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FACTUAL BASIS FOR CURRICULUM REVISION IN  
ARITHMETIC WITH SPECIAL REFERENCE TO  
CHILDREN'S UNDERSTANDING OF  
BUSINESS TERMS

A DISSERTATION  
SUBMITTED TO THE GRADUATE FACULTY  
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BY

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## CHAPTER I

### AN INTRODUCTION AND STATEMENT OF THE PROBLEM

During the past seventy-five years phenomenal changes have occurred in the field of industry. Machine labor has displaced hand labor. Big businesses have superseded or absorbed small businesses. The large manufacturing plant is now the rule and not the exception as was formerly the case. The worker who previously gained a great deal of general experience about business as an owner and participator in all the processes of manufacture is now confined to a single, specialized task. Thus he fails to gain the beneficial experience which home manufacture formerly gave. That this change in the character of business and manufacture is phenomenal is indicated by the fact that in 1919 the percentage of industrial wage-earners in this country under corporate organization was 85.5 per cent of all the wage-earners in the country and this group produced 87.7 per cent of the value of all manufactured articles.<sup>1</sup>

These facts have a far reaching significance as they relate to the problems of modern education. For when human activities become thus specialized, new words must be used to designate the new ways of responding. Since words are the names that we give to experience, we find, then, that there grows up in addition to the easily learned general vocabulary which relates to the common experiences of living, a highly specialized vocabulary relating to experiences not shared by all people and, therefore, difficult to learn. The vocabulary of science is an excellent illustration of this fact. It has grown to such proportions that the school

1. William Z. Ripley, Main Street and Wall Street, Boston: Little, Brown & Co., 1927, p. 19.

is compelled to offer courses in general science in order to make the environment of the child intelligible to him. The situation is similar in the field of modern business. With its increasing specialization, technical terms have increased greatly in number. These terms are difficult to learn since they frequently connote methods of response which are not common. It is necessary, however, that an understanding of many of these business terms be generally diffused in order that ordinary social intercourse may go on. Language training is social training. Dr. Judd states the problem in these words:

In order that men may live together they must have common ideas on all essential items. Common interests and joint modes of action are essential items to the very existence of a community. Social unity can be secured only when some method is provided for holding individuals to the same inner patterns of thought and desire.<sup>1</sup>

The dilemma which confronts us is this: Unless careful attention is given to the problem of training vast numbers of people in the common elements of business, we must face the prospect of having entire groups of people shut off mentally and socially from this important phase of human activity. No important part of common everyday living can long exist successfully apart from the mental life of the group.

Educational writers have called attention to the difficulty of mastering this specialized vocabulary. Brown and Coffman indicate the failure of pupils to master arithmetic dealing with interest because of their unfamiliarity with the business terms which occur in the textbooks. Later writers have corroborated

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1. Charles H. Judd, The Psychology of Social Institutions, New York: The Macmillan Co., 1926, p. 168.

this finding. The statement by Brown and Coffman follows:

Pupils sometimes fail to master the subject of interest, but the failure may usually be traced to the lack of an accurate understanding of the terms used and of an acquaintance with business rather than to any mathematical difficulties involved. There is no problem in simple interest the solution of which requires a degree of mathematical knowledge not in the possession of the pupil who is prepared to begin a formal study of the subject.<sup>1</sup>

And again:

The subject of stocks and bonds is generally considered to be the most difficult application of percentage. The difficulty is due, however, not to the mathematics involved, but to the fact that the language of the subject is frequently unfamiliar to the teacher and is usually unfamiliar to the student.<sup>2</sup>

The major effort of the arithmetic textbooks has been in the direction of the teaching of those business terms which normally arise in the commercial experience of an individual as he performs his personal business activities. We must remember, however, that in addition to the business terms which are used in what may be designated as private business, we have those business terms which are used in the transaction of public business. That this public business is gigantic in its size and scope is indicated by the following totals of tax collections which were furnished to Robert M. Haig by the Industrial Conference Board as a preliminary estimate of tax collections for the calendar year 1925.<sup>3</sup>

Federal .....	\$3,408,649,897
State .....	1,175,579,968
Local .....	<u>4,131,496,450</u>
Total .....	\$8,715,726,315

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1. J. C. Brown and L. D. Coffman, How to Teach Arithmetic, Chicago: Row, Peterson & Co., 1914, pp. 237-238.
  2. *Ibid.* p. 277.
  3. *World's Work*, March, 1927, p. 494

These figures give us a clue as to the cruciality of training involved in an understanding of business as a civic duty as well as a personal duty. We must include some business training as a part of our civic education. This need is well illustrated when we examine the popular speeches made by Andrew Mellon and Ogden Mills of the United States Treasury Department. In order to understand what these men say in their public addresses, we would have to know the meaning of such words as amount, account, authorize, assets, balance, bank, bond, burden, call, callable, capital, certificate, corporation, debt, finance, income, liability, loan, mature, obligation, operations, internal revenue, excise tax, premium, security, surtax, and warrant. These words were taken from some of their radio talks on finance.

Further evidence for the need of business understanding as a part of general education is indicated in the increase in the number of persons who are investing their money in stocks and bonds. Various estimates have been given on the number of security holders in the United States but accurate data cannot be secured. The estimate of 15,000,000 individual holders which has been given by several writers was probably not far from correct before the great bull market of 1928. The present number probably greatly exceeds this figure. At the present time there are over 440,000 stockholders in the American Telephone and Telegraph Company and more than 155,000 in the United States Steel Company. Customer ownership of public utilities has greatly expanded. Dr. Ripley states that:

There are now approximately 1,307,000 customers of public utilities who are shareholders in their respective companies.<sup>1</sup>

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1. Op. Cit. p. 343

Such figures show that thousands of people are investing their money in securities and suggest, but do not prove the need for some training in the elements of investment. If this increase in the number of people who are investing in various types of securities is being consummated without any serious deficiencies, if these new investors are able to direct their purchases in such a way that they sustain no losses, then no specialized investment training is necessary. However, such is not the case. Gross deficiencies exist in investment skill. How great the deficiency is difficult to determine. An ex-president of the New York Stock Exchange states that

Many estimates have been made of this gross income of the security swindling industry in America. The U. S. Treasury has stated that in 1918-1919 approximately \$400,000,000 of Liberty Bonds were taken from investors through various swindling methods. Some years ago both ex-Secretary of the Treasury, W. G. McAdoo and the Fraudulent Securities Committee of the Investment Banker's Association agreed in estimating the annual public loss at \$500,000,000.<sup>1</sup>

The presence of investment deficiencies and the need for training are patent. The type of educational agency which should be utilized to remedy the defect is not so clear. The writers of arithmetic textbooks believe that their subject should<sup>d</sup> bear a part of the burden. Snedden<sup>2</sup> has indicated that it deserves a place in civic training. Burton<sup>3</sup> has included a number of business words such as bond, bail, stock, interest, bank, capital, tax, and others in his test of the civic information possessed by sixth grade children. Courses in economics involve training in business terms. Various school subjects other than

1. E. H. E. Simmons, Modern Capitalism and Other Addresses, New York Stock Exchange, Published by author, 1927, p. 236
2. David Snedden, Sociological Determination of Objectives in Education. New York: Lippincott, 1921, p. 138 f.
3. W. H. Burton, The Nature and Amount of Civic Information Possessed by Chicago Children of Sixth Grade. Thesis, Univ. of Chicago, 1924.

those mentioned are attempting to give some training in an understanding of business vocabulary. In some cases this has been well done and in other cases it has been done badly.

The one outstanding defect of all the training in elementary principles of business is that no scientific evidence has been available regarding the terms to be taught. There is little unanimity between different writers because there is no common authoritative source of words to which they can turn. As a result the textbooks vary greatly in the business terms which they attempt to teach. The discrepancies in this respect of the judgments of four arithmetic textbook writers<sup>1</sup> are shown by reading the data in Tables I, II, III, IV and V on the following pages. These tables were prepared after the writer had checked the frequency of occurrence of the business words in those sections of these arithmetic books which dealt with the investment of money.

The analysis of these books showed, for example, that all these writers gave great prominence to the word brokerage. The writer's investigation, however, showed that the word brokerage did not occur once in the 310,000 running words dealing with investment literature which he analyzed. The word security which is surpassed in frequency of use in the investment materials only by the words company, investment, and bond, is not used at all by one of the arithmetic textbook writers and is used only 11 times by the other three writers combined. Again, the word par is 220th in rank in the writer's frequency list but

1. Stone, The New Mathematics, Book II, Chicago: Benjamin Sanborn Co., 1920, pp. 197-219. Wentworth-Smith, Essentials of Arithmetic, Book III, Boston: Ginn & Co., 1916, pp. 184-197. E. L. Thorndike, The Thorndike Arithmetics, Book III, Chicago: Rand McNally & Co., 1917, pp. 171-183. Phillips & Anderson, The Silver Burdett Arithmetics, Silver Burdett Co., 1913, pp. 332-342.



TABLE I

FINANCIAL TERMS FOUND IN ALL FOUR TEXTS  
ARRANGED IN ORDER OF FREQUENCY.

Word	Frequency	Word	Frequency
share	327	income	46
stock	191	price	42
bond	188	business	41
interest	138	cost	41
buy	108	per cent	37
dividend	104	annual	34
pay	96	par	31
investment	86	due	27
par value	85	broker	19
company	71	amount	18
brokerage	65	owner	15
rate	63	profit	14
corporation	60	commission	13
invest	57	bank	12
value	49	sales	9
		payment	4

TABLE II

FINANCIAL TERMS FOUND IN THREE OF THE  
TEXTS ARRANGED IN ORDER OF FREQUENCY.

Word	Frequency	Word	Frequency
money	67	purchase	14
sell	58	earn	12
mortgage	51	increase	12
market	39	insurance	12
property	31	declare	12
note	24	security	11
capital	23	common stock	8
quote	23	semi-annually	8
real estate	18	coupon	7
tax	17	investor	7
own	17	face value	6
payable	17	fixed	6
promise to pay	17	stock certificate	6
issue (v.)	17	deposit	5
holder	15	stock exchange	5
preferred st.	15	maturity	4
expenses	14		

TABLE III  
 FINANCIAL TERMS FOUND IN TWO OF THE  
 TEXTS ARRANGED IN ORDER OF FREQUENCY.

Term	Frequency	Term	Frequency
yield	21	borrow	4
safety	14	collection	4
increase	12	debt	4
quotation	11	face	4
loss	12	bond	4
savings bank	10	shareholder	4
save	9	depreciation	3
return	8	president	3
cash	7	savings	3
gain	7	secretary	3
ownership	7	advertisement	2
principal	7	agreement	2
register	7	balance	2
risk	7	bear (int.)	2
total	7	charter	2
certificate	6	check	2
earnings	6	decrease	2
govt. bond	6	deed	2
secured	6	expenditure	2
preferred	5	manufacturing	2
		offer	2
		transaction	1
		treasurer	2

TABLE IV

FINANCIAL TERMS FOUND IN ONLY ONE TEXT  
ARRANGED IN ORDER OF THEIR FREQUENCY.

Word	Frequency	Word	Frequency
quarterly	11	lender	2
proceeds	7	marketability	2
surplus	7	municipal bond	2
director	5	open	2
fee	5	net proceeds	2
lend	5	product	2
speculation	9	rate of discount	2
accrued interest	4	accumulate	1
assess	4	agent	1
average	4	assessable	1
claim	4	assigns	1
common	4	assignment	1
fluctuation	4	bank discount	1
loan	4	Board of Directors	1
railroad bond	4	bonus	1
earning power	3	borrower	1
enterprise	3	canvasser	1
guarantee	3	capacity	1
listed	3	cash account	1
report	3	committee	1
bearer	2	compound interest	1
capital stock	2	concern	1
close	2	distribute	1
comp. semi-ann.	2	delivery	1
convert	2	document	1
first mortgage	2	equipment	1
fund	2	exchange	1
insure	2	economy	1
issue. (n.)	2	factory	1
savings account	2	fare	1
stability	2	financial	1
wages	2	first class sec.	1
written agreement	2	full value	1
low	1	general upkeep	1
liability	1	gross earnings	1
maker	1	high	1
maintain	1	industry	1
manager	1	industrial	1
marketable	1	indust. bond	1
mature	1	instrument	1
obligation	1	inherit	1
open market	1	labor	1
order	1	legal	1
original stock	1		
overtime			

TABLE IV.  
(cont.)

Word	Frequency	Word	Frequency
LOW (level)	1	requirement	1
liability	1	receipts	1
maker	1	running expense	1
maintain	1	realize	1
manager	1	selling price	1
marketable	1	spend	1
mature	1	terminale	1
obligation	1	title	1
open market	1	transact	1
order	1	treasury	1
original stock	1	upkeep	1
overtime	1	vice-president	1
owe	1		
net earnings	1		
net income	1		
net average	1		
net profits	1		
non-int. bearing	1		
partner	1		
per annum	1		
piece work	1		
pledge	1		
pub.ut. bond	1		
promoter	1		

TABLE V

NUMBER OF TERMS USED BY EACH BOOK.

Book	No. of terms
Wentworth-Smith	117
Thorndike	84
Stone	166
Philips-Anderson	78

is used quite frequently by all the writers. The word diversify does not occur once in the sections of these textbooks which were analyzed but is 88th on the writer's list.

These illustrations together with the tables present convincing evidence that the words selected by the writers of our arithmetic textbooks are selected subjectively according to each writer's judgment. Since no objective evidence as to the most common or most important words is at hand, it is clear that the same situation must obtain in any subject which teaches business words as part of its curriculum.

The purpose of the writer's study was to perfect techniques of research which would remedy some of these difficulties and to offer a list of common business words which had been derived objectively from an analysis of investment literature. The study grew out of an attempt to construct a course in business essentials for the Skokie junior high school at Winnetka, Illinois. An analysis of the field showed that nowhere were there reliable data upon which to base such a course.

The specific questions which the writer attempts to answer are these: First, what words will appear in a master list of common business terms? Second, with what frequency does each of these words appear in that type of investment material which has been written by an expert for the lay reader? And third, how well do children from grades six thru grade twelve understand those words which are most frequently used by such writers?

Some studies have been made in the above fields and certain techniques of investigation have been formulated. These will be described and evaluated in the next chapter.

## CHAPTER II

### AN ANALYSIS OF PREVIOUS INVESTIGATIONS

Information concerning children's understanding of business terms is almost non-existent. Two studies were discovered which had made some investigation in this field. A study by Roy Davis<sup>1</sup> attempted to discover children's understanding of the business terms found in eighth grade arithmetic textbooks. A second study, that of Dr. William E. Burton,<sup>2</sup> included a few business terms which occurred in the field of civics. Both studies were of assistance in working out the techniques employed in the writer's study. The purpose of the study by Roy Davis was:

To discover what knowledge eighth grade pupils have of business terms which they meet in arithmetic, such terms as insurance, check, interest, stock, bank, commission, promissory note, money, broker, and the like.<sup>3</sup>

Mr. Davis had been led to believe that the business terms included in such arithmetics were exceedingly difficult since his pupils in the evening school:

Although, as a rule, older than those in the eighth grade of the elementary school, did not appear to know much about business matters when called upon to use these subjects in written and oral English. It seemed improbable that eighth grade pupils would be any better informed.<sup>4</sup>

He states his method of investigation to be as follows:

A set of questions was prepared based upon problems in arithmetic which were common to many widely used texts. These questions were worded as to preclude any reasonable likelihood of misunderstanding their meaning. Nothing that might be called a catch question was admitted and all the questions were

1. Roy Davis, Harvard Bulletins in Education, Vol VI.  
Business Practice in Elementary Schools, Oct. 1917.
2. Op. Cit.
3. Ibid. p. 3
4. Ibid. p. 4

submitted for criticism and revision to various teachers, principals, and superintendents.<sup>1</sup>

This set of 22 questions about business terms was printed and then sent to various cities of different size throughout the United States. Where more than one school was selected in the same system, care was taken to have those schools represent somewhat different methods of instruction. Thirty different groups of papers were graded on a scale of good, fair, or poor. There were 1541 different papers. The highest score was 69 per cent G's and the lowest score was 20 per cent G's. The average score on the basis of the number of G's was 37 per cent. Questions relating to installment plan, tax rate, interest, and commission had over 50 per cent of their answers marked G. Those having less than 25 per cent of their answers marked G were assessor, depositing money in a bank, investing in stock, savings bank, and post-office money order. The high scores of installment plan, tax rate, interest, and commission are explained by Davis as follows:

The first two questions involve matters that are probably common knowledge, that is, pupils become familiar with them in the every-day life of the home and the outside world. Interest and commission are also likely to be commonly talked about. Interest is certainly a subject of common knowledge. In addition interest and commission are also largely used in arithmetic drill in school. On the whole, it would seem that these four questions deal with ideas that are a sort of 'pick-up' with children. That the children are familiar with them is not due primarily to school instruction.<sup>2</sup>

This study by Davis is suggestive and interesting yet it has the defects of inadequate sampling, subjective grading of papers, and inadequate control of the conditions under which the test was given.

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1. Op. cit., p. 7.

2. Op. cit., p. 21.

Davis' general conclusion is that

Business practice (as indicated by the questions) is, as a rule, not well known to pupils of the eighth grade, although it is possible for them to know it. A further conclusion, stated previously, is that from one-half to two-thirds of a class is likely to have either a very inadequate knowledge or no knowledge at all of a subject of business practice.<sup>1</sup>

Dr. William E. Burton included a small number of business terms in his inventory of the civic concepts of the sixth grade children of Chicago and one or two other localities. The most valuable suggestion gleaned from his thesis was that of validating the test items through an interview with the examinee, and changing the test where necessary in order to make it correlate with the results of the interview.

A study made by Hyman Meltzer of children's concepts advocated the use of the interview in preference to a multiple response test because it was more revealing, gave the examiner an opportunity to find out the "why" of some rare answers and because it gave fuller and richer data on each concept. However, he criticizes the interview technique adversely as follows:

The first disadvantage this test has is one that all individual tests have in common as compared with group tests, i.e., time. In the time it takes to test one child by this method, a class of children can be tested by a group test. For a study whose chief interest is in gaining insight into the development of our concepts in the minds of children, considering the present status of our knowledge about the subject, the increment of meaningful and revealing materials obtained by this more clinical method is worth the difference in time. The only real difficulty introduced by this procedure is that of scoring. There is no standard technique for scoring a partially free association test---associations given as responses to the naming of a concept, associations yielded by the procedure herein described as the Personal Interview.<sup>2</sup>

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1. Op. Cit. p. 26.

2. Hyman Meltzer, Children's Social Concepts, A Study of Their Nature and Development. New York: Teacher's College, Columbia University, 1925. p. 18.



A study made by Laura H. V. Kennon<sup>1</sup> in the field of English gave some assistance in the problem of developing a testing technique. She used the selection form employed<sup>2</sup> by Thorndike in his tests of word knowledge. Five options were given from which the word most nearly like the test word was to be chosen. Miss Kennon states that temptations to error were introduced by using opposites, by definitions of words of similar sound or spelling, and by inclusions of "high-sounding", but essentially meaningless terms. Whenever it was possible, the options were chosen from the same kinds of words in order to make the choice more difficult. No attempt was made by Miss Kennon to validate individual items through the use of an interview with the examinee in order to determine whether certain temptations to error were so great as to cause him to mark the term incorrectly even when it was well-known to him. It is likely, however, that such validation was secured by giving the test informally to many people before it was put into printed form.

Miss Kennon found correlations of .60 with her test of specialized English literary vocabulary and the Thorndike Intelligence Examination, Part III. She also found a correlation of .61 between her test and Army Alpha, Form 7. These correlations are approximately the same as those found by the writer between his test of business vocabulary and standard tests of vocabulary and intelligence.

1. H. V. Kennon, Tests of Literary Vocabulary for Teachers of English, Teachers College, Columbia University Contributions to Education, No. 223, 1926.
2. E. L. Thorndike, Thorndike Test of Word Knowledge, New York: Teachers College, Columbia University, 1921.

1

E. L. Dolch presents what he considers a master list of methods for testing knowledge of word meaning. He divides these methods into two groups, the aided recall and the unaided recall. In the tests of unaided recall he favors the type where the student checks a list of words individually as well-known, doubtful, and not known. It is a test of familiarity with the term. His statement regarding this type of test follows:

From the administrative point of view this kind of test is the very simplest to prepare, to give, and to score. A large number of words can be listed, and the children can go over them very rapidly, taking no more than from five to ten minutes for a hundred words. The scoring is done merely by counting the children's check marks. Psychologically, this test is also most satisfactory. In the first place, it tests a rather definite degree of meaning, practically the "threshold" at which point the symbol first becomes meaningful when seen alone. In the second place, for group results this test is sufficiently reliable, since the variable error due to too great self-confidence by some children or too little by others is largely eliminated. The constant error that might be caused by children's desire to make a high score can be removed by directions which explain that individuals are not to be graded but that the children are simply to help the teacher find out which are the hard words. Further accuracy can be secured by having the children mark the words as certainly known, certainly unknown, or doubtful, and then counting only the certainly known. This tends to remove the doubtful cases from the known group and makes us more sure of results. These advantages, both administrative and psychological, certainly point to the checking test as the one most useful for the testing of large numbers of words with large numbers of children.<sup>2</sup>

The writer does not share Mr. Dolch's wholesale enthusiasm for the checking test of familiarity. He believes that it is highly useful for certain restricted types of testing but believes that for general testing it has certain disadvantages.

In the first place, the accuracy of the scores depends in large measure upon the attitude which the pupils take toward

1. E. W. Dolch, Reading and Word Meanings, Boston: Ginn & Co., 1927.

2. *Ibid.* p. 111 f.

the test. The writer believes that overconfidence in marking will be greater than underconfidence and that only by an interview with the pupil is it possible to determine whether the checking technique gives valid results. Dr. Dolch makes no mention in his report of how the investigators knew that pupils showed too great self-confidence in marking the words. Apparently they trusted their own judgment as to the relative difficulty of the words. If teacher or investigator judgment is to be the validating criterion, of what value is it to have the pupils check the words in the first place?

This leads to the second difficulty with Dolch's checking technique. Nowhere does he present evidence that children actually knew the words which they checked as being familiar. What he does present is evidence that tests given at varying intervals on the same words to the same children show favorable correlation. This proves only the reliability of the test, not its validity. The fact that a child checks a word as familiar or unfamiliar in much the same manner at different times cannot be accepted as a valid test of whether he knows the word. He may believe that he knows the word and yet not be able to use it accurately or be able to understand it when he sees it in a contextual setting. Children frequently replied in the following manner to the writer's query about a word: "I've heard it lots of times, but I don't know what it means." The word was familiar, the child had heard others use it, he would doubtless check it as known under the above type of test, yet the word would actually be unknown to him.

The data supplied by Dr. Dolch illustrate a third difficulty of his checking test. It involves error when a word has more than one meaning or when a word is a homonym. Among the 56 words which he used in his checking test are ball, alter and course. What assurance is there that the children did not interpret them as ball, alter, and course, and mark their tests accordingly? The word arrest which occurs in the test has two distinct meanings and if the child marks it as known we do not have any evidence as to which meaning he understands.

Dr. Dolch offers the following criticism of the multiple-choice test:

The multiple-choice test mixes up the right meaning with several wrong ones. It, too, may not be successful in discriminating the right meaning. The usual method is to provide four choices or alternates. It is very hard, indeed, to keep some of these from being instinctively eliminated, since they are so familiar that the child is sure the strange word is not related to them. With but two or three remaining, mere guessing will greatly affect the result. On the other hand, this method may be too successful and, by suggestion, produce a wrong answer. In fact, this misleading suggestion is often aimed at... This characteristic of the type is much objected to.<sup>1</sup>

Dr. Dolch's criticism is just but he has failed to state the remedy, an interview with the examinee to validate the test. If the examinee is able to eliminate successfully, if he is misled when he knows the right answer, then the problem is merely one of changing the test. The above criticism of multiple-choice tests applies, then, only to those tests which are not revised in the light of data obtained from an interview with the child who has been given the written test. If a multiple-choice test is carefully revised, it can be made as accurate as the conditions demand.

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1. Op. Cit., p. 113.

Some assistance was received by studying the testing techniques used in the field of general vocabulary. One of the earliest of these was that of Kirkpatrick.<sup>1</sup> His list contained 100 words which he had selected from Webster's Academic Dictionary. His subjects were given a printed list of the words and were ask to mark those which they did not know with a minus sign, those which they knew with a plus sign, and those on which they were doubtful with a question mark. They were told to "count as known all words which they would not, as to their meaning, need to look up in a dictionary, should they be seen in a sentence."<sup>2</sup> Doran made a study in 1907 in which he required written and oral definitions.<sup>3</sup> Babbitt<sup>4</sup> and Bonser later made vocabulary studies using the same technique as Kirkpatrick. In 1918 Brandenburg<sup>5</sup> made a study in which he instructed examinees to use each word in a sentence and to place a cross before each word known. In 1916 Terman<sup>6</sup> formulated a test of 100 words and determined children's understanding of them by requiring oral definitions. In 1917 Gerlach<sup>7</sup> constructed a four response multiple-choice test. In these tests he also had children make "working definitions" of some of the terms. In 1919 we find

1. E. A. Kirkpatrick. "A Vocabulary Test". Popular Science Monthly, Vol. 70, pp. 157-164, 1907.
2. E. W. Doran, "A Study of Vocabularies", Pedagogical Seminary, Vol. 14, pp. 401-438, 1907.
3. E. H. Babbitt, "A Vocabulary Test", Popular Science Monthly, Vol. 70, p. 378, 1907.
4. F. C. Bonser, L. E. Burch, and M. R. Turner, "Vocabulary Tests as Measures of School Efficiency", School & Society Vol. 2, pp. 713-718, 1915.
5. G. C. Brandenburg, "Psychological Aspects of Language", Journal of Educational Psychology, Vol. 9, pp. 313-332, 1918.
6. L. M. Terman, The Measurement of Intelligence, Boston: Houghton Mifflin Co., 1916.
7. F. M. Gerlach, Vocabulary Studies, Studies in Education and Psychology, Colorado College, No. 1, 1917.

Holley<sup>1</sup> taking Terman's list of 100 words and testing children's understanding of them by using a four response, multiple-choice test. In 1921 Thorndike<sup>2</sup> constructed a multiple-choice test similar to the following:

article: magazine bit thing painting gift

Thorndike does not indicate whether attempts were made to validate the individual items on the test but since his purpose was primarily to find the range of vocabulary, this was probably not so necessary a procedure. The Inglis test<sup>3</sup> differs slightly from the Thorndike test since it has six choices and the word that is being tested is placed in context in order to identify the particular meaning which is desired.

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1. C. E. Holley, First Annual Report of the Bureau of Educational Research, University of Illinois, 1919.
  2. E. L. Thorndike, Thorndike Test of Word Knowledge, New York: Teachers College, Columbia University, 1922.
  3. Alexander Inglis, The Inglis Tests of English Vocabulary, Boston: Ginn & Co.

### CHAPTER III

#### A STUDY OF UNDERSTANDING AND METHODS BY WHICH TO TEST IT

When does one understand a word or a term? The answer to this question is no simple one. It is as profound as the problem of education itself. Varying answers would doubtless be received from different persons. An etymologist might reply that one does not truly understand a word unless he knows its origin and evolution. A linguist might attempt to convince us that knowing the word in many different languages greatly aided one's understanding of it. A grammarian could conceivably make the claim that understanding is never complete unless one can decline, conjugate, or compare the word properly. The dictionary maker would call our attention to the myriad meanings of words which have similar spellings and would warn us of the pitfalls involved in the belief that words spelled alike have similar meanings. The behaviorist would couch his explanation of understanding in terms of conditioned response and glandular secretions, and his discussion would be liberally sprinkled with the word "reaction." The philosopher would wrinkle his brow, talk to us about the "meaning of meaning" and might finally throw us into utter confusion by declaring, as did one eminent philosopher recently, "that we know nothing as yet about the meaning of meaning."

