the eleventh inclusive.**
- 3. Whether or not the ranking order of errors made by pupils in rules of punctuation and capitalization remain constant from grades five to eleven inclusive.**

Significance of the Problem

The importance of this study lies in its attempt to indicate the relative percentages of errors made in rules of punctuation and capitalization by pupils in grades five to eleven inclusive, thus supplying data which will help in the selection of rules to be taught in these respective grades.

No attempt is made to suggest either standards of achievement or the grade placement of the rules studied. On the other hand, the author proposes to indicate those points at which pupils' growth in ability to punctuate and capitalize fails to show continuous improvement as

well as these points at which mastery is approached. These findings may be used by the reader to suggest a grade placement of the rules studied.

The importance of a definite attack on this problem is emphasized by a number of investigators who have carried on research in this field. Johnson¹, Lyman², and Sternsund³ have shown the high frequency of punctuation and capitalization errors in comparison with grammatical errors. Spray⁴, in a study made in 1929, startles us with the statement that "Punctuation and capitalization errors account for 70.6 percent of all errors made", in ordinary classroom compositions of children in grades three to nine inclusive.

The Literature of the Field

Numerous studies have been made in the field of punctuation and capitalization. The chief purpose of these studies has been to determine the frequency of errors in the elementary, junior and senior high school,

-
- 1 Johnson, Roy Ivan "A Study of Errors in English Composition" Masters Thesis, Department of Education, University of Chicago. 1917.
 - 2 Lyman, R.L. "Fluency, Accuracy and General Excellence in English Composition" School Review February, 1918.
 - 3 Sternsund, Martin J. and O'Shea, H.V. "How Much English Grammar?" Warwick and York, Baltimore. 1924.
 - 4 Spray, Edith J. "A Study of Grammatical Errors Made by Pupils of Grades 3, 4, 5, 6, 7, 8, and 9 of the South Bend Indiana Schools" Masters Thesis, University of Chicago. 1929.

and among university students. Those related most closely to this study are listed at the end of this chapter. Their most important findings may be summarized as follows.

(1) In the studies made by Spray¹, Sternzand², Anderson³, Bobbit⁴, and others, the most frequent errors in written expression were found in punctuation and capitalization. These studies were based upon investigations from the third grade of the elementary school, through the university and into adult life.

(2) The study made by Johnson⁵ seems to indicate that there is a "vocabulary of errors" in punctuation usage corresponding to the "vocabulary of words" which pupils use in written expression.

(3) In general, it appears that errors in capitalization are almost as frequent as errors in punctuation.

A careful search through the investigations of English usage has revealed no authoritative study dealing with punctuation and capitalization errors rule by

1 *ibid.*

2 *ibid.*

3 Anderson, H.R. "A Study of Errors in Composition in the University of Chicago High School" Master's Thesis, University of Chicago. 1926.

4 Bobbit, Sarah A. "Shortcomings in the Written English of Adults" Supplementary Educational Monograph, University of Chicago, Department of Education. 1926.

5 *ibid.*

rule and grade by grade.

Symonds and Lee¹ studied a limited number of punctuation and capitalization errors in compositions arranged by grades on the basis of their rating on the Hillegas Composition Scale. In a later chapter the results of this study are contrasted with the findings of the present study.

Ashbaugh² noted the most frequent errors occurring in the "unstudied writings" of high school pupils. He examined letters sent through the mails by junior and senior high school pupils to their friends. He ranked the seven most persistent errors. A comparison with the ranks indicated by the present study is shown in a later chapter.

Leonard³ studied the punctuation and capitalization errors made in a select group of eighth and ninth grade pupils. The proofreading test constructed by Leonard for use in his study is used for determining the findings of the present study. Leonard's findings are compared with the results of the present study in a later chapter.

The overwhelming evidence of a universal deficiency in ability to punctuate and capitalize correctly demon-

1 Symonds, Percival M. and Lee, Baldwin "Studies in the Learning of English Expression" Teachers College Record. Vol. 30, P. 460-464; 687-692.

2 Ashbaugh, E.J. "Non-School English of High School Students" Journal of Educational Research, May, 1927.

3 Leonard, J. Paul "The Use of Practice Exercises in the Teaching of Capitalization and Punctuation," Contributions to Education No. 372. Teachers College, Columbia University.

strates with increasing force the need for investigations which may lead to improved learning in this branch of English usage.

Methods of Testing Punctuation and Capitalization Abilities

Several methods have been used to determine abilities in punctuation and capitalization. Actual counts of the frequency of errors in the written work of pupils was one of the early procedures used. This method was shown to be inadequate since it did not take into account the number of opportunities for error.

Later, the relation between the number of errors and the number of opportunities for error in the written work analysed was accepted as good practice. However, some opportunities for errors appeared infrequently, which made necessary the analysis of a great mass of written work of each pupil to insure the reliability of the results with each type of usage.

Simultaneous with this development of technique in composition analysis, proofreading and correction of error tests were brought into use as instruments of measurement. A battery of these tests have been shown to produce a degree of validity equal to the analysis of a 1,200 word theme. Leonard¹ then produced a single

1 *ibid.*

test which equaled in validity the results of the battery of tests formerly employed. The present study is based on the results of the Leonard test. This test, which utilizes the most advanced techniques of measurement, is described in detail in the following chapter.

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and York, Inc. 1924.

Chapter II

Materials and Procedure

The Measuring Instrument

The measuring instrument used in this study was the Leonard Diagnostic Test in Punctuation and Capitalization¹. This test was chosen as the most comprehensive and diagnostic as well as the most accurate instrument available in punctuation and capitalization. The author claims for it a validity of .68 and a reliability of .87-.97. It is a proofreading test, simple to administer, score, and interpret. Twenty rules of punctuation and six rules of capitalization are measured. The author selected these rules with the aid of three college professors of English and two high school teachers of English from a possible forty rules found in sixteen grammar and punctuation texts and several handbooks of English form. Each of the twenty-six rules is clear and definite; there is no overlapping.

This test consists of fifty-two sentences in which there are four opportunities to use each of the twenty-six rules correctly. The sentences are clear and are of the nature used by children in their oral and written expression. Opportunities for the correct usage of

1 Leonard, J. Paul. "Leonard Diagnostic Test in Punctuation and Capitalization." World Book Company, New York, 1930.

several rules sometimes appear in one sentence as is the case in everyday usage. The validity of this test rests partially on the assumption that four opportunities to use each rule correctly will give the pupil a reasonable chance to demonstrate his ability in that usage. These opportunities for correct usage are clear and definite; there are no borderline cases.

In taking this test, the pupil is required to recognize the omission of marks of punctuation and capitalization and is asked to supply them when needed. Explicit directions for giving this test are furnished in order that the conditions under which it is given may be as uniform as possible. The test is scored by means of an objective key. Each error counts one point in the total score. The score is shown as a percentage of error; that is, the number of errors made is divided by the number of opportunities for making errors. One may thus secure a percentage of error for each rule and for the entire test. This scoring technique prevents the undue weighting of some rules at the expense of others.

Other studies have used the method of composition analysis to determine pupils' English errors; the pupil's composition serving as a measure of his ability. This technique has been regarded as the most valid means of determining pupils' abilities in punctuation

and capitalization. Composition analysis, however, has several serious handicaps. First, it is a laborious process. Second, a great mass of written work must be analyzed in order to secure a reasonable representation of each rule. Third, each pupil does not have equal opportunity in each rule usage. Willing¹ found that comprehensive proofreading tests were reasonably good instruments (average validity .68) for predicting the average number of formal errors his pupils would make in 1200 words of diversified, classroom-written compositions on familiar subject matter. The test used in this study has the same validity (.68) and at the same time controls both the opportunities for correct usage and provides an equal representation of each rule of usage for each child.

In view of this evidence, the author of this study feels justified in regarding the Leonard Diagnostic Test in Punctuation and Capitalization as a quite reliable measuring instrument.

The Pupils Tested

The Leonard test, a copy of which is in the appendix, was administered to 2055 pupils in grades five to eleven inclusive in three school systems: (1) Norfolk, Virginia (2) Northampton County, Virginia (3) Springfield, Missouri. These pupils were unselected within the grades and are

1 Willing, Mathew H. "Valid Diagnosis in High School Composition." Teachers College, Contributions to Education, No. 239, Columbia University, 1926.

regarded as representative of pupils in these grades.

The distribution by grades was as follows:

100 pupils in the fifth grade

307 pupils in the sixth grade

487 pupils in the seventh grade

309 pupils in the eighth grade

312 pupils in the ninth grade

266 pupils in the tenth grade

274 pupils in the eleventh grade

The distribution by systems was:

Fifth grade pupils from Northampton and Springfield

Sixth grade pupils from Northampton and Springfield

Seventh grade pupils from Norfolk and Northampton

Eighth grade pupils from Northampton and Springfield

Ninth grade pupils from Northampton and Springfield

Tenth grade pupils from Northampton and Springfield

Eleventh grade pupils from Northampton and Springfield.

The northampton system is composed of comparatively small rural schools. Norfolk, in the South, and Springfield, in the Mid-West, are both city school systems and are composed of larger schools.

Procedure

The 2055 tests were administered between November 14 and December 11, 1930 by the regular classroom teachers under the supervision of the principals in Norfolk, the county superintendent in Northampton, and the director of research in Springfield. The directions printed in the test manual were followed in each system.

The tests were scored by the teachers with the objective key. Some of the teachers transferred the results of their tests to the diagnostic charts furnished with the tests. The author transferred the remainder of the test results to the diagnostic charts. The information contained on these charts was then summarized on a convenient tabulation sheet. Copies of the objective key and the tabulation sheet may be found in the appendix. The diagnostic chart provides for the tabulation of each possible error in the order of its occurrence in the test, sentence by sentence. The tabulation sheet provides for the rearrangement of the results by rule number. The vertical totals indicate the pupils' scores on all rules together. These totals were then divided to indicate total errors in capitalization and total errors in punctuation. The horizontal totals indicate the total errors made by all pupils in each rule.

The accuracy of this study rests partially on the reliability of the test results in each grade. The following method was used to determine the number of

pupils' scores necessary to insure a high degree of reliability. Rankings on the percentages made in each rule were taken at intervals of fifty pupils' scores. The third ranking (150 pupils) was found to be as constant as subsequent rankings. This seems to indicate that the reliability of groups of one hundred and fifty of these unselected pupils' tests is as high as larger numbers. More than two hundred and fifty tests were used in each of the grades, except grade five in which one hundred pupils were tested. There is, therefore, a reasonable basis for the assumption that the results in grades six, seven, eight, nine, ten, and eleven are highly reliable. The results in grade five may be considered less reliable.

Chapter III

The Results

The findings of this study are arranged in the order of the problems set up in Chapter I:

- (1) To determine the relative growth in ability to punctuate and capitalize correctly from grade to grade.
- (2) To determine the relative persistency of errors in punctuation and capitalization made by pupils in each grade from the fifth to the eleventh inclusive.
- (3) To determine whether or not the ranking order of errors made by pupils in rules of punctuation and capitalization remain constant from grades five to eleven inclusive.

The numbers of the rules in the Leonard test did not follow the order of percentages of error made on these rules by the pupils in any grade in this study. The author, therefore, arranged the rules in grade five in the order of descending percentages of error in punctuation and in capitalization to provide a definite basis for comparing the growth shown in the succeeding grades. This revised rule numbering was then followed throughout the entire study.

The rules of punctuation and capitalization used in this study are presented here in the order followed:

Capitalization

- Rule number 1 - Capitalize the first word in each quotation.
- Rule number 2 - Capitalize the principal words in titles.
- Rule number 3 - Capitalize each proper adjective.
- Rule number 4 - Capitalize each proper noun.
- Rule number 5 - Capitalize the pronoun I.
- Rule number 6 - Capitalize the first word in each sentence.