Perhaps we do know nothing about the meaning. Perhaps the attempt to define understanding is a hopeless task. However, when we turn to the activities of the classroom we become more hopeful when we discover that teachers everywhere and every day are

giving one good answer to the question when they teach the meanings of words to children and when they test these children's understanding of words. Every one of them accepts, in essence at least, the statement laid down by Thorndike when he said that

To know a word shall mean for us to be able to define it passably, or at least to recognize a definition of it among three or four wrong definitions. (This is lamentably vague, but is the best we can do at present).<sup>1</sup>

This definition of understanding formulated by Dr. Thorndike as a basis for carrying on his vocabulary studies differs in an important aspect from that of Dr. Dolch who maintains that familiarity with the word is the starting point in testing and advocates the use of a checking test which measures a rather definite degree of meaning, practically the "threshold" at which point the symbol first becomes meaningful when seen alone.<sup>2</sup>

That two such widely varying points of attack should be used in making vocabulary studies is due to the fact that the understanding of words develops gradually, or passes through certain stages or levels of growth. This gradual development was clearly distinguishable in the interviews which the writer had with many of the children who took his multiple-choice test. Six stages of growth were noted.

In the first stage the child indicated to the examiner that he had heard or seen the word before but that he did not know what it meant. These answers by the children are typical of this stage: "It seems to me that I've heard the word before but

I don't know what it means"; "I've heard of it, I think";

1. E. L. Thorndike, Contributions to Education, Vol. I, World Book Co., New York. 1924. p. 74.
2. E. W. Dolch, Reading and Word Meanings, Boston: Ginn & Co., 1927, p. 111.



"I can't tell you but I've heard of it." We may consider this the vaguely familiar stage.

In the second stage the word is clearly familiar but the child does not know its meaning. The situation has its corollary in one's meeting a person who says, "I'm sure that I've seen you before but I can't place you." The following statements by the children are typical of this stage of understanding: "I've heard it lots of times"; "My father says that word many times but I don't know what it means"; "I've heard of it but I've no idea what it means"; "I can't tell you what it means but I know that I've heard of it"; "I've seen it in my arithmetic book but I really don't know what it means."

A third stage in the understanding of a word occurs when one is familiar with its sound and spelling and has an understanding of the class of words to which it belongs but no understanding of its meaning. These statements describe this stage: "A bond has something to do with business"; "It has to do with a bank"; "Stock has to do with a business. Daddy talks about it all the time"; "Something to do with money"; "A security is something that has to do with business but it's awfully hard to put into words"; "A reserve has to do with a bank."

In the fourth stage of understanding the child is able to put the word into a contextual setting but he has no clear grasp of the meaning of the word. These statements illustrate this level of development: "I don't know what assess means but I know that you assess property."; "A mortgage is what you put on a house but I don't just know what a mortgage is."

In the fifth stage the child is familiar with the word, knows that it is used in business, can use it in a sentence, but knows only a specific meaning for the word. This was frequently illustrated by the words credit and market. Children frequently replied that "credit is what you get when you return something at the store" and "A market is where you buy things." Yet they did not know the generalized meaning of these words. Other statements upon which further analysis showed no generalized understandings were these: "I reserve ten cents for car fare"; "A thing that comes from England is an import"; "Taxes are what you pay to the village"; "A check is the money you pay maids with"; "In law you have a partner"; "Investing is putting money in the bank"; "My father's company is a corporation"; "A bond is a piece of paper with a lot of little stamps on it"; "An endowment policy is one that you pay so much a week on"; "A company is where they sell things"; "Bonds are what you use to get money to carry on war."

Full credit for understanding cannot be given when the word has only a specific application in the child's mind. To really understand the meaning of the word check one must know that it is used in many more ways than "paying the maid with". Further, the word import is only partially understood when the child limits it to goods shipped from England.

In the sixth and final stage the child understands the word in its specific and general aspects and is able either to give a definition of it that approximates in all important particulars the definition which the writer used, or the child is able to use it with evident understanding in a sentence. This

does not imply the ability to give nice or highly discriminating definitions. The implication, however, is that no important element in the definition can be left out if the examinee is to receive credit for understanding. ✓

### Testing for Understanding

How then shall we test children's understanding of the meaning of business words? A commonly used type of test of understanding is that of formulating a written definition for a word. This type has the advantage of wide applicability since a large number of students can be tested at one time. Certain investigators in the field of vocabulary have used this technique. This method, however, involves the introduction of numerous abilities other than those implied in the understanding of a term. Some of these abilities which are introduced into the written type of test are composition, writing, and vocabulary, any one of which may be sufficiently strong as to invalidate the results. Frequently the answers of the examinees are incomplete and with a written test the examiner does not know whether these incomplete answers are due to ignorance of the term or whether certain elements which the pupil actually knew, were not recalled at the moment. The possibilities of using the written definition test were not explored by the writer. That it may under certain circumstances be substituted for the time-consuming oral interview is fairly possible.

A free association test where the child is asked to write down all the business words which he knows might be of some value in determining the relative extensity of business

vocabulary among students. This type of testing was considered of no value in the problem which the writer was trying to solve.

A third type of test is that which involves the presentation of a list of business words to the student, and he is asked to check these words as well-known, doubtful, and unknown. This test was experimented with. When the attitude of the class was properly conditioned, and when the words were either very easy or very hard, reliable results were obtained. Error was introduced into the test by improper attitude, the misreading of words, knowledge of specific but not general meanings, and by inability to distinguish homonyms. Clear-cut answers are not given by this test to the question of word difficulty, however, when the words fall between the very easy and the very hard type, or when any of the above unfavorable circumstances appear.

A fourth type of test is the interview with the subject. He is asked to tell the meaning of the word. If his definition contains all the essential elements, he is given full credit for it. If it is lacking in one or more of these essential elements, the examiner determines whether these are known to the subject by the use of questions which give no assistance in getting the right answer, but which do enable the subject to answer correctly if he knows the further meaning implied in the term. How can one determine accurately and objectively whether the definition does contain the essential elements? Does not error creep in at this point? Terman's conclusions relative to this matter are as follows:

While there is naturally some difficulty now and then in deciding whether a given definition is correct, this happens much less frequently than one would expect. In order to get a

definite idea of the extent of error due to individual differences among examiners, we have had the definitions of 25 subjects graded independently by 10 different persons. The 25 results showed an average difference below 3 in the number of definitions scored plus. Since these subjects attempted on an average about 60 words, the average number of doubtful definitions per subject was below 5 per cent of the number attempted.<sup>1</sup>

This method of testing understanding is probably the most exact of all methods, and was the one used to validate the writer's test. The objection to the interview is the inordinate amount of time which it consumes for both the interviewer and the subject.

The above tests may be considered the recall type tests. A second group may be designated the aided recall type. Examples of the latter type of test follow:

The controlled association test is a type of aided recall test that measures certain elements of understanding. The child is asked to write after each of certain business words, the words which they make him think of. Some data on extensivity and nature of business vocabulary might be obtained by such a method, but its general value is probably slight.

A second type of test in the second group is the matching test. A set of business words is followed by their definitions written in random order. The task is to fit the words with their definitions. If ten words are followed by fifteen definitions we have a multiple-choice test with a choice of one in fifteen for the first answer and a choice of one in six for the last answer. The test requires high-grade reading ability and requires a great deal of time to mark. For this reason it was

1. L. M. Terman, The Measurement of Intelligence, Boston: Houghton Mifflin Co., 1916, p. 227.

not used by the writer. A third defect of this type of test is the difficulty of changing it in order to make it correlate with oral interview data.

A third type of aided recall test is the completion test. It can be used under certain circumstances where the answer is expected unequivocal. It is difficult, however, to construct a test of this type where only one answer can be considered correct. This introduces subjectivity into the scoring with possible errors in the interpretation of the answers.

The fourth type of test is similar to the matching test in that it involves a multiple-choice but it has certain characteristics which distinguish it from the matching test. A five choice multiple-response test was the type used by the writer since the results of various investigations indicate its superiority to those tests which have fewer choices.

There are two distinct types of five-choice multiple-response tests. In the first type, a single term such as stocks is given, and this word is followed by five definitions, only one of which is correct. This type of test has the following disadvantages:

- a. It is difficult to make five plausible definitions.
- b. Because of this difficulty, guessing becomes easier.
- c. No measure of the difficulty of the various answers can be obtained prior to actual testing other than that given by subjective judgment.
- d. Accurate test-making under this plan is a time-consuming process.
- e. Reading ability becomes a more important factor in the successful passing of the test.

The writer proposes to substitute the following type of test for the one adversely criticized above:

A definition of a business term is presented to the examinee. This definition is followed by five terms, only one of which is the correct answer to the definition. The subject must then determine which of the five words is the term defined. Such a test has the following advantages:

- a. It becomes much easier to secure five plausible answers.
- b. The word lists of Thorndike and others can be used to determine the relative difficulty of the choices prior to testing.
- c. Since the terms are of approximately the same difficulty, guessing by eliminating known terms becomes much harder.
- d. The tests will require less time to construct.
- e. Reading ability becomes a less important factor in the results.
- f. Revision of the test to make it correlate with interview findings is made much less difficult.

The following safeguards were taken in constructing the multiple-response business test:

- a. Care was taken to insure consistency among the terms. If the definition or term implied a verb as an answer, all choices were usually verbs. This decreased the chances of guessing successfully when the answer was actually not known. It was found, however, that children did not detect inconsistencies of this type as readily as one might suppose.
- b. In general the words in the answer were made of the same relative difficulty. This increased the chances that all

five choices would be equally familiar to the child. The word list formulated by Dr. Thorndike is of value here but it must be used judiciously since it is a spelling list and not a meaning list. The business meanings of the following words are greatly different from their usual meaning and their high credit number in the Thorndike list may be misleading. Words of this type are stock, bond, warrant, note, credit, duty, appreciate, etc.

c. Preliminary testing must be done for the following two reasons: First, the examiner must determine whether or not certain incorrect terms are consistently avoided due to their make-up or some other cause. As a corollary of the above, he must ascertain whether certain answers have more attraction for the child than do other answers.

d. Attractive wrong answers should be included in order to draw the guesser away from the correct answer. These attractive wrong answers should not be so strong as to draw a child who knows the right answer away from this answer to the more attractive wrong answer.

e. The labor of test construction can be greatly diminished and the results improved if the preliminary forms of the test are submitted to adults who are interested in the problem. Such persons can furnish much data in regard to inaccurate definitions, guessing, attractive wrong answers, etc. However, since such adults usually know most of the right answers, they cannot contribute much regarding methods of guessing used by children who do not know the right answers. The writer secured



a great deal of light on the construction of his test by giving it informally to his former junior high school pupils many of whom were of superior mental ability. They indicated to him the terms upon which they guessed, their method of guessing, definitions which they found difficult to understand, misleading choices, etc.

f. When these informal methods of revising the test have been used, the test should be mimeographed and given to small groups of children at the level at which it is desired to test. These children should be instructed to guess if they do not know the right answer. Interviews on the terms with the members of this group will indicate those test items which need revision. Some of the terms will be too hard, and others will be too easy so certain adjustments of definitions and choices will have to be made. The revision and interviewing should be continued until the test reaches the desired degree of correlation with the results of the interview. At this point the test will be guess-proof, that is, children who attempt to guess will usually guess wrong.

g. When the test is finally completed, instructions to the children should be not to guess. This will be a factor in further increasing the validity of the test.

The utilization of the above principles of test construction will be discussed in detail in Chapter VII which contains a complete account of the specific problems met in constructing the test.

## CHAPTER IV

### PROBLEMS INVOLVED IN MAKING A MASTER LIST OF BUSINESS TERMS

#### The Definition of a Business Term

Webster defines term as "a word or expression, especially one peculiar to a science, art, etc." This will be the meaning implied in the use of the word term in constructing the master list of business terms. A business term, then, is any term peculiar to business or one which has a special application in the field of business. The field of business will be interpreted as those commercial operations such as buying, selling, distributing, bargaining, traffic, or transfer.

#### Sources to be Used in Securing the Master List

Webster's Elementary School Dictionary<sup>1</sup> was chosen as the primary source of business terms. This first list was made from the dictionary for the following reasons:

1. Without counting several thousand inflected forms, the Elementary School Dictionary contains, in all departments, 44,322 entries. A list of this size will contain almost all the words that a pupil or adult will ever meet in his reading or conversation,

2. The makers of the dictionary have made a special effort to include technical terms of general use. They say:

Technical terms, if of general use, have also been given, especially the words common in business and the trades and those relating to government and political institutions.<sup>2</sup>

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1. G. & C. Merriam Co., Springfield, Mass. 1914.

2. Op. cit., p. iv.

3. A dictionary list is in alphabetical form, thus eliminating the time-consuming problem of alphabetization which would be necessary if a different primary source of words were used.

4. The dictionary will enable one to secure at the outset a list complete except for highly technical terms and compound terms. For example, the dictionary above mentioned, does not include the word amortization nor the word current assets.

A second source of business words was Roget's Thesaurus.<sup>1</sup> The author indicates in the preface that "particular attention has been given to scientific and technical terms".<sup>2</sup> Section IV of Division II deals with "possessive relations" and contains sixteen pages of words dealing directly and indirectly with business. The defect of the Thesaurus is the general nature of many of the words and the inclusion of many uncommon words.

A third source of business terms was Montgomery Rollins' Money and Investments.<sup>3</sup> A book of this type gives excellent assistance in compiling a master list of investment or business terms but it includes many highly technical terms which occur rarely if at all in investment material written for the lay reader. Again, it fails to include many simple business terms which adults are commonly assumed to know. A tentative unpublished list of investment terms compiled by Samuel O. Rice, Educational Director of the Investment Bankers of America, was also used in similar fashion.

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1. P. M. Roget, International Thesaurus of English Words and Phrases. (Revised by C. O. Sylvester Mawson) New York: Thomas Y. Crowell Co. 1928.

2. Ibid. p. v.

3. Montgomery Rollins, Money and Investments, Boston: Financial Publishing Co. 1917.

A fourth source<sup>34</sup> of terms was the indexes of various books on business, commercial law and economics. These were scanned and business words not already in the master list were added.

A fifth source of words was the business articles and business books themselves. Numerous additions were made to the master list after actual checking of materials had begun.

A sixth source was the various encyclopedias on banking and finance. One which was especially valuable was Glenn G. Munn's Encyclopedia of Business and Finance.<sup>1</sup>

#### The Comprehensiveness of the List.

Does the list include all business words that are common? What are the chances of a common business word being omitted from the list? It is possible for a word commonly used in some phase of business other than investment to be omitted but this possibility is slight. The safeguards taken to insure the comprehensiveness of the list were these:

1. The Thorndike word list<sup>2</sup> was checked twice by the writer to discover therein all business words. The Horn Basic Writing Vocabulary<sup>3</sup> was checked once for the same purpose. If words are omitted from the master list, it means that they probably do not occur in the ten thousand commonest words as determined by these two studies and are, therefore, not common words.

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1. New York: Banker's Publishing Co. 1926.

2. Thorndike, E.L., The Teacher's Word Book. Teachers College, Columbia University, New York.

3. Ernest Horn, A Basic Writing Vocabulary, University of Iowa Monographs in Education, Iowa City, Iowa, April 1, 1926.

2. The Pressey<sup>1</sup> list of the technical vocabulary of arithmetic was checked in the same manner for the presence of business words. If the Pressey list is accurate, this check should insure the presence in the master list of all the technical business words which are used in arithmetic text-books.

3. Three hundred and ten thousand running words of investment literature of a type written for the lay reader was checked by the writer and his assistants. That any business word appearing frequently in these pages would be overlooked is highly improbable.

#### The Accuracy and Objectivity of the List

To what extent does the personal judgment of the person who makes this list affect its constitution? Do two or more workers agree on what a business word is? The answer to this problem was secured in the following manner. After a preliminary survey of the technique of constructing a master list on a basis other than that of the personal judgment of one observer, the following technique for securing objectivity was formulated. The writer noted his own difficulties in determining what a business word was, and he noted the difficulties of those who assisted him in making the preliminary lists. Discrepancies between the lists which he made and those lists made by his assistants usually occurred because certain definite types of words were included by one and excluded by the other or vice versa. This led to the gradual building of a series

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1. L. C. Pressey, The Technical Vocabularies of the Public School Subjects, Section 3: Arithmetic, Bloomington, Ill.: Public School Publishing Co., 1924.

of rules or principles of word selection. The rules in their final form are as follows:

1. Check all words which refer directly to commercial operations such as buying, selling, storing, distributing, owning, bargaining, traffic, or transfer.
2. Check the names of all occupations if they involve both buying and selling.
3. Check all legal words which refer to business.
4. Check all terms relating to money such as pound, silver, peso. Do not check ancient money terms such as ducat, doit, pieces of eight, etc.
5. Check the names of general products of business or manufacture such as jewelry, hardware, etc., but do not check specific products such as knives, watches, vegetables, etc.
6. Do not include office appurtenances such as typewriter, desk, filing cabinet, and comptometer.
7. Do not check terms relating to measurement, quantity, or time such as numerals, the words hour, minute, annual, etc.
8. Check all parliamentary law terms such as nomination, majority, minority, vote, etc.
9. If the definitions do not explicitly characterize the word as a business word, but you believe that an unabridged dictionary would give a business meaning, check it, and put a question-mark beside it.

The results of the work of three assistants compare with those of the writer on duplicate lists of words in the dictionary as follows:

Of the 128 business words selected by the first assistant, there were seven discrepancies with the list prepared by the

writer. These discrepancies were a failure to include the words adjourn, diversification, and right, and an inclusion of the words separate, divide, dominate, and quantity.

Of the 97 words selected by the second assistant, there were six discrepancies with the list prepared by the writer. These discrepancies were a failure to include the words abut and address and an inclusion of the words A 1, ammunition, annex, and antedate.

Of the 88 words selected by the third assistant, there were seven discrepancies with the list prepared by the writer. These discrepancies were a failure to include the words apartment, apportionment, ask, behalf and the inclusion of the words ascend, argue, and barometer.

It is believed that the above data justify the following conclusions:

First, that there will be a variation of approximately ten per cent in the lists compiled by different persons. They will definitely agree on about 90 per cent of the words. Second, the disagreement will be on those words whose connection with business is vague or not clearly defined, words which are semi-technical in their nature. This element of subjectivity in the dictionary master list need not give us undue concern since the major purpose of the master list is to be inclusive enough. It errs in large measure in including too many words rather than too few. This defect, if it is a defect, can be remedied when actual checking of the words in investment materials has been done in a complete way. Those words on the master list which do not occur in the investment materials automatically receive no place in a true master list of the terms actually used in

business. Clearly, the final criterion as to whether or not a word should be included in a vocabulary of business terms is its actual use in business materials.

These conclusions, then, appear valid. The master list presents highly objective results on those words which are technical in their nature. On such words there is almost perfect agreement between different observers. On semi-technical words, however, the agreement is not so great and because of the presence of such words there may be a disparity of about ten per cent on lists prepared by two independent workers.

#### Varying Forms of the Same Word

This is a problem which occurs in the making of any vocabulary list. In this case it must be remembered that it is a meaning list and not a spelling list that is being constructed. For this reason the technique of classifying words differed greatly from the technique used by Horn and Thorndike in making up their spelling lists. In general the following rules were followed:

1. Verbs were classified under the form of the present infinitive. The assumption that underlies such a rule is that if the meaning of the infinitive form of a verb is understood, other inflected forms of the verb will also be understood. Although there is no scientific evidence bearing on the problem of the relative difficulty of understanding the different forms of a verb, it is believed that only slight error was introduced by this rule. The slight loss in accuracy is more than offset by the ease of checking only the infinitive form.



2. Nouns which had varying forms due to the addition of suffixes were classified under only one form if the suffix was regularly added, e.g., apportion and apportionment.

3. Nouns whose meanings are changed by suffixes regularly added did not follow the above rule when the addition of the suffix made a significant change in the meaning of the word. For example, the words debt and debtor were classified as different terms since one cannot work out the meaning of the word debtor with only a knowledge of the meaning of the root and the suffix.

4. Terms formed by adding the suffix able to the root form of the term were classified separately. In quite a number of cases it was found that adding able to the root made the word appreciably more difficult. All seventh grade children know the meaning of the word pay yet only thirty-six per cent of the seventh grade children at Winnetka knew the meaning of the word payable.

5. Adjectives were classified under their positive form.

6. Verbs and nouns of similar spelling whose meanings are nearly the same were classified together in most cases. The words issue, record, reserve, supply, and estimate are examples. The writer is now inclined to believe that this rule was an unwise one.

7. Care was taken to insure the proper checking of those terms which are spelled alike but whose meanings are different. For example, a dual classification was used for the following words: bear, policy, interest, and fund. The

central fact that this was a meaning vocabulary and not a spelling vocabulary was kept constantly in mind.

8. Certain words which changed their spelling when <sup>root</sup> suffixes are added such as diversify and diversification were classified together. All cases of this type are noted in the list itself. The criterion that determined the point at issue was that of change in the relative difficulty of the word. If the writer believed that the changed form had not altered the difficulty of the word appreciably, then the terms were combined. That this is a genuine problem is indicated by the fact that the term authority was known by 54 per cent of the seventh grade children at Hervey, Ill. while only 38 per cent of them knew the meaning of the word authorize.

Personal judgment entered into the classification in a way that may have produced appreciable error at certain points where words of possible varying difficulties were classified together. Nevertheless, no method of solving the problem is at hand as yet and some subjectivity will have to be permitted until further studies have been made in this field.

9. Root words were classified separately from those roots to which prefixes had been added. Thus, paid and unpaid were classified as different terms, as were capitalia-ation and overcapitalization. Whether this rule was necessary is problematical. If there proves to be little change in difficulty as the result of adding a prefix, the frequencies of terms classified separately can simply be added together.

10. Where terms are compounded, classify them as one word when the meaning of the compound term is different from the meaning of the two terms separately. If the term does not gain a meaning different from a mere addition of terms, classify each term separately. Where common usage links certain terms together, put them together in classifying.

#### Conclusion

On the whole, the above rules proved satisfactory. The one defect, if any, was that of over-refinement. Perhaps less attention need be paid at the outset to the separate classification of the varying forms of the word in respect to conjugation, inflection, or addition of prefixes and suffixes.

## CHAPTER V

### A MASTER LIST OF BUSINESS TERMS

In the following pages is presented a master list of the common business words in the English language. Approximately 2,000 words are included in this list. Before the reader studies this list of words his attention should be called to the following points:

First, the length of the list is an indication of the great importance of commercial activities in human living. The extensity of the list is also an indication that training in business essentials should occupy a more important place in the curriculum of the school than it does today.

Second, the reader should be warned that many of the words in this list possess a popular, non-technical meaning in addition to their technical business meaning. For this reason, the business meaning of the term may not be apparent until one looks it up in the dictionary. The words accept, appreciation, ask, apply, and alienate are excellent examples of this point. The writer put each of these words in the list on a separate card 3 x 5 in size, and then wrote the definition of the word below it. However, to include the definition of each of the words below in this paper, would require an additional volume and would hardly be worth the added exactness which it would give.

Third, attention should be called to the great number of business-legal words which appear in this list. This is due,

in large measure, to the complexities inherent in that highly developed social institution which we call property. The wide diffusion of ownership of modern corporations thru the purchase of stock has further increased the number of business-legal terms which one must know in order to be intelligent about the business activities in which he is engaging.

Fourth, the list contains a fairly large number of semi-technical terms whose connection with business is less distinct and clear-cut than is a technical term. No one would hesitate to classify bond as a business term but there might be some doubt regarding the word accumulate. The writer believed that it was better to err on the side of including too many semi-technical terms than too few since it is a simple matter to exclude them if one so decides later. As the list stands at present, different observers will probably agree on from 90 to 95 per cent of the terms. Rigid exclusion of semi-technical terms would increase this agreement to approximately 98 per cent.

A MASTER LIST OF COMMON BUSINESS TERMS

abrasion	administration	amortize
abstract	administrator	amortization
abstract of title	administratrix	amount
abut	admission	anchorage
abutment	admit	announce
accept	admittance	announcement
acceptance	ad valorem	annuitant
accepter	adopt	annuity
accessibility	adoption	annul
accessory	advance	annulment
acclamation	advancement	antecedents
accommodate	advantage	apartment
accommodation paper	advertise	apothecary
account	advocate	applicant
account, bank	affair	application
account, open	affidavit	apply
accountant	affiliate	appoint
accountant, certified	affiliation	appointment
accounts, payable	affirm	apportion
accounts receivable	affirmation	apportionment
accredit	affluence	appraisal
accretion	affluent	appraise
accrue	afford	appreciate
accumulate	agency	appreciation
acknowledge	agent	appreciation
acknowledgment	aggregate	apprentice
acquire	agree	apprenticeship
acquisition	agreement	appropriate
acreage	agreement, verbal	appropriation
act	agriculture	arbitrage
acting	alienate	arbitrate
action	allot	arrearage
active	allotment	arrears
actuary	allow	article
address	allowance	ask
addressee	alteration	"asked"
adjacent	amalgamate	assess
adjourn	amalgamation	assessment
adjust	amend	assessment, special
adjustment	amendment	assessor
administer	amends	assets

assets, capital  
assets, current  
assets, fixed  
assets, frozen  
assets, physical  
assets, net  
assets, net current  
assets, net quick  
asset position  
assets, tangible  
assets, total  
assign  
assignment  
assignate  
assignee  
assignor  
assigns  
assimilate  
associate  
association  
association, voluntary  
assume  
assumption  
assurance  
assure  
assured  
at-the-market  
attach  
attest  
attestation  
attorney  
auction  
auctioneer  
audit  
auditor  
authorization  
authorize  
authority  
average  
award

back  
backing  
back interest  
back taxes  
bad  
bad debts  
bailee  
bailment  
bailor  
balance  
balance sheet  
ballot  
bank  
bank, commercial  
bank, Federal Reserve  
bank, Federal land

bank, intermediate credit  
bank, joint stock land  
bank, land  
bank, national  
bank runners  
bank, savings  
bank, postal savings  
bankable  
bank account  
bank discount  
banker  
banking  
banking house  
bank note  
bank note, national  
bankrupt  
bankruptcy  
bargain  
barter  
base  
basic  
basis  
bawbee  
bazaar  
bear (noun)  
bear (verb)  
bear market  
bearer  
beholden  
belong  
benefactor  
beneficiary  
benefit  
bequeath  
bequest  
bet  
bid  
bidder  
bidding  
bill  
bill (bank note)  
bill head  
bills payable  
bills receivable  
bill of exchange  
Bill of exchange, foreign  
bill of exchange, inland  
bill of lading  
bill of sale  
bimetallism  
blank  
block  
blue-sky  
board  
Board of Directors  
body  
bona fide  
bonanza

bond  
bond, adjustment  
bond, baby  
bond, bearer  
bond, benefit district  
bond, collateral trust  
bond, convertible  
bond, county  
bond, debenture  
bond, divisional  
bond, drainage  
bond, external loan  
bond, farm loan  
bond, federal farm loan  
bond, federal land bank  
bond, first and general mortgage  
bond, first consolidated  
bond, first convertible gold  
bond, first general mortgage  
bond, first guaranteed  
bond, first mortgage  
bond, first mortgage and refunding  
bond, first mortgage trust  
bond, first refunding gold  
bond, foreign  
bond, general  
bond, general and refunding  
bond, general lien  
bond, gold  
bond, gold note  
bond, government  
bond, highway  
bond, improvement  
bond, income  
bond, industrial  
bond, irrigation  
bond, junior  
bond, liberty  
bond, first liberty  
bond, second liberty  
bond, third liberty  
bond, fourth liberty  
bond, listed  
bond, mortgage collateral trust  
bond, mortgage third  
bond, municipal  
bond, no warrant  
bond, personal  
bond, prior lien  
bond, public utility  
bond, real estate  
bond, redeemable  
bond, refunding  
bond, registered  
bond, road

bond, sanitary district  
bond, second liberty loan  
bond, school  
bond, serial  
bond, sinking fund  
bond, soldier bonus  
bond, special assessment  
bond, stamped  
bond, state  
bond, subsidiary  
bond, tax-exempt  
bond, temporary  
bond, term  
bond, terminal  
bond, township  
bond, traction  
bond, Treasury  
bond, underlying  
bond, unified  
bond, unlesn  
bond, unlisted  
bond, United States  
bond, war  
bonded  
bond holder  
bond house  
bondsmen  
bonus  
book (verb)  
books  
bookkeeper  
bookkeeping  
boom  
borrow  
boss  
bottom  
bought  
bounty  
boycott  
brackets  
branch  
breach  
break  
breakage  
broke  
broker  
brokerage  
bucket shop  
budget  
budget, balanced  
budget, unbalanced  
build  
building and loan  
association  
building permit



bull  
bull market  
burden  
bureau  
burser  
business  
business barometer  
business cycle  
buy  
buyer  
by-law  
by-product

calculation  
calendar year  
call  
callable  
call money  
cancel  
cancellation  
candidate  
canteen  
capital  
capital expenditures  
capital, fixed  
capital, free working  
capital gain  
capital loss  
capital position  
capital stock  
capital stock, paid in  
capital value  
capital, working  
capitalist  
capitalization  
capitalization, sole share  
capitation  
cargo  
carrier  
carrier, common  
carry  
carrying charges  
cartage  
cartel  
cash (noun)  
cash (verb)  
cash (Chinese coin)  
cash account  
C. O. D.  
cashier  
cash position  
cash surrender value  
cash value  
casualty insurance  
catchpenny

cellarage  
census  
cent  
centime  
centralize  
centralization  
certificate  
certificate, benefit  
certificate of deposit  
certificate of indebtedness  
certificate, permanent  
certificate, receivers  
certificate, stock  
certificate, temporary  
certification  
certify  
certified accountant  
certified check  
chair  
chairman  
Chamber of Commerce  
chandler  
"Change"  
change (noun)  
change (verb)  
charge  
charge in  
charge off  
charges, fixed  
charter  
chattel  
cheap  
cheat  
check  
check, cancelled  
check, certified  
check, cashiers  
check, traveler's  
check (verb)  
check, out-of-town  
checking account  
circulating medium  
circulation  
civil  
claim  
claim, preferred  
claim, prior  
Class A  
Class B  
clause  
clear (verb)  
clear (adj.)  
clearing  
clearing house  
clearings, bank

clerk	confectionery	correspondent, local
client	confer	correspondence
clientele	conference	cost
close	confidence man	cost, initial
closed shop	confirm	costs, operating
code	confirmation	counsel
codicil	confiscate	counter
coffer	confiscation	counter check
co-heir	congestion	counterfeit
coin	conservative	countermand
coinage	conservation	countersign
collateral	consideration	counter-signature
collect	consign	counting-house
collection	consignor	counting room
collector	consignee	coupon
collective note	consignment	court
colporteur	consolidation	court-house
combination	console	covenant
combine	constitution	covenantor
command	construction	cover
commandeer	consume	coverage
commerce	consumption	crash
commercial	consumer	credential
commission	contest (v)	credit (verb)
commissioner	contingent fund	credit (noun)
commission merchant	contingent liabilities	credit, public
commit	contingent reserve	creditor
commitment	contingent surplus	crisis
committee	continuance	crook
company	contract	crooked
compensate	contractor	crops
compensation	contribute	crown
commodity	contribution	cumulative
common	control	Curb
commute	controller	currency
company, holding	controlling interest	current
company, mortgage	convene	current account
compete	convention	current expenditures
competition	conversion	current liabilities
competitor	convert	current payables
compound	convertible	current ratio
compound interest	convertibility	curtailment
compromise	convey	custodian
comptroller	conveyance	custody
Comptroller General	cooperage	customs
computation	cooperation	Customs House
compute	cooperative	customer
concentration	co-partner	customer's men
concern	coppers	cut
concern, going	copyright	cut-off
concession	corner	cycle
conduct (verb)	corporation	
confectioner	correspondent	

damage	demand	disposition
date	deaise	dispossess
days of grace	demonetization	dispossession
daybook	demonetize	dissipation
deal	demurrage	dissolution
dealer	denominate	dissolve
debasement	denomination	distress
debenture	department	distribute
debenture,	dependent	distribution
convertible gold	deplete	distributor
debit	depletion	district
debit balance	deposit	diversification
debt	deposit, time	diversify
debt, bonded	deposit slip	dividend
debt charge	depository	dividend, back
debt floating	depositor	dividend, common
debt, funded	depository	dividend, extra
debt, limit	depreciate	dividend, preferred
debt, national	depreciation	dividend, special
debt, public	depress	dividend, stock
debt service charge	depression	divisibility
debtor	deputy	dockage
decedent	develop	document
decentralize	development	dole
decentralization	devise	dollar
declaration	devises	domestic
declare	devisor	double eagle
decline	dicker	double entry
decrease	difference	down payment
decree	diffusion	draft
deduct	dice	draw
deduction	direct	drawback
deed	director	drawee
deed, first	directorats	drawer
deed, security	director's shares	drayage
deed, trust	directory	draw up
defalcation	disallow	drop
default	disallowance	drover
defiance	disburse	dry goods
deferred survivorship	disbursement	due
deficiency	discharge	due date
deficit	discount (noun)	duebill
deflate	discount (verb)	dull
deflation	disencumber	dun
defraud	disencumbrance	duplicate
defray	dishonor	duration
defrayal	dismiss	dutiable
delinquent	dismissal	duty
deliver	dispensary	
deliverance	disposal	
delivery	dispose	

eagle	equity	extravagant
earn	equivalent	ex-warrants
earning	escheat	fabricate
earning power	escrow	face
earnings	establish	face value
earnings, net	establishment	facilities
earnings, total	estate	facsimile
easement	estimate	factor
economic	estimation	factory
economics	estoppel	fail
economist	examiner, bank	failure
economize	excess	fake
economy	exchange	fall
efficiency	exchange, foreign	fall due
elastic	exchange, grain	fare
elapse	exchequer	farthing
elect	excise	favor
election	excise tax	favorable
embargo	ex-dividend	Federal Reserve
embark	executive	federation
embarkation	executor	fee
embezzle	executrix	fee simple
embezzlement	except	fee tail
employ	exemption	forriage
employer	ex-officio	fiat money
employment	exorbitance	fiduciary
empirium	exorbitant	figure
emolument	expand	file
empower	expansion	finance (noun)
encumber	expectancy, life	finance (verb)
encumbrance	expend	financial
endorse, indorse	expenditure	financial position
endorsement	expense	financial statement
endow	expense, operating	financial structure
endowment	expense, overhead	financier
endowment, 20 year	expense, running	financing
endowment, 25 year	expensive	finding
endowment, 30 year	experience	firm (noun)
endowment, 40 year	expert	firm (adj.)
endowment, double	expiration	first lien
endowment, semi-	expire	fiscal
endowment, 20 year pure	exploit	fiscal year
engage	export	fixed charges
engagement	exportation	fixture
enhance	express	flat
enhancement	expressage	"fleece"
enrich	extend	float
enrichment	extension	floated
entail	extra	floor
enterprise	exchange rate	floorwalker
entrepreneur	extravagance	florin
equalization		
equipment		
equitable		

flotation	gilded	heir apparent
fluctuate	gilt-edge	heir presumptive
fluctuation	give	heiress
flyer	glut	heritability
fly-by-night	go-to-wall	heritage
forced	gold	high
forecast	gold brick	high grade
foreclose	gold note	hinterland
foreclosure	gold standard	hire
foreign	good	hoard
foreman	goods	hoarding
forfeit	good faith	hold
forfeiture	good will	holder
forge	govern	holding
forgery	government	homestead
form	grade	honor
fortune	grade	honorarium
forwarded	graft	house
found	grant	housing
founder	grantee	huckster
foundation	grantor	hypothesize
franc	gratis	hypothesis
franchise	gratuitous	
fraternal	gratuity	identification
fraud	greenback	identify
fraudulent	grocer	idle
free	grocery	illegal
free on board	gross	illegality
freehold	ground	immovables
free trade	ground floor	immune
freight	ground plan	immunity
freightage	guarantee	inpanel
frontage	guarantee	impecunious
front foot	guaranty	import
frugal	guardian	importation
frugality	gulden	impose
fulfill		impost
fulfillment	haberdasher	impound
full reserve	half dollar	improvement
fund (verb)	half-eagle	income
funds	half-penny	income account
furrier	hallmark	income, earned
furriery	hand, on	income, fixed
future	handle	income, gross
	hardware	income, net
	hatter	income, unearned
	haulage	incoming
gage	hawk	incontestible
gain	hawker	inconvertible
gainful	hazard	incorporate
gamble	hazard, moral	incorporation
gambler	head	increase
gambling	headquarters	incumbrance
garnish	hearing	incur
garnishee	hedge	indebtedness
garnishment	heavy	indemnification
get-rich-quick	heir	indemnify

indemnity	issuance	liable
indenture	issue	liability
index number	issue, junior	liability, net
individual	item	license
indorse, endorse	itemize	lien
indorsee	jeweler	lien, prior
indorsement	jewelry	limited
indorser	job	line
industrial	jobber	liquid
industry	joint	liquidate
inexpensive	joint account	liquidation
infant	joint holder	list n.
inflate	joint-life	list v.
inflation	joint-stock	livestock
infringement	journal	load
inherit	journalize	loan
inheritance	judgment	loan, call
inheritor	junior	loan, liberty
insolvency	justice	loan, mortgage
insolvent		loan, perpetual
installment	kopeck	loan, time
institution		loan value
instrument	labor	locate
insurable	laborer	location
insurance	lading	lockout
insurance, life	land	"long"
insurance, term	land, farm	long pull
insurable interest	land, farm	long term
insure	landowner	lose
insured	lands, public	loss
insurer	lapse	lot
intangible	launch	lots, odd
intendant	law	lottery
interest (share)	lawful	"low"
interest	lawyer	lowering
interest, accrued	lay (impose)	Ltd.
interest-bearing	lease	lucrative
interest charges	leasehold	lucre
interest-paying	lesseeholder	luggage
interest rate	legacy	lump sum
interest requirements	legal	luxury
interests, private	legality	machines
internal revenue	legalize	magnate
interstate commerce	legal reserve	mail
intestate	legal tender	maintain
invalid	legatee	maintenance
invalidate	lend	majority
inventory	lessee	make
invest	lessor	maker
investment	let	make out
investment banker	letter of credit,	manage
investment banking	commercial	management
house	letter of credit	manager
investment, business	letter of credit,	manipulate
man's	traveler's	manipulation
investment trust	level	manipulator
investor	level premium	manual
invoice	level rate	manufacture
irredeemable	levy	

manufacturer  
margin  
marginal  
mark (signature)  
mark (coin)  
market  
market, open  
market value  
marketable  
marketability  
mart  
material  
mature  
maturity  
means  
melon  
medium  
medium of exchange  
meet  
member  
membership  
memorandum  
mercantile  
mercenary  
merchandise  
merchant  
merger  
metropolis  
middle-man  
mileage  
mill  
millionaire  
minerals  
mining  
minor  
minority  
mint  
minutes  
misappropriate  
misappropriation  
misdemeanor  
misemploy  
misemployment  
miser  
mismanage  
mismanagement  
mite  
monetary  
monetize  
money  
money center  
money of account  
money order  
monometallism  
monopolist  
monopolize

monopoly  
mortality  
mortality table  
mortality, American  
experience table of  
mortgage  
mortgage, blanket  
mortgage, chattel  
mortgage, farm  
mortgage, first  
mortgage, first trust  
mortgage, general  
mortgage, open  
mortgages, open end  
mortgage, purchase  
money  
mortgage, real estate  
mortgage, second  
mortgage, third  
mortgages  
mortgagor  
motion  
mountebank  
movement  
municipal  
municipality  
mutual  
mutual company  
"  
"narrow"  
negligence, contributory  
negotiable  
negotiate  
negotiation  
net  
nickel  
nominal  
nominate  
nomination  
nominee  
non-cumulative  
non-forfeitable  
non-negotiable  
no par  
no par value  
non-performance  
non-profit making  
non-speculative  
no protest  
notary  
notary public  
note  
note, commission  
note, Treasury  
noteholder

notes, payable  
note, promissory  
note, purchase money  
notes receivable  
notes, short-term  
note, treasury  
note, victory  
notice  
notification  
notify  
not-sufficient-funds  
null  
obligate  
obligation  
obligation, direct  
obligation, joint  
obligation, purchase  
money  
obligee  
obligor  
obsolescence  
occupance  
occupancy  
occupant  
occupation  
offer  
offered  
offering  
office  
officer  
official  
officiate  
old line  
omit  
open (verb)  
open (adj.)  
opening  
operate  
operating  
operation  
operations  
operator  
option  
opulent  
oral  
order  
order, stop-loss  
ordinary life  
organize  
organization  
original  
outbid  
outgo  
outlaw (verb)  
outlay

outlook	patronize	policyholder
output	pawn	policy, 5 year term
outstanding	pawnship	policy, installment
overbid	pay	policy, life
overcapitalize	pay off	policy, return premium
overcapitalization	payable	policy, renewable term
overcharge	payables	policy, 20 year en-
overdraft	payee	dowment
overdraw	payer	policy, 20 year
overdue	paymaster	pure endowment
overexpand	payment	policy, term
overexpansion	payment, limited	pool
overextension	payment, partial	poor
overhead	payment, whole term	portemonnaie
overissue	payment, fifteen	portorage
overproduction	pecuniary	position
overseer	peddle	possess
oversell	peddler	possession
overtime	pelf	possessive
owe	penalty	possessor
own	pence	pest (verb)
owner	penny	postage
ownership	penny-wise	postal order
ownership certificate	pension	postdate
	pensionary	postmaster
paid	per capita	postoffice
paid-in-full	per cent	postpaid
paid-up	percentage	postpone
panic	perform	pound
paper	performance	power
paper, commercial	permission	power, financial
paper money	permit	power of attorney
paper profit	perpetuity	preempt
par	perquisite	preemption
par value	personal	preference
parcel post	personalty	preferred
parity	personnel	preferred, accumulating
parol	peso	preferred, first
parimony	petty cash	preferred, second
partial payment	pharmacy	preferential
participating	physical	preferred, participating
participation	picayune	preferred prior
partner	piecework	preferred, senior
partnership	pilotage	prelisting
party	"pin money"	premise
pass (dividend)	pit	premium
pass (convey)	plant	premium (bond)
pass book	pledge	premium, net
patent	pocketbook	premium, gross
patrimony	point	prepay
patron	policy (business)	prepayment
patronage	policy (insurance)	prescription (legal)
	policy, income	present (verb)
	policy, convertible	



presentation	public	reclamation
president	public credit	recompense
price	public improvement	reconcile
primage	public service	reconciliation
prime	public utility	record (verb)
primaogeniture	purchasable	record (noun)
principal	purchase	recourse
principal amount	purchaser	recourse, without
principal sum	purchasing power	recover
prior	purse	recovery
prior charge	purser	redeem
prior redemption	"put"	redeemable
priority	pyramiding	redemption
private	qualification	rediscount
privilege	quantity production	reduce
probate	quarter	reduction
proceeds	quarter day	re-export
proceeding	quarter eagle	referee
process	quietus	reference
procuration	quitclaim	refinance
procurator	quitrent	refund
produce (verb)	quorum	register
produce (noun)	quotation	registrar
product	quote	registration
production	racket	registry
productive	rails	regulate
productivity	raise (noun)	regulation
"professional"	rake-off	regulative
profit	range	reimburse
profitable	ratable	reimbursement
profitless	rate	reinstate
program	ratify	reinstatement
promise	ratiification	reinvest
promise to pay	rating	reinvestment
promissory	rating book	reissue
promissory note	ratio	release
promote	ratio, operating	relinquish
promoter	reaction	relinquishment
promotion	real (adj.)	reloan
property	realize	remission
property, fixed	realty	remit
property, personal	rebate	remittal
proprietary (noun)	recapitalization	remittance
proprietor	recapitalize	remitter
pro rata	receipt	remunerate
prospects	receipts	remuneration
prospectus	receipts, gross	remunerative
prosper	receipts, net	render
prosperity	receipts, ordinary	renew
prosperous	receivable	renewal
protect	receivables	rent
protection	receive	rental
protectionism	receiver	rente
protective	receivership	renter
protest	recession	reorganization
protocol	reciprocity	reorganise
provide	reckoning	reparation
provision	reclaim	repay
proxy		repayment
		replace

report	sabotage	shipper
repairs	safe	shipping
repudiation	safety	shop
reputable	safety deposit box	shopkeeper
reputation	salable	shopping center
repurchase	salability	short
requirement	salary	shortage
requisition	sale	short-term
rescind	sales	short time
rescission	salesman	shrinkage
reservation	salesmanship	shyster
reserve	saleswoman	sight
reserve account	salvage	sign (verb)
residence	sample	signature
residuary legatee	satisfaction	signature, joint
resign	satisfy	single standard
resignation	save	single tax
resources	saver	sinking fund
restitution	savings	site
retail	savings account	sixpence
retainer	savings, postal	slack
retire	savings, war	slump
retired	scarcity	smash
retirement	schedule	society
retiring	scrip	sold
retrench	seal	solicitor
retrenchment	seasoned	solvency
return (noun)	secretary	solvent
revenue	section (land)	son
revenue expenditure	secure	sound
revenue, gross	secured	soundness
revenue, internal	security	sovereign
revenue, operating	security holder	specie
revenue, total gross	securities, junior	specify
reversion	seigniorage	specification
review	seize	speculate
revocable	seizure	speculation
revocation	sell	speculative
revoke	senior	speculator
reward	sequester	spend
rich	sequestration	spendthrift
riches	serial	split
right	series	"spotty"
rise	serve	spurious
risk	services	squander
risk-bearing	services	"square deal"
rich, business man's	set-back	stability
rolling stock	set-off	stable
royalty	settle	stake
ruble	settlement	stall
ruin	share	stamp
rule	shareholder	stamp, war savings
ruling	sharp	staple
rupee	shilling	standard
rural credit	ship	standard of living
	shipment	standardization

standing  
state (v)  
statement  
statement, earnings  
statement, net debt  
stationer  
stationery  
status  
statute  
statute of limitations  
statutory  
steerage  
sterling  
steward  
stipend  
stipendiary  
stipulate  
stipulation  
stipulator  
stock  
stock, bank  
stockbroker  
stock, common  
stock exchange  
stockholder  
stock jobber  
stock market  
stock, ordinary  
stock, preferred  
stock, watered  
stop payment  
storage  
store  
storehouse  
stowage  
straddle  
strength  
strike  
stringency  
stringent  
strong  
structure, capital  
stub  
subcontract  
subdivision  
subject  
sublet  
suborn  
submit  
subpoena  
subrogation

subscribe  
subscription  
subscription rights  
subsidiary  
subsidize  
subsidy  
subsistence  
substance  
substance  
substantial  
suburban  
succeed  
succession  
successor  
sucker  
sue  
suit  
suitor  
sum  
sumptuary  
superannuate  
superannuation  
supercargo  
superintendent  
supervision  
supply  
support  
surcharge  
surety  
suretyship  
surplus  
surplus account  
surplusage  
surrender  
surrogate  
surtax  
suspend  
suspension  
sweatshop  
sweepstakes  
swindle  
swindler  
swindling  
swing  
syndicalism  
syndicate  
system  
tael  
take  
talesman  
tally

tape price	textiles
tare	thaler
tariff	thrift
tax	thrifty
tax back	thrive
tax, capital	tick
tax, direct	ticker
tax, estate	tickler
tax, excise	tight
tax-exempt	time bill
tax, federal	time draft
tax, general	time note
tax, income	tip
tax, indirect	tipster
tax, inheritance	tithe
tax, normal	tithing
tax, nuisance	title
tax, personal	title, absolute
tax, poll	token
tax, property	tone
taxable	toll
taxation	tonnage
taxing power	tontine
taxpayer	Torren's system
tax rate	tort
technology	total
teller	total disability
teller, paying	towage
tenancy	township
tenant	tracer
tenantry	tract
tender	trade
tenement	trade discount
tenpenny	trade, foreign
term (insurance)	trademark
term, five year	trader
term, five year convertible	tradesman
term, renewable	trade-union
terminable	trading unit
terminate	traffic
termination	transact
territory	transaction
testament	transfer
testate	transferable
testator	transport
testatrix	transportation
testify	treasure
testimonial	treasure-trove
testimony	treasurer

treasury	unproductive
treasury note	unprofitable
trend	unqualified
trespass	unrecorded
triplicate	unregistered
truckage	unremunerative
trust	unrestricted
trust (business combination)	unsalable
trust company	unseasoned
trust fund	unsecured
trust, investment	unskilled
trust, living	unsound
trust, voluntary	unstable
trustee	unsuccessful
tuition	unsystematic
turn	untenanted
turnover	unthrifty
twopence	unvalued
unauthorized	upkeep
unbusinesslike	usufruct
unconstitutional	usurer
underbid	usurious
undercapitalization	usurp
underpay	usury
undersell	utility
undersigned	utilization
undertake	utilize
undervaluation	
underwrite	vacancy
underwriter	vacant
undigested	vacate
undue	valid
unearned	validate
unearned increment	validity
unemployed	valorization
unemployment	valuable
unencumbered	valuation
unfulfilled	valuation, assessed
unfunded	value
unincorporated	value, book
union	value, fair
unionism	value, intrinsic
unit	value, present
unit of value	value, surrender
unite	value, total
unlicensed	value, true
unlisted	valued
unload	vault
unofficial	vend
unpaid	vendee
	vender
	vendor

venture  
verification  
vest  
vested  
veto  
vice-president  
vocation  
void  
voidable  
volume  
voting power  
voting trust  
vouch  
voucher

wage-earner  
wages  
waive  
waiver  
Wall Street  
ward  
ware  
warehouse  
warrant  
warrant, fractional  
warrant, stock  
warrant, stock purchase  
warrantable  
warranter  
warranty  
"wash"  
"wash sales"  
waybill

weakness  
wealth  
wealthy  
weather, financial  
well-managed  
well-to-do  
well-seasoned  
wharfage  
wherewithal  
wholesale  
whole life  
wild cat  
will  
withdraw  
withdrawal  
witness  
work  
works  
workman  
workroom  
workshop  
worth  
worthless  
writ  
written  
write-off  
  
yearbook  
yen  
yield  
  
zoning  
zoning ordinance

## CHAPTER VI

### ANALYSIS OF BOOKS AND ARTICLES ON INVESTMENTS

The value of a study of the frequency of occurrence of business words in investment literature hinges almost entirely upon the value or importance of the material sampled. Certain studies of this type in other subject-matter fields have not been able to justify their conclusions because it was not clear that the materials analyzed were those which people ought to read. Clearly, if we have no assurance that the material selected for analysis is that which people should read, then our selection of the most frequent concepts in these pages as important for the layman to know, falls to the ground.

What materials in the field of investment ought the layman to read? Manifestly, the layman should read those books or articles on investment which have been written by experts in this field. Such experts know the science of investment and have put their understanding into words. It is, then, in the study of their writings that the layman can perfect himself in gaining an understanding of the activities which are performed by an investor who does this task scientifically. Nevertheless, books written by the scientific expert have one major disadvantage. Usually they have been written in highly technical language, understood by other experts, but unintelligible to the lay investor. Therefore, it becomes necessary to select for analysis books and articles which have been written by competent experts with the lay reader in mind.

It is in such books that the lay reader will discover the science of investment. It is true that this science is incomplete and sometimes fragmentary. However, it represents the best that it is possible to find, and as yet no better guide to investment behavior can be found. The layman, then, will gain an intelligent understanding of methods of investment by carefully studying those materials which have been written for him by experts in this field. Since the investment of money is an activity carried on by immature children and mature adults, almost everyone who reads, then, will be seeking an understanding on how to invest money thru study of some kind. The eight year old child, for example, reads a circular sent out by the local bank which describes the way money gradually accumulates when one is careful to save systematically. The adult may pick up the daily newspaper, turn to the financial page, and study the types of investment recommended there by the financial editor.

Such a process of learning how to invest money appears absurdly simple. Why must the school be concerned with an investment curriculum? The answer to this question was indicated in Chapter I. That answer is in substance as follows:

Investment is a specialized, technical experience. Its technical nature is due to the fact that investment is no longer a simple concrete activity but one which is highly abstract. One no longer purchases a horse, or a cow, or a farm as an investment but rather he exchanges his money for some symbol of wealth such as a life insurance policy, a note, a mortgage, a bank account, or a bond. Since these are abstractions they are difficult to understand. Further, certain phases of this type of investment



have been entirely foreign to the lives of most people. Training should be given at those points where some difficulty or need has arisen. That the field of investment is one where a great deal of educational effort is necessary is a commonly accepted fact.

Where shall we find out which books and articles in the field of investment are the ones which the lay investor should read? Again we go to the expert for advice. The writer secured a list of such books by asking for this information from the well-known schools of commerce, finance, and administration throughout the country. Fifteen schools replied to this request and their recommendations made a list of about seventy-five books and periodicals which were scientific in their nature and which were written primarily for the non-technical reader.

Why does not our curriculum problem end at this point. Why is not the lay reader able to select books from such a list, study them carefully, and thus perfect himself in the science of investment. There is one serious obstacle to such a procedure. Business is a specialized field and employs specialized or technical concepts not familiar to the layman. The technical nature of these books and articles makes them difficult to understand.

The problem for the curriculum worker, then, is to determine thru analysis the business words used by these writers, the frequency of the occurrence of these words, and finally, the difficulty which each of these words has for the typical reader.

When information of this type is available it becomes possible

to set up a program of teaching to remedy any shortcomings which the reader of such material may have.

#### The Material to be Sampled

With two or three exceptions all of the books and articles analyzed were those which had been recommended by the investment experts consulted. Those not recommended by them were clearly of a character which stamped them as having distinctive merit. The list of materials analyzed follows:

1. Safeguarding Your Future, Chicago: The Daily News Publishing Co., 1924. (A pamphlet containing a series of talks on finance by investment experts.) Every third page beginning with page 3 was sampled.
2. Investments, New York: American Institute of Banking, 1924. Every 7th page to page 178 was sampled beginning with page 1, then every twenty-third page to the end of the book.
3. Schnedler, William A., How to Get Ahead Financially, New York: Harper and Brothers, 1925. (Pages 98 to 153 omitting all pages ending in 0 and 5.)
4. Moody, John., How to Invest Money Wisely, New York: Moody's Investor's Service, 1915. (All pages ending in 0 or 5.)
5. Hall, Henry, How Money is Made in Security Investments, New York: Funk & Wagnalls Co., 1916. (Every page divisible by 7 was sampled.)
6. Metropolitan Life Insurance Co., How to Invest Your Money, (All the material in this pamphlet was analyzed)
7. Parkinson, S. B., Investor's Guide, Chicago: The Chicago Tribune, 1927. (All the material in this pamphlet was analyzed.)
8. Illinois Merchants Trust Co., Banking Made Plain, Chicago: 1928. (A pamphlet containing 7200 words)  
Winnetka Trust & Savings Co., Bank Information, Winnetka; Ill., 1927. (A pamphlet containing 2700 words which describes the work of a modern bank).
9. Kirshman, John Emmet, Principles of Investment, Chicago: A. W. Shaw Co., 1925. (Every odd-numbered page in Chapters XIII and Chapters XIV. pp. 325-389.)