Punctuation

- Rule number 1 - Use a semicolon to separate items of a series when commas are used within them.
- Rule number 2 - Enclose literary titles in quotation marks.
- Rule number 3 - Place a period after each abbreviation or initial.
- Rule number 4 - Use the apostrophe to show the possessive of a noun.
- Rule number 5 - By means of commas separate all direct quotations from the rest of the text matter.
- Rule number 6 - Place a colon before a formal list.
- Rule number 7 - Use an apostrophe to indicate the omission of a letter in a contraction.
- Rule number 8 - Separate a parenthetical expression from the rest of the text matter by commas or dashes.
- Rule number 9 - Use a semicolon to separate independent clauses when they are not closely or immediately related or when they are not joined by conjunctions.

- Rule number 10 - Place a comma before "such as" when used in a sentence to interrupt the principal thought or when used appositively or parenthetically.
- Rule number 11 - By means of quotation marks separate all direct quotations from the rest of the text matter.
- Rule number 12 - Commas are usually used to separate independent clauses that are joined by such coordinates as but, for, because, if, or, as, or and.
- Rule number 13 - Set off by commas the name of a person addressed.
- Rule number 14 - When a subordinate clause precedes a main clause, follow the subordinate clause by a comma.
- Rule number 15 - Separate appositives by commas.
- Rule number 16 - Set off restrictive clauses and phrases by commas.
- Rule number 17 - Place a question mark at the end of an interrogative sentence.
- Rule number 18 - Use a comma to set off the name of a state from the name of a place within the state, a street from a city, the year from the day of the month, a place from a date or a name from a place.
- Rule number 19 - Use the comma to separate words, and phrases, and clauses in series, and put a comma before "and" when it is used to join the last two items of the series.
- Rule number 20 - Place a period at the end of a declarative or imperative sentence.

Growth in Ability

Table A shows the rule numbers, the number of opportunities for error in each rule, the number of errors made on each rule in each grade, and the total number of

Table A

Numbers of Errors Made by 2055 Pupils in Grades 5, 6, 7, 8, 9, 10, + 11 in Rules of Punctuation and Capitalization										
Capitalization	Rule	opportunities for Error	Grade 5 100 pupils	Grade 6 307 pupils	Grade 7 487 pupils	Grade 8 309 pupils	Grade 9 312 pupils	Grade 10 266 pupils	Grade 11 274 pupils	Total Errors 2055 pupils
	1	8,220	383	1069	1422	833	848	571	526	5,652
	2	22,605	932	2718	3228	2021	1452	969	762	12,082
	3	8,220	337	1056	1491	928	795	631	484	5,722
	4	8,220	311	916	986	679	505	398	300	4,095
	5	8,220	362	629	556	384	206	135	113	2,286
	6	8,220	79	152	174	232	75	76	37	825
	Total	63,705	2305	6540	7857	5,077	3881	2,780	2,222	30,662
Punctuation	1	8,220	398	1174	1779	1131	1038	954	751	7,225
	2	16,440	782	2139	2903	1898	1625	1231	963	11,531
	3	14,385	677	1804	2771	1547	1021	1035	642	9,497
	4	8,220	382	1161	1644	1066	962	793	671	6,679
	5	12,330	570	1371	1599	1044	739	683	519	6,525
	6	8,220	375	1119	1414	1007	800	619	574	5,908
	7	8,220	374	1097	1346	964	708	624	412	5,525
	8	16,440	726	1899	2130	1140	933	718	534	8,080
	9	8,220	360	1038	1284	791	607	513	363	4,956
	10	8,220	353	957	1092	598	578	528	402	4,508
	11	24,660	1060	2805	3043	2372	1510	1172	860	12,872
	12	8,220	342	917	1007	595	499	434	358	4,152
	13	10,275	427	1025	1088	630	524	421	311	4,426
	14	8,220	339	879	951	558	550	470	388	4,135
	15	14,385	580	1473	1482	681	586	506	332	5,640
	16	12,330	471	1264	1345	616	613	370	256	4,935
	17	8,220	303	797	914	551	414	310	187	3,476
	18	22,605	744	1976	2012	1198	762	582	376	7,650
	19	24,660	739	1350	794	560	434	322	174	4,373
	20	8,220	187	398	452	241	145	161	131	1,715
Total	250,710	10,189	26,643	31,050	19,188	15,048	12,446	9,204	123,808	
Grand Total	314,415	12,494	33,183	38,907	24,265	18,929	15,226	11,426	164,470	

Table B

Percentages of Errors Made by 2055 Pupils in Grades 5, 6, 7, 8, 9, 10, & 11 in Rules of Punctuation and Capitalization

	Rule	Percentages of Errors by Grades						
		Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11
Capitalization	No.							
	1	95.9	87.2	73.0	71.5	68.0	53.7	47.8
	2	84.6	77.6	60.5	58.8	42.3	33.2	25.4
	3	84.2	86.0	76.6	75.0	63.7	59.2	44.1
	4	77.8	74.6	45.5	55.0	40.5	37.4	37.3
	5	67.5	51.2	28.3	31.1	16.5	12.8	10.3
	6	19.7	12.4	8.9	18.8	6.0	7.2	3.4
Punctuation								
	1	99.5	95.7	91.3	95.5	83.2	89.5	68.5
	2	97.8	87.1	74.5	76.9	65.3	57.8	44.0
	3	96.9	83.8	81.3	71.3	46.3	55.6	33.6
	4	95.5	94.7	84.5	86.0	77.1	74.3	60.3
	5	95.0	74.4	54.8	55.3	39.5	42.8	31.6
	6	93.9	91.1	72.7	81.5	64.1	58.0	44.0
	7	93.5	89.3	69.2	78.0	56.7	58.5	37.6
	8	90.8	77.3	54.7	46.2	37.5	33.7	24.4
	9	90.0	84.6	65.9	64.0	48.6	48.1	33.1
	10	88.4	78.0	56.2	48.4	46.3	49.6	37.7
	11	88.2	76.2	52.1	63.9	40.2	36.8	26.3
	12	85.6	74.6	51.4	48.1	40.0	40.7	32.5
	13	85.4	67.4	44.7	40.8	33.6	31.6	22.7
	14	85.0	72.4	48.8	45.2	44.1	44.0	35.4
	15	83.0	68.5	43.6	31.2	26.8	22.2	17.8
	16	78.7	69.0	46.0	33.7	32.8	23.1	15.7
	17	75.8	64.9	47.0	44.6	33.2	29.1	17.1
	18	67.8	58.6	37.4	35.2	22.2	19.9	12.5
	19	61.8	36.3	12.6	15.1	11.6	10.8	5.3
	20	47.0	32.4	23.1	19.5	11.6	15.1	12.0

errors made in each rule. 2055 pupils with 314,415 opportunities for errors made a grand total of 164,472 errors. This study, therefore, is based on this group of errors. Table B shows the percentages of error made on each rule in each grade. Tables number 1, 2, 3, 4, 5, 6, and 7, one for each grade studied, were then prepared to present the results in each grade separately. Graphs were then prepared to present the results in each grade in a clearer form. These graphs were numbered to correspond with the number of the tables for the individual grades. Mention of the tables corresponding to each graph will be omitted in the rest of this chapter.

Each of these tables and graphs was divided into two sections: the first presenting the results in capitalization and the second in punctuation.

Grade Five

Graph number 1 shows the achievement of 100 fifth grade pupils in each rule of punctuation and capitalization. In capitalization, the percentage of errors is seen to vary from 95.9% to 19.7%. Only one rule (number 6) shows a percentage of error less than 65.7. Rule number 6 is used correctly four times out of every five opportunities. The remaining five rules are used correctly less than four times in every ten opportunities.

In punctuation only one of the twenty rules is

Table 1
Percentages of Error Made by 100 Fifth Grade
Pupils on Six Rules of Capitalization and
Twenty Rules of Punctuation

Capitalization			
Rule Number	Number of Opportunities	Number of Errors	Percent of Error
1	400	383	95.9
2	1100	932	84.6
3	400	337	84.2
4	400	311	77.8
5	400	263	65.7
6	400	79	19.7
Punctuation			
1	400	398	99.5
2	800	782	97.8
3	700	677	96.9
4	400	382	95.5
5	600	570	95.0
6	400	375	93.9
7	400	374	93.5
8	800	726	90.8
9	400	360	90.0
10	400	353	88.4
11	1200	1060	88.2
12	400	342	85.6
13	500	427	85.4
14	400	339	85.0
15	700	580	83.0
16	600	471	78.7
17	400	303	75.8
18	1100	744	67.8
19	1200	739	61.8
20	400	187	47.0

Table 2
Percentage of Error Made by 307 Sixth
Grade Pupils on six Rules of Capitalization
and Twenty Rules of Punctuation

Grade 6 Capitalization 307 Pupils			
Rule Number	opportunities for Error	Number of Errors	Percent of Error
1	1228	1069	87.2
2	3377	2718	7.6
3	1228	1056	86.0
4	1228	916	74.6
5	1228	629	51.2
6	1228	152	12.4
Punctuation			
1	1228	1174	95.7
2	2456	2139	87.1
3	2149	1804	83.8
4	1228	1161	94.7
5	1842	1371	74.4
6	1228	1119	91.1
7	1228	1097	89.3
8	2456	1899	77.3
9	1228	1038	84.6
10	1228	957	78.0
11	3684	2805	76.2
12	1228	917	74.6
13	1535	1025	67.4
14	1228	879	72.4
15	2149	1473	68.5
16	1842	1264	69.0
17	1228	797	64.9
18	3377	1976	58.6
19	3684	1360	36.8
20	1228	398	32.4

Table 3
Percentages of Error Made by 487 Seventh
Grade Pupils on Six Rules of Capitalization
and Twenty Rules of Punctuation

Capitalization			
Rule Number	Opportunities for Error	Number of Errors	Percent of Error
1	1948	1422	73.0
2	5357	3228	60.5
3	1948	1491	76.6
4	1948	986	45.5
5	1948	556	28.3
6	1948	174	8.9
Punctuation			
1	1948	1779	91.3
2	3896	2903	74.5
3	3409	2771	81.3
4	1948	1644	84.5
5	2922	1599	54.8
6	1948	1414	72.7
7	1948	1346	69.2
8	3896	2130	54.7
9	1948	1284	65.9
10	1948	1092	56.2
11	5844	3043	52.1
12	1948	1007	51.4
13	2435	1088	44.7
14	1948	951	48.8
15	3409	1482	43.6
16	2922	1345	46.0
17	1948	914	47.0
18	5357	2012	37.4
19	5844	794	13.6
20	1948	452	23.1

Table 4
 Percentages of Error Made by 309 Eighth
 Grade Pupils on Six Rules of Capitalization
 and Twenty Rules of Punctuation

Capitalization			
Rule Number	Opportunities for Error	Number of Errors	Percent of Error
1	1236	833	71.5
2	3399	2021	58.8
3	1236	928	75.0
4	1236	679	55.0
5	1236	384	31.1
6	1236	232	18.8
Punctuation			
1	1236	1131	95.5
2	2472	1898	76.9
3	2163	1547	71.3
4	1236	1066	86.0
5	1854	1044	55.3
6	1236	1007	81.5
7	1236	964	78.0
8	2472	1140	46.2
9	1236	791	64.0
10	1236	598	48.4
11	3708	2372	63.9
12	1236	595	48.1
13	1545	630	40.8
14	1236	558	45.2
15	2163	681	31.2
16	1854	616	33.1
17	1236	551	44.6
18	3399	1198	35.2
19	3708	560	15.1
20	1236	241	19.5

Table 5
Percentages of Error Made by 312 Ninth
Grade Pupils on six Rules of Capitalization
and Twenty Rules of Punctuation

Grade 9 Capitalization 312 Pupils			
Rule Number	opportunities for Error	Number of Errors	Percent of Error
1	1248	848	68.0
2	3432	1452	42.3
3	1248	795	63.7
4	1248	505	40.5
5	1248	206	16.5
6	1248	75	6.0
Punctuation			
1	1248	1038	83.2
2	2496	1625	65.3
3	2184	1021	46.3
4	1248	962	77.1
5	1872	739	39.5
6	1248	800	64.1
7	1248	708	56.7
8	2496	933	37.5
9	1248	607	48.6
10	1248	578	46.3
11	3744	1510	40.2
12	1248	499	40.0
13	1560	524	33.6
14	1248	550	44.1
15	2184	586	26.8
16	1872	613	32.8
17	1248	414	33.2
18	3432	762	22.2
19	3477	434	11.6
20	1248	145	11.6

Table 6
Percentages of Error Made by 266 Tenth
Grade Pupils on Six Rules of Capitalization
and Twenty Rules of Punctuation

Grade 10 Capitalization 266 Pupils			
Rule Number	opportunities for Error	Number of Errors	Percent of Error
1	1064	571	53.7
2	2926	969	33.2
3	1064	631	59.2
4	1064	398	37.4
5	1064	135	12.8
6	1064	76	7.2
Punctuation			
1	1064	954	89.5
2	2128	1231	57.8
3	1862	1035	55.6
4	1064	793	74.3
5	1596	683	42.8
6	1064	619	58.0
7	1064	624	58.5
8	2128	718	33.7
9	1064	513	48.1
10	1064	528	49.6
11	3192	1172	36.8
12	1064	434	40.7
13	1330	421	31.6
14	1064	470	44.0
15	1862	506	27.2
16	1596	370	23.1
17	1064	310	29.1
18	2926	582	19.9
19	3192	322	10.8
20	1064	161	15.1

Table 7
Percentages of Error made by 274 Eleventh
Grade Pupils on Six Rules of Capitalization
and Twenty Rules of Punctuation

Capitalization			
Grade 11	274 Pupils		
Rule Number	opportunities for Error	Number of Errors	Percent of Error
1	1096	526	47.8
2	3014	762	25.4
3	1096	484	44.1
4	1096	300	37.3
5	1096	113	10.3
6	1096	37	3.4
Punctuation			
1	1096	751	68.5
2	2192	963	44.0
3	1918	642	33.6
4	1096	671	60.3
5	1644	519	31.6
6	1096	574	44.0
7	1096	412	37.6
8	2192	534	24.4
9	1096	363	33.1
10	1096	402	37.7
11	3288	860	26.3
12	1096	358	32.5
13	1370	311	22.7
14	1096	388	35.4
15	1918	332	17.8
16	1644	256	15.7
17	1096	187	17.1
18	3014	376	12.5
19	3288	174	5.3
20	1096	131	12.0

used correctly as often as four times in ten opportunities. One rule (number 1) is used correctly only once in every two hundred opportunities. Only five rules are used correctly two times in every ten opportunities. Graphs 2, 3, 4, 5, 6, and 7 are read in a similar manner.

Grades Five and Eleven

The gain in punctuation and capitalization abilities from grades five to eleven is presented in Graph number 8 and the accompanying Table number 8. This graph and table combine the results given in Graphs number 1 and 7 and in Tables number 1 and 7, showing percentages of errors made by fifth and eleventh grade pupils respectively.

In capitalization and punctuation together the average percentage of error has been diminished from grade 5 to grade 11 by 51.8%; the average capitalization percentage of error has been diminished by 43.3%; and the average punctuation percentage of error by 54.4%.

In capitalization rules 5 and 6 have been reduced to almost negligible percentages of error. The growth in ability in all six rules is seen to have been uniform. If equal instructional emphasis has been placed on each rule, it would appear that the difficulty experienced in learning these usages could be ranked in the order of decreasing achievement levels in grade eleven. Curriculum builders may find in Graph number 8 an aid in

Table 8
 Percentages of Errors Made by 100 Fifth
 Grade Pupils and 274 Eleventh Grade Pupils on
 Rules of Capitalization and Punctuation

Capitalization		
Rule	Grade 5	Grade 11
Number	% Error	% Error
1	95.9	47.8
2	84.6	25.4
3	84.2	44.1
4	77.8	37.3
5	65.7	10.3
6	19.7	3.4
1	99.5	68.5
2	97.8	44.0
3	96.9	33.6
4	95.5	60.3
5	95.0	31.6
6	93.9	44.0
7	93.5	37.6
8	90.8	24.4
9	90.0	33.1
10	88.4	37.7
11	88.2	26.3
12	85.6	32.5
13	85.4	22.7
14	85.0	35.4
15	83.0	17.8
16	78.7	15.7
17	75.8	17.1
18	67.8	12.5
19	61.8	5.3
20	47.0	12.0

40

50

determining the emphasis to place on these rules to secure the desired outcomes.

In punctuation the growth in ability is also found to be fairly uniform. The general shape of the curve tends to remain the same. The range of percentages is approximately equal in these two grades. The irregularity in the upper curve (eleventh grade) is due in part to the arbitrary smoothing of the lower curve (fifth grade). The author does not attempt to explain the differences in learning rates, but merely to point them out to the reader.

The gain in punctuation and capitalization ability from grade to grade is presented in both graphic and tabular form in Graphs number 9, 10, 11, 12, 13, and 14, and in the accompanying Tables number 9, 10, 11, 12, 13, and 14. In each of these graphs and tables the results of two adjacent grades are placed side by side to show the relation between them more clearly.

Grades Five and Six

From grade five to grade six (Graph number 9, Table number 9) there is a uniform growth seen in the capitalization rules number 1, 2, 5, and 6, averaging about eight percent. Rules number 3 and 4 do not show any appreciable growth.

In punctuation the growth in ability varies from ten to twenty percent in fifteen of the twenty rules.

Table 9
Percentages of Error Made by 100 Fifth
Grade Pupils and 307 Sixth Grade Pupils on
Rules of Capitalization and Punctuation

Capitalization		
Rule	Grade 5	Grade 6
Number	% Error	% Error
1	95.9	87.2
2	84.6	77.6
3	84.2	86.0
4	77.8	74.6
5	65.7	51.2
6	19.7	12.4
Punctuation		
1	99.5	95.7
2	97.8	87.1
3	96.9	83.8
4	95.5	94.7
5	95.0	74.4
6	93.9	91.1
7	93.5	89.3
8	90.8	77.3
9	90.0	84.6
10	88.4	78.0
11	88.2	76.2
12	85.6	74.6
13	85.4	67.4
14	85.0	72.4
15	83.0	68.5
16	78.7	69.0
17	75.8	64.9
18	67.8	58.6
19	61.8	36.8
20	47.0	32.4

The growth in the remaining five rules varies from one to seven percent.

Grades Six and Seven

Growth in ability to capitalize from grades six to seven (Graph number 10; Table number 10) is uniformly rapid, varying from ten to thirty percent. Rule number 6 is closely approaching complete mastery.

The growth in punctuation varies from about eight to twenty percent in eighteen of the twenty rules. The remaining two vary in growth from about 2.5 to 4.4 percent.

Grades Seven and Eight

Appreciable growth in ability to capitalize from grades seven to eight (Graph number 11; Table number 11) is confined to rules number 4 and 6. There is very little growth in the remaining four rules.

In punctuation there is very little growth. Rules 3, 8, 9, 10, 13, 14, 15, 16, and 20 show some gain. In several cases there is a loss in ability indicated. These results are most puzzling. They appear to indicate that no learning takes place during the second semester of grade seven and the first semester of grade eight. Is there some peculiar condition existing in these grades in the schools represented in this study? Is there

Table 10
 Percentages of Errors Made by 307 sixth Grade
 Pupils and 487 seventh Grade Pupils on Rules of
 Capitalization and Punctuation

Capitalization		
Rule	Grade 6	Grade 7
Number	% Error	% Error
1	87.2	73.0
2	77.6	60.5
3	86.0	76.6
4	74.6	45.5
5	51.2	29.3
6	12.4	8.9
Punctuation		
1	95.7	91.3
2	87.1	74.5
3	83.9	81.3
4	94.7	84.5
5	74.4	54.8
6	91.1	72.7
7	89.3	69.2
8	77.3	54.7
9	84.6	65.9
10	78.0	56.2
11	76.2	52.1
12	74.6	51.4
13	67.4	44.7
14	72.4	48.8
15	68.5	43.6
16	69.0	46.0
17	64.9	47.0
18	58.6	37.4
19	36.8	13.6
20	32.4	23.1

Graph #10

Table II
Percentages of Errors Made by 487 Seventh
Grade Pupils and 309 Eighth Grade Pupils on
Rules of Punctuation and Capitalization

Capitalization		
Rule	Grade 7	Grade 8
Number	% Error	% Error
1	73.0	71.5
2	65.0	58.8
3	76.6	75.0
4	45.5	55.0
5	28.3	31.1
6	8.9	18.8
Punctuation		
1	91.3	95.5
2	74.5	76.9
3	81.3	71.3
4	84.5	86.0
5	54.8	55.3
6	72.7	81.5
7	69.2	78.0
8	54.7	46.2
9	65.9	64.0
10	56.2	48.4
11	52.1	63.9
12	51.4	48.1
13	44.7	40.8
14	48.8	45.2
15	43.6	31.2
16	46.0	33.1
17	47.0	44.6
18	37.4	35.2
19	13.6	15.1
20	23.1	19.5

some striking psychological action occurring during this period of adolescence? Need exists for further investigation into the relative learning rates of pupils from grade to grade. One explanation may be found in the transition from the elementary grades to the high school. The break comes at these grades in the southern systems where part of these results come from.

Grades Eight and Nine

Capitalization ability rises uniformly from grade eight to grade nine (Graph number 12; Table number 12). Five of the six rules show an average gain of about twelve percent. The remaining one shows little growth.

There is also a decided gain in ability in the use of rules of punctuation, although this gain is somewhat irregular.

Grades Nine and Ten

Growth in ability in capitalization from grades nine to ten (Graph number 13; Table number 13) is seen to be comparatively large in two rules and small in the remaining three rules; in rule 6 there is a loss. The lack of large growth in two of these four rules is probably due to the closeness of their approach to complete mastery.

Table 12
Percentages of Error Made by 309 Eighth
Grade Pupils and 312 Ninth Grade Pupils on
Rules of Capitalization and Punctuation

Capitalization		
Rule	Grade 8	Grade 9
Number	% Error	% Error
1	71.5	68.0
2	58.8	42.3
3	75.0	63.7
4	55.0	40.5
5	31.1	16.5
6	18.8	6.0
Punctuation		
1	95.5	83.2
2	76.9	65.3
3	71.3	46.3
4	86.0	77.1
5	55.3	39.5
6	81.5	64.1
7	78.0	56.7
8	46.2	37.5
9	64.0	48.6
10	48.4	46.3
11	63.9	40.2
12	48.1	40.0
13	40.8	33.6
14	45.2	44.1
15	31.2	26.8
16	33.1	32.8
17	44.6	33.2
18	35.2	22.2
19	15.1	11.6
20	19.5	11.6

Table 13
Percentages of Errors Made by 312 Ninth
Grade Pupils and 266 Tenth Grade Pupils
on Rules of Capitalization and Punctuation

Capitalization		
Rule	Grade 9	Grade 10
Number	% Error	% Error
1	68.0	53.7
2	42.3	33.2
3	63.7	59.2
4	40.5	37.4
5	16.5	12.8
6	6.0	7.2
Punctuation		
1	83.2	89.5
2	65.3	57.8
3	46.3	55.6
4	77.1	74.3
5	39.5	42.8
6	64.1	58.0
7	56.7	58.5
8	37.5	33.7
9	48.6	48.1
10	46.3	49.6
11	40.2	36.8
12	40.0	40.7
13	33.6	31.6
14	44.1	44.0
15	26.8	27.2
16	32.8	23.1
17	33.2	29.1
18	22.2	19.9
19	11.6	10.8
20	11.6	15.1

Table 14
Percentages of Errors Made by 266 Tenth
Grade Pupils and 274 Eleventh Grade Pupils
on Rules of Capitalization and Punctuation

Capitalization		
Rule	Grade 10	Grade 11
Number	% Error	% Error
1	53.7	47.8
2	33.2	25.4
3	59.2	44.1
4	37.4	37.3
5	12.8	10.3
6	7.2	3.4
Punctuation		
1	89.5	68.5
2	57.8	44.0
3	55.6	33.6
4	74.3	60.3
5	42.8	31.6
6	58.0	44.0
7	58.5	37.6
8	33.7	24.4
9	48.1	33.1
10	49.6	37.7
11	36.8	26.3
12	40.7	32.5
13	31.6	22.7
14	44.0	35.4
15	27.2	17.8
16	23.1	15.7
17	29.1	17.1
18	19.9	12.5
19	10.8	5.3
20	15.1	12.0

Growth in ability to punctuate is extremely small. Slight less in ability is seen in five rules. No explanation is offered for this lack of growth. Is it caused by the organization of the courses of study, the attitudes of the pupils, or by some more obscure condition existing? In Springfield the transition from the Junior to the Senior High School takes place at these grades. This fact might shed some light on this lack of growth.