10. Ibid. (Every word in Chapters XVIII and XIX which deal with general methods of investment)
11. Ibid. (Chapter XXI, pp. 632-675, skipping pages ending in 0 and 5.)
12. Guenther, Louis, Investment and Speculation. Chicago: LaSalle Extension University, 1922. (Every 7th page beginning with page 1)
13. Gries, John M., and Taylor, James S. How to Own Your Own Home, Bulletin of the Department of Commerce, Supt. of Documents, Gov't Printing Office, Washington D. C., 1925. (Every page was sampled)
14. Atlantic Monthly, The Financial Counselor, Concord, N. H., (Every page in the above financial column for months of August, September, and October 1927 and for January and February, 1928.)
15. Daily Journal of Commerce, Investor's Aid, Chicago. (Entire column for the following dates in 1927: Feb. 14, March 15, April 6, 16, 19, 21, 22, 23; May 4, 6, 8, 9, 10, 17, 18, 24.)
16. Hood, Frazier, Everyman's Insurance, New York: D. Appleton Co, 1925. (pp. 55-92)
17. Rice, Samuel O. Fundamentals of Investment, Chicago, 1925 A. W. Shaw & Co., (All of Chapter IX and X)
18. Ibid. (pp. 132-167)
19. Rice, Samuel O., Safety Zones for Dollars, Chicago: Investment Bankers of America. (A series of undated articles prepared for publication in daily newspapers thruout the United States. Enough articles to make 10,000 words were selected).
20. a. Revenue Act of 1926, Speech of Hon. Reed Smoot of Utah in the United States Senate, Thursday Jan. 28, 1926: Washington: Govt. Printing Office.  
b. Mills, Ogden. Some Observations on our Federal Tax System, Speech delivered before the Economic Club of Worcester, Mass., Friday Nov. 11, 1927.  
c. Mills, Ogden. The Treasury Department, Address before the Women's University Club, Washington D. C. Oct. 12, 1927.  
d. Mills, Ogden. Radio Announcement Regarding the Current Offering of 3½ per cent Treasury Notes of 1920-32, Sept. 6, 1927.

- e. Mellon, A. W., The Work of the Treasury Department, Address given at the Seventh Annual Luncheon of the Women's National Republican Club at the Waldor-Astoria Hotel, New York, Jan. 14, 1928.

(All of the above material was analyzed and included 10,000 words)

21. Robins, Kingman Hott, Mortgage Handbook, New York: Doubleday, Page & Co. 1916. (pp. 55-79 and Chapter VI)
22. Sakolski, A. Elements of Bond Investment, New York: Ronald Press, 1921. (Chapter I, pp. 1-35)
23. Ibid. (Chapter XIII on Real Estate Mortgages and Farm Loans and one-half of Chapter on National Government Bonds)
24. Ibid (Chapter VIII, Investment Bonds Classified).
25. Salliers, Earl A. Financial Statements Made Plain. New York: Magazine of Wall Street, 1919. (Every page)
26. Chamberlain and Edwards. Principles of Bond Investment. New York: Henry Holt & Co., 1927. ( pp. 52-109) Every other page)
27. Ibid. (pp. 8-51. Every even-numbered page).
28. The Literary Digest. Investments & Finance, (All the material in this financial column for seven issues beginning Feb. 4, 1928)
29. New York Life Insurance Co:
- a. Advantages of Ordinary Life Policies. New York, 1926. (Every page, 4,000 words)
- b. Advantages of Endowment Insurance, 1926. (Every page, 2250 words)
- c. Advantages of Limited Payment Policies, 1927, (Every page, 3200 words)
- d. Atwood, Albert W., An Elusive Panacea, Philadelphia: The Saturday Evening Post, Feb. 26, and March 8, 1924. (Quotations from these articles published in a pamphlet called "The Faithful Servitor", 780 words)
30. Lincoln, Earle. Testing Before Investing, New York: A. W. Shaw Co. 1926, (Every page divisible by 3)
31. Chamberlain and Edwards, Principles of Bond Investment, New York: Henry Holt & Co., 1927. (pp. 422-478. Every even-numbered page.)

## The Size of the Sample

In all cases ten thousand word samples were taken from the various books or articles. Frequently this was due to the fact that the pamphlet or article contained only 10,000 words. Again, the chapters in investment books which were sampled contained about this number of words very frequently. Perhaps the word "block" is better than sample since frequently the material chosen was not a sample in the statistical sense unless we considered it as representative of a great deal of material like it.

### Techniques of Checking to Determine the Frequency of Occurrence of Business Words

The problem of working out a technique of checking which was economical of time and effort, and accurate was a difficult one. The first three or four samples were checked in the following fashion. The master list of business terms had been typewritten single-space on a large sheet of paper 24 inches by 36 inches. There were five columns of words with space in between for check marks. Each time a business word occurred in these books and articles, a tally mark was placed after the word on the tally sheet. All tally marks were made in this manner, //// with a diagonal line thru these four to indicate a group of five marks. A hard lead, well-sharpened pencil was used to insure legible marks. Whenever a word occurred which was not in this preliminary master list, it was written in.

When one 10,000 word sample had been analyzed, the tally marks were counted and recorded on a separate sheet. Then the tally marks were erased and the second and third samplings analyzed in the same manner. This technique of checking was not satisfactory because it necessitated the erasing of tally marks after each analysis.

The second method of analysis was to typewrite the master list on letter-size paper and by the use of carbon paper, make eight copies at each typing. The words were typed single-space, and with three columns of words to each sheet. These columns were spaced as far apart as possible in order to leave sufficient room for the tally marks. Thirteen sheets of paper were required to include the entire master list.

These thirteen sheets of paper were then spread out on a large table and the work of checking carried on in the manner described above. However, this second method of checking proved no more satisfactory than the first. Thirteen pages of letter-size paper occupy a rather extensive area and a great deal of movement was necessary for a reader to make the proper tallies. This lengthened the time needed for analysis considerably.

To remedy this defect a master list of the 300 commonest words was constructed using the data obtained from the analysis of the first six samples. This master list was placed upon a single sheet. Thus there was one sheet which contained those words occurring most frequently in addition to the other thirteen sheets. Since these words were the ones occurring most frequently in the material analyzed, most of the tally marks were then

concentrated on this sheet thus speeding up the checking considerably. This method, then, proved fairly successful. It was varied in the following two ways. First, an attempt was made to utilize clerical service by employing two assistants to put in tally marks while the writer dictated the business words occurring in the particular sample under analysis. A second method was to utilize an assistant to put in the tally marks on the thirteen sheets of low-frequency words as the writer dictated them while he checked those words which went on the high-frequency or 300 word master list.

The number of sheets was further reduced by putting four columns of words single-spaced on a single sheet. With these refinements it was possible for one person to check the business words in a sample of ten thousand words in from three to five hours.

After the first 210,000 running words had been analyzed, still a different technique was experimented with. A new 300 word high-frequency list was compiled by adding up the separate entries for words which appeared frequently and these words were typewritten on the same size sheets as before but they were double-spaced and four columns of words were placed on a sheet. No other sheets were used and in the checking of the remaining 100,000 words, all words not in this typewritten list were written in when they first appeared. If they appeared a second time, the usual tally marks were set down for them. The double-spacing made it possible to write these words in between the typewritten entries in the proper alphabetical arrangement.

The time saved by the confining of the checking to three or four sheets of paper more than compensated for the amount of time which it took to write in the words not in the 300 word list. In each sample it was necessary to write in only about sixty or seventy words.

If a ten thousand word sample is to be analyzed, the best length checking list would probably be the 500 commonest words since this would reduce the number of words which one would have to write in to a negligible amount.

#### The Accuracy of the Checking

Most of the words were checked, underlined, or dictated by the writer. What are the possible sources of error in such checking, underlining, and dictation?

The first source of error lies in failing to remember which words have been designated as business words on the master list. That this error was at a minimum is indicated by the fact that the common technical investment terms are fewer than 500, and also that the writer had secured much practice in memorizing the list of words thru working them out and then typing the lists. Further, seeing words as they appear in context makes their detection less difficult. Hence, it is highly probable that errors due to this cause are relatively few and that they occur more frequently among the semi-technical words than in the technical business words.

A second source of error is that of forgetting when certain words are checked under their root form or when they are checked



as separate words. For example, the words deal and dealer were checked separately but the words audit and auditor were not. If each of these words appears as frequently as the other there will be a slight error since there will be compensation set up and little discrepancy will result. This type of error can be reduced in subsequent studies when more is known about the change of meaning and difficulty involved in the change of form, or thru the addition of prefixes and suffixes.

A third source of error lies in the checking of compound terms. Unless care is exercised the words may sometimes be checked separately and then at times be checked as a compound term. However, the seriousness of this type of error is minimized since failure to check a term as compound, merely results in increasing the score of the individual terms of which it is comprised.

A fourth possible source of error is that of losing one's place in a book, thus repeating or omitting certain parts of the subject matter. To obviate errors from this source, the index finger of the left hand was always kept upon <sup>word</sup> the until a check mark had been tallied for it in the proper place.

An adding machine was used to secure the sums of the frequencies of the terms which appeared in the various sources thus eliminating error at this point.

These facts indicate that the checking was done in such a manner that the results may be taken as reliable and accurate. Errors, when and if they occur, will be found among those terms which appear relatively infrequently. The business terms found in the 310,000 word analysis appear below in Table VI.

TABLE VI

THE MOST COMMONLY USED BUSINESS WORDS

Word	f	Word	f
bond	1737	invest	285
investment	1399	obligate, ion	281
company	1111	principal	272
security	996	funds	269
stock	850	credit	264
business	836	increase	262
issue	790	return	259
value, valuable	771	own, owner	251
investor	754	loss	239
pay, paid	753	cash	226
percent, %	718	land	224
interest	633	yield	221
amount	626	make	201
insure, insurance	626	demand	196
loan	618	expense, ive	191
price	577	total	189
policy (insurance)	572	risk	183
bank	569	individual	175
mortgage	541	reduce, tion	172
income	537	assets	165
market, marketing	536	deposit	157
money	533	date	155
payment	513	law	154
corporation	506	basis	154
premium	478	note	154
finance, financial	465	sound, er, est	154
property	458	protect, ion	153
rate	452	payable	153
buy, buyer	399	farm	150
tax	382	provide, sion	148
profit	361	dollar	147
capital	356	government	147
industry	355	life insurance	145
debt	340	trade	145
purchase	340	maturity	144
earnings	328	net	142
dividend	326	receive	142
borrow, er, ing	322	enterprise	142
speculate, ion, ive, or	318	check	142
sell	316	sum	141
high, higher, est	310	statement	141
cost	298	record	138
share	296	account	138
operate, operation	296	diversify	
safe, safety	293	diversification	137

TABLE VI  
(Cont.)

Word	f	Word	f
endowment	137	sinking fund	93
mature	136	economic	92
sales	136	list	92
banker	135	decline	91
surplus	134	sale	91
contract	128	assume	91
advantage	128	manufacture, er	90
factor	127	position	90
default	125	convertible, sion	90
guarantee	125	consideration	88
services, services	124	let	88
savings	122	associate, ion	88
management	122	rent	88
organize, ation	122	stock exchange	88
holder	121	power	87
current	121	accept, acceptance	86
low, or est	121	apply	85
office, officer	121	outstanding	84
offer, offered	120	exchange	84
accumulate, ion	119	current assets	84
reserve	116	good	82
public	116	establish, ment	82
house	115	advance	82
term	114	develop, ment	82
margin	114	production	81
item	114	base	81
sold	114	public utility	81
concern	111	cover	80
wealth	110	transact, ion	80
supply	109	certificate	80
trust	107	bond, municipal	77
system	106	hold	77
benefit	106	requirements	77
revenue	104	fail, failure	77
preferred stock	103	product	76
depreciate, ion	103	balance	76
commerce	103	institution	75
due	101	collateral	75
common stock	101	estate	75
farm mortgage	99	work	74
distributes, or, ion	97	title	74
improvement, improve	96	worth	73
legal, legally	95	report	73
estimate	94	afford	73
charge	93	figure	73

TABLE VI  
(Cont.)

Word	f	Word	f
stockholder	72	face	54
bondholder	72	assessment	54
conservative	71	future	54
claim	71	lien	54
rights	71	repudiate	54
promote, promoter	71	speculative	53
taxation	69	secure	53
installment	69	profitable	53
municipal	69	district	52
produce (verb)	69	stability	52
balance sheet	68	authority	51
employment	68	paper	51
specify	68	excess	50
treasury	68	fraud, fraudulent	50
holdings	65	department	50
broker	65	customer	49
interest rate	64	banking	48
drawn	63	expenditures	48
mortgage, first	63	capital, working	48
difference	62	standard	48
prosperity	62	policy (business)	47
trust company	62	marketability,	
fluctuate, ion	61	marketable	46
endorsement, endorse	61	collect, ion	46
liability	60	face value	46
appreciate, ion	60	assure, assurance	46
beneficiary	59	convert, conversion	46
redeem, redemption	59	receipt	45
dependent	57	strong	45
tax-exempt	57	average	45
dealer	57	fund (verb)	45
bond, liberty	57	panic	45
retire, ment	57	income tax	44
volume	57	burden	44
common	56	commission	44
plant	56	debenture	44
quotation	56	participating	44
bought	56	trustee	44
order	55	authorize, ation	44
level	55	gross	44
depression, depress	55	policyholder	43
par	55	percentage	43
spend	55	option	43
agreement	55	loss	43
privilege	55	equipment	43
discount	54	gamble	43

TABLE VI  
(Cont.)

Word	f	Word	f
Wall street	42	commodity	32
refund	41	take	32
compete, competition	41	practice	32
levy	41	rental	32
labor	41	reaction	32
limited payment	41	decrease	31
material	41	unit	31
judgment	41	net earnings	31
exempt	41	good-will	31
debt, funded	41	net premium	31
subsidiary	41	signature	31
inventory	40	crops	31
secured	40	bear	30
amortization	40	pool	30
callable	40	fixed assets	30
written	40	cancel, cancellation	29
payee	40	point	29
interest charges	39	offering	29
coupon	39	output	29
prospects	39	calculation	29
support	39	firm	29
substantial	39	stock market	29
application	39	agriculture	29
liquidate	39	committee	29
lend	38	maintain	28
bull	38	bull	28
preferred	38	cent	28
short term	38	assessed valuation	27
promise	37	reorganization	27
favorable	37	deal	27
par value	37	line	27
act	37	lease	27
negotiate	37	earning power	27
currency	36	renewal	27
contribute	36	combination	27
net income	36	consolidation	27
possessions	36	interest (share)	26
subdivision	36	promise-to-pay	26
sign (verb)	35	expensive	26
permit, permission	34	repayment	26
agent	33	withdraw	26
appraise, appraisal	33	stipulate	26
bureau	33	draft	25
bond, state	32	maker	25
expansion	32	site	25

TABLE VI  
(Cont.)

Word	f	Word	f
active	25	administration	17
policy, term	24	franchise	17
dispose	24	file	17
build	24	open	17
engage	24	advertisement	17
settle, ment	24	allow	17
denomination	24	alloy, allotment	17
equivalent	23	program	16
second mortgage	23	bond, government	16
expert, exportation	23	extension	16
transport	23	worthless	16
inflation	23	document	16
handle	23	reference	16
merchandise	23	mutual	15
long term	23	thrift	15
declare	23	soundness	15
boom	22	ratify	15
party	22	venture	15
facilities	22	budget	15
rule	22	disburse	15
foreign	22	no per	15
guarantor	21	partner	15
satisfy	21	floating	15
outlook	21	close	15
bill-of-exchange	21	taxable	15
ratio	21	issuance	15
capital structure	20	retail	15
certify	20	mortgage company	14
bucketshop	20	salesman	14
present, presentation	20	unsound	14
Federal land bank	20	debt limit	14
favor	20	client	14
expire	20	utility	14
deficit	19	tenant	14
creditor	19	occupy, occupance	14
accrue	19	undertake	14
assumption	19	bearer	13
drawer	18	anrtax	13
means	18	owe	13
majority	18	endowment, twenty	
ordinary life	17	year	13
whole life	17	fiscal year	13
investment banking		amendment	12
house	17	clearing house	12
investment banker	17	customs	12
dishonor	17	Class A	12

TABLE VI  
(Cont.)

Word	f	Word	f
Mortality table	12	bond, collateral	15*
weakness	12	bond, public utility	
preferred dividend	12	bond, drainage	
discharge	12	bond, United States	
accrued interest	12	bond, 2nd mortgage	
Federal Reserve Bank	12	bond, 3rd mortgage	
bond, debenture	11	bond, irrigation	
notify	11	bond, school	
fraternal	11	bond, industrial	
bond house	11	bond, income	
recession	11	bond, term	
old line	11	bond, refunding	
drop	11	bond, highway	
mortality	11	bond, soldier bonus	
utilize	11	bond, special assessment	
accommodate	15*	bond, road	
agreement, verbal or less		bond, school district	
assignment		bond, township	
appeal		bond, personal	
arrears		bond, farm loan	
apartment		bond, coupon	
applicant		bond, foreign,	
accessory		bond, mortgage	
assets, capital		bond, benefit district	
admit		bond, bearer	
appropriate		bond, unclean	
acquire		bond, liberty	
appoint		bond, liberty first	
arbitrage		bond, liberty second	
assets, fixed		bond, liberty third	
accountant, certified		bond, liberty fourth	
bond, mortgage		bona fide	
collateral trust		box, safety deposit	
bond, serial		body	
bond, refunding		bank, national	
bond, unlisted		bank runners	
bond, listed		bank, land	
bond, second liberty		bank-note, national	
loan		bill-of-exchange	
bond, baby		bill-of-exchange, inland	
bond collateral trust		bill-of-exchange, foreign	

\*Data obtained by adding up scores of low-frequency words were believed not worth the extensive time required, therefore, the following terms are represented as having 15 or less occurrences. Most of them probably occurred fewer than 5 times.

TABLE VI  
(Cont.)

Word	f	Word	f
bank account	15*	check, traveler's	15*
blank		curb	
bankruptcy		deflation	
bargain		duration	
business barometer		direct	
blue sky		drawee	
business cycle		debtor	
basic		duty	
assessment, special		division	
aggregate		depletion	
accretion		deduction	
check, out-of-town		defer	
cash position		debt, national	
command		deficiency	
circulation		debt charge	
conduct		dissipation	
compromise		draw up	
checkbook		down payment	
clearings, bank		diffusion	
correspondent		deferred	
correspondent, local		survivorship	
check, certified		deed, trust	
cash value		deed, security	
consumer		deed, first	
clause		endowment, 25 year	
auditor		experience	
appoint		executor	
advocate		encumbrance	
benefactor		escrow	
claim, prior		elapse	
clear		expectancy, life	
compound		exchange, grain	
claim, preferred		exploit	
cost, initial		expense, running	
control		confidence man	
curtailment		Chamber of Commerce	
construction		elastic	
congestion		endowment, 30 year	
certificate, benefit		endowment, 40 year	
computation		endowment, double	
cash surrender value		endowment, semi-	
credit, public		endowment, 20 year pure	
capital, fixed			
capital free working		omit	
concern, going		forced	



TABLE VI  
(Cont.)

Word	f	Word	f
funds, not sufficient	15*	joint life	15*
forwarded		letter of credit	
fulfillment		letter of credit,	
forgery		travelers	
financial statement		letter of credit,	
fixed charges		commercial	
fall		locate	
forfeit		lapse	
file suit		liable	
front foot		lowering	
fly-by-night		lands, public	
fair value		lamb	
fake		long	
full reserve		location	
give		loan, call	
gross premium		loan, time	
found, founder		lump sum	
get-rich-quick		level rate	
gold standard		loan, liberty	
gilt-edge		living trust	
gold brick		loan, perpetual	
hazard		market, open	
high grade		manipulation	
hinterland		mortgage, real estate	
interest, back		money center	
insurance, term		minerals	
identification		movement	
internal revenue		magnate	
incorporate		machines	
inheritance		mutual company	
investment trust		moral hazard	
investment, business		mortality	
man's		mortality, American	
interest paying		Exper. Table	
insolvent		net current assets	
inducement		mortgage, third	
incur		note, victory	
idle		nominal	
irredeemable		non-performance	
Interstate Commerce		narrow	
inequitable		non-profit making	
joint		non-forefeitable	
job		non-speculative	
junior		note, commission	
justice		original	
joint stock		oral	

TABLE VI  
(Cont.)

Word	f	Word	f
outlay	15*	racket	15*
operator		rural credit	
operating ratio		risk-bearing	
obligor		residence	
order, stop-loss		rise	
overexpansion		reputation	
overissue		reinvest	
overcapitalization		reserve, contingent	
obsolescence		receipts, ordinary	
on hand		rent	
pass book		set-back	
pay off		subscribe	
paid up		sue	
process		sight	
preference		standing	
property, personal		strength	
prior		standard of living	
prelisting		surrender	
"professional"		swindler	
purchasing power		sucker	
payment, whole term		submit	
policy, return		swing	
premium		shopping center	
policy, income		square deal	
policy, installment		serial	
policy, convertible		"spotty"	
policy, life		shrinkage	
paid-in-full		society	
public service		stamp, war savings	
perpetuity		statement, net debt	
premium, level		solicitor	
payment, fifteen		surplus, contingent	
production, quantity		subject	
prime		statement, earnings	
power, taxing		short time	
profits, paper		seizure	
reloan		term, five year	
recourse, without		convertible	
ruin		stub	
reimbursement		trust fund	
requirements, interest		Torren's system	
reputable		tax, estate	
rake-off		tax, inheritance	

TABLE VI  
(Cont.)

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Word	f	Word	f
tax, property	15*	unemployment	15*
true value		"undigested"	
ticker		unauthorized	
trading unit		undercapitalization	
trade, foreign		violator	
territory		vice-president	
trend		vender	
textiles		unpaid	
total disability		value, total	
term, five year		write-off	
term, renewable		well-managed	
tax, general		value, intrinsic	
tax, excise		wage earner	
tax, capital		weather, financial	
tax, back		zoning ordinance	
unstable		zoning	
unpaid		productivity	
upkeep		wild cat	
unbusinesslike		pyramiding	
unrestricted		physical	
unload		indemnity	

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## The Reliability of the Sampling

How reliable is the sampling? Do 310,000 running words of investment literature relating to stocks and bonds constitute a sufficient number of words to determine the frequency of, let us say, the hundred commonest business terms in this type of material?

The answer to this question can best be formulated by first reviewing the principle which governs the problem of reliability. Perfect agreement of two samples both in composition of terms and frequency of occurrence of each term would indicate that each sample possessed perfect reliability. The correlation between two such samples would be 1.00. A variant of this method of determining the reliability of a list would be to ascertain the ratio of the frequency of a given word to the total number of running words. If this ratio continued the same in successive samples, it would be safe to assume that the sample was large enough for that particular word.

The method used by the writer to determine the reliability of his successive samples utilizes the above principles but differs somewhat in technique of application. He noted similarities in the composition of successive samples and determined the reliabilities of his list in this manner. The comparisons are between the first 210,000 word sample, the second 100,000 sample, and the combined 310,000 word sample.

When we compare the 25 words of highest frequency of the 210,000 word sample with the 25 words of highest frequency of the 100,000 word sample, we find that there is an agreement of 84 per cent between the two lists. Four words are not common to both lists. The four words which appear in the 210,000 list and not

in the 100,000 list are market, price, money, and buy. The four words appearing only in the 100,000 samples are mortgage, premium, property, and profit. The fact that these two lists agree on 21 of their 25 words of highest frequency is an indication of a high degree of reliability even in a list which contains 100,000 running words.

When we compare the first 50 words of the 210,000 word sample with the first 50 words of the 100,000 word sample we find that they agree on 44 words which is an agreement of 88 per cent. The six words which appear in the 210,000 word list and not in the 100,000 word list are share, earnings, sell, invest, safety, and yield. The six words which appear in the 100,000 word list and not in the 210,000 word list are increase, principal, assets, mature, loss, and land. Here, again, we find a high degree of correspondence between the words of high frequency of both lists.

A comparison of the 75 words of highest frequency of the 210,000 word sample with the 75 words of highest frequency of the 100,000 word sample indicates an agreement of 59 words which is approximately 79 per cent. The 16 words in the 210,000 word list and not in the 100,000 word list are expenses, basis, payable, yield, reduction, life insurance, protection, dollar, provide, note, record, diversify, check, sound, and term. The 16 words appearing in the 100,000 word list and not in the 210,000 word list are assets, mature, statement, individual, receive, owner, offer, net, government, benefit, public, maturity, low, secured, date, and guarantee. Here, again the agreement between the two lists is high.

When we compare the 100 words of highest frequency of the 210,000 word sample with the 100 words of highest frequency of the 100,000 word sample, we find that they agree on 72 words, which is a 72 per cent agreement. It is clear that the reliability of the two lists is decreasing as more words are taken.

These facts lead to the conclusion that a sample of business literature containing 100,000 words gives us fairly reliable results for the fifty most frequently used words, a decreasing reliability for the next fifty, but with a high degree of correspondence nevertheless.

Since the writer's list was compiled on the basis of an analysis of 310,000 running words, what techniques can be used to determine the reliability of the words in the higher frequency groups in this list? Since we do not have a second list of similar size with which to compare it, there are certain difficulties in the way of ascertaining its reliability. However, there is one way by which some information concerning its reliability can be gained. We can ascertain what effect the addition of the business terms from 100,000 running words of investment material had upon the frequency list of the 210,000 running words. This means that we compare the 210,000 sample frequency list with the 310,000 word sample frequency list.

When we compare these two frequency lists we find that among the first 25 words of each list there is a difference of only two words. The partial sample of 210,000 words contains the words finance and buy and the total sample contains the

words mortgage and premium.

A comparison of the first 50 words in each frequency list indicates that two words are not common to both lists, namely, return and yield in the partial list and the words insure and high in the total list.

A comparison of the first 75 words in each frequency list indicates that there are six words not common to both lists, namely, provide, dollar, life insurance, check, record, and diversification in the partial list and law, date, assets, individual, deposit, and owner in the total list.

A comparison of the first 100 words in each frequency list indicates that there are 12 terms not common to both lists. The words in the partial list which are not found in the total list are savings, management, holder, accumulation, house, term, margin, item, sold, supply, common stock, and farm mortgage. The words in the total list which are not in the partial list are assets, government, maturity, net, receive, statement, mature, surplus, advantage, factor, default, and guarantee.

These four comparisons between the frequency lists of the partial sample of 210,000 words and the total sample of 310,000 words indicate unmistakably that but slight changes were effected in the 100 business words of highest frequency in the 210,000 word sample by adding to it the frequency lists of the 100,000 word sample. If the frequency list of the 100 commonest business terms had not already been quite stable, the addition of the frequency list from the 100,000 word sample would have greatly changed its composition.

Conclusion-. On the basis of the evidence from the comparison of the frequency lists of the 100,000 word sample, with the 210,000 word sample, and the comparison of the 210,000 word sample with the 310,000 word sample, the conclusion seems warranted that the first 100 words in the 310,000 word sample frequency list are the most common words in investment literature dealing with stocks and bonds. The only exceptions to this statement are the four or five words dealing with life insurance which appear among the 200 commonest terms. These words owe their presence there to their extremely high frequency in the insurance materials which were sampled.

#### The Need for Further Investigation

Since the writer's data concerning the most common words in investment literature are reliable for only approximately the first one hundred words, additional studies will have to be made to determine accurately the 200 most common words, the 300 most common words and so on. The writer did not carry his research beyond a sampling of 310,000 running words of investment literature for these reasons:

First, this sampling was large enough to demonstrate the adequacy of the writer's technique of attack on the problem. Second, further investigation involves merely high-grade clerical work since the techniques have already been worked out. Third, it will become increasingly more expensive to determine the most common words after the first one hundred. The writer and his assistants put in not less than 250 hours of work in the analysis and tabulation of the business terms in the 310,000 running words.



## CHAPTER VII

### THE CONSTRUCTION OF THE TEST

Now that the most common business words in investment literature dealing with stocks and bonds had been discovered, the next problem for solution was that of determining children's understanding of these terms. In Chapter III are discussed the reasons why a five-choice multiple response test was selected for this purpose and the principles that should be considered in the construction of such a test. The principles of test construction proved an excellent guide but did not provide answers for all of the problems encountered in such construction.