Grades Ten to Eleven

Growth in capitalization ability from grades ten to eleven (Graph number 14; Table number 14) is present in five of the six rules. There appears to be no growth in one rule.

In punctuation the growth in ability is positive and substantial. Growth ranges from three to twenty-two percent. This rapid increase in ability to punctuate appears to indicate that the instructional emphasis has been increased or that there has been an increase in the feeling of need for correct usage habits on the part of the pupils.

Reliability of Growth

The foregoing analysis of the relative growth in ability to punctuate and capitalize correctly from grade to grade has shown that growth varies. How reliable is the growth from grade to grade? The standard deviations

and the means of the total scores made on the rules by grade is needed to indicate the reliability of this growth. Table C provides this information for both punctuation and capitalization in each of the grades studied. Means and Sigmas were determined for each grade. A comparison of the means by grade shows a complete lack of growth from grades seven to eight in both punctuation and capitalization. Growth in punctuation ability is also seen to be slow from grades nine to ten. Growth during the remaining periods is seen to be substantial.

The large sigmas of the distributions of scores within each grade indicate that there is a large amount of variation in ability to punctuate and capitalize between pupils in these grades. This overlapping of ability reemphasizes the fact that these pupils were unselected within their respective grades.

In order to determine the reliability of the improvement in punctuation and capitalization ability from grade to grade (Table D) the following formula was applied to the mean and sigma scores for each grade:

The gains from one grade to the next becomes significant as the ratio of the standard deviations of the differences to the actual mean approaches 3.0. This number is taken to mean that such improvement was due

Table C

Means and Sigmas

Grade	Number of opportunities for Error	Number of Errors	Mean Percentage of Error		Sigma	
			Cap	PUNCT	Cap	PUNCT
5	12,494	12,494	23.35	102.00	6.15	15.90
6	46,991	33,183	17.82	87.26	7.85	16.90
7	74,511	38,907	16.30	63.90	7.25	16.20
8	47,277	24,315	16.90	63.13	7.30	19.20
9	47,736	18,921	12.12	48.31	6.58	19.20
10	40,698	15,226	9.97	42.33	7.25	18.70
11	41,922	11,426	8.30	33.60	6.54	17.40

Table D

Reliability of Gains in Ability from Grades 5-6, 6-7, 8-9, 9-10, and 10-11.						
Grades	Mean Gain from Lower to Higher Grade					
	Punct.	Cap.	Punct.	Cap.	Punct.	Cap.
5-6	14.74	5.53	1.86	725	7.22	7.63
6-7	23.36	1.52	1.21	514	19.25	2.96
7-8	.77	-.60	1.32	511	.58	-1.17
8-9	14.82	4.78	1.54	526	9.62	9.08
9-10	5.98	2.15	1.59	551	3.76	3.90
10-11	8.73	1.67	1.50	566	5.82	2.95

to a definite cause (in this case teaching was in all probability the chief cause) and could not have happened by mere chance.

The gain in punctuation ability between each two grades except from grades seven to eight is significant. The gain is especially significant between grades five and six, six and seven, and eight and nine. This may indicate that more emphasis is placed upon correct punctuation usage here than in other grades.

In capitalization the gains are highly significant between grades five and six, and eight and nine; reliably significant between grades six and seven, nine and ten, and ten and eleven. The gains between grades seven and eight are of no significance.

Persistency of Errors

The irregularity of growth in ability to use correctly the rules of punctuation and capitalization indicates need for a close scrutiny of the persistency of error in each rule from grade to grade. Graphs number 15, 16, 17, 18, 19, 20, and 21, and the accompanying Tables number 15, 16, 17, 18, 19, 20, and 21 give the percentages of error made on each rule in each of the seven grades (five to eleven inclusive). A percentage of error of 25 is considered negligible in this proofreading test since it represents three correct usages in every four

opportunities. The fourth opportunity may be unnoticed.

Capitalization

A growth curve for each of the rules of capitalization is presented in Graph number 15.

Rule number 1 - Capitalize the first word in each quotation.

Errors in this rule seem to persist throughout the seven grades although there is steady growth from grade to grade. In grade five the percentage of error is 95.9. In grade eleven it is 47.0 percent. Why do pupils continue to violate this rule? Why is there practically no gain in ability to use this rule correctly from grades seven to nine?

Rule number 2 - Capitalize the principal words in titles.

The curve for this rule indicates that a high degree of mastery may be obtained by the end of grade eleven.

Rule number 3 - Capitalize each proper adjective.

Large errors in this usage persist until the middle of the eighth grade. Violations decrease at an accelerated rate through the remaining three grades. There is need for more rapid learning in grades five, six, and seven.

Rule number 4 - Capitalize each proper noun.

Learning in this usage is rapid from grade five to seven, drops in grade eight and does not show great gain during the following four grades. There is need for

Table 15

Capitalization

Rule	% Error Grade 5	% Error Grade 6	% Error Grade 7	% Error Grade 8	% Error Grade 9	% Error Grade 10	% Error Grade 11
1	95.9	87.2	73.0	71.5	68.0	53.7	47.8
2	84.6	77.6	60.5	58.8	42.3	33.2	25.4
3	84.2	86.0	76.6	75.0	63.7	59.2	44.1
4	77.8	74.6	45.5	55.0	40.5	37.4	37.3
5	65.7	51.2	28.3	31.1	16.5	12.8	10.3
6	19.7	12.4	8.9	18.8	6.0	7.2	3.4

Graph #15

Percentages of Error Made in the Usage of Capitals

accelerated learning from the seventh grade through the eleventh.

Rule number 5 - Capitalize the pronoun "I".

Growth in ability in this usage is rapid after the sixth grade.

Rule number 6 - Capitalize the first word in each sentence.

Little difficulty is experienced with this usage in any grade. An interesting observation is pertinent here. A large number of studies made of composition errors indicate that this rule is very frequently violated. In most of these studies the punctuation error is confused with the sentence structure error. Children know the capitalization rule but are frequently not able to recognize the sentence so they capitalize the wrong word.

Punctuation

A growth curve for each of the rules of punctuation is presented in Graphs number 16, 17, 18, 19, 20, and 21.

The Comma

Growth curves for each of the ten rules concerning comma usage are presented in Graphs number 16 and 17.

Rule number 5 - By means of commas separate all direct quotations from the rest of the text matter.

Why does error in this usage persist from the

Table 16

Comma

Rule	% Error Grade 5	% Error Grade 6	% Error Grade 7	% Error Grade 8	% Error Grade 9	% Error Grade 10	% Error Grade 11
5	95.0	74.4	54.8	55.3	39.5	42.8	31.6
8	90.8	77.3	54.7	46.2	37.5	33.7	24.4
10	88.4	78.0	56.2	48.4	46.3	49.6	37.7
12	85.6	74.6	51.4	48.1	40.0	40.7	32.5
13	85.4	67.4	44.7	40.8	33.6	31.6	22.7

Graph #16

Percentages of Error Made in the Usage of Commas

seventh to the eighth grades and again from the ninth to the tenth grades? There is a substantial gain shown during each of the other grades. Need exists for an increased rate of learning from grades seven to eight and from nine to ten.

Rule number 8 - Separate a parenthetical expression from the text matter by commas or dashes.

Pupils appear to experience little difficulty in learning this usage.

Rule number 10 - Place a comma before "such as" when used in a sentence to interrupt the principal thought or when used appositively or parenthetically.

Error in this usage diminishes rapidly from grades five to eight. Less in ability is noticed from grades eight to ten. Its persistence breaks sharply in the final period, from grades ten to eleven.

Rule number 12 - Commas are usually used to separate independent clauses that are joined by such subordinating conjunctions as but, for, because, as, or, and.

The growth curve for this rule indicates two periods of little or no growth. The first is from grades seven to eight and the second from grades nine to ten. The characteristics of this curve are very similar to the one for rule number 5. What is the reason for greater persistence of errors during these periods?

Rule number 13 - Set off by commas the name of a person addressed.

Little difficulty is experienced in learning the correct usage of this rule from grades five to seven

Table 17

COMMA

Rule	% Error Grade 5	% Error Grade 6	% Error Grade 7	% Error Grade 8	% Error Grade 9	% Error Grade 10	% Error Grade 11
14	85.0	72.4	48.8	45.2	44.1	44.0	35.4
15	83.0	68.5	43.6	31.2	26.8	27.2	17.8
16	78.7	69.0	46.0	33.1	32.8	23.1	15.7
18	67.8	58.6	37.4	35.2	22.2	19.9	12.5
19	61.8	36.8	13.6	15.1	11.6	10.8	5.3

Graph # 17

Percentages of Error Made in the Usage of Commas

and from grades ten to eleven. Error does persist somewhat from grades seven to ten.

Rule number 14 - When a subordinate clause precedes a main clause, follow the subordinate clause with a comma.

The growth curve for this rule rises rapidly from the fifth to the seventh grades. From the seventh to the tenth grades very little learning is indicated. In the last period, from the tenth to the eleventh grade a rapid rate of learning is resumed. What are the conditions acting to produce this depression in the middle period? Is this usage ignored in these grades? This curve is confusing. This usage is not stressed in the lower grades, where the learning is rapid, but is stressed in the middle grades where the learning is on a plateau.

Rule number 15 - Separate appositives by commas.

Little difficulty is experienced in learning the correct usage of this rule except between grades nine and ten.

Rule number 16 - Set off restrictive clauses and phrases by commas.

A plateau is seen in the growth curve for this rule from grades nine to ten. Little difficulty was experienced in other grades.

Rule number 18 - Use a comma to set off the name of a state from the name of a place within a state, a street from a city, the year from the day of the month, a place from a date or a name from a place.

This rule presented little difficulty, although

there were slumps in growth from the seventh to the eighth grades and from the ninth to the tenth grades.

Rule number 19 - Use commas to separate words, phrases, and clauses in series, and put a comma before "and" when it is used to join the last two items of the series.

Error in this usage was reduced to a negligible amount by the middle of the seventh grade.

Graph number 18 presents growth curves for the four rules concerning the use of periods and apostrophes.

The Period

Rule number 3 - Place a period after each abbreviation or initial.

The growth curve for this rule shows a temporary decrease in learning rate from grades six to seven. From grades nine to ten there is a loss in ability. In the final period, from grades ten to eleven, the learning rate is rapid. Why does ability to use this rule decrease from grades nine to ten?

Rule number 20 - Place a period at the end of a declarative or imperative sentence.

Little difficulty was experienced in learning to use this rule correctly. The confusion cited in the use of the period to end a sentence is similar to the one given in capitalization rule number 6.

The Apostrophe

Rule number 4 - Use the apostrophe to show the possessive of a noun.

Table 18

Period and Apostrophe

Rule	% Error Grade 5	% Error Grade 6	% Error Grade 7	% Error Grade 8	% Error Grade 9	% Error Grade 10	% Error Grade 11
Period							
3	96.9	83.8	81.3	71.3	46.3	55.6	33.6
20	47.0	32.4	23.1	19.5	11.6	15.1	12.0
Apostrophe							
4	95.5	94.7	84.5	86.0	77.1	74.3	60.3
7	93.5	89.3	69.2	78.0	56.7	58.5	37.6

Graph #18

Percentages of Error Made in the Usage of Periods and Apostrophes

Error in this usage persisted throughout the seven grades, especially from grades five to six and from grades seven to eight. This is a difficult rule and should, doubtless, be taught in connection with spelling in the elementary grades. Satisfactory skill is not attained even at the end of grade eleven.

Rule number 7 - Use an apostrophe to indicate the omission of a letter in a contraction.

The growth curve for this rule indicates a loss in ability from grades seven to eight and from grades nine to ten. Growth in other grades is substantial. What is the trouble during these two periods? Is it lack of drill?

Graph number 19 presents growth curves for rules concerning the use of quotation marks and the question mark.

Quotation Marks

Rule number 2 - Enclose literary titles in quotation marks.

The rate of growth in ability to use this rule correctly is not sufficiently high to give promise of a reasonable degree of mastery by the end of grade eleven. The achievement level in grade five is practically zero. Need exists for an increase in learning rate especially from grades seven to eight. Variations in the means of indicating such titles, doubtless, accounts somewhat

Table 19

Quotation Mark and Question Mark

Rule	% Error Grade 5	% Error Grade 6	% Error Grade 7	% Error Grade 8	% Error Grade 9	% Error Grade 10	% Error Grade 11
Quotation Marks							
2	97.8	87.1	74.5	76.9	65.3	57.8	44.0
11	88.2	76.2	52.1	63.9	40.2	36.8	26.3
Question Mark							
17	75.8	64.9	47.0	44.6	33.2	29.1	17.1

Graph # 19

Percentages of Error Made in the Usage of Quotation Marks and Question Marks by Grades

Question Mark

Rule 17

Quotation Marks

Rule 11

Rule 2

for the lack of mastery.

Rule number 11 - By means of quotation marks
separate all direct quotations
from the rest of the text matter,

The loss in ability to use this rule correctly from
grades seven to eight is the most glaring characteristic
in this curve. What is wrong in the learning situation
during this period?

The Question Mark

Rule number 17 - Place a question mark at the end of
an interrogative sentence.

Little difficulty is experienced in learning to use
this rule correctly although the rate of learning is
slower from grades seven to eight and from grades nine
to ten.

Graph number 20 presents growth curves for rules
concerning the use of colons and semicolons.

The Colon

Rule number 6 - Place a colon before a formal list.

Error in this rule persists throughout the
seven grades. The most glaring characteristic seen in
the curve for this rule is the loss in ability from
grades seven to eight.

The Semicolon

Rule number 9 - Use a semicolon to separate indepen-
dent clauses when they are not close-
ly or immediately related or when
they are not joined by conjunctions.

Table 20

Colon and Semicolon

Rule	% Error Grade 5	% Error Grade 6	% Error Grade 7	% Error Grade 8	% Error Grade 9	% Error Grade 10	% Error Grade 11
Colon							
6	93.9	91.1	72.7	81.5	64.1	58.0	44.0
Semicolon							
9	90.0	84.6	65.9	54.0	48.6	48.1	33.1
1	99.5	95.7	91.3	95.5	83.2	89.5	68.5

Graph #20

Percentages of Error Made in the Usage of Colons and Semicolons by Grades

The sharp lag in growth from grades seven to eight and from grades nine to ten is the most striking characteristic of this curve. Clear sentence thought is necessary to use this rule correctly.

Rule number 1 - Use a semicolon to separate items of a series when commas are used within them.

Error in this usage is more persistent than in any other punctuation or capitalization rule. There is less in ability from grades seven to eight and again from grades nine to ten. Even when there is growth it is small. Why do pupils experience such a high degree of difficulty with this usage? Do they have no need for it? Is instructional emphasis weak? Is the usage inherently difficult? It is beyond the scope of this study to attempt to answer these questions.

In reviewing the analysis of these rules of punctuation and capitalization there appears to be something strikingly wrong in the learning situation during the period from the seventh to the eighth grades, and again from the ninth to the tenth grades. Need exists for further investigation into this situation. These are the periods of transition from the elementary to the junior high school and from the junior high school to the senior high school respectively. Some of the explanation may

be inherent in this fact. Errors consistently persist during these two periods. With these two exceptions, the growth in each rule of punctuation and capitalization is fairly uniform.

The ten "demon" rules of punctuation and capitalization as indicated in this study are ranked in order of persistence:

Punctuation

1. Use a semicolon to separate items of a series when commas are used within them.
2. Use the apostrophe to show the possessive of a noun.
3. Enclose literary titles in quotation marks.
4. Place a colon before a formal list.
5. Place a comma before "such as" when used in a sentence to interrupt the principal thought or when used appositively or parenthetically.
6. Use an apostrophe to indicate the omission of a letter in a contraction.
7. When a subordinate clause precedes a main clause, follow the subordinate clause by a comma.

Capitalization

1. Capitalize the first word in each quotation.
2. Capitalize each proper adjective.
3. Capitalize each proper noun.

This ranking order is compared with rankings found in some of the leading studies in English usage in Table E.

Table E

Comparison of the Ranking Orders Indicated in other studies with the Present Study						
Rule	Present Study	Briggs	Leonard	Johnson	Stormzand	Symonds
Punctuation						
1	1					
4	2	1	2	1		5
2	3					3
6	4					
10	5		1		2	1.5
7	6		3		1	1.5
14	7					4
Capitalization						
1	1	1			1	1.5
3	2	2			2	1.5
4	3		1			3

Constancy of Error Rankings

The errors made in each grade were ranked in the order of decreasing percentages made on each rule of punctuation and capitalization (Table F). A tendency for the ranking order of each rule to remain approximately the same throughout the seven grades may be observed. This tendency is especially marked for the six rules of capitalization and first rule of punctuation.

This apparent tendency for rules of punctuation and capitalization to retain approximately the same ranking order was determined statistically by correlating, using the method of rank differences, the rankings of the percentages of error made in each rule by grade with the ranking of the mean percentage of error made on each rule for the seven grades. These correlations are presented in the last column of Table F, and indicate the relative constancy of the ranking order of each rule in both punctuation and capitalization.

In capitalization the constancy of ranking order is seen to be almost perfectly fixed.

In punctuation the constancy of ranking order is seen to vary from 1.00 to .09. Thirteen of these rules are .75 or higher and only four are lower than .48. The average deviation in ranking order was 1.13 and was determined by dividing the sum of the deviations in ranking order of each rule throughout the seven grades

Table F

	Rule	Rankings of Percents of Error by Grades							Corre- lation with
		Grade	Grade	Grade	Grade	Grade	Grade	Grade	Mean
	No.								
Capitalization	1	1	1	1	1	1	1	1	1.00
	2	2	3	3	3	3	3	3	.99
	3	3	2	2	2	2	2	2	.99
	4	4	4	4	4	4	4	4	1.00
	5	5	5	5	5	5	5	5	1.00
	6	6	6	6	6	6	6	6	1.00
Punctuation	1	1	1	1	1	1	1	1	1.00
	2	2	5	4	5	3	5	3.5	.85
	3	3	7	3	6	7.5	6	8	.48
	4	4	2	2	2	2	2	2	.92
	5	5	12	9	9	12	7	11	.23
	6	6	3	5	3	4	4	3.5	.70
	7	7	4	6	4	5	3	6	.79
	8	8	9	10	12	13	13	13	.09
	9	9	6	7	7	6	5	9	.84
	10	10	8	8	10	7.5	7	5	.67
	11	11	10	11	8	10	12	12	.75
	12	12	11	12	11	11	11	10	.86
	13	13	10	16	15	14	14	14	.82
	14	14	13	13	14	9	9	9	.11
	15	15	14	17	18	17	16	15	.79
	16	16	15	14	17	15	17	17	.75
	17	17	17	15	13	16	15	16	.32
	18	18	18	18	16	18	18	18	.91
	19	19	19	20	20	19.5	20	20	.92
	20	20	20	19	19	19.5	19	19	.92

(158) by seven times the number of rules in one grade (140). This demonstrates that, in general, these rules of punctuation do not change in ranking order by more than 1.13 from grade to grade.

These results indicate that error rankings in the six rules of capitalization are almost perfectly constant and that the error rankings in the twenty rules of punctuation show a high degree of constancy. It is beyond the scope of the present study to determine whether the degree of constancy of an error indicates its inherent difficulty or the instructional emphasis that has been placed upon it or both. An investigation leading to an accurate ranking of the difficulty experienced by pupils in mastering the grammatical usages upon which punctuation and capitalization usages are based should help to reveal the true significance of these findings.

Chapter IV

Summary of the Findings

1. With the pupils used in this study growth in ability to punctuate correctly tends to cease from the end of the first semester of the seventh grade to the beginning of the second semester of the eighth grade and is slow from the first semester of the ninth grade to the second semester of the tenth grade. We need to know how general this condition is and the real cause of it in these pupils.

2. Growth in ability to punctuate correctly is fairly uniform and substantial from grades five to seven, eight to nine, and ten to eleven.

3. Growth in ability to capitalize correctly tends to cease from the end of the first semester in grade seven to the end of the first semester in the eighth grade.

4. Growth in ability to capitalize correctly is fairly uniform from grades five to seven and from grades eight to eleven.

5. The three punctuation usages in which mastery is most closely approached by the middle of grade eleven are: (1) Periods at the ends of declarative or imperative sentences, (2) Commas to separate words, phrases, and clauses in series, and (3) commas to

separate names, places, and dates.

6. The seven "demon" rules of punctuation in order of error are:

- 1- Use a semicolon to separate items of a series when commas are used within them.
- 2- Use the apostrophe to show the possessive of a noun.
- 3- Enclose literary titles in quotation marks.
- 4- Place a colon before a formal list.
- 5- Place a comma before "such as" when used in a sentence to interrupt the principal thought or when used appositively or parenthetically.
- 6- Use an apostrophe to indicate the omission of a letter in a contraction.
- 7- When a subordinate clause precedes a main clause, follow the subordinate clause by a comma.

7. The two capitalization usages in which mastery is most closely approached by the middle of grade eleven are: (1) capitalization of the first word in sentences, and (2) capitalization of the pronoun "I".

8. The three "demon" rules of capitalization in order of error are:

- 1- Capitalize the first word in each quotation.
- 2- Capitalize each proper adjective.
- 3- Capitalize each proper noun.

9. There is a fairly high degree of constancy in the error ranking order of rules of punctuation from grades five to eleven inclusive.

10. There is an almost perfect constancy in the

error ranking order of rules of capitalization from grades five to eleven inclusive.

11. There is need for an investigation leading to an accurate ranking of difficulty experienced by pupils on the grammatical usages upon which the rules of punctuation are based.

12. The growth in ability to punctuate and capitalize correctly from grade to grade was found to be significant in all cases except between grades seven and eight (Table D).

13. The decrease in the average percentage of error made with all rules of punctuation and capitalization from grades five to eleven is 51.8%; in punctuation alone 54.4%; and in capitalization alone is 43.3%.

APPENDIX

LEONARD DIAGNOSTIC TEST IN PUNCTUATION AND CAPITALIZATION

By J. PAUL LEONARD, PH.D.

Professor of Education, College of William and Mary

MANUAL OF DIRECTIONS

INTRODUCTION

Purpose. For economy in teaching punctuation and capitalization and in order to meet the needs of the individual pupils in a class, the English teacher should know the ability of each pupil to punctuate correctly his compositions. The purposes of the Leonard Diagnostic Test in Punctuation and Capitalization are: (1) to diagnose the ability of pupils to recognize punctuation and capitalization errors, and (2) to measure progress in these phases of English. The teacher who uses the test to determine the number of errors each pupil makes on each rule will have a quick survey of the pupil's mastery of correct practices in punctuation and capitalization. This information can be supplemented by the mechanical correctness of compositions which the pupil writes. Pupils will be interested in taking the test and practicing the rules in which they made errors in the first testing.