One difficulty was the variety of definitions offered by the various dictionaries and encyclopedias for the same word. The word mortgage illustrates this difficulty. It is defined in Webster's New International Dictionary in this fashion:

At the common law, a conveyance of property, upon condition, as security for the payment of a debt or the performance of a duty, and to become void upon payment or performance.<sup>1</sup>

Webster's Elementary School Dictionary defines it thus:

A conditional conveyance of property, as security for the payment of a debt, etc., to become void upon settlement of the obligation.<sup>2</sup>

Funk & Wagnalls New Standard Dictionary gives the following definition:

A lien upon land or other property as security for the performance of some obligation to become void upon such performance.<sup>3</sup>

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1. G. and C. Merriam Co., Springfield, Mass., 1926. p. 1408.

2. American Book Co., New York, 1914. p. 375.

3. Funk & Wagnalls Co., New York, 1925. p. 1615.

Glenn G. Munn in his Encyclopedia of Banking and Finance offers this definition for the word mortgage:

A conditional deed conveying or transferring title of the property of the mortgagor (owner and borrower) to the mortgagee (lender).<sup>1</sup>

The definition by the New International Encyclopedia is slightly different:

The conveyance or transfer of property, either real or personal, as security for the payment of a debt or the performance of a legal obligation.<sup>2</sup>

Here are presented five definitions of the word mortgage all of them presenting slight variations. How can this difficulty be resolved? The answer was found not to be a difficult one. An analysis of these definitions shows that they contain certain common essentials. The problem then with <sup>the</sup> word mortgage, as with other words, was to analyze the various definitions for those items which they all agreed upon and incorporate them into the new definition. The writer used this definition for the word mortgage: A conditional transfer of property to insure the payment of a loan. This definition is sufficiently accurate yet it is simple and free from distracting details.

It was sometimes necessary in rewriting these definitions to substitute simpler words for the difficult ones in the definitions. If this had not been done, there would have been cases where the term would have been known to the child but the niceties and technicalities of the definition would have baffled his analysis.

Another difficulty was the fact that words may have more than one meaning. The business term market is an excellent illustration  
1. Banker's Publishing Co. New York, 1924. p. 376.  
2. Dodd, Mead, & Co., 1916. p. 296.

of this fact. There is the simple meaning, for example, indicating a place for the buying and selling of wares. This meaning is well known to children. But there is another important meaning of market, namely, an opportunity to buy and sell goods. The writer did not think it wise to include a test on both words so he chose the more difficult meaning since it is the more generalized of the two.

Another source of difficulty was the difference in the definition of words when defined strictly as economic terms and when defined more popularly as commercial words. Usually the common commercial meaning was chosen if it varied from the more technical meaning used in economics. For example, interest was defined in the test as "the money paid for the use of money". The economist prefers to define interest as "the money paid for the use of capital".

After satisfactory definitions had been selected and the five choices selected as indicated in Chapter III, the first form of the test was typed and a number of carbon copies made. This test was then given individually and informally to about twenty-five children from the sixth grade thru the ninth grade, and all young friends of the writer. These children were first asked to give orally the meaning of the various terms. The writer wrote out the definitions which they gave on the back of their test paper. At the completion of the interview the child was given the multiple-choice test to mark. He was asked to guess on all the items for which he did not know the correct answer. He was further asked to note those items on which he guessed by placing a question-mark after them. After the child had finished

the test, the writer compared the test items with the interview answers to note those cases where guessing had enabled the pupil to get the right answer and also to note those cases where the term was known to the child but he had not marked the test item correctly. The examinee was then asked to indicate orally to the writer the methods which he had used to guess the answers. The following methods of guessing were noted:

1. Guessing by elimination. This was a common method. The child eliminates those answers which he knows have a different meaning than the definition stated and in this manner he increases his chances of guessing correctly. If one item can be eliminated in this fashion, the chance of guessing correctly becomes one in four. If two items can be eliminated, the chance of guessing the right answer becomes one in three. Under exceptional circumstances the examinee may eliminate all four of the wrong answers and get credit for knowing the term when it is actually entirely unfamiliar to him. An example of such successful elimination which one boy accomplished is to be found in this test item: Duty: tax interest profit due import. The child knew the last four terms, realized that the word duty did not fit any of them so he underlined the word tax. The interview showed that he was wholly unfamiliar with the true meaning of the word duty.

2. Guessing by noting inconsistencies. A few children were able to guess correctly by noting that certain terms were slightly inconsistent with the term to be tested by variation in part

of speech, number or tense, etc. and eliminate terms accordingly. This type of guessing was successful in only a few instances <sup>and then</sup> with the brighter children.

(3) Reasoning by analogy. Sometimes the common general meaning of a term helped the child to guess successfully when he did not know a specialized meaning. This is well illustrated by one boy's guessing on this test item:  
A sum of money deposited with a broker by the buyer or seller of stocks to protect him in case of unfavorable advance or decline:

brokerage      reserve      balance      margin      pledge

This boy underlined margin because "margin is what you leave at the edge. It's what you leave over so that you'll have something left."

(4) Guessing from similarity in sound or appearance. This fact appears in this item:

One who receives the financial benefits of an insurance policy:  
beneficiary      contractor      benefactor      benedict      benison

In spite of the evident attempts to mislead the guesser, the word beneficiary, usually not known to the children, was selected because it most resembled the word benefits.

(5) Certain answers sound or look right to the pupil. In the following the word dishonor was correctly guessed in a number of cases. The examinees said that they underlined it because it "sounded right". In another test item, the word corporation was underlined because it was confused with the word cooperation, a word which children were attracted to.

These, then are five specific techniques which children used in an attempt to get answers right by guessing when the terms were unknown or partly known to them. That the same techniques sometimes operated to the disadvantage of the guesser should also be made known to the reader.

While the test was still in this typewritten form, it was submitted to Samuel G. Rice, Educational Director of the Investment Bankers of America, Edgar Bernhard of the legal firm of Lee, Mergentheim, and Bernhard, and to a graduate student in Economics at the University of Minnesota. Each of these experts made suggestions concerning the revision of terms relating to their specialty.

In the light of the data received in this manner, the test was revised and this time put into mimeographed pamphlet form, and can be found in Appendix A. In this form it was given to about 25 adults, approximately 15 of whom were teachers in grades six, seven, and eight. They were asked to go through the test, guess if they did not know the right answer, and indicate those items upon which they guessed by appending a question mark to them. Their reactions and comments proved useful in making the final form of the test. The writer believes that the submission of a test of this type to adults who are interested in the problem of developing an accurate test, is a desirable step in the making of most tests of this type.

This test was also given to approximately thirty children in each grade of the sixth, seventh, and eighth grades of the Skokie Junior High School at Winnetka, Ill. The tests were:

given by the writer and regular class periods were taken over for the testing. Since most of the groups were well acquainted with the writer, only a few minutes was necessary to establish rapport, explain the purpose of the test, and give the necessary directions. Each group was instructed to guess when they did not know the answer and to put a question mark after those items upon which they guessed. The time required for this test of 100 items ran from 20 to 50 minutes in the eighth grade and from 20 to 50 minutes in the seventh grade. The 100 item test given to the sixth grade was an easier test and took from 20 to 50 minutes to finish. A copy of this test will be found in Appendix B.

The above tests were then corrected and a week and a half later the writer began selecting at random 15 children from each of the groups of 30 for the purpose of interviewing them. Each child was interviewed singly in an office of the Skokie school. When the interview with one examinee was finished, another child was summoned. The time required to interview a subject ran from twenty to thirty minutes. This variation was due to the fact that those who knew few terms took less time since in their case a simple "I don't know" on difficult terms sufficed to end the questioning on that word.

The plan of the interview was this. When the child came into the office he was asked to be seated and since the children were known to the writer it was not necessary to spend time establishing rapport with an examinee. He was asked the meaning of a term by a simple direct question like, "John, what is a bank". If the child's answer included the essentials of that term as given in the accepted definition, he was given credit for it at once. If

his answer was correct as far as it went but it was not inclusive enough, the question, "Is that all?" was frequently asked or one similar to it so that the subject might give additional information if he possessed it. As soon as it was clear that the child knew or did not know the term, the writer made the proper mark on the test item on that particular child's test sheet. By making these marks directly on the test sheet of the child it was possible later to determine by looking at this record the exact places where the test was giving an accurate picture of the child's understanding of a term and where it was not.

Requesting the child to put a question mark after those items on which he guessed did yield valuable data on techniques of guessing. However, it is the writer's belief that this technique alone would not be sufficient to use in validating a test for these reasons:

First, the division between guessing and non-guessing is not a hard and fast line. It is difficult for one to introspect and answer unqualifiedly as to whether he is guessing or not. This is due in part to the fact that words may be in any of the six stages mentioned in a previous chapter and frequently one is not sure if he does know the term. Second, the desire to appear well in the eyes of the examiner caused not only children but also adults to leave off question marks where it was clear that the subject knew that he was guessing.

All of the answers of the first group of fifteen children were recorded with the expectation of putting the testing of understanding upon a more rigidly objective basis. The plan was not continued with the remaining thirty children since it doubled the time taken for the interview and its value in increasing the



objectivity of the test in any appreciable degree was questioned.

Unusual answers were noted as well as early understanding of difficult terms. An attempt was made to secure data from the child as to the sources of information when he was found to understand an especially difficult term. Although the number of cases was small nevertheless it was clear to the writer that this type of study of children's vocabulary may prove a fruitful source of inquiry. Children frequently knew the sources of the words which they have recently learned or words which are rare or uncommon. Children knew the word established more commonly than the author thought that they would. The advertisements of companies which indicated that they were established in a certain year proved to be the source of information of the children. Receipt had been learned most frequently thru the receipt which the children got when packages were insured or registered. Some children had learned the word quotation thru the radio announcer's use of the term when broadcasting daily stock prices. The children at the Skokie school knew what exempt meant in the word tax-exempt. This unexpected brilliance puzzled the writer until he found out that they had learned the term thru the practice of the school in exempting them from certain spelling drills if a certain proficiency had been attained in a trial test.

There was no evidence that the children had learned from taking the test to such an extent that their interview scores were appreciably affected thereby. In fact the make-up of the test precluded anything but the most meager assistance from this source. Two or three children had asked their parents about the

meaning of specific words appearing in the test but these children voluntarily gave the writer this information and in this way their score was unaffected by this training.

The scores on the individual items of the test in per cent score correct for the interview and for the written test are given in Table VIII. Here is the crucial evidence regarding the validity of a multiple-choice test of the type used by the writer. Since the interview test is the most valid method of determining understanding that one can use, the validity of the multiple-choice test depends upon the degree to which it corresponds with the results of the interview.

An analysis of the test shows that the following items show a deviation of from 20 to 30 per cent from the interview score: conservative, premium, fiscal, customs, assess, circulation, concern, default, securities, outstanding, certified check, credit, identification, negotiable, corporation, and common stock.

The following items in the eighth grade showed a deviation of from 30 to 40 per cent from the interview score: expenditure, agreement, endowment, redeem, par, and estate. Two items on the written test showed a deviation of from 40 to 50 per cent from the interview score, namely, bill-of-exchange, and preferred stock. One item, order, deviated from 50 to 60 per cent, and one item, check, deviated from 60 to 70 per cent.

Analyzing the results in a slightly different manner, we find that 26 per cent of the 100 words show discrepancies greater than 20 per cent from the interview, ten per cent show discrepancies greater than 30 per cent, four per cent of the words

TABLE VII  
COMPARISON OF PER CENT SCORES OF FIFTEEN EIGHTH GRADE PUPILS ON  
INTERVIEW WITH SCORES MADE ON WRITTEN TEST

Term	Inter- view	Written test	Term	Inter- view	Written test
appreciate	33	40	repudiation	7	20
capital	93	90	reserve	60	45
commodity	20	25	sound	100	95
conservative	53	75	redeem	100	65
decline	93	85	receiver	0	10
underwrite	7	10	policy	27	45
bureau	93	85	outstanding	0	25
commission	80	80	par	13	50
expenditure	40	75	option	13	20
real-estate	73	85	gilt-edge	33	30
agreement	80	50	inflation	0	15
maturity	33	25	duty	100	90
premium	7	35	draft	20	30
beneficiary	7	35	draw	13	25
endowment	13	45	account	80	75
fiscal	7	30	bill of exchange	0	50
customs	67	45	certified check	13	30
current	20	30	credit	40	45
assess	7	30	credit	87	60
circulation	53	30	dishonor	0	10
bankruptcy	93	100	estate	60	20
assets	7	25	face	0	5
concern	80	50	identification	80	55
imports	100	95	instrument	0	0
receipt	93	95	issue	73	55
lease	100	100	negotiable	13	40
profit	100	95	order	100	45
annuity	0	20	protest	0	5
bear	7	10	receipts	13	10
callable	7	20	specify	53	45
collateral	7	5	authorize	27	40
default	13	30	check	100	35
funded debt	7	0	quotation	73	60
lien	7	15	note	67	55
margin	0	20	investing	40	85
premium	0	20	corporation	20	45
holdings	67	55	preferred stock	20	70
economics	33	50	security	60	65
deficit	20	30	dividend	47	45
yield	33	35	common stock	27	50
bull	13	15	speculating	54	45
arrears	7	15	stock	40	40
trust	0	10	principal	33	40
tip	73	75	bond	20	20
stock exchange	87	75	brokerage	27	45
sinking fund	13	15	deposit	100	85
securities	40	70	liabilities	10	40
revenue	7	20	exports	100	95
retire	20	15	assets	20	25
resources	13	20	income	73	65

show discrepancies greater than 40 per cent, and two per cent of them show discrepancies ranging from 50 to 60 per cent from the interview score.

Table VIII compares the written and interview test items for the seventh grade. The following terms show a deviation of from 20 to 30 per cent as measured by the two different tests:

beneficiary, concern, imports, annuity, funded debt, sinking fund, revenue, repudiation, outstanding, bill of exchange, certified check, dishonor, estate, investing, preferred stock, common stock, stock, deposit, and income.

The terms showing a deviation of from 30 to 40 per cent are: conservative, agreement, and margin.

No terms showed a deviation from 40 to 50 per cent, and one term, check showed a deviation of from 50 to 60 per cent. These figures show that 24 per cent of the 100 words deviated by more than 20 per cent of the interview score. However, in the seventh grade, only 4 per cent show a deviation greater than 30 per cent.

Table IX presents the same type of data for the sixth grade examinees. In this grade there are four words on the written test which show deviations of from 20 to 30 per cent from the interview score. These words are certificate, dealer, develop, and term. There are thirteen words which show deviations ranging from 30 to 40 per cent, namely, advantage, balance, bureau, marketable, manufacture, payable, prosperity, public, order, plant, agreement, share, and outstanding. Six words show a deviation ranging from 50 to 60 per cent, namely, decline, enterprise, insure, protection, stockholder, and option. In this grade, we find, then, that 26 per cent of the words on the written test

TABLE VIII

COMPARISON OF PER CENT SCORES OF FIFTEEN SEVENTH GRADE PUPILS ON INTERVIEW WITH SCORES MADE ON WRITTEN TEST

appreciate	13	24	repudiation	0	28
capital			reserve	53	64
commodity	0	12	sound	100	80
conservative	20	52	redeem	80	60
decline	80	64	receiver	0	24
underwrite	0	8	policy	27	28
bureau	87	68	outstanding	13	40
commission	60	64	par	13	16
expenditure	40	49	option	13	12
real-estate	40	56	gilt-edge	33	28
agreement	83	48	inflation	0	4
maturity	7	16	duty	60	68
premium	13	16	draft	7	12
beneficiary	0	24	draw	0	4
endowment	0	20	account	60	68
fiscal	0	20	bill-of-exchange	7	28
customs	80	40	certified check	13	36
current	13	32	credit	27	16
assess	0	16	credit	27	32
circulation	67	52	dishonor	7	36
bankruptcy	67	80	estate	40	12
assets	7	16	face	7	8
concern	93	72	identification	53	44
imports	93	70	instrument	0	0
receipt	100	84	issue	20	32
lease	93	84	negotiable	0	20
profit	87	72	order	20	36
annuity	0	24	protest	0	20
bear	0	8	receipts	13	16
callable	13	20	specify	33	52
collateral	0	8	authorize	20	32
default	7	16	check	100	48
funded-debt	0	24	quotation	40	28
lien	13	24	note	20	28
margin	0	32	investing	53	76
premium	0	20	corporation	20	40
holdings	27	28	preferred stock	13	40
economics	7	32	security	33	44
deficit	27	36	dividend	27	28
yield	7	16	common stock	20	44
bull	7	24	speculating	33	40
arrears	7	8	stock	7	32
trust	7	16	principal	0	4
tip	60	48	bond	0	16
stock-exchange	67	60	brokerage	20	40
sinking fund	0	24	deposit	100	72
securities	33	36	liabilities	7	24
revenue	0	24	exports	100	84
retire	27	24	assets	13	16
resources	33	28	income	53	32

TABLE IX

COMPARISON OF PER CENT SCORES OF FIFTEEN SIXTH GRADE PUPILS ON INTERVIEW WITH SCORES MADE ON WRITTEN TEST

Word	Inter-view	Written test	Word	Inter-view	Written test
amount	93	73	management	67	80
advantage	67	27	marketable	40	13
assume	20	27	manufacture	93	60
accumulate	33	33	ownership	80	60
advance	100	93	payable	53	13
accept	100	100	per cent	67	73
balance	40	7	pledge	27	33
burden	80	80	price	100	93
business	100	93	prospects	7	27
charges	87	73	prosperity	40	73
claim	80	60	property	100	93
commerce	20	27	public	93	60
conservative	0	20	purchase	60	73
customer		100	reduce	100	93
competition	13	27	loss	87	67
contract	80	67	market	27	33
convert	27	33	apply	27	47
debt	93	93	office	100	87
borrow	100	87	order	73	33
bureau	53	20	pay-off	80	67
cash	93	87	plant	73	40
certificate	87	60	profit	80	33
check	100	93	protection	100	47
collect	100	100	real estate	47	33
concern	67	53	receipt	80	80
dealer	93	67	risk	100	93
decline	33	53	sum	93	73
due	100	47	surplus	13	13
earnings	100	100	trade	93	80
enterprise	13	67	value	100	100
establish	87	87	wealth	93	87
estimate	33	47	total-exchange	100	100
exchange	93	93	benefit	93	73
expense	93	75	agreement	100	67
increase	87	87	discount	40	47
firm	93	93	develop	100	73
funds	87	47	tax	93	47
high-grade	67	73	rent	93	73
hold	93	87	share	93	53
insure	93	40	sign	100	100
demand	87	40	stock-exchange	7	53
dependent	33	40	term	80	53
deposit	87	80	tip	13	33
distribute	100	80	title	0	20
indorse	47	40	tax-exempt	53	67
income	60	67	figure	47	53
guarantee	67	47	outstanding	13	47
industry	47	47	net	0	20
interest	73	53	sound	27	27
loan	80	67	option	0	53

were varying more than 20 per cent from the interview score.

In Appendix C is presented a third preliminary test. It contains 61 test items. A few of these test items were not used in the final test either because they were too easy or because the final tabulation of frequency gave them a credit number less than the lowest frequency term used in the final test. The usual validating procedure was not followed with this test. Instead an attempt was made to explore the possibilities of checking the terms for familiarity. Each student was given in addition to the test, a list of the terms in the test. He was asked to mark these terms as known, doubtful, and unknown prior to taking the test. These lists were then collected and the student did the multiple-choice test.

Approximately 20 of the 40 students who took this test were interviewed to ascertain the validity not only of the multiple-choice test but also that of the checking test. The checking test was found to be satisfactory if the term was either very difficult or very easy. Error crept in when the term was of medium difficulty or when a general meaning was interpreted instead of a business meaning.

On the basis of the data received in the above manner, it was discovered that approximately 10 per cent of the items needed revision.

#### Validity of Written Test

What do the data presented in the preceding pages tell us about the validity of this multiple-choice test? First they indicate that if certain scientific principles of test

construction are formulated and rigidly adhered to in constructing such a test, and if pupils are encouraged to guess, the test will then show valid evidence of the difficulty of approximately 75 per cent of the items, if we interpret as a valid test item one which has a score within 20 per cent of the interview score.

Second, an inspection of those terms where the evidence from the written test is at variance with the evidence from the interview, shows that almost all of these words are the more difficult ones in the test. If, then, pupils are given a mental set against guessing when they do not know the right answers, we can expect much more valid evidence of understanding on such difficult items.

#### Revising the Test

The data in Tables VII, VIII, and IX were now used to revise the test. The revised form which was finally used appears in Appendix D and E. Every item which showed a deviation of more than 20 per cent from the interview score was changed and made easier or more difficult as the case required.

Since the interviews had given the writer data relative to the methods by which children were guessing successfully, and the difficulties which they met on items which they knew but failed to mark properly on the test, it was relatively easy to reconstruct these items to make them easier or more difficult as desired. A few examples will be given to show how this revision was effected.



The original test on the word option was as follows:

Option: property profit privilege bonus vision

Fifty-three per cent of the children got this item right and not one of them knew the meaning of the term. How was this possible? The guessing technique used in the case of this word is as follows: The words property and profit were well-known to the children and they eliminated these first. A few of the brighter children were misled by the word vision but most children made their choice between the words privilege and bonus thus making the chance of getting the test item right one in two. The revised form of the test is as follows:

Option: opposition optical bonus vision privilege

That the change was successful is indicated by the fact that when the test was given in the seventh grade only 8 per cent of the children got it right.

The test on the word profit also proved too difficult.

The first form of the test on this word was as follows:

If you subtract the cost from the selling price you get the:  
interest profit dividend yield income

This generalized meaning of profit as selling price less the cost was not known to the group who took this test. A more specific meaning of the word profit was then used in the revised test:

A pen which costs \$3 is sold for \$4.50. The difference between these two prices is called the:

interest profit dividend saving per cent

The following test on the word enterprise proved too easy:

Enterprise: profit undertaking earnings yield sale

It was changed to read thus:

Enterprise, as a business enterprise:  
entertainment undertaking entry-fee medal gift

These examples and the techniques of test construction developed in Chapter III should prove sufficient to illustrate the methods used in revising the test to make it conform to the results of the interview. The following chapter will discuss the giving of the test and the methods used for scoring it.

## CHAPTER VIII

### GIVING AND SCORING THE TEST

The previous chapter has dealt with the technique involved in constructing a test which would satisfactorily measure children's understanding of business terms. This task completed, it was necessary to formulate plans for carrying out the testing program. The following two plans of attack were considered:

First, it would be possible to test great numbers of children in a single grade, let us say the eighth, in many different communities whose social composition and teaching personnel varied greatly. From such test data norms could be established for each word. This scheme was dismissed for these reasons:

(1) Such a procedure represents little more than able clerical work, worthy in itself, yet hardly advisable to do in view of the experimental nature of the test itself.

(2) It would be impossible to give the test under the above conditions without incurring undue expense, since personal supervision of the giving of the tests would be a wise precaution to take.

(3) When a technique of research is in its earlier stages of development, it is probably wise to put one's effort into an analytical study of a comparatively small number of cases in preference to the securing of large bodies of unwieldy and questionable data upon which to employ statistical techniques.

The other plan would be to select two communities highly divergent in their social composition and test children in several grades above the seventh on these business terms. Such

a plan has the following advantages:

(1) It would be possible to personally supervise the giving of the tests. This would enable the writer to explain the purpose of the test to the children, make certain that all directions were understood, develop the proper attitude toward guessing, answer certain questions of the examinees, watch for evidences of fatigue, and observe the reactions of the children toward the test.

(2) Securing data from different grades instead of a single grade would give interesting data concerning the development of children's concepts concerning business. Research literature is extremely meagre on the development of vocabulary from year to year. Further, it might be possible to check the validity of the test by data gained in this fashion.

Comparison of the data obtained in two cities of widely different social composition would give us excellent clues regarding the social forces which are operative in environments that are apparently greatly dissimilar. The claim is frequently made, for example, that method and content must vary greatly in different communities. The evidence obtained from the testing of two such groups would give proof of the truth or falsity of this statement as it related to training in the understanding of common business terms.

The only defects in this second plan are that in our present social order we have not merely two widely divergent groups of people but many, and second, that evidence from only two communities is not sufficient to settle the problem of

differentiated curricula. It would be necessary to compare native with foreign groups, suburban with industrial, suburban with rural, industrial with rural, and so on.

It is evident from the tenor of the above discussion that the second plan was the type of research carried on by the writer. Conditions were very favorable for the comparison of a wealthy, residential suburb with an industrial city where the fathers of the children who took the test were workers in the factories of that city. A further favorable factor in the selection of these two cities was the fact that both of them are well known for the excellent character of their schools. Thus the character of the teaching in the two different cities is a variable that enters into the problem but slightly and renders the data secured from the test more significant.

The writer was fortunate to secure for the purposes of testing the school systems at Winnetka, Illinois, and Harvey, Illinois. Winnetka is the residential suburb referred to above and Harvey is the industrial city. Dr. Carlton W. Washburne granted permission to give the tests in the elementary and junior high school at Winnetka and permission to test in the senior high school was received from Supt. Frederick Clerk. The same permission to give the tests was granted by Supt. William E. McVey of the Thornton Township High School at Harvey, Ill., and by Supt. Miller of the elementary school system.

#### Sampling

It is apparent that to test the entire student body of these two school systems from the seventh grade up in order to determine norms of understanding for each word would require

An inordinate length of time and an extensive amount of labor. To obviate this difficulty sampling was resorted to. An empirical answer to the question of the number of tests required for a reliable sample was obtained in the following manner. All of the sixth grade children at Winnetka, Illinois, were tested on 100 items in the test. Mean scores of a number of items on the test were now obtained using the data in all of the 200 test booklets. Next the writer determined how many samples it was necessary to take from these 200 test booklets to get a mean score which stabilized at the true mean scores of these items. It was found that 50 tests selected at random from the 200 tests were sufficient to give a reliable sample for the mean scores of individual words. These data indicated that the data obtained by a sample of one-fourth of the children in this grade would be almost as reliable as the data from the entire group. On the basis of this evidence and on the strength of general statistical principles relative to sampling, the writer tested about one-fourth of the children in each of the grades beginning with the seventh and thru the Senior year of the high school in the schools at Winnetka and Harvey, Illinois.

At the Skokie Junior High School one-half of the seventh and eighth grade children were given the first half of the test and one-half of the children were given the second half of the test. A good random sample was insured by handing out a different half to alternate children in the group being tested.

At the New Trier Township High School approximately one-fourth of the student body in each of the four years was tested. Mr. Brown, Head of the Department of Reference and Research, selected those groups for testing which were most representative of the high school personnel. Extensive research data on file in his office made this a comparatively easy task. The selection at the Thornton Township High School was on approximately the same basis but incomplete educational and mental test data made it more difficult to secure representative groups. At the Whittier elementary school at Harvey all the seventh and eighth grade students were tested on all the items.

Omission of Easy Words From the Test-. Preliminary interviews conducted by the writer among children in the fourth, fifth, and sixth grades indicated that certain terms were well known to them. Further, the data obtained by testing the entire sixth grade at Winnetka, the results of which are shown in Table IX in Chapter VI, indicated that a number of terms were well-known to them. Since terms well-known to sixth grade children would be well-known to children of higher grade, it was decided to eliminate from the test all words known by 80 per cent or more of the children. This resulted in the omission of the following words: amount, advance, accept, business, claim, customer, debt, borrow, cash, check, earnings, exchange, expense, increase, hold, price, ownership, property, public, reduce, office, risk, sum, trade, value, wealth, total, develop, interest, share, sign, labor, worth, and life insurance. Other

words omitted from the test in the grades from the seventh thru the high school because interview or test data or both indicated that they were well-known to the children of the sixth grade are the following: company, pay, money, payment, buy, sell, cost, safe, loss, land, make, date, protection, farm, dollar, receive, sales, banker, savings, sold, good, failure, work, produce, bought, spend, colliect, lose, gamble, lend, promise, and manufacture.

Time of Testing-. The tests were given during May, in 1928. This time was chosen so that all students would secure every possible scholastic advantage and so that variations in the placement of items through the year's work would be minimized in the results. Whether this precaution was necessary in all grades is not known. However, the wide variation in the score of the seventh and eighth grade students and which is not found between other grades indicates that there is apparently some scholastic influence entering into the work of the eighth grade which greatly increases their score. This scholastic influence is without doubt the extensive training in essentials of business which is given in the arithmetic work of this year. If the test had been given early in the school year the effect of this training might not have been so apparent.