Validity. Probably the best method of determining the mastery of correct practices in punctuation and capitalization is to get a large number of compositions from each pupil and to tabulate the errors by types. However, the teacher has no assurance that the pupil will use all the punctuation and capitalization he could doubtless utilize to advantage if he knew how to use them. Then, too, the labor in going through this procedure for a large class is so great that the average teacher neglects it. Willing¹ found that comprehensive proof-reading and error-correction tests which he used were reasonably good instruments (average validity, .68) for predicting the average number of formal errors that pupils would make in 1200 words of diversified classroom-written compositions on familiar subject matter.

In 1928 the author made a study of the effect of proof-reading and correction-of-error-through-practice exercises on teaching children to punctuate their own compositions. Nearly 200,000 words of composition material written by the children were analyzed by the author to determine the growth in ability to punctuate and to capitalize as a result of eleven lessons with practice exercises.²

¹ Willing, Matthew H., "Valid Diagnosis in High School Compositions," in *Teachers College Contributions to Education*, No. 230, pages 33-34. Bureau of Publications, Teachers College, Columbia University; 1926.

² For a brief description of the experiment the reader is referred to Leonard, J. Paul, "The Use of Practice Exercises in Teaching Punctuation and Capitalization," *Journal of Educational Research*, Vol. XXI, pages 186-190; March, 1930. A more complete report of the experiment, together with a full description of the preparation of the test, will be found in Leonard, J. Paul, "The Use of

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No comprehensive test in punctuation and capitalization was available for measuring achievement in the 26 rules selected for the study. The author therefore constructed one, selecting 40 possible rules based on 16 grammar and punctuation texts and several handbooks of English form. In view of the lack of agreement on the rules to be taught, opinions were obtained from three college professors and two high school teachers of English. From these judgments, 26 rules were chosen and 51 sentences prepared. The test so made was given to 800 pupils in three schools. The present test of 52 sentences is a careful revision based on the data of the preliminary form.

To determine the validity of the test, the Pearson coefficient of correlation was computed between the percentage of error made by an individual pupil on five classroom-written compositions on familiar subjects and the number of errors he made on Form A of the Leonard Diagnostic Test in Punctuation and Capitalization. Each pupil's percentage of error on his compositions was found by dividing the actual number of errors he made on his five compositions by the total number of opportunities he had for making errors. A percentage of error was then calculated for 82 children. The correlation found between these percentages and the pupils' scores on the Leonard Diagnostic Test in Punctuation and Capitalization was .68.¹

Form A of the Leonard Diagnostic Test was given to 96 pupils in January, 1928. At the same time the pupils were given the Pressey Diagnostic Tests for Punctuation and Capitalization. The Pearson coefficient of correlation between the results the pupils made on both tests was .86.²

Reliability. The following are the correlations between Forms A and B:

GRADE	5	6	7	8	9	10	11
CORRELATION . . .	.873	.911	.961	.972	.972	.954	.876
NUMBER OF CASES .	37	132	116	126	131	105	81

Nature and scope of the test. The Leonard Diagnostic Test is of a proof-reading nature. The pupil is required to recognize the omission of marks of punctuation and capitalization and is asked to supply them wherever needed. Proof-reading and error-correction exercises are valuable techniques to use in teaching punctuation and capitalization. The studies referred to above show these to be reasonably satisfactory methods of arriving at pupils' probable composition errors in punctuation and capitalization. They also show that the learning does function in the pupils' own composition writing.

The test may be used to advantage from the fifth grade through the twelfth. It may be given to as many pupils as can be placed in a room. There is no time limit. The time for taking the test varies from twenty to forty minutes, depending upon the grade in which it is used.

Practice Exercises in Teaching Punctuation and Capitalization," *Teachers College Contributions to Education*, No. 372. Bureau of Publications, Teachers College, Columbia University; 1930.

¹ The probable error of this coefficient was .041. The standard deviation of the test scores was 18.70, and of the percentages of error 4.19.

² The probable error of this coefficient was .013. The standard deviations of the scores were for the Pressey Tests 10.30 and for the Leonard Test 27.85.

DIRECTIONS FOR GIVING THE TEST

These directions should be read carefully before the test is given and should be followed closely.

1. Each pupil should be supplied with at least one sharpened pencil. (Only pencil should be used.) A supply of sharpened pencils should be at hand in case of need.

2. Say to the class: "Today we are going to see how well we can use capitalization and punctuation marks in sentences which have been partially punctuated. When you receive your copy of the test, fill in your name, age, and the other information called for on the front page. Do not open your booklet or look into it."

3. Pass out the papers. When the pupils have had time to fill in the information on the front page, say: "Pencils down. Listen carefully while I read the directions on the front page. You may read them to yourselves while I read them aloud." Read the directions.

4. Do not give any help during the test. See that there is no cheating. Supply pupils with sharpened pencils if their pencils break. Answer no questions during the course of the test.

5. There is no time limit in the sense of making the pupils hurry. However, all papers should be collected at the end of 45 minutes. A pupil who has not finished by that time can undoubtedly do no better with more time.

6. As pupils finish, urge them to look over their papers again. When a pupil is certain that he cannot improve his score, collect his paper. Have some work ready for the pupils who finish first so that such pupils will not interfere with the others who are still taking the test.

DIRECTIONS FOR SCORING

The test is scored by an objective key supplied with each test. If the scores are to be used as measures of achievement and interpreted in terms of the norms, the key should be followed exactly. If the teacher does not care to teach a few of the rules as they are measured by the test, he may omit them from his interpretation of results and remedial teaching program. The norms are based on the entire test. However, the norms are not important for diagnostic use of the test. They indicate merely the average accomplishments of pupils on the test, and can be used to interpret achievement rather than to diagnose mastery of capitalization and punctuation.

There is some variation in accepted practice in capitalization and punctuation. The user of the test may accept, as correct, punctuation or capitalization that does not appear in the key, provided it is in accord with the instruction given by the teacher in the classroom. In that event the norms would not apply and the test would be used only for diagnostic purposes.

Each mark used correctly counts one point in the total score. For instance, in sentence No. 18 there is illustrated the rule of quotation marks

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around both parts of broken quotations. In this sentence it requires four quotation marks to complete the rule, and it is not used correctly unless all are supplied. If the pupil uses all four quotation marks correctly, he receives a score of 4. If he misses any one, he gets one point for each one correctly used. Another example is in sentence No. 3, where principal words in titles are enclosed in quotation marks and are capitalized. There are two quotation marks and four capitals used — a total of six marks to illustrate two rules. Each complete unit, therefore, counts only as one rule, but each part of the unit counts in the total score.

Twenty-six rules of punctuation and capitalization are measured by the test. Each rule is illustrated four times. Allowing, however, for the several marks required to illustrate one rule, the total possible score is 153.

In scoring, place the key by the side of the sentences and compare the marks in the key with the ones inserted by the pupils. Capitalization and punctuation to be corrected are in boldface type in the key. Alternate acceptable, but not preferred, punctuation and capitalization are given in parentheses. When the punctuation and capitalization of the pupil's test agree with the key, make a check (✓) above the place where the mark belonged. When the pupil's marks disagree with the key, place a cross (×) above the place where the mark belonged. Make a check or a cross for every mark shown on the key. When the pupil's test has been scored, add the number of each kind of scoring (checks and crosses), and place in the indicated space at the bottom of each page of the test. Then place the combined total of all of these in the spaces indicated on the first page of the test. The crosses and checks should total 153. This method provides a convenient check on the work, and the number of checks and crosses for each sentence can be compared with the number of marks required to complete each sentence. This number is given in parentheses for each sentence in the key.

If a total score is desired which can be compared with the norms, pay no attention to the marks the pupil uses which are not in the key. If only a diagnostic measure is desired, the teacher can check as incorrect each mark the pupil adds in places not indicated on the key. If this is done, there is no limit to the score.

A percentage of error can be derived for each pupil by dividing the number of errors by 153 — the total number of opportunities for making errors (provided the key is followed in scoring). The pupil's score is therefore twofold — his number of errors and his percentage of error. Percentages of error may be read directly from the table on the following page.

After the tests have been scored, the scores should be copied on to the Class Record provided with each package of tests. This record may be filed for future reference.

INTERPRETATION OF SCORES

In order to obtain the most value from the test results, the teacher should tabulate the errors made by each pupil. Such a tabulation will present the situation to the teacher in a clear and concise manner so that her reme-

TABLE SHOWING PERCENTAGE OF ERROR FOR DIFFERENT SCORES

SCORE	PER CENT OF ERROR	SCORE	PER CENT OF ERROR	SCORE	PER CENT OF ERROR	SCORE	PER CENT OF ERROR	SCORE	PER CENT OF ERROR
1	1	32	21	63	41	94	61	125	81
2	1	33	21	64	41	95	61	126	81
3	2	34	22	65	42	96	62	127	82
4	3	35	23	66	43	97	63	128	83
5	3	36	23	67	43	98	63	129	83
6	4	37	24	68	44	99	64	130	84
7	5	38	25	69	45	100	65	131	85
8	5	39	25	70	45	101	65	132	85
9	6	40	26	71	46	102	66	133	86
10	6	41	26	72	46	103	66	134	86
11	7	42	27	73	47	104	67	135	87
12	8	43	28	74	48	105	68	136	88
13	8	44	28	75	48	106	68	137	88
14	9	45	29	76	49	107	69	138	89
15	10	46	30	77	50	108	70	139	90
16	10	47	30	78	50	109	70	140	91
17	11	48	31	79	51	110	71	141	91
18	12	49	32	80	52	111	72	142	92
19	12	50	32	81	52	112	72	143	92
20	13	51	33	82	53	113	73	144	93
21	13	52	34	83	54	114	74	145	94
22	14	53	34	84	54	115	74	146	94
23	15	54	35	85	55	116	75	147	95
24	15	55	35	86	56	117	76	148	96
25	16	56	36	87	56	118	76	149	96
26	17	57	37	88	57	119	77	150	97
27	17	58	37	89	57	120	77	151	97
28	18	59	38	90	58	121	78	152	98
29	19	60	39	91	59	122	79	153	99
30	19	61	39	92	59	123	79	154	99
31	20	62	40	93	60	124	80	155	100

dial instruction will be as effective as possible. The rules covered by the test are given below.

In the test several rules are oftentimes illustrated in each sentence. This provides more of a normal punctuation situation for the pupil. The teacher is interested in knowing what rules are violated by the pupil and where remedial instruction needs to be applied.

The following list shows the sentences that cover each rule and the number of times (given in parentheses) that the rule is covered in the particular sentence:

RULE SENTENCE IN WHICH
RULE IS ILLUSTRATED

CAPITALIZATION

1. Capitalize each proper noun.	2 (1),	15 (1),	21 (1),	51 (1)
2. Capitalize each proper adjective.	2 (1),	33 (1),	37 (1),	51 (1)
3. Capitalize the first word in each sentence.	5 (1),	8 (1),	13 (1),	15 (1)
4. Capitalize the first word in each quotation.	6 (1),	11 (1),	23 (1),	46 (1)
5. Capitalize the pronoun I.	18 (1),	22 (1),	30 (1),	50 (1)
6. Capitalize the principal words in titles.	3 (4),	12 (2),	19 (2),	32 (3)

Period

PUNCTUATION

7. Place a period at the end of a declarative or an imperative sentence.	8 (1),	15 (1),	21 (1),	22 (1)
8. Place a period after each abbreviation and initial.	14 (1),	28 (4),	37 (1),	48 (1)

(Continued on next page)

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RULE		SENTENCE IN WHICH RULE IS ILLUSTRATED			
Apostrophe					
9. Use an apostrophe to show the possessive of a noun.	5 (1),	15 (1),	47 (2)		
10. Use an apostrophe to indicate the omission of a letter in a contraction.	9 (1),	18 (1),	31 (1),	47 (1)	
Quotation Marks					
11. By means of quotation marks separate all direct quotations from the rest of the text matter.	6 (2),	11 (2),	18 (4),	21 (4)	
12. Enclose literary titles in quotation marks.	3 (2),	12 (2),	19 (2),	32 (2)	
Colon					
13. Place a colon before a formal list.	1 (1),	13 (1),	24 (1),	35 (1)	
Semicolon					
14. Use a semicolon to separate independent clauses when they are not closely or immediately related or when they are not joined by conjunctions.	9 (1),	23 (1),	35 (2)		
15. Use a semicolon to separate items of a series when commas are used within them.	29 (1),	42 (1),	49 (1),	52 (1)	
Question Mark					
16. Place a question mark at the end of an interrogative sentence.	11 (1),	18 (1),	34 (1),	51 (1)	
Comma					
17. Use commas to separate words, phrases, and clauses in a series; and put a comma before "and" when it is used to join the last two items of the series.	1 (3),	13 (4),	24 (2),	49 (3)	
18. Separate appositives by commas. (Dashes may sometimes be used if the appositive is strictly explanatory.)	37 (2),	39 (1),	40 (2),	51 (2)	
19. Separate a parenthetical expression from the text matter by commas or dashes.	2 (2),	9 (2),	15 (2),	26 (2)	
20. Place a comma before "such as" when used in a sentence to interrupt the principal thought or when used appositively or parenthetically.	8 (1),	30 (1),	41 (1),	44 (1)	
21. By means of commas separate all direct quotations from the rest of the text matter.	18 (1),	21 (1),	33 (2),	43 (2)	
22. Set off by commas the name of a person addressed.	7 (1),	25 (1),	34 (2),	48 (1)	
23. Use the comma to set off the name of a state from the name of a place in the state, a street from a city, the year from the day of the month, a place from a date, or a name from a place.	4 (2),	10 (2),	14 (3),	20 (4)	
24. Commas are usually used to separate independent clauses that are joined by such coördinating conjunctions as <i>but</i> , <i>for</i> , <i>because</i> , <i>if</i> , <i>nor</i> , <i>as</i> , or <i>and</i> .	33 (1),	43 (1),	47 (1),	50 (1)	
25. When a subordinate clause precedes a main clause, follow the subordinate clause by a comma.	16 (1),	22 (1),	27 (1),	36 (1)	
26. Set off non-restrictive clauses and phrases by commas.	17 (1),	33 (1),	38 (2),	45 (2)	

The following list shows the rules illustrated in the various sentences :

SENTENCE NUMBER	NUMBERS OF THE RULES ILLUSTRATED ¹	SENTENCE NUMBER	NUMBERS OF THE RULES ILLUSTRATED ¹
1	13, 17	27	25
2	1, 2, 19	28	8
3	6, 12	29	15
4	23	30	5, 20
5	3, 9	31	10
6	4, 11	32	6, 12
7	22	33	2, 21, 24, 26
8	3, 7, 20	34	16, 22
9	10, 14, 19	35	13, 14
10	23	36	25
11	4, 11, 16	37	2, 8, 18
12	6, 12	38	26
13	3, 13, 17	39	18
14	8, 23	40	18
15	1, 3, 7, 9, 19	41	20
16	25	42	15
17	26	43	21, 24
18	5, 10, 11, 16, 21	44	20
19	6, 12	45	26
20	23	46	4
21	1, 7, 11, 21	47	9, 10, 24
22	5, 7, 25	48	8, 22
23	4, 14	49	15, 17
24	13, 17	50	5, 24
25	22	51	1, 2, 16, 18
26	19	52	15

DIAGNOSIS OF ACHIEVEMENT

For the maximum use of the test the teacher should fill out the Diagnostic Chart. Doing this is a mechanical process and can be accomplished without a knowledge of the test or the placement of rules in the test. The chart is arranged so that a clerk can fill it out by exercising reasonable care, but it can be done best by having two people work on it — one to read from the pupil's test, the other to tabulate errors read.

Note that space is provided on the chart for each mark of punctuation and capitalization used in the test in the exact order of its occurrence. In most of the columns only one mark is represented, but in a few cases from two to four marks may be represented. These numbers are indicated on the chart in the row headed "Number of Errors." This is the only heading that needs to receive attention while the chart is being filled out.

To fill out the chart when two people are working together, proceed as follows : ²

1. In scoring, all errors on the test were indicated by crosses and all correct marks by checks. In filling out the chart only crosses are entered. However, both crosses and checks should be called by the reader in order to enable the tabulator to do his work most easily. Every time a cross is read, it is to be entered on the chart; every time a check is read, a space is to be skipped equivalent to one punctuation or capitalization mark used.

¹ These are the numbers of the rules as given above (pages 5-6).

² If only one person fills out the chart, follow the same procedure suggested for two people, except that the same person reads and tabulates.

8 *Leonard Diagnostic Test in Punctuation and Capitalization*

2. Arrange all the test papers in the class in alphabetical order; then number them in order — 1, 2, 3, etc.
3. The reader then takes the test of pupil No. 1 and calls off from the test “Cross” or “Check” in the order of appearance on the pupil’s test.
4. As the reader calls, the tabulator moves across the chart horizontally from box to box with each “Cross” or “Check” called by the reader, except that when the column heading for “Number of Errors” is more than one, the person tabulating must enter the same number of crosses (or skip for checks) as the number at the top of the column. By comparing the number of sentences tabulated with the number read from time to time, a convenient check-up on the accuracy of the work can be made.

After the Diagnostic Chart is completed the teacher should transfer this information to the Class Record, which shows the total number of errors made by each pupil with each rule and gives the total possible errors for each rule. To fill out the Class Record, proceed as follows:

1. On the Diagnostic Chart consider the first 26 numbers on the left-hand side, which were used to represent the numbers of the individual pupils, to represent also the numbers of the rules.
2. The four asterisks in row No. 1 show the columns in which the errors in rule 1 were tabulated. The four asterisks in row No. 2 show the columns in which the errors in rule 2 were tabulated, etc. By means of this device the number of errors made in each rule by each pupil can be determined. These numbers should be recorded on the Class Record.
3. When that form is completely filled out, the columns and rows should be totaled to show at the bottom the total number of errors made by each pupil on all the rules, and at the right the total number of errors made in each rule by all the pupils.

The teacher is now ready to plan her remedial program on the basis of individual needs as shown by the Diagnostic Chart and the Class Record. The teacher may safely assume that no class time need be taken to drill children on a rule which is used incorrectly only 25 per cent of the time as measured by the test. These errors may be given special attention in the written work of the individual pupil, if necessary. However, pupils who show percentages of errors above 25 per cent, as measured by the test, should be given special drill in the punctuation or capitalization marks. If the rule or its application is new to the pupils or most of them make errors in the same rule, then its usage may be taught to the entire class. If only a few need practice in the application of the rule, individual self-teaching practice exercises on the rule in which the pupil shows deficiencies should be given. This enables the teacher to teach pupils individually and at the same time make certain that they will know a given amount of punctuation and capitalization in the end.¹

In treating the test scores as measures of achievement the teacher may compare the class average, as well as individual scores of pupils, with the norms. A more fruitful interpretation of the scores can be obtained by

¹ Suggestions for definite teaching in such a manner, together with experimental evidence of its value, may be found in the author’s dissertation on “Practice Exercises in Teaching Punctuation and Capitalization,” *Teachers College Contributions to Education*, No. 372. Teachers College, Columbia University; 1930.

changing them to percentile ranks. For this purpose the *Universal Percentile Graph*¹ can be used conveniently. With the form for the graph are given instructions for its construction and interpretation.

NORMS

Norms are of value chiefly as a basis for comparison of individual scores or class averages with the average achievement as determined from various school systems. Norms are of little value in diagnosing pupils' mastery of the rules of capitalization and punctuation.

For diagnostic purposes the teacher should determine what the pupil has achieved in terms of what it was possible for him to do — his percentage of error — or in terms of what he was supposed to have learned. To measure progress, the achievement at the end of a given period on one form of the test should be compared with achievement at the beginning of that period on the other form of the test.

The following table is based on almost 5000 cases in Grades 5 to 12 inclusive, drawn from schools in areas varying from typically rural to large cities. The smallest number of cases for any one grade is over 200. Both forms of the test were given in November to almost all the pupils. Norms for tenths of a grade are interpolated between the scores for November. Norms below Grade 5³ and above 12³ are extrapolated values. The table applies to both Forms A and B.

GRADE	SCORE	GRADE	SCORE	GRADE	SCORE
12 ¹⁰	131	9 ¹⁰	104	6 ¹⁰	61
12 ⁹	130	9 ⁹	103	6 ⁹	60
12 ⁸	130	9 ⁸	102	6 ⁸	58
12 ⁷	129	9 ⁷	100	6 ⁷	56
12 ⁶	128	9 ⁶	99	6 ⁶	55
12 ⁵	128	9 ⁵	97	6 ⁵	53
12 ⁴	127	9 ⁴	96	6 ⁴	52
12 ³	126	9 ³	95	6 ³	50
12 ²	125	9 ²	94	6 ²	48
12 ¹	124	9 ¹	92	6 ¹	47
11 ¹⁰	124	8 ¹⁰	91	5 ¹⁰	45
11 ⁹	123	8 ⁹	89	5 ⁹	44
11 ⁸	122	8 ⁸	88	5 ⁸	41
11 ⁷	121	8 ⁷	86	5 ⁷	40
11 ⁶	120	8 ⁶	85	5 ⁶	39
11 ⁵	120	8 ⁵	83	5 ⁵	37
11 ⁴	119	8 ⁴	82	5 ⁴	36
11 ³	118	8 ³	80	5 ³	34
11 ²	117	8 ²	79	5 ²	33
11 ¹	116	8 ¹	77	5 ¹	31
10 ¹⁰	115	7 ¹⁰	76	4 ¹⁰	30
10 ⁹	114	7 ⁹	74	4 ⁹	28
10 ⁸	113	7 ⁸	73	4 ⁸	27
10 ⁷	112	7 ⁷	72	4 ⁷	26
10 ⁶	111	7 ⁶	70	4 ⁶	24
10 ⁵	110	7 ⁵	69	4 ⁵	23
10 ⁴	109	7 ⁴	67	4 ⁴	21
10 ³	108	7 ³	66	4 ³	20
10 ²	107	7 ²	64	4 ²	19
10 ¹	105	7 ¹	63	4 ¹	17

¹ By A. S. Otis. Published by World Book Company, Yonkers-on-Hudson, New York.

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The table is read as follows: A pupil who obtains a score of 131 points does as well on the test as the average pupil finishing Grade 12. A pupil whose score on the test is 83 does as well on the test as the average pupil in the middle of Grade 8.

It is often desirable to express a pupil's achievement in terms of his grade. This may be done by expressing his score as a percentile rank; that is, the percentage of pupils of his grade whose scores are exceeded by his score. Thus, if a pupil's score is higher than the scores of 62 per cent of the pupils of his grade, we say that his grade percentile is 62. This very meaningful method of interpreting test scores can be done in terms of the school distribution of scores by the procedure explained in the *Universal Percentile Graph*.¹

The following table gives percentile ranks for November based on the scores for almost 5000 pupils from different parts of the country. For values obtained at other times of the year than November, it is necessary to interpolate between the grade columns in this table. The table is read as follows: A fifth-grade pupil obtaining a score of 57 points on the test in November has a grade percentile rank of 80. A pupil in the sixth grade whose score on the test in November is 54 has a percentile rank of 57; etc.

The table applies to both Forms A and B.