The directions printed on the first page of the test folder were followed closely in giving the test. The following points were emphasized in the directions to the students. First, it was made clear to them that certain answers were partly right, that only one answer was entirely right, and that the best answer should be checked. Second, they were impressed with the fact that the usefulness of the results depended upon the accuracy of the checking, and third, they were requested not to



guess when they were sure that they did not know the right answer. Enough time was given so that everyone could finish the test and this time ranged from 15 to 40 minutes. There was no evidence of fatigue of any kind, all children working on it with interest and earnestness.

The writer conducted all of the testing except that at the New Trier Township High School. Here the test was given by advisory or home room teachers in order that the regular class work should not be interfered with. To insure the proper giving of the test under these circumstances, the following precautions were taken. Whenever possible, Mr. Brown selected groups for testing whose adviser was interested in the problem. Second, the writer met with all the teachers who were giving the test and instructed them in the manner of conducting it. These instructions were also written out, a copy given to each teacher, and she was asked to follow these directions explicitly. The writer believes that these instructions were carefully followed and that no error was introduced into the study by using these instructors as examiners.

Scoring the Tests--. Since the test could be objectively scored, stencils were constructed for this purpose, and the writer and two assistants corrected the tests. Red pencils were used in scoring the test and in those places where the student had failed to put in the correct pencil mark, a red line was drawn instead. When a page had been corrected, these red lines were counted and the number put at the bottom of each sheet. When the last page had been corrected, the total number of red marks was determined, subtracted from the total possible

score, and the result put on the first or explanatory page of the test.

When the total score for each paper had been determined in this way, the problem of determining the score for each item arose. It was decided, first of all, to limit the number of different test papers from which these data were taken to fifty. Since this was approximately the number sampled from each grade in the different schools, this could have no effect as far as changing the results in any way is concerned. At the Whittier school in Harvey, the entire seventh and eighth grades were tested and there were approximately forty children in each group so the scores on the individual items are figured on the entire number of tests for these two groups. Approximately the same number were sampled from the Senior class at Harvey.

The following technique was found to be most effective in determining the scores on individual items and it had the additional advantage of constituting a check on all the corrections of papers either by the writer or by his assistants. First, the entire set of fifty papers to be scored was laid out on a long table and opened to the first page of the test. Then the scorer looked at the first item on each of the outspread tests and counted, as he walked along, the number of red marks appearing on this item. If there were, let us say, five red marks in the entire fifty tests, that number would be written opposite this term in a test booklet which was blank. The first word in the test of common business words is account. If a certain grade had five red marks for this term it would mean that 5/50 of them got it wrong. All scores were worked out as per cents of the entire group who got the item right so 90 per cent would be the score of that particular grade on

that particular item. Since this particular step had to be repeated for 217 different items for 13 different groups it can be seen that the task was one of no small magnitude. The writer and his assistants spent a total of approximately 100 hours on this work. Thus each test took a single worker approximately six hours to finish.

The above facts are stated in order to demonstrate the great amount of time that must be consumed if detailed studies on vocabulary are to be made. While it is true that certain refinements of technique might have reduced the time required for the writer to secure his data, nevertheless this time cannot be reduced greatly and must be considered when laying plans for detailed vocabulary studies.

In the following chapter will be presented a comparison by grades of total scores, scores on individual items, and a critical evaluation of the results of the test.

## CHAPTER IX

### ANALYSIS OF RESULTS OF THE TESTS

On the following page is presented Table X which compares the scores received by each grade on the test for both Form A, the first half of the test, and Form B, the second half. The following conclusions appear to be warranted by these data:

The total mean scores increase from grade to grade. This is to be expected since vocabulary is known to increase from grade to grade. Apparently business vocabulary increases from year to year in the same fashion. The Senior group at Harvey apparently do not follow this general rule, but this fact is doubtless to be explained by the inadequate test data for the selection of groups to be tested at Harvey. Since there is very little selection set up at Winnetka thru children dropping out of school, the increase in vocabulary cannot be attributed to the general increase in mental ability of the students as the higher grades are reached.

The difference in the mean scores of Harvey and Winnetka is least on Form A for the seventh grade. Table XI gives a clue as to the reason. The four words on which the Winnetka children exceeded the Harvey children most were broker, stock-exchange, income, and prosperity--terms which doubtless occur very frequently in the conversation of the family. The four words on which the Harvey children exceeded the Winnetka children by the biggest difference were principal, interest, endowment, and loan. The explanation probably does not lie in the Harvey children's greater familiarity with their own savings accounts since only

TABLE X

SCORES SHOWING THE PER CENT OF CORRECT ANSWERS ON EACH ITEM OF THE TEST BY GRADES AND BY CITIES

Word	Harvey						Winnetka					
	7	8	9	10	11	12	7	8	9	10	11	12
account	61	62	72	86	88	90	72	72	86	94	86	86
accumulate	32	39	64	62	82	84	46	62	76	84	72	90
advantage	67	60	62	54	74	78	70	78	80	78	90	94
apply	39	39	50	48	82	87	50	52	56	70	88	88
appreciate	13	8	18	10	48	22	8	30	20	38	50	56
assessment	58	55	92	88	96	100	32	56	60	92	96	96
assessment*	53	47	62	70	80	76	28	50	68	76	90	90
assets	16	23	26	46	68	56	10	24	44	58	60	84
association	61	75	88	94	90	90	72	72	94	82	98	92
assume	32	34	52	64	72	73	36	50	74	84	92	92
authority	54	70	72	80	90	100	58	76	92	92	98	96
authorize	38	34	62	40	86	90	34	46	60	84	86	94
balance	70	68	88	78	96	81	66	74	84	92	92	96
balance sheet	89	39	40	58	48	50	26	12	36	50	46	64
bank	90	98	-	-	-	-	98	94	-	-	-	-
base	73	83	84	82	94	97	68	82	86	90	90	88
basis	64	78	-	-	-	-	78	90	-	-	-	-
bear	0	3	8	4	20	3	4	6	14	24	26	32
bearer	48	70	68	68	92	81	46	64	72	74	84	86
beneficiary	0	16	8	28	50	50	10	20	48	28	66	76
benefit	70	75	76	84	84	78	64	68	78	84	88	96
bond	22	34	56	42	76	42	20	60	64	70	76	80
bondholder	64	61	86	82	86	87	66	94	94	86	94	98
broker	19	68	88	72	86	78	62	92	86	98	92	96
bull	8	8	8	4	32	4	2	12	22	26	30	42
burden	70	68	84	72	90	81	68	68	68	86	86	86
bureau	26	42	64	62	78	78	52	82	72	90	74	82
capital	38	49	74	68	86	84	56	82	82	88	94	90
certificate	51	61	66	80	88	56	64	68	82	88	84	90
certificate†	59	70	82	82	98	72	68	76	78	76	72	84
charges	77	88	82	88	96	79	56	70	72	74	82	84
collateral	3	6	4	6	26	14	6	16	8	20	30	30
commerce	80	98	98	96	100	98	66	86	94	92	98	100
common stock	6	10	12	18	50	39	10	26	30	32	36	76
competition	22	47	60	68	84	90	54	74	86	94	96	100
concern	45	70	80	88	88	98	64	82	94	96	98	98
conservative	22	23	26	38	70	70	10	42	54	68	74	94
conservative*	59	60	90	88	100	97	52	78	86	90	98	92
consideration	16	10	12	20	40	31	6	4	12	10	30	50
contract	70	73	74	76	86	87	64	72	70	86	72	84
convert	45	55	62	56	62	90	34	54	58	86	92	92
corporation	16	34	34	28	66	54	16	36	48	64	66	86

\* Two different tests are used for these words.

† The test for these words is repeated.

TABLE X  
(Cont.)

Word	Harvey						Winnetka					
	7	8	9	10	11	12	7	8	9	10	11	12
coupon	45	23	44	24	45	56	50	50	52	44	54	60
cover	29	57	62	60	56	56	44	46	56	76	58	76
credit	36	47	66	54	74	78	54	68	64	58	92	98
crop	86	81	--	--	--	--	74	84	--	--	--	--
current	13	26	42	34	68	73	34	54	70	70	62	90
current assets	5	13	20	40	52	48	2	18	26	42	50	62
current liabilities	6	29	34	44	66	68	4	26	28	44	56	72
dealer	81	70	--	--	--	--	80	64	--	--	--	--
debenture bond	5	8	8	10	44	22	4	8	52	40	32	44
decline	35	70	68	72	90	81	54	76	90	92	92	98
decline*	62	60	78	88	98	94	82	82	86	98	96	196
default	6	15	10	8	16	11	2	10	16	12	34	26
demand	22	29	24	30	30	17	34	32	56	28	56	42
department	32	49	48	56	82	90	42	74	80	90	78	88
dependent	42	68	--	--	--	--	74	78	--	--	--	--
deposit	90	88	--	--	--	--	84	94	--	--	--	--
depreciate	45	59	64	76	88	73	50	68	74	90	94	98
depression	6	8	56	26	66	60	14	30	36	28	62	88
discount	80	83	68	88	92	95	52	80	68	92	94	96
discount*	92	88	96	98	100	94	80	86	90	98	98	100
distribute	70	81	--	--	--	--	88	92	--	--	--	--
district	86	73	--	--	--	--	80	92	--	--	--	--
diversify	5	15	34	30	62	48	12	22	32	48	66	70
diversify*	22	29	66	68	88	86	46	70	64	84	82	92
dividend	16	52	46	70	72	62	16	76	62	72	78	86
draw	15	26	20	18	52	36	6	18	42	44	70	74
due	77	83	--	--	--	--	76	72	--	--	--	--
economic	22	16	42	58	66	73	14	36	36	66	70	86
employ	96	94	96	98	100	100	96	98	100	97	96	100
endorse	70	81	98	92	94	100	58	88	98	100	100	98
endowment	56	51	34	42	54	48	4	24	44	32	52	58
enterprise	35	47	74	74	92	98	42	70	88	92	96	100
enterprise*	56	62	72	88	98	100	48	76	80	92	96	100
establish	78	81	92	86	92	90	88	82	88	90	92	94
estate	18	26	40	44	70	90	22	46	52	66	82	82
estimate	86	88	--	--	--	--	76	82	--	--	--	--
excess	10	31	42	56	76	90	30	46	60	64	86	94
expenditure	22	21	60	60	88	78	30	48	62	80	72	84
face	6	24	24	30	44	56	16	36	56	56	64	82
face value	10	29	42	56	66	86	14	38	60	68	58	74
factor	20	44	74	80	88	86	20	52	70	90	86	96
figure	48	39	46	58	56	67	22	50	52	82	64	78
finance	42	57	70	76	84	90	52	60	84	86	92	98

\* Two different tests are used for these words.

TABLE X  
(Cont.)

Word	Hervey						Winnetka					
	7	8	9	10	11	12	7	8	9	10	11	12
first mortgage	10	10	16	22	58	42	14	56	40	42	56	70
fluctuation	10	23	36	38	76	62	14	46	62	74	86	98
freud	67	73	84	88	98	95	62	72	92	96	96	98
fund (v)	22	5	2	4	2	0	2	2	0	2	0	4
funds	42	60	72	52	62	70	32	64	70	78	86	88
government	45	60	44	54	84	81	28	32	68	80	94	100
guarantee	64	94	--	--	--	--	74	80	--	--	--	--
high	26	39	46	46	58	56	20	56	52	52	58	72
holdings	51	60	72	68	90	81	44	68	64	72	76	88
house	3	10	12	6	24	28	10	18	46	54	54	54
improvement	64	68	74	80	86	78	70	56	70	58	76	74
income	38	68	--	--	--	--	76	76	--	--	--	--
income tax	76	78	92	82	100	86	58	90	84	92	90	96
individual	88	91	94	100	96	98	90	92	98	98	96	98
industry	74	60	60	62	54	70	64	74	80	74	70	78
installment	61	62	64	74	88	84	56	62	78	82	96	86
institution	74	60	--	--	--	--	76	80	--	--	--	--
insure	80	86	--	--	--	--	82	96	--	--	--	--
interest	93	91	84	82	94	95	48	78	88	86	94	98
interest charges	76	62	58	64	74	64	58	52	52	54	54	66
interest rate	73	62	92	70	94	89	64	98	96	94	96	100
investing	73	70	--	--	--	--	76	84	--	--	--	--
issue	56	62	78	62	82	89	50	86	88	80	88	92
item	42	51	46	60	78	73	34	50	64	76	82	85
law	53	52	78	76	90	86	62	86	66	82	92	92
legal	77	65	80	82	72	100	50	84	90	90	94	100
level	22	29	36	36	58	56	32	48	48	58	54	64
levy	26	47	54	46	78	73	10	24	46	72	74	86
liabilities	29	18	36	58	60	50	18	38	52	60	68	86
liberty bond	64	69	86	74	98	84	62	76	80	82	94	86
limited payment	39	29	26	24	32	40	24	32	38	36	26	36
list	56	57	64	72	94	75	36	64	72	72	80	88
loan	74	83	98	96	96	81	44	74	76	84	82	88
lot	72	55	76	78	94	90	68	74	74	88	90	86
"low"	26	47	54	40	60	62	22	54	46	50	64	70
management	64	62	70	62	68	62	62	70	64	72	76	88
margin	0	10	4	4	22	14	4	14	24	24	24	48
market	32	31	34	40	66	45	34	66	56	68	72	78
marketable	42	70	56	70	86	84	42	74	84	90	96	96
marketable*	31	65	74	76	88	94	44	66	70	82	96	92
maturity	14	42	70	58	80	89	10	38	58	68	66	82

\* Two different tests are used for these words.

TABLE X  
(Cont.)

Word	Harvey						Winnetka					
	7	8	9	10	11	12	7	8	9	10	11	12
mortgage	32	31	50	54	64	67	26	50	40	52	50	60
municipal bond	19	16	26	30	54	50	18	30	52	38	62	64
municipality	13	18	24	26	52	40	12	26	36	46	66	60
negotiable	11	8	28	22	42	61	6	14	36	36	36	56
negotiation	31	44	60	70	82	93	22	50	60	64	64	90
net	19	26	30	42	48	50	30	40	42	50	42	52
note	29	56	60	60	74	76	24	62	54	78	50	78
obligation	31	36	42	54	92	90	34	58	66	82	82	96
offer	73	70	80	88	90	93	70	74	90	90	88	90
officer	37	36	52	54	68	68	40	68	52	68	82	86
operations	3	3	10	0	12	17	0	8	4	12	10	18
option	6	31	30	36	80	55	8	32	30	54	70	82
order	11	8	30	10	46	32	6	12	22	32	22	30
organize	56	73	84	88	92	97	72	84	88	90	92	100
outstanding	42	41	40	40	32	61	24	16	24	20	24	20
panic	22	23	48	20	60	50	8	22	36	44	74	86
paper	3	29	10	4	22	14	0	26	8	18	14	38
par	6	51	46	26	64	47	0	58	42	46	44	68
payable	42	44	56	52	68	68	36	52	56	56	76	86
pay off	73	70	80	66	88	68	56	82	76	72	88	84
per cent	59	47	60	52	48	65	56	80	64	62	74	70
percentage	40	31	50	68	88	68	48	48	58	60	70	84
plant	53	55	58	50	62	65	40	48	58	64	62	72
policy	61	52	82	72	90	87	44	54	70	74	88	88
policy holder	56	62	68	66	36	76	48	62	62	58	80	70
position	90	88	86	78	96	97	78	84	94	92	88	86
preferred stock	14	18	40	42	62	40	12	52	46	48	50	74
premium	20	36	48	44	58	65	12	36	62	68	76	70
premium <sup>a</sup>	9	29	60	34	44	29	14	20	34	34	34	40
principal	68	70	72	80	94	90	6	54	68	66	84	86
privileges	87	91	--	--	--	--	80	80	--	--	--	--
product	56	54	--	--	--	--	62	74	--	--	--	--
product <sup>a</sup>	56	57	72	76	96	79	68	72	82	84	72	88
profit	81	70	--	--	--	--	80	82	--	--	--	--
profitable	70	75	--	--	--	--	80	86	--	--	--	--
promote	45	70	80	74	88	90	50	64	68	92	90	98
prospects	22	18	60	56	92	68	32	66	78	84	90	94
prospects <sup>a</sup> *	28	34	72	52	86	68	50	60	64	82	88	92
prosperity	22	46	84	78	90	86	56	72	78	90	88	96

<sup>a</sup> This represents two different meanings of the word.

\* Two different tests are used for these words.

† The test for these words is repeated.



TABLE X  
(Cont.)

Word	Harvey						Winnetka					
	7	8	9	10	11	12	7	8	9	10	11	12
provision	14	29	46	46	76	61	14	28	50	58	70	78
public utility	56	60	72	78	90	94	50	72	78	90	88	92
purchase	90	91	--	--	--	--	82	90	--	--	--	--
quotation	14	16	34	38	74	76	28	50	48	62	72	80
rate	34	44	74	70	90	89	40	70	64	78	72	94
reaction	17	18	12	26	20	24	10	20	24	32	30	40
realize	14	44	6	24	40	39	6	14	22	20	32	54
refund	87	88	--	--	--	--	86	86	--	--	--	--
rent	67	91	90	84	100	86	64	76	84	92	90	88
report	28	29	64	58	90	89	30	50	68	72	90	96
repudiation	8	10	20	10	58	40	4	6	24	30	30	46
requirement	67	70	82	84	82	83	62	70	80	74	84	82
reserve	22	36	38	46	62	61	26	62	60	60	64	66
retire	81	88	--	--	--	--	84	88	--	--	--	--
return	39	39	46	46	68	40	34	48	38	52	54	72
revenue	14	13	20	22	40	43	14	24	18	18	38	42
rights	62	70	82	72	90	83	64	72	86	86	76	82
security	50	68	60	80	86	86	32	66	70	76	84	94
securities	34	63	66	62	52	65	54	44	78	64	62	66
sell short	14	16	22	18	60	43	16	12	14	36	40	52
service	62	65	74	68	76	79	64	64	54	78	80	88
short-term	01	65	86	70	66	65	52	68	58	80	76	74
sinking fund	3	0	6	8	30	11	4	22	6	10	20	42
sound	45	49	74	54	88	83	60	68	72	92	92	94
sound <sup>†</sup>	70	82	84	70	72	90	68	90	80	86	84	94
specify	20	23	48	60	86	90	26	46	60	82	90	94
speculating	6	44	36	52	76	54	6	34	54	64	80	76
stability	34	42	54	58	92	96	46	76	84	90	94	96
statement	90	91	94	92	94	89	72	84	96	92	94	96
stock	28	65	40	56	74	58	24	44	42	42	44	70
stock exchange	45	68	--	--	--	--	84	94	--	--	--	--
stock holder	53	62	88	76	90	83	58	84	86	98	90	100
substantial	42	38	68	62	80	93	64	76	90	86	92	94
support	92	78	--	--	--	--	80	90	--	--	--	--
supply	90	91	96	96	98	100	92	94	92	98	100	100
surplus	28	26	--	70	--	--	34	52	78	92	92	96
system	64	49	--	--	--	--	82	84	--	--	--	--
tax	84	73	--	--	--	--	78	90	--	--	--	--
taxation	76	75	96	92	92	89	68	92	98	96	96	100
tax-exempt	6	39	68	76	98	96	38	42	58	74	82	94
taxpayer	92	91	--	--	--	--	94	98	--	--	--	--
term	95	83	--	--	--	--	76	94	--	--	--	--

<sup>†</sup> The test for these words is repeated.

TABLE X  
(Cont.)

Word	Harvey						Winnetka					
	7	8	9	10	11	12	7	8	9	10	11	12
tip	62	68	40	76	94	83	60	84	82	82	88	96
title	45	44	66	72	90	83	34	38	70	88	86	88
transaction	56	65	84	86	96	100	58	78	94	94	100	98
treasury	76	86	--	--	--	--	86	80	--	--	--	--
trust	25	36	50	46	80	65	18	30	58	58	60	86
volume	32	52	50	58	84	90	58	54	72	82	78	86
Wall Street	48	52	64	68	72	90	50	60	74	88	86	82
yield	39	49	62	64	90	61	28	50	68	76	78	84
difference	70	83	--	--	--	--	78	86	--	--	--	--

TABLE XI

TERMS ON WHICH WINNETKA AND HARVEY SEVENTH GRADE STUDENTS  
SHOW A DISTASTY OF MORE THAN 10 PER CENT

Term	Favor of Winnetka	Term	Favor of Harvey
broker	43	principal	62
stock-exchange	39	interest	45
income	38	endowment	34
prosperity	34	loan	30
dependent	32	short term	29
competition	32	*discount	28
credit	28	legal	27
bureau	26	*assessment	26
diversify	24	*assessment	25
prospects	22	list	20
substantial	22	figure	20
tax-exempt	22	fund (verb)	20
apply	21	government	19
current	21	term	19
securities	20	income tax	18
*decline	20	security	18
excess	20	statement	18
dealer	19	interest charges	18
*decline	19	outstanding	18
concern	19	pay off	17
distribute	16	policy	17
volume	16	levy	16
organize	16	limited payment	15
accumulate	15	depreciate	15
cover	15	coupon	15
sound	15	balance	14
system	14	commerce	14
quotation	14	panic	14
marketable	13	plant	13
certificate-	13	*discount	12
basis	12	position	12
demand	12	support	12
stability	12	endorse	12
product	12	crop	12
association	11	conservative	12
account	11	title	11
net	11	liabilities	11
		convert	11
		charges	11

\*The term was tested in two different ways.

one-third of them have savings accounts while four-fifths of the children at Winnetka in the seventh grade have savings accounts. Nor is the explanation for the superior score of the Harvey children on these four words likely to be found in favorable home experience since they received a higher score on the word interest than did the eighth, ninth, and tenth grades at this place. If out-of-school experiences were the major reason for the high score on this word, then the scores of the eighth, ninth, and tenth grades should have been correspondingly higher. The explanation for the high score on all of these words probably lies in the fact that the Harvey course of study emphasizes these words more strongly in the arithmetic work in percentage than does the Winnetka course of study. Whether the higher score on the word endowment was due to out-of-school experience or not, cannot be definitely answered. But the fact that the seventh grade did better on this word than did the two grades immediately above it, points to some special school influence.

Attention should be called to the word fund on which the seventh grade at Harvey received a score higher than any other grade in either of the two cities. This superior score is probably due to the fact that this group knew so little about the meaning of the word that a pure chance guess on the part of a large number of the children resulted in a score of 22 per cent on this item. The items put into mislead the guesser apparently worked well with every group except this seventh grade.

If the two groups of children from Harvey and Winnetka are

compared word by word, few striking differences will be found. Three different correlations were worked out, namely, those between the scores on the individual items of the two seventh grades, eighth grades, and twelfth grades. There was a correlation of  $.867 \pm .0117$  between Harvey seventh grade and Winnetka seventh grade. The correlation between the two eighth grades was  $.867 \pm .011$ , and between the two twelfth grades was  $.845 \pm .014$ . These facts indicate clearly that, in general, words which are hard for one group are hard for the other and, conversely, words which are easy for one group tend to be easier for the other group. There are certain words which show significant differences, but these differences are never great enough, except in the case of a few words, to make a word well-known in one group and not known at all in the other group.

The above data, coupled with the further data in Table X justify the tentative conclusion that as far as these two cities are concerned, the major differentiation in training in business words would be one on proportionate amount of practice needed for each word. In other words, terms like stock, bond, mortgage, investment, and discount would appear in both courses of study, and the radical variation in home environment would necessitate greatly varied training only in the case of a few words.

The writer also believes that these data prove the powerful socializing effect of excellent school systems in making common business terms well-known to all classes of children. The excellent showing made by the Harvey seventh grade on the four words mentioned above as contrasted with the showing at Winnetka illustrates the effect of concentrated effort in vocabulary training. It shows that where a direct attack is made

in the teaching of words, tangible results soon appear.

Comparison between the scores of boys and girls.-

The Winnetka sixth grade boys made a mean score of 71.39 and the girls made a mean score of 64.03. The probable error of the difference of these two means, 7.36 is  $\pm 1.99$ . The difference between the two means is approximately  $5\frac{1}{2}$  times the probable error. The mean score of the Winnetka seventh and eighth grade boys was  $65.11 \pm 1.02$  and the mean score of the Winnetka seventh and eighth grade girls was  $55.23 \pm .985$ . The difference between the two means is  $9.88 \pm 1.41$ . This difference is 7 times its probable error.

The boys at the New Trier high school made a mean score of  $69.62 \pm .69$  and the girls made a score of  $62.8 \pm .95$ . There is a difference of 6.82 points between these scores of the boys and the girls and the probable error of this difference is  $\pm 1.3$ . Since the difference of the two means is more than five times its probable error it may be considered significant. The reader's attention should be called to the fact that the number of items on which the seventh grade and eighth grade was tested differs from the number on which the high school was tested, hence their mean scores are not directly comparable. The fact that the two groups are equal in intelligence, tends to add further weight to the conclusion that boys have a better understanding of business terms than do girls.

Here we have definite evidence concerning the popular belief that "women know less about business than do men". The fact that this differentiation can be detected as early as the sixth grade indicates that the influences which are

producing variations in the two sexes are already at work. When the writer was teaching courses in business methods in the junior high school at Winnetka, he discovered a greater interest on the part of the boys in these classes than on the part of the girls. The latter not infrequently protested at the nature of the course and said, "Why should girls have to take this course. They don't need to know about business." That this is an attitude which typifies many parents is probably not far from the truth.

If these same differences between boys and girls which were discovered at Winnetka proved universal, and if we believe that girls as well as boys need training in common economic experiences, then it follows that the curriculum must make adequate provision for this training. There must be cooperation between the school and the home. Parents need to discuss business not only with their boys but with their girls as well. Schools must develop methods whereby the interest of the girls is developed in relation to business experience.

No comparisons between the scores of boys and girls were made at Harvey. This was not done because data were not available to show the equality of the two groups, hence it would be impossible to adequately interpret the data after they had been secured.

Relation between I. Q. and test score--. Data on I. Q.'s of pupils were available for the Freshmen, Sophomores, and Juniors at New Trier high school. The correlation between I. Q. and test score was  $.578 \pm .036$ .

This correlation is not extremely high, nevertheless, it is a fairly good one. It indicates that the ability or abilities tested by an intelligence test, so-called, must be taken into consideration when planning business training for children or adults. An examination of the correlation chart indicates, also, that some pupils do very well on the intelligence tests and poorly on the business test while others reverse these findings.

Relation between business vocabulary and general vocabulary.- Data were available for sixth grade pupils at Winnetka of their scores on the word meaning test of the Stanford Achievement Test, Advanced Examination, Grades 4 - 6. The correlation between these scores and the scores on the business vocabulary scores was  $.586 \pm .0409$ .

Here we have an indication that the factors which are producing facility in general vocabulary tend to produce facility in technical vocabulary as well.

Relation between ownership of bonds and business vocabulary. Many parents purchase bonds for their children in order to acquaint them with certain business fundamentals. Is their aim realized? The writer sought an answer to this question by having all children who took the test indicate on the first sheet of the test whether or not they owned bonds. Each child who indicated that he owned bonds was questioned individually by the writer as he passed about the room in order to find out if he knew what kind and denomination he owned. If the child was unable to give a satisfactory answer, it was assumed that he did not own bonds.



An analysis of the scores in the high school at Winnetka indicates that the children who owned bonds secured an average score of  $73.4 \pm .99$  and those who did not own bonds secured an average score of  $66.6 \pm .70$ . The difference between these two means is  $6.8 \pm 1.22$ , a significant difference. Approximately 25 per cent of all the students who took the test in Winnetka owned bonds.

At Harvey the average score of all students who owned bonds was 65.8 and of those who did not own bonds, 49.6. Approximately 10 per cent of the children here owned bonds. Because of the small number who owned bonds, no attempt was made to test the reliability of the differences of these means.

The conclusion appears justified that children who own bonds under present conditions will tend to secure higher scores on a test of business terms than do those who do not own bonds. Can this superiority be ascribed to the training which they receive thru owning and handling these bonds? Is it possible to find the cause for this superiority in other factors?

At Winnetka the mean score of the Seniors who owned bonds was 78.7, and of those who did not own bonds, 74.1. However, an analysis of the Terman Group Intelligence scores of these students shows that the mean score of those who owned bonds was 181 while those who did not own bonds made a score of 159. The mean I. Q. of the juniors who owned bonds was 120 and of those who did not own bonds, 110. The superiority in mental ability of the group who owned bonds was slight in the Sophomore and Freshman groups. These facts do not prove that the superiority of the group who owned bonds was due largely to superior mental ability. They do suggest very strongly, however, that mental ability played an

important part in causing the superiority.

Does this prove that the responsibility of bond ownership is not a desirable method of training children in an understanding of the elements of business. Most certainly it does not. It does indicate very strongly, however, that in many cases the child's ownership of the bond was not a genuine responsibility on his part. The writer found that in most of the cases where children owned bonds, they had little responsibility to discharge in regard to them. They were usually a gift and the child exercised no judgment regarding their selection since this was done by the parent. Again, it was common for the parents to attend to the coupons or interest checks, thus further minimizing the opportunity for any experience by the child. There can be little learning where there is little responsibility.

Relation between possession of savings accounts and business vocabulary. - The writer made provision on his test so that the child could indicate whether he had a savings account. At Winnetka approximately 83 per cent of the children had savings accounts and at Harvey 61 per cent of the children had savings accounts. The mean score of the children at Winnetka who had savings accounts was 64.6 and of those who did not, 60.1. At Harvey the mean score of those children who had savings accounts was 57.6 and of those who did not, 54.3. No attempt was made to check the veracity of the child's report of possession of a savings account so there can not be certainty as to what the above figures mean. The writer believes, however, that their statements were substantially accurate.

## CHAPTER X

### USES FOR FINDINGS OF THE THESIS

Of what value are the findings of this investigation? For what purposes can they be used? In what type of educational problems will these data prove valuable? Can the techniques of testing used in this study be used in studies in other fields?

The uses to which the results of the investigation can be put relate to three different aspects of the problem, namely, the master list, the data on the frequency of each term in investment literature, and the techniques and results of the test itself. Each aspect will be discussed separately.

#### The Master List of Business Terms

In this list are presented for the first time all of those specialized meanings which occur in the simple business activities of modern living. The isolation of these specialized meanings into a single list makes it possible for research workers to make careful, minute studies of these words. The list gives us excellent clues as to the extensivity of training required to prepare students to carry on common business activities. Further, the classification of these words in different ways will yield scientific data useful for developing training curricula. For example, a noun-verb classification will assist us in determining the substantive and functional aspects of business. A classification according to investment areas such as insurance, banking, real estate, and others will indicate the interrelationships of various fields of business.

In this collection of meanings and their relationships inheres, at least implicitly the science of investment for simple investment needs. Dewey states the fact in this manner:

In the degree in which the meanings of any set of experience are so cleared up as to serve as principles for grouping these experiences in relation to one another, that set of particulars becomes a science.<sup>1</sup>

The master list also provides a check list which can be used by any investigator who wishes to carry on research in this field. That other investigators will not be in perfect agreement with this master list is readily admitted by the writer. However, the data gained from working with his assistants in preparing this list indicates that these disagreements will be confined almost exclusively to semi-technical terms and will occur rarely among technical business terms. In spite of the objection that this list is not 100 per cent objective, nevertheless it does offer a working basis for further research in this field. If one wished to secure a list which has the desired degree of objectivity, one would merely have to eliminate about ten per cent of the words, namely, the ones which are designated as semi-technical.

#### The Frequency List

Since this frequency list is a reliable measure for at least the first 100 terms of the frequency of these terms in the literature dealing with stocks and bonds, these data give us unmistakable evidence regarding the investment terms which should be taught in our arithmetic textbooks. They indicate that if we continue to believe that children should be taught about investments in the seventh and eighth grades then we must make sure that frequently used terms are well understood. It means, for example, that the

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1. John Dewey, How We Think, D. C. Heath & Co. 1910, p. 131

word stock and bond will require careful explanation and frequent use, and that the word fiscal year or surtax should probably not appear at all. The data show further that the present exaggerated emphasis of the word brokerage in most arithmetic textbooks is wholly unjustified. Commission is, of course, the term which should be substituted for it. Again, the word diversification appears rarely if at all in our present day textbooks. Since the word appears frequently in investment literature it is clear that our textbooks are at fault in failing to mention it.

It must also be remembered that the vocabulary problem is a crucial one in adult education. Very frequently the books written for the laymen in specialized subjects such as this are too difficult for him to read. When a writer uses terms that do not appear with fairly high credit numbers in this list, he must make sure that the term is one which the layman is likely to know since its infrequency of use in investment literature may mean that the term is a difficult one. If, however, the writer wishes to use such a term it must be accompanied by some explanation unless it is used in a context which makes it easily understood. Examples of words which appear infrequently and which are likely to present difficulties to readers who have not had special training in this field are debenture bond, capital structure, bill of exchange, franchise, surtax and fiscal year.

The development of a child's vocabulary is an important school problem. By the use of this frequency list a writer can use from time to time a word with increasingly lower frequency credit number. In this way the vocabulary of the student can be developed gradually.

Per Cent of Understanding Scores

These scores which show the relative difficulties of the most common investment terms can be used by anyone who attempts to teach an understanding of investment terms. The author of an arithmetic book who is using such words as profit, discount, interest, loss, per cent, tax, check, endorse, bank, etc. can scan the scores of each of these words in order to determine what additional explanation of their meaning he may have to give. The study showed, for example, that children in the sixth grade did not know profit as the difference between the cost and the selling price. Even when it was simplified to the following form only 58% of the entire sixth grade at Winnetka got it correctly:

A pen which costs \$3 is sold for \$4.50. The difference between these two prices is called the:  
interest    profit    saving    dividend    per-cent

Again, if a problem stated that a price had declined 30 per cent, approximately one-third of the children in a typical seventh grade would know the meaning of the word decline, two-thirds of them would not. The word premium occurring in all insurance sections of arithmetic textbooks is known by only one-fifth of the children in the seventh grade at the end of that year's work. At Harvey, Ill and Winnetka, Ill. the test showed that only 36 per cent of the children in the eighth grade knew the meaning of the term. Even at the end of the high school training in the Senior year only 65 to 70 per cent of the students know its meaning.

If terms are well-known they will need no explanation when they occur either in the body of the test or in arithmetic problems. Words of this type for the eighth grade are bank, certificate, charges, commerce, employ, crop, deposit, distribute, due, endorse, retire, treasury, taxpayer, and others. Terms which are at the other end of the difficulty scale, that is, relatively unknown to children are appreciate, assets, bear, collateral, beneficiary, economic, common stock, default, consideration, current assets, diversify, to fund, house, first mortgage, reaction, bull, and others. If arithmetic textbook writers find it desirable to introduce any of these words they must either accompany them with careful explanation or use them in a context where it will be easy to determine their meaning.

By scrutinizing Table X we can see that the teaching of such words as stock, bond, assets, capital, common stock, and many others has not been attended with any great degree of success. The writer believes judging by his own experience in teaching this type of material and by his interviews with children that this failure to teach the meaning of these terms does not mean that they are inherently too difficult for children to understand. The evidence points rather to the fact that the methods utilized in such teaching are as yet unsatisfactory.

The following conclusions can be drawn from the above material relating to the vocabulary of arithmetic textbooks:

1. The selection of important business terms has been done haphazardly and unscientifically.

2. The writers of these books use many words which are too difficult for children to understand without generous explanation.

3. The writer's data on the difficulty of business words should prove useful to the curriculum maker or text-book writer who wishes to carefully grade for difficulty the business words used in arithmetic.

Economics and Economic Civics.-- Many technical business words are used in both of these subjects. Indeed there is good reason to believe that the failure of students to become deeply interested in these subjects is due in part to the number and difficulty of the business words used in the books and materials written on economics. In order to gain some understanding as to the frequency and range of terms used in economics books, one chapter from each of two books<sup>1</sup> was analyzed. The data from this analysis are presented in Tables XII and XIII.

In order to bring out the problem of vocabulary burden even more clearly than is indicated in the tables, a paragraph from Fairchild's book is presented. The writer has underlined all the business terms:

The stock dividend.<sup>2</sup> We have learned that when a corporation's business prospers, its assets generally increase in value, and the book value and the market value of its capital become greater than the par value. In such cases, corporations often increase their capital stock, by giving new shares to all the stockholders in proportion to their present holdings. Let us take an example. The statement of the Eagle Mercantile Corporation on page 100 showed that the book value of the capital was \$74,675. The par value was \$50,000. The directors may now

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1. F. R. Fairchild, Essentials of Economics, Chicago: American Book Co. 1923, pp. 98-111  
R. G. Hughes, Economic Civics, Chicago: Allyn & Bacon, 1921. pp. 215-243



TABLE XII

BUSINESS WORDS FOUND IN A SINGLE CHAPTER OF A TEXTBOOK  
ON ECONOMICS<sup>1</sup>

Word	f	Word	f
account	4	holding	3
affaires	1	improvement	1
aggregate	1	incorporate	1
amount	11	increase	10
assets	38	incur	1
assets, total	4	individual	7
balance	3	insolvency	4
balance sheet	2	interest	2
balance the acc't	1	invest	
bank, national	1	investment	
belong	1	investor	9
bond	16	investment, original	2
bondholder	3	investment, permanent	1
book value	24	issue	2
borrow	4	item	4
business	31	land	7
buy, buyer	4	liability	20
capital	31	liability, double	3
cash (n)	13	liability, limited	5
cent	1	liability, unlimited	1
certificate	1	limited	3
close-up	1	list	3
company	1	lose	5
conservative	1	loss	2
contribution	1	manage, management	1
corporation	85	market	2
debt	11	member	1
debt, outside	1	merchandise	8
decline	4	mercantile	11
decrease	1	net worth	2
deduct	1	note	13
director	3	noteholder	3
dispose of	1	organize, organization	6
distribute		outsider	2
distribution	2	owe	1
dividend	12	own, owner, ownership	11
dividend, stock	7	par value	21
due	1	partner, partnership	24
excess	1	pay, paid	19
exchange	1	pay in	1
failure, fail	4	pay out	1
fortune	2	per cent	3

<sup>1</sup>F. R. Fairchild, Essentials of Economics, New York: American Book Co., 1933. pp. 98-112.

TABLE XII  
(Cont.)

Word	f	Word	f
gain	3	percentage	1
holder, bond	1	permanent	1
person	1	shrink	1
person, artificial	1	spend	2
person, legal	1	statement	34
person, natural	2	stock	16
private	2	stock, capital	37
profit, profitable	3	stock certificate	1
profits, undivided	11	stockholder	23
promise	7	stock of goods	1
promise-to-pay	2	stock watering	2
property	3	store	1
property account	3	subscribe, subscription	2
property, private	2	sum	3
prosper, prosperity	3	surplus	18
purchase, purchaser	1	total	2
rate of interest	1	transaction	1
real estate	6	undervalue	1
reduce, reduction	2	unlimited	1
reorganization	1	value	13
rights	11	value, market	13
rights, property	3	value, real	7
risk	2	value, true	1
sale	1	water, watering	2
sell	5	wealth, wealthy	2
share	35	withdraw	1
share holder	19	worth	11

TABLE XIII

BUSINESS WORDS FOUND IN A SINGLE CHAPTER OF  
A TEXTBOOK ON ECONOMIC CIVICS

Word	f	Word	f
act (n)	1	Bradstreet	1
accept		break (contract)	3
acceptor		broker	6
acceptance	11	broker, curb	1
account	3	brokerage house	1
account, charge	1	bronze	2
account, permanent	1	bullion	2
adjust	1	business	37
affairs	1	buy, buyer	22
agent	2	calculation	1
agreement	6	call	1
amount	19	carry	1
appoint	1	cash (n)	3
assets	1	cash (v)	1
authority, authorize	2	cashier	1
"back it up"	2	cast	1
balance	5	center	1
bank	60	certificate	2
bank, commercial	1	charge (v)	5
bank, Federal land	4	charger	5
bank, National	5	check	8
bank, savings	3	check, cancelled	1
bank, state	1	check, travelers	1
banker	7	circulation	5
banking	8	clause	1
banking house	3	clearing house	3
barter	5	"close its doors"	2
basis	3	coin	20
bill	1	coinage	1
bill-of-exchange	7	collateral	2
board	1	collect	4
board, Federal Reserve	1	collective bargaining	1
bond	12	commerce	1
bond (v)	1	commodity	1
bond house	1	company	3
bond, liberty	2	company, trust	1
bonding	1	Comptroller of Currency	1
bond holder	11	concern	1
books	1	condition of finances	1
borrow	2	contract	12

TABLE XIII  
(Cont.)

Word	f	Word	f
contract, binding	1	engage, engagement	1
contract, written	1	enterprise	2
corporation	9	establish	1
correspondent	1	exchange	8
cost	2	expand	1
counterfeiter	1	expire, expiration	1
credit (n)	22	face	1
credit book	1	fail, failure	2
credit instrument	3	favor	1
creditor	4	Federal Reserve	3
curb market	1	figure	1
currency	4	finance, financial	10
deal	2	financial center	2
dealing	2	firm (n)	7
debt	3	five cent piece	1
debtor	1	foreign	3
deceased	1	funds	3
demand	2	gold	19
demand, on	2	gold certificate	3
denomination	2	gold reserve	1
department	1	goods	16
department, savings	1	govern, government	17
deposit, depositor	11	grant	1
dime	1	greenback	2
discount (v)	3	half eagle	1
dispose of	7	half dollars	1
district	5	headquarters	1
dividend	6	hold, holder	2
dollar	9	inspector	1
dollar exchange	1	institution	3
double eagle	1	insure	1
draft	3	interest	7
draw out	1	interest, financial	1
drawee	2	intrust	3
drawer	2	invest	
due	5	investment	
durable	1	investor	2
Dun	1	issue	19
eagle	1	item	1
employ	1	labor union	1
employee	1	law	11
endorse, endorsement	6	lend	19

TABLE XIII  
(Cont.)

Word	f	Word	f
liability	1	paper	7
loan	6	paper money	12
local	1	par	3
make good	4	par value	2
maker	2	party	1
making	1	pay, paid	34
management	1	payable	1
margin	1	pay back	2
market	1	pay down	1
market place	1	pay for	3
material	4	payee	2
measure of value	1	payment	10
medium of exchange	1	penny	1
member, membership	3	pledge	1
met	1	policy, business	4
metal	9	possess, possession	2
milling	1	pound (Eng.)	1
miner	1	power	1
money	89	price	5
monometalism	1	private	1
mortgage	1	profit, profitable	5
nickel	1	promise-to-pay	3
note	14	property	2
note, Federal Reserve	4	prosperity	1
note, National	1	public	1
note, National Reserve	1	quarters	1
note, promissory	4	quarter eagle	1
note, short term	1	rate (n)	3
note, treasury	2	rate (v)	1
note, U. S.	2	real estate	1
obligate, obligation	3	regulation	1
offer	1	renew	1
officer	4	repay, repayment	3
official	4	report	2
on hand	2	reserve (n)	1
open	1	security	2
operate, operation	2	sell, seller	21
order	6	service, services	3
order, express money	1	share	3
organize, organization	3	ship	3
owe	8	sign	2
own		silver	19
owner		silver certificate	2
ownership	3	16 to 1	1

TABLE XIII  
(Cont.)

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Word	f	Word	f
sound, soundness	3	system	9
specification	1	system, Federal Reserve	5
spend	2	three cornered trade	1
stamped	1	trade	19
standard	7	trade acceptance	1
standard of payment	1	transact, transaction	3
standing	2	treasurer, treasury	2
state (n)	3	triplicate	1
statement	3	trust (n)	1
sterling exchange	1	trust (v)	2
stock	22	turnover	1
stock, common	1	union	5
stock, preferred	5	U.S.Treasury	3
stock exchange	3	undertake	1
stockholder	4	value	11
stock watering	2	valuable	2
store	1	vault	1
strike	2	vault, safe deposit	1
subsidiary	1	violate	1
sum	5	vote	2
aurety	1	wages	2
swap	1	Wall Street	1

---

decide to increase the capital stock of the corporation to \$60,000. They will issue \$10,000 of new stock (par value). Since this is one fifth of the present stock (par value), they will give to each stockholder new stock equal to one-fifth of the amount of his present holdings. For example, A has five shares of stock; he will receive one new share. The par value of his shares was \$500 (\$100 a share). It is now \$600, since he now has six shares. Such a distribution of new capital stock is called a stock dividend. In this example it is a 20 per cent stock dividend, since each stockholder receives new shares equal to 20 per cent (one fifth) of his present holdings.<sup>1</sup>

It is doubtless clear to the reader that this passage from an economics textbook indicates the necessity for analyzing the vocabulary burden of economics books. The writer's master list of business terms makes it possible to make such an analysis.

American History--. The frequency with which business terms are used in this subject is not generally recognized by educators. In order to present a fairly accurate picture of the different business words which are used in American History the writer made an analysis of all the business words in the Pressey Vocabulary list of technical terms in American History.<sup>2</sup> This list of words is presented in the table on the following page. These facts should be noted concerning these words:

(1) There are 162 different business words in this list.

(2) Many of them are among the more difficult words on the writer's test of business words. Therefore, in American History textbooks they must be explained or appear in highly favorable context if they are to be understood by the student.

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1. Op. Cit. p. 109.

2. L. G. Pressey, The Technical Vocabularies of the Public School Subjects. Section 5: American History, Bloomington, Ill., Public School Publishing Co.

TABLE XIV

BUSINESS TERMS FOUND IN THE PRESSEY VOCABULARY  
LIST OF TECHNICAL TERMS IN AMERICAN HISTORY

accounts	conservative
agent	consideration
agreement	consignment
agriculture	consolidate
annul	consumer
appointment	contract
apportionment	convert
appropriation	corporation
assessment	counterfeit
assumption	court
auditor	credit
bankrupt	currency
barter	custodian
bimetallism	customs
bond	damage
bonus	debtors
boycott	declaration
budget	demonetise
bureau	denomination
calculate	depose
capital	depreciation
capitalist	depression
cargo	development
charter	directorato
circulation	draft
claim	drummer
coinage	duty
collateral	economics
combination	embargo
commerce	embark
commission	employee
commodity	employer
company	endowment
compensate	enterprise
compensation	equalization
competition	establish
compute	estate
concession	excise
confiscate	exempt
conservation	expenditure

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TABLE XIV  
(Cont.)

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exploit	patronage
exportation	pension
factory	prerequisite
fee	philanthropist
finance	possession
franchise	property
fraud	proprietor
funds	prosperous
grant	protection
greenback	purchase
guarantee	rebate
import	recompense
income	reparation
incorporate	repudiate
indemnity	reserve
industry	resources
inflation	resumption
infringement	revenue
inheritance	settlement
insolvent	shilling
invest	specie
issue	speculation
labor	squatter
levy	staple
loan	sterling
machine	subsidy
mail	surplus
manipulation	tariff
manufacture	tax
mercantile	taxation
merchant	taxpayer
merger	tenant
middlemen	textile
mint	trade
monopoly	tradesmen
mortgage	traffic
negotiation	transportation
option	treasury
overcapitalization	trusts
panic	union
patent	utilities

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Commercial Law-. The strikingly large number of legal terms in the master list has been commented on in Chapter V. This fact suggests a curriculum problem of no small significance. If business-legal words are of so much importance, what device has the school used to train the vast number of pupils who pass thru its doors in an understanding of common business-legal concepts? The answer is, of course, that the school has done exceedingly little in this field. Some schools offer courses in commercial law and in certain localities the enrollment in these classes is fairly large. However, the percentage of all high school students who get any contact with the subject is exceedingly low.

The present textbooks for training in commercial law are usually too difficult, too specialized, and the selection of curriculum material has not been scientifically done. Consider, for example, the following statement from a well-known text in this field. The topic discussed is one <sup>with</sup> which almost every investor in stocks or bonds is concerned:

Corporate stocks may be pledged. The transfer is accomplished in the same way as in case of an ordinary sale and transfer of title, the pledgor taking back from the pledgee a writing showing that the shares are held in pledge, and not absolutely. To render the pledgee's security complete as against the pledgor, a mere transfer of the certificates indorsed in blank or in full is sufficient. But in order to invest the pledgee with full legal title, as against the corporation and the creditors of the pledgor, a transfer must be registered on the books of the company. (As to whether a pledgee is a bona fide holder for value or entitled to protection as such, see p. 395. 1

The words underlined are the business and business-legal words. The difficulty of reading such a passage with complete

1. E. W. Spencer, A Manual of Commercial Law, Indianapolis: Bobbs Merrill Co., 1913. pp. 431.

understanding is apparent. The writer believes that the problem of developing a scientific curriculum in this field can be attacked in this fashion. First, we must find out the legal problems which the layman commonly faces. This will be an extensive analysis and should not be confined merely to the civil cases with which a court deals. Second, we must determine the amount of legal understanding which is necessary to meet these problems. Third, since this training in understanding must be presented in words, we must analyze this information for the purpose of determining the concepts, legal and otherwise, which are used to present this information. Fourth, the typical layman's understanding of these terms must be ascertained. Fifth, the agency which should correct the inadequate understanding must be determined.

Here is presented in bold relief one method of attacking the curriculum problem in commercial law. Thru the use of the use of the writer's master list of business terms it would be possible to analyze various types of commercial law material which has been written for the lay reader by an expert and determine the concepts which have been used in such writings. In order to demonstrate the practicability of this procedure, the writer has analyzed a chapter of a commonly used text on commercial law. The data furnished by this analysis are presented in Table XV . Here is an illustration of the heavy business vocabulary burden of such a book.

#### Conclusion

The writer has presented in this chapter numerous uses to which the master list of business terms, the per cent of understanding scores, and the various techniques employed in

TABLE XV

BUSINESS WORDS FOUND IN A SINGLE CHAPTER  
OF A TEXTBOOK ON COMMERCIAL LAW<sup>1</sup>

Word	F	Word	F
accept, acceptance,		clearing house	2
acceptor	9	codify	3
account	2	coin	2
acquire	1	commerce, commercial	2
act (n)	9	code	4
action	2	company	10
adjust	1	confer (v)	1
adopt	1	consideration	2
annex	1	consolidation	2
appraisement	1	contract	8
assign, assignability	6	counter-claim	1
assignee	2	court	3
assignor	1	credit (n)	2
associate, association	2	credit (v)	4
attorney	1	creditor	2
authority, authorize	2	currency	3
bank	24	customer	1
bank, national	5	date	2
banker	9	debit	2
banking	2	debt, debtor	9
bearer	6	defects	1
bill	15	defenses	2
bill, foreign	3	delivery	6
bill, inland	2	demand	5
bill-of-exchange	15	departure	1
bill-of-exchange, inland	3	deposit, depositor	12
bills, domestic	1	direct (v)	2
borrower	1	dishonor	2
business	4	dollar	3
buy, buyer	2	draft	6
carriage	1	draft, bank	2
carry on	1	draw	15
case	1	drawee	3
wahh (n)	1	drawer	5
cashier	1	economic	1
certificate	4	economy	1
certificate of deposit	3	enact	1
certify	4	endorse, endorsement	10
channel of trade	1	endorsee	2
charge (v)	2	endorser	2
check	22	enforce, enforcement	2
circulate, circulation	2	entry	1
claim	1	equivalent	1

1. E. W. Spencer, A Manual of Commercial Law, Indianapolis: Bobbs Merrill Co., 1913, pp. 157-167.

TABLE XV  
(Cont.)

Word	
exchange	5
expense	1
expire, expiration	1
extend	1
face	1
fail, failure	2
favor	2
fee	1
foreign	6
form	7
formulate	1
funds	1
goods	5
government	1
grace (day of grace)	2
hold, holder	5
import	3
incorporate	2
instrument	13
instrument, negotiable	11
insure, insurance	2
law	14
law, common	1
law, merchant	2
legal	3
liable	4
limitation	2
loan	2
loss	1
maker	1
manage, management	1
maturity	2
medium, exchange	1
mercantile	2
merchant	1
metal	1
money	18
name	1
negotiate,	
negotiation	5
negotiable,	
negotiability	11
non-acceptance	1
non-negotiable	1
non-payment	1
no-protest	1
note	9
note, promissory	9
notice	3
notification	1
order	10
order, written	1
ownership	1
paper	1
party	9
pass book	1
pay, paid	11
payable	10
payee	5
payment	7
per annum	1
per cent	2
protest (n)	1
provide, provision	4
purchase, purchaser	1
receipt	1
recover	1
release	2
repay, repayment	1
representative	1
require, requirement	2
rights	1
risk	2
run	1
sell	1
send	1
sight	1
sight, at	1
specify, specification	2
statute	8
statute of limitation	2
subject to	3
substitute	1
sue	2
suit	3
sum	4
term	1
term of credit	1
tenor	1
trade	1
transact, transaction	3
transfer, transferee	8
transmission	1
transport, transportation	3

TABLE XV  
(Cont.)

Word	F	Word	F
triplicate	1	value received	3
unconditional	2	void	1
unpaid	2	withdraw	1
validity	1	worth	2
valuation	1	written	3
value	4		

the testing can be put. The list of uses could be extended to all other fields which involve commercial training of some sort such as commercial arithmetic, commercial geography, commercial history and so on. However, he believes that the illustrations given are sufficient to demonstrate what is believed to be the major contribution of this study, namely, a technique of attack on the problem of training students for successful participation in the common business activities of modern life.

A TEST OF BUSINESS TERMS

Prepared by Edgar Dale, Graduate Student,  
School of Education, Univ. of Chicago.

NAME \_\_\_\_\_ AGE \_\_\_\_\_ YEARS \_\_\_\_\_ MONTHS

BOY OR GIRL \_\_\_\_\_ GRADE \_\_\_\_\_ DATE \_\_\_\_\_

CITY OR TOWN \_\_\_\_\_ STATE \_\_\_\_\_

Do you have a savings account? \_\_\_\_\_ Stock \_\_\_\_\_ Bonds \_\_\_\_\_

DIRECTIONS

This booklet contains a set of exercises whose purpose is to test your understanding of common business terms. There are three kinds of exercises. In the first kind a definition is given. Five words follow the definition and only one of the five is correct. You are to underline the word which best fits the definition. Do this one:

To get something by paying a price for it;  
sell      earn      buy      lend      borrow

In the second type only one word is given. You are to find a word among the five following it which is the same in meaning. Do this one:

price:            cost      tax      earnings      loan      rent

In the third type you are to find a word like the one underlined in the sentence. Do this one also:

He received his pay weekly:  
bills      wages      interest      bonds      rent

Now do the exercises on the following pages as carefully and quickly as you can. If you do not know the answer, put a question mark at the side of the exercise, and then try to guess the right answer.