PERCENTILE RANK	GRADE							
	5	6	7	8	9	10	11	12
98	90	101	114	128	134	142	144	144
95	77	91	105	119	127	136	139	142
90	68	83	97	112	121	131	136	139
85	62	77	91	106	116	127	133	137
80	57	72	86	102	112	123	130	135
75	52	67	82	97	109	120	128	134
70	48	63	78	93	107	118	126	132
65	44	59	74	90	104	116	124	131
60	40	56	71	86	101	114	122	129
55	37	53	68	83	98	112	120	128
50	34	50	66	80	95	108	118	126
45	31	47	63	77	92	105	115	124
40	28	45	60	73	88	102	112	121
35	26	43	57	68	83	98	108	117
30	23	39	53	64	79	94	105	113
25	21	36	49	60	75	90	100	109
20	18	32	46	55	70	85	95	104
15	14	28	41	50	64	78	89	98
10	11	22	34	44	57	72	82	90
5	7	16	25	36	47	60	70	80
2	3	10	17	27	37	48	60	68

¹ World Book Company.

LEONARD DIAGNOSTIC TEST IN PUNCTUATION AND CAPITALIZATION

By J. PAUL LEONARD, PH.D.
Professor of Education, College of William and Mary

TEST: FORM A

Do not open this booklet, or turn it over until you are told to do so. Fill these blanks, giving your name, age, etc. Write plainly.

Name..... Date.....19.....

Age.....years. Boy or Girl..... Teacher.....

Grade..... School..... City.....

GENERAL DIRECTIONS. Here are several sentences printed without some necessary commas, capital letters, apostrophes, periods, question marks, quotation marks, colons, and semicolons.

Read each sentence very carefully; then insert the necessary punctuation and capitalization where you think they belong.

Do not change any punctuation or capitalization used in the following exercises. Each mark used is correct; you are merely to supply those that have been *omitted*. Each sentence is complete; there are *no* part sentences, and *no* sentences are run together. Read the entire sentence first to get its meaning.

Do not hurry. You will be given plenty of time to complete the test. When you have finished the test, look over your paper; then sit quietly until you are asked to give your paper to the teacher.

Ask no questions after the test has begun.

Total number of errors (×).....

Total number correct (√).....

Total should be 153

Percentage of errors (Number of errors ÷ 153)

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1. You may proceed as follows hold the flask fill it with acid
boil it gently and note its change in color.
2. Thomas hardy - a great english novelist died in 1928.
3. Charles Dickens wrote a tale of two cities.
4. New York City January 26 1930, appeared at the top of the
letter.
5. the flower fell on the soldiers grave.
6. He jumped to his feet and cried, we will not stand for this
outrage!
7. Charles you have done excellent work.
8. my brother does many queer things such as giving money to
every beggar he meets -
9. Peter the cat we had in the country knew the supper hour
he was never late for supper, and he didnt have a wrist
watch either.
10. My address this summer will be 37 Laclede Avenue Cleve-
land Ohio.
11. The senator asked, when shall we declare war
12. I am writing a paper called Children's love of poetry.
13. the following five girls belong to the basketball team Mary
Louise Frances Ellena and Elizabeth.
14. The dentist's appointment card read: Mrs George Davis 27
Orange Avenue February 18 1930.
15. another voice answered; and then the first voice which was
silvers took up the story
16. Away went the children laughing in glee.
17. He left the woods and walked along the Albany Post Road
where he could make better progress.
18. Fellows said Wilson, dont you know what I would do if i
owned half of that dog
19. You will probably be interested in seeing Mr. Barrie's fan-
tasy called peter pan.

(Go right on to page 3.)

Number of errors (×).....
Number of correct marks (✓).....

20. On September 10 1930 Mary Ryan's address was 9 East Batson Street Los Angeles California.
21. Captain Kidd said Charles, was the best pirate that ever lived
22. Although I am afraid yet I am no coward
23. A famous man once said, "make the best of everything think the best of everybody."
24. Bring the following things to class pen pencil and paper.
25. "Mr. Jones I'm sorry, but it is necessary to trade you to another team," said the manager.
26. Rayon silk which is made by a chemical process is being widely used instead of real silk spun by silkworms.
27. There came to my house a stranger fleeing from justice.
28. Columbia University confers the A B and A M degrees.
29. The articles that indicate rank, membership, and attendance in our club are for sale only to members that is to say, our pin, our badge, and our ring may not be bought by anyone outside of the club.
30. My schedule includes many studies that I like such as art, music, and dancing.
31. It isn't true that I am the best friend your brother has.
32. Louis Untermeyer has compiled a book of poetry called this singing world, which you would probably be interested in reading.
33. "Mayor Jones" said the speaker "who is an authority on French Literature has made many friends in this community because he has been willing to talk frequently on the subject."
34. What would happen Father if I should miss the train
35. Read the following directions think before you write punctuate as you write never use a punctuation mark unless you are sure of its correct use.
36. Although they agreed to leave early Bill was not ready on time.
37. Mr Smith our principal was formerly a Spanish teacher.

(Go right on to page 4.)

Number of errors (X).....

Number of correct marks (✓).....

38. The foreigner who was the cook at our summer camp came from the tenement section on the East Side.
39. The Democratic Convention of 1928 met in Houston a city in Texas.
40. The Grand Canyon which is one of the National Parks is visited each year by thousands of tourists.
41. Many relics such as fire flints, warming pans, and muskets are preserved in museums.
42. Nicknames are often used for boys' names, such as, for Theodore, Ted for James, Jim.
43. "George" said the coach "you will not need to report for basketball practice this afternoon for I want you to rest for the game tonight."
44. It is difficult to become accustomed to the new modern furniture such as that which is made perfectly square and is raised only a few inches from the floor.
45. Most great men those who have been the leaders of society have been men of vision and ideals.
46. He turned to his friend and said, "you have been a fine pal to me."
47. Im more interested in golf than in Browns club for on the golf course one can discuss mens business .affairs.
48. Dr Smith will you please report on your visit to the Orient?
49. If I were a sailor I would have relics from China Japan Turkey and India and all my friends would know of my wanderings, my collections, and my various experiences.
50. I must return to school this afternoon but before i go I must see my doctor.
51. Who said that becky our persian cat was killed yesterday
52. Our organization is for the promotion of social life, good humor, and repartee it is in no sense a club for study, politics, or business.

Number of errors (×).....
Number of correct marks (✓).....

LEONARD DIAGNOSTIC TEST IN PUNCTUATION AND CAPITALIZATION

KEY: FORM A

DIRECTIONS

If the scores are to be evaluated in terms of the norms, only the punctuation given in the key should be allowed. Otherwise the teacher may also allow as correct any punctuation, other than that given in the key, that has been taught to the class. For more complete directions for scoring see the Manual of Directions (pages 3 and 4).

Where more than one method of punctuation and capitalization may be followed, the less preferred forms are given in parentheses. For ease in scoring, all capitalization and punctuation are indicated in boldface type.

The key indicates for each sentence only the places where there should be punctuation or capitalization. Thus, in the first sentence the key should be read as follows: The pupil should place a colon after "follows," a comma after "flask," a comma after "acid," and a comma after "gently."

When the same word occurs twice in a sentence and is also used in the key, the word which precedes the one in the key is given in parentheses in the key in order to avoid confusion. See sentence 15, "(first) voice."

Each mark (both punctuation and capitalization) used correctly is given 1 point credit. For instance, in sentence 1 the maximum score is 4 points, 1 for the semicolon and 1 for each comma. In sentence 18 there is illustrated the rule for quotation marks around both parts of broken quotations. In this sentence it requires four quotation marks to complete the rule. One point is given for each of the four quotation marks that is put in the proper place. The maximum number of points for each sentence is given in parentheses after the correct punctuation for the sentence.

Place the key beside the sentences and compare the marks in the key with those inserted by the pupil. When the pupil's test agrees with the key, place a check (✓) above the mark. When the pupil's mark disagrees with the key, or when the pupil has omitted a mark, place a cross (×) above it. At the foot of each page indicate the number of right and wrong marks, on the lines provided. (For this purpose count omitted items as wrong.)

Disregard all punctuation added by the pupil that is not indicated in the key, even though it is incorrect. (See Manual of Directions, page 4.)

Leonard Diagnostic Test: A: Key

(Page 2)

1. follows: (or —) flask, acid, gently, (4)
(or follows: (or —) flask; acid; gently;)
(hold may be capitalized)
2. Hardy, English novelist, (4)
3. "A Tale of Two Cities" (6)
4. City, 26, (2)
5. The soldier's (2)
6. "We outrage" (3)
7. Charles, (1)
8. My things, meets. (3)
9. Peter, country, hour;
didn't (4)
10. Avenue, Cleveland, (2)
11. "When war?" (4)
12. "Children's Love Poetry" (4)
13. The team: (or —) Mary,
Louise, Frances, Ellena, (6)
14. Mrs. Davis, Avenue, 18, (4)
15. Another (first) voice, Silver's,
story. (6)
16. children, (1)
17. Road, (1)
18. "Fellows," "don't I dog?" (8)
19. "Peter Pan" (4)

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(Page 3)

20. 10, 1930, Street, Angeles, (4)
21. "Captain **Kidd**," "was lived." (7)
22. afraid, **I** coward. (3)
23. **M**ake everything; (2)
24. class: (or —) pen, pencil, (3)
25. Jones, (1)
26. silk, process, (2)
27. house, (1)
28. A.B. A.M. (4)
29. members; (1)
30. **I** like, (2)
31. isn't (1)
32. "This **S**inging **W**orld" (5)
33. Jones, speaker, **F**rench
Literature, community, (5)
34. happen, Father, train? (3)
35. directions: (or —) write; write; (3)
(or directions: (or —) write, write,
(think may be capitalized)
36. early, (1)
37. Mr. Smith, principal, **S**panish (4)

(Page 4)

38. foreigner, camp, (2)
39. Houston, (1)
40. Canyon, Parks, (2)
41. relics, (1)
42. Ted; (1)
43. George, coach, afternoon, (3)
44. furniture, (1)
45. men, (or —) society, (or —) (2)
46. **Y**ou (1)
47. I'm Brown's club, men's (4)
48. Dr. Smith, (2)
49. China, Japan, Turkey, India; (4)
50. afternoon, **I** (2)
51. **B**ecky, **P**ersian cat, yesterday? (5)
52. repartee; (1)

LEONARD DIAGNOSTIC TEST IN PUNCTUATION AND CAPITALIZATION

DIAGNOSTIC CHART

Grade 9A School High Form
Date Examiner Patterson
City State

Sentence	1		2				3			4	5			6			7	8				9			10	11				
Rule Used	13	17	1	19	2	19	12	6	12	23	3	9	11	4	11	22	3	20	7	19	14	10	23	11	4	16	11			
No. of Errors	1	3	1	1	1	1	1	4	1	2	1	1	1	1	1	1	1	1	1	2	1	1	2	1	1	1	1			
Pupils' Names																														
1			*																											
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Total																														

(Diagnostic Chart continued on following pages)

DIAGNOSTIC CHART — Continued

	12			13			14		15							16	17	18						19			20	21			
	12	6	12	3	13	17	8	23	3	19	1	9	19	7	25	26	11	21	11	10	5	16	11	12	6	12	23	11	1	21	11
1	1	2	1	1	1	4	1	3	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	4	1	1	1	1
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DIAGNOSTIC CHART — Continued

[illegible]

CLASS RECORD

City State

[illegible]

(Class Record continued on next page)

1. The number given each pupil should correspond to the number of his name on the Diagnostic Chart.

Leonard Diagnostic Test

DIRECTIONS. To distribute scores of a class, make a mark for each score, in the column under "Number of Pupils" and opposite the interval in which the score falls.

SCORE	NUMBER OF PUPILS
135 and above	
130-134	//
125-129	/
120-124	//
115-119	///
110-114	///
105-109	///
100-104	///
95-99	///
90-94	/
85-89	//
80-84	//
75-79	///
70-74	//
65-69	
60-64	/
55-59	//
50-54	//
45-49	/
40-44	
35-39	
30-34	
25-29	/
20-24	
15-19	
10-14	
5-9	
0-4	
TOTAL	42
MEDIAN	

[illegible]

[illegible]