1. To rise in value:  
depreciate appreciate profit extension yield
2. The wealth used to carry on a trade, business, or manufacture:  
income subsidy profits capital earnings
3. An article of merchandise:  
commodity freight cargo stock bargain
4. Free from risk:  
conservative risky speculative fraudulent hazardous
5. Decline: lowering raising increase acceptance gain
6. Underwrite: surety sign contract insure bind
7. A department of a government, business, or city that has a special work to perform:  
bursar bureau health building taxing
8. Pay which we give another person for carrying on business dealings for us: brokerage commission bonus toll duty
9. Expenditure: expensive debts wages salary expenses
10. Property such as land and buildings:  
personal-property apartments real-estate lots estate
11. Agreement: policy settlement transaction charter contract
12. The time when a note or bond is due:  
expectancy contingency maturity specification stipulation
13. The amount the insured pays periodically or in one sum for insurance: dividend bonus option premium interest
14. The person who receives the financial benefits of an insurance policy: beneficiary contractor benefactor benefitter donor
15. A life insurance policy whose face amount is payable to the insured at a specified time, or sooner to his representatives should he die before the term of years was over:  
term straight-life endowment limited-payment ordinary-life
16. The financial year of a business or government:  
calendar fiscal accounting bookkeeping monetary
17. The tax placed by law on exported or imported goods:  
ad valorem revenue toll merchandise customs
18. Current, as, current expenses:  
electricity future world present past
19. To determine the value or amount of property or income as a basis for taxation: levy lay assess estimate exact
20. The amount of coin, bills, etc., in actual use as currency:  
exchange medium-of-exchange ratio circulation standard

21. The condition of a man who cannot pay all of his debts and who turns all his property over to the courts to distribute to his creditors:  
insolvency      broke      failure      solvency      bankruptcy
22. All the property owned by a debtor:  
real estate      assets      chattels      bonds      currency
23. A business organization:      tenant lease      concern      factory      stock
24. Goods shipped into a country:  
exports      merchandise      revenue      duty      imports
25. A paper showing that a debt has been paid:  
note      mortgage      check      bond      receipt
26. The contract which a renter has with an owner:  
policy      lease      agreement      deed      policy
27. If we subtract the cost from the selling price we get the:  
interest      profit      dividend      yield      income
28. A fixed annual sum to be received by a certain person:  
earnings      wages      annuity      dividend      profit
29. A person who tries to lower the price of stocks:  
bear      fox      bull      lion      gambler
30. A bond which can be retired by the maker before it is mature:  
mortgage      refunding      sinking-fund      callable      government
31. Property pledged to insure the payment of a loan:  
collateral      mortgage      note      assets      trust
32. The failure of a corporation to meet its debts:  
deficit      default      reorganization      loss      dishonesty
33. Capital for permanent use which is borrowed by bond issues:  
capital stock      liabilities      funded-debt      bonds      floating-debt
34. A legal claim on property which the possessor holds as security for the payment of some debt:      trust      bond      lien      pledge      tax
35. A sum of money deposited with a broker by a purchaser of stocks to protect the broker in case of unfavorable advance or decline:  
brokerage      reserve      balance      margin      pledge
36. Subtracting the face value of a bond from its selling price gives the:  
premium      quotation      yield      discount      par value
37. Property owned such as stocks, bonds, notes, etc.:  
collateral      holdings      income      earnings      sinking fund
38. A study of the production, consumption, and distribution of wealth.  
geography      economics      civics      history      agriculture
39. Deficit:      gain      loss      profit      default      decrease
40. Yield, as the yield was high:  
cost      dividend      price      payment      return

41. A person who tries to raise the price of stocks:  
bull      fox      bear      lion      gambler
42. The unpaid part of a debt:  
bill      arrears      credit      expense      debit
43. The relation between persons where one looks after the property of another: corporation      partnership      contract      trust      proxy
44. Secret information about the best stocks to buy or sell:  
note      intrigue      price-fixing      gambling      tip
45. A place where stocks are bought and sold:  
market      broker      stock exchange      pit      New York
46. A fund formed by a corporation or government by gradually accumulating money:  
reservation      collateral      funded-debt      sinking-fund      capital
47. Stocks, bonds, notes, etc. are known as:  
resources      funds      securities      speculations      wealth
48. Revenue: taxation      income      profits      margin      losses
49. To withdraw bonds from circulation:  
repudiate      retire      exchange      drawback      cancel
50. Available funds: obligations      resources      debts      wages      interest
51. Refusal to pay a lawfully contracted debt:  
liquidation      bankruptcy      liability      deficit      repudiation
52. The uninvested cash kept on hand by a bank or corporation to meet demands made on it:  
reserve      assets      resources      capital      currency
53. Sound, as a sound investment: poor      fair      safe      weak      land
54. To regain property by paying what is due on it:  
conversion      lien      foreclose      redeem      transfer
55. The person appointed by the court to take charge of a bankrupt's property: financier      agent      receiver      custodian      manager
56. A written contract between the insured and the insurance company:  
record      premium      policy      certificate      document
57. Outstanding, as, he has \$1,000 outstanding:  
expenses      debts      uncollected      capital      invested
58. The face value of a stock or bond:  
par      net      equity      standard      market
59. The privilege of buying certain property. It is usually obtained by paying a sum of money:  
option      bonus      installment      note      mortgage
60. Gilt-edge: high quality      low quality      expensive      fake      gold-edge

61. Increase beyond proper or just value:  
boom depreciation inflation expansion gain
62. Duty: tax interest profit due import
63. A paper ordering the payment of money:  
mortgage draft remittance obligation note
64. To write out: sign draw endorse record correspond
65. The record of the business dealings which one has with a bank,  
store, etc: bill account order exchange books
66. An unconditional written order from one person to another to pay  
to some person mentioned a certain sum therein named:  
bill-of-exchange bond stock consignment assignment
67. A check which an officer of a bank has stamped as being good:  
registered voucher stamped certified cancelled
68. A sum of money due to some person:  
credit debit loan note account
69. Good reputation for the payment of bills which entitles a person  
to be trusted in buying or borrowing:  
credit debit honor duty account
70. Refusal to pay a check or draft:  
not-sufficient-funds discredit dishonor annul rejection
71. Property in general but particularly that left at death:  
inheritance estate will land securities
72. The words of a written paper, especially of a commercial or legal  
paper: contract affidavit notation instrument face
73. Proving who a person is in order to cash a check:  
identification affidavit signature witness probate
74. A legal business writing such as a contract, deed, etc.  
consignment assignment grant negotiation instrument
75. A putting out or giving forth especially in regard to stock in a  
company: dispense issue deliver distribute disseminate
76. That which can be disposed of by sale or transfer:  
signed sealed ratified negotiable confirmed
77. A written instruction to pay money: also to make, furnish, or  
deliver something: check draft order assignment contract
78. Steps taken to fix the liability of drawer or endorser of commer-  
cial paper when the paper is dishonored:  
default bankruptcy insolvency protest settlement
79. Money received: receipts liabilities cash checks profit
80. To mention exactly or in detail:  
specify testify classify record instruct

81. To give the right or power to act:  
administer authorize control influence enact
82. A written paper asking a bank to pay money which one has deposited there:  
note bill check contract account
83. Naming the present price of a stock or bond:  
quotation statement auction appraisal announcement
84. A paper which shows that one owes a debt and promises payment:  
mortgage contract note receipt liability
85. Buying property in order to get a safe yearly income:  
investing gambling speculating defrauding
86. A company which receives certain legal rights thru a charter from the state or the United States:  
municipality corporation partnership consolidated industrial
87. Stock which receives its dividend before other capital stock:  
deferred capital common extraordinary preferred
88. Property turned over to a lender of money to keep until the debt is repaid:  
security holdings assets note deposit
89. That part of the earnings of a corporation which is returned to the owners of stock:  
dividend gain income winnings salary
90. The ordinary capital stock of a company:  
Class A customary preferred current common
91. Buying property not for a safe income but to sell at a higher price:  
investing speculating gambling defrauding
92. The capital of a company or corporation in the form of transferable shares each of a certain amount:  
stock bond note holdings assets
93. The sum of money upon which interest is paid:  
holdings capital principal credit deposit
94. Any interest-bearing certificate used by a government or corporation:  
stock, mortgage letter-of-credit warrant bond
95. The charge made by a person who buys or sells stock, bonds, etc.  
bondage market-price brokerage duty tax
96. Money placed in a bank: deposit loan note mortgage funds
97. All of one's debts: liabilities stocks assets arrears deficit
98. Goods shipped out of a country:  
exports revenue duty tax imports
99. All of one's property: assets arrears deficit liabilities stocks
100. Total yearly receipts: rent capital income expenses earnings

APPENDIX B

A TEST OF BUSINESS TERMS

Prepared by Edgar Dale, Graduate Student,  
School of Education, Univ. of Chicago.

NAME \_\_\_\_\_ AGE \_\_\_\_\_ YEARS \_\_\_\_\_ MONTHS

BOY OR GIRL \_\_\_\_\_ GRADE \_\_\_\_\_ DATE \_\_\_\_\_

CITY OR TOWN \_\_\_\_\_ STATE \_\_\_\_\_

Do you have a savings account? \_\_\_\_\_ Stock \_\_\_\_\_ Bonds \_\_\_\_\_

D I R E C T I O N S

This booklet contains a set of exercises whose purpose is to test your understanding of common business terms. There are three kinds of exercises. In the first kind a definition is given. Five words follow the definition and only one of the five is correct. You are to underline the word which best fits the definition. Do this one:

To get something by paying a price for it:  
sell      earn      buy      lend      borrow

In the second type only one word is given. You are to find a word among the five following it which is the same in meaning. Do this one:

price:              cost      tax      earnings      loan      rent

In the third type you are to find a word like the one underlined in the sentence. Do this one also:

He received his pay weekly:  
bills      wages      interest      bonds      rent

Now do the exercises on the following pages as carefully and quickly as you can. If you do not know the answer, put a question mark at the side of the exercise, and then try to guess the right answer.

1. Amount: sum cost yield return money
2. Advantage: advance education gain loss entertainment
3. Assume: lose profit undertake yield amount
4. Accumulate: earn increase profit interest lose
5. Advance: interest earn lose benefit increase
6. Accept: take lend borrow lose profit
7. Balance: gain account interest remainder debt
8. Burden: loss insurance load pay sell
9. Business: trade art science agriculture music
10. Charges: losses costs profits yield earnings
11. Claim: check account contract demand wish
12. Commerce: earnings earn sales force trade
13. Conservative: healthy speculative bond risky safe
14. Customer: owner salesman buyer clerk peddler
15. Competition: gain corporation rivalry company competent
16. Contract: transaction charter bill assessment agreement
17. Convert: find change lose win secure
18. Debt: what-you-owe bill cash borrow profit
19. To get something with the intention of returning it later:  
borrow earn gain invest tax
20. A department of a government, business, or city that has a  
special work to do:  
police bureau health building taxing
21. The money paid when goods are bought:  
interest note credit charge cash
22. A written statement which tells that something is true:  
check note contract certificate bill
23. You wish to pay a bill with some of the money you have in the  
bank. So you write a: note check contract bill receipt
24. To ask for and to receive payment of money:  
profit earn pay collect bill
25. A business organization:  
tenant school concern contract stock

26. Dealer: owner customer merchant debtor creditor
27. Decline: lowering raising increase acceptance gain
28. Due: paid payable received found taxed
29. Earnings: wages taxes duties bills business
30. Enterprise: profit undertaking earnings yield sale
31. Establish: shop insure lose win build-up
32. Estimate: judge earn contract learn profit
33. Exchange: profit tax trade loan lease
34. Expense: profit loss gain earnings cost
35. Increase: grow-larger grow-smaller fold return bend
36. Firm: company farm broker lawyer employer
37. A sum of money: note bill funds loan check
38. High Grade: steep of-high-quality expensive dear proud
39. Hold: gain profit lend borrow own
40. Insure: earn guarantee profit cost verify
41. To ask for with authority:  
yield excuse demand lease seek
42. A person who receives his support from another:  
youth junior dependent senior lessor
43. Money placed in a bank or given as a pledge:  
deposit loan earnings profit check
44. To divide among several or many:  
engage distribute transact dividend fraction
45. To write one's name on the back of a check, note, etc:  
sign underwrite indorse enscribe countersign
46. The total amount of money which a person or company receives  
each year: expenses capital rent income gain
47. To make sure against loss or damage:  
guarantee invest be-careful pledge bond
48. A particular branch of work or trade:  
iron steel wood-working industry wheat
49. The money paid for the use of money:  
profit interest wages income salary
50. A sum of money lent at interest:  
bonus dividend stock rent loan



51. Management: care income<sup>159-</sup> interest property employee
52. Marketable: fresh salable vegetables profitable counter
53. Manufacture: own make handle factory shop
54. Ownership: property possession office store profit
55. Payable: able-to-pay due profitable earning costly
56. Per Cent: by-the-cent by-the-thousand by-the-hundred  
cheap expensive
56. To pledge: lend guarantee interest profit give
57. Price: profit earnings cost gain admission
58. Prospects: guess prosperity wealth expectations sales
59. Prosperity: good-fortune sales income property ownership
60. Property: thing-owned good-manners house gain proper
61. Public: the-people private print individual city
62. Purchase: buy sell lend receive exchange
63. Reduce: make-smaller increase compel lose induce
64. A business which pays out more money than it takes in is said to have a:  
gain profit loss reduction mortgage
65. The opportunity for buying or selling goods:  
store office business market bazaar
66. To put to a particular purpose:  
yield standard make apply deposit
67. A place where business is carried on:  
shilling office house conservatory agent
68. An instruction to buy, sell, or supply goods or to pay money:  
order promise discount payment bonus
69. To pay in full:  
receipt bill pay-off lend discount
70. The tools, machinery, fixtures, etc. of any trade or business:  
store plant office bazaar warehouse
71. If you subtract the cost from the selling price you get the:  
interest profit dividend yield income
72. Keeping from loss or injury:  
doctor carefulness thoughtfulness gain protection
73. Property such as land and buildings:  
personal-property apartments real-estate lots estate
74. A paper showing that a debt has been paid:  
note mortgage check bond receipt

75. Risk: play chance frisk lose profit
76. Sum: cost amount yield money return
77. Surplus: clothing excess loss addition earnings
78. Trade: profit business prosperity cash rent
79. Value: gain furnish burden property worth
80. Wealth: real-estate riches salary wages gain
81. Total: the-whole-sum addition gain increase income
82. Benefit: advantage advance bequest request lease
83. Agreement: benefit discount charge bargain value
84. Discount: distribute deduct miscount loss gain
85. Develop: prosper expand decrease discount trade
86. Tax: income license bonus charge gain
87. The money paid for the use of a house or other property:  
receipt lease check rent cash
88. Any of a number of equal parts into which any property is divided:  
dividend quotient share division yield
89. To put your name on something:  
print sign receipt scribble scrawl
90. A place where stocks are bought and sold:  
market broker stock-exchange Chicago New York
91. A definite length of time: holiday calendar term age sum
92. Secret information about the best stocks to buy or sell:  
note intrigue price-fixing gambling tip
93. Legal right to the ownership of property:  
assessment contract receipt proprietorship title
94. Tax-exempt: tax-burden tax-free high-tax low-tax war-tax
95. Figure: discount loss profit price yield
96. Outstanding: expense loss debt unpaid profit
97. Free from all charges, deductions, etc:  
profit gross net gain yield
98. Sound: poor profitable tight safe cheap
99. An owner of stock:  
proprietor broker merchant trader stock-holder
100. Option: property profit privilege bonus vision

APPENDIX C

A TEST OF BUSINESS TERMS

Prepared by Edgar Dale, Graduate Student,  
School of Education, Univ. of Chicago.

NAME \_\_\_\_\_ AGE \_\_\_\_\_ YEARS \_\_\_\_\_ MONTHS

BOY OR GIRL \_\_\_\_\_ GRADE \_\_\_\_\_ DATE \_\_\_\_\_

CITY OR TOWN \_\_\_\_\_ STATE \_\_\_\_\_

you have a savings account? \_\_\_\_\_ Stock \_\_\_\_\_ Bonds \_\_\_\_\_

D I R E C T I O N S

This booklet contains a set of exercises whose purpose is to test your understanding of common business terms. There are three kinds of exercises. In the first kind a definition is given. Five words follow the definition and only one of the five is correct. You are to underline the word which best fits the definition. Do this one:

To get something by paying a price for it:  
sell      earn      buy      lend      borrow

In the second type only one word is given. You are to find a word among the five following it which is the same in meaning. Do this one:

price:      cost      tax      earnings      loan      rent

In the third type you are to find a word like the one underlined in the sentence. Do this one also:

He received his pay weekly:  
bills      wages      interest      bonds      rent

Now do the exercises on the following pages as carefully and quickly as you can. If you do not know the answer, put a question mark at the side of the exercise, and then try to guess the right answer.

1. A business which receives and lends money:  
bank store corporation company market
2. The management of money:  
economics finance traffic barter thrift
3. A charge fixed by a standard or scale:  
return rate savings capital security
4. A conditional transfer of property to insure the payment of a loan:  
barter exchange mortgage guarantee lease
5. That which is either grown or manufactured.  
linen paper product wheat silk
6. A time when business is dull:  
loss depreciation failure calmness depression
7. A mortgage which has preference over other mortgages on the property:  
preferred first primary prior preference
8. Failure: not-making-a-success gain profit thrift return
9. A bond issued by the U.S. government to raise money to carry on the World War:  
municipal-bond government-bond liberty-bond tax-bond German-bond
10. The upward and downward movement of prices:  
loss profit fluctuation flotation recession
11. A town or city which has local self-government.  
borough corporation municipality metropolis urban
12. Level, as , the level of prices is high:  
cost position yield amount return
13. A certain part of a city or state:  
village district home bureau primary
14. Work: leisure employment profit earnings finance
15. Taxation: taxing worry money property real-estate
16. Any of the parts of a debt paid at different times:  
rent taxes interest installment premium
17. Retire: repair withdraw sleep earn yield
18. An owner of a bond:  
bondsman bondman bondholder bounder patriot
19. Consideration: payment interest attempt nice improvement
20. A place where money is deposited, kept, and paid out:  
corporation store station warehouse treasury
21. An official statement of facts:  
deed bond lease report assessment
22. Statement: report lie debt truth capital

23. A valuable addition to a building or other property:  
consideration supplement asset profit improvement
24. Cover: to-be-equal-to be-less-than be-more-than lend earn
25. Low, as General Motors low for April 24 was 184.  
low-yield low-profit low-earnings low-point low-number
26. Draw, as, the money draws 3% interest each year:  
earn lose profit charge require
27. To go down in value: depreciate deflect assess subsist  
depreciate
28. Requirement: loss gain need interest charge
29. Sale: selling discount value worth price
30. The union of persons in a company:  
relationship association family connection bond
31. A distinct part of a business:  
association department corporation improvement supplement
32. Any legally authorized bond issued by village, township, city,  
county, or state:  
municipal liberty mortgage government guaranteed
33. Shifting and changeable property such as cash on deposit and on  
hand, accounts and bills receivable, marketable securities and  
inventories: current-assets current-liabilities  
current-accounts capital funded-debt
34. System: railroad plan association school need
35. The value of a security, regardless of any coupons, as appears  
in the security itself:  
true-value net-value face-value known-value gross-value
36. Legal: true right lawful court jury
37. Stability: changeableness soundness profit cost interest
38. The premium of an insurance policy after all deductions are made:  
gross net endowment cost yield
39. A person's name written by himself:  
scrawl signature endorsement seal affidavit
40. The business of receiving and lending money:  
economics thrift banking capitalism profiteering
41. Profitable: expensive gainful costly stable valuable
42. Volume: printing quantity figure cost water
43. Wall-Street: riches financial-New York power stocks bonds
44. A change in the direction of prices from the upward tendency  
which had been existing up to that time:  
reaction transposition check revision loss

45. Substantial: weak strong useful old profitable
46. The produce of a farm is called:  
crop profit wheat cotton stock
47. To raise or collect by assessment:  
validate levy indemnify liquidate discount
48. A tax on earnings:  
income property customs duty license
49. The right or power to do something:  
desire authority demand vigor influence
50. Banks usually pay about 3% on savings accounts. This is called:  
profit income discount interest-rate gain
51. A term used to refer to notes, checks, bills of exchange, etc.  
paper contracts investments invoices discounts
52. A sudden wide-spread fright in business affairs accompanied by  
a frenzied attempt to convert property into cash:  
bankruptcy deflation panic anxiety crash
53. A condensed statement showing the financial condition of a  
business:  
report balance-sheet account accountancy abstract
54. A person who pays taxes:  
collector treasurer taxpayer renter store-keeper
55. The money which a corporation pays for the use of borrowed money  
is: interest-charges bonus accrued-interest net gross
56. A business transaction: bill check negotiation suit debt
57. Support: help profit discount supply prospect
58. More than the usual or stated amount:  
gain expensive excess access expenditure
59. Realize: gain find return lose expend
60. A firm or commercial establishment:  
house broker newspaper church school
61. General Motors high for April 24 was 187:  
high-point high-yield high-cost high-return profit

## FINAL TEST FORM A

A TEST OF BUSINESS TERMS

Prepared by Edgar Dale, Graduate Student,  
School of Education, Univ. of Chicago.

NAME \_\_\_\_\_ AGE \_\_\_\_\_ YEARS \_\_\_\_\_ MONTHS \_\_\_\_\_

BOY OR GIRL \_\_\_\_\_ GRADE \_\_\_\_\_ DATE \_\_\_\_\_ SCHOOL \_\_\_\_\_

CITY OR TOWN \_\_\_\_\_ STATE \_\_\_\_\_

Do you have a savings account? \_\_\_\_\_ Stock? \_\_\_\_\_ Bonds? \_\_\_\_\_

D I R E C T I O N S

This booklet contains a set of exercises whose purpose is to test your understanding of common business terms. There are two kinds of exercises. In the first kind a definition is given. Five words follow the definition. Any of the five may be partly right but only one of them is the best answer. Underline the word that you think best fits the definition. Do this one:

To get something by paying for it:  
sell    earn    buy    lend    borrow

In the other kind only one word is given. You are to find a word among the five words which follow it which is most like it in meaning. Do this one:

Price:            cost    tax    earnings    loan    rent

Can you do this one:

Tontine:            security    insurance    loan    bond    rent

Most likely you cannot since very few adults can. When you come to a hard word like this one whose meaning you are sure you do not know, skip it. DO NOT TRY TO GUESS WHEN YOU ARE SURE THAT YOU DO NOT KNOW THE RIGHT ANSWER. Now turn over the page and do the exercises that you find there.

1. The record of the business dealings which one has with a bank, store, etc. bill account order exchange books
2. To accumulate: earn increase profit interest lose
3. Advantage: advance education benefit loss entertainment
4. To put to a particular purpose: yield supply make apply deposit
5. To rise in value: depreciate appreciate profit extension yield
6. Assessment: profit tax earnings gain cooperation
7. All of one's property: assets real-estate chattels bonds currency
8. The union of persons in a company: relationship association family connection bond
9. Assume: lose profit take yield amount
10. To give the right or power to act: administer authorize control influence enact
11. Balance: gain loss interest remainder debt
12. A business which receives and lends money: bank store corporation company market
13. The wealth used to carry on a trade, business, or manufacture: income subsidy profits capital earnings
14. A condensed statement showing the financial condition of a business: report balance-sheet account accountancy abstract
15. The right or power to do something: desire authority demand vigor influence
16. Basis: network foundation power authority right
17. A written statement which tells that something is true: check note letter certificate bill
18. One who is interested in having stocks go lower in price: bear fox bull lion gambler
19. Charges: losses costs profits yield earnings
20. A security for the performance of agreements or the payment of money: collateral note loan assets trust
21. The person who receives the proceeds of an insurance policy: benefactor benefitter family banker beneficiary
22. Dealer: stock-holder tax-payer merchant debtor creditor
23. Benefit: gain advance harm request lease



24. The person who holds a check, draft, note or the like:  
owner bearer payer lessor teller
25. An interest bearing certificate used by a government or corporation:  
stock mortgage letter-of-credit warrant bond
26. Commerce: trade earnings sales force yield
27. Relating to the production, distribution, and consumption of wealth:  
geographic economic civic urban political
28. An owner of a bond:  
bondsman bondman bondholder bounder patriot
29. Decline: lowering raising increase acceptance loss
30. A person who buys and sells stocks etc. for others:  
commission-man broker agent customer banker
31. Burden: loss insurance load payment sale
32. Any department of a government, business, or city that has a special work to do:  
police bureau health building taxing
33. Capital stock upon which dividends may be paid only after meeting the requirements of the floating debt, bonds, and preferred stock, if any:  
preferred deferred cumulative non-cumulative common
34. Competition: gain corporation rivalry company competence
35. A business organization:  
tenant school concern contract stock
36. The failure of a corporation to meet its debts:  
deficit dishonesty indebtedness loss default
37. Desire to own: contract bond demand yield title
38. Conservative, as a conservative stock:  
healthy speculative bond risky safe
39. Consideration: payment interest attempt nice improvement
40. Contract: transaction charter bill assessment agreement
41. To convert: find change lose win secure
42. Employ: rent hire earn trade gain
43. A distinct part of a business:  
association department corporation improvement supplement
44. A company whose existence and activities are authorized by a charter from a state:  
municipality concern firm corporation partnership
45. An interest certificate on a bond:  
dividend stock profit yield coupon

46. To cover: be-equal-to be-less-than lend earn profit
47. A person who pays his bills promptly and who can be trusted in buying or borrowing is said to have good honor debit account credit name
48. The produce of a farm is called:  
crop profit wheat cotton stock
49. Current, as current expenses:  
electricity future world present-prevailing past
50. A person who receives his support from another:  
youth junior dependant senior lessor
51. Money placed in a bank or given as a pledge:  
deposit loan earnings profit check
52. Shifting and changeable property such as cash on deposit and on hand, accounts and bills receivable, marketable securities and inventories:  
current-assets current-liabilities capital funded-debt credit
53. To decrease in value: deflect depreciate assess subtend net
54. To divide among several or many:  
engage distribute transact earn fracture
55. A certain part of a city or state:  
village district home bureau primary
56. To diversify: choose vary advertise share enjoy
57. That part of the earnings of a corporation which is distributed to the owners of stock:  
dividend gain interest winnings salary
58. Draw, as the money will draw 3% interest:  
earn lose profit require increase
59. Owed, or owing as a debt:  
paid due insured signed sold
60. To write one's name on the back of a check, note, etc.  
sign underwrite endorse enscribe countersign
61. A life insurance policy whose face amount is payable to the insured at a certain time:  
dividend interest premium accident endowment
62. Enterprise: entertainment undertaking entry-fee medal gift
63. Figure: discount loss profit price yield
64. The management of money:  
economics finance traffic barter thrift
65. Property in general but particularly that left at death:  
will land trust estate heir
66. To estimate: judge earn contract learn profit

67. More than the usual or stated amount:  
gain expensive excess access expenditure
68. The amount by which one quantity is greater or less than another  
profit difference loss gain yield
69. Expenditures: sales losses expensive indentures expenses
70. The upward and downward movement of prices:  
loss profit fluctuation flotation recession
71. The value of a security, regardless of any coupons, as appears  
in the security itself:  
true-value net-value face-value known-value gross-value
72. Fraud: cheap trickery expense loss bankrupt
73. To change a floating debt into a more or less permanent debt:  
conversion fund exchange release rebate
74. A sum of money: note bill funds loan contract
75. Government: administration bond stock aim legality
76. To make sure against loss or damage:  
guarantee demand endorse pledge bond
77. A valuable addition to a building or other property:  
consideration supplement asset profit improvement
78. General Motors high for April 24th was 187:  
high-point high-yield high-cost high-return profit
79. Management: income interest property employee care
80. Money deposited with a broker by a buyer of stocks to protect  
the broker in case of unfavorable changes in price:  
deposit pledge brokerage reserve margin
81. The total amount of money which a person or company receives  
each year: expenses capital rent income gain
82. A single person: individual private public company group
83. A particular branch of work or trade:  
iron steel wood-working industry wheat
84. The opportunity for buying or selling goods:  
store office business market bazaar
85. Any of the parts of a debt paid at different times:  
rent taxes interest installment premium
86. Legal: true right lawful court jury
87. Institution: home establishment officer school church
88. Insure: earn guarantee profit cost lose
89. Holdings: interest property profits taxes expenses  
expensive salable vegetables cheap counter

91. To discount: distribute take-away-from miscount lose gain
92. A firm or commercial establishment:  
house broker newspaper church school
93. A written contract between the insured and the insurance company:  
premium dividend casualty policy certificate
94. The money paid for the use of money:  
profit interest wages capital salary
95. Level, as the level of prices is high:  
cost position yield amount return
96. To raise or collect by assessment:  
validate levy indemnify liquidate discount
97. A separate particular in a bill or account:  
item note lease staple receipt
98. A mortgage which has preference over other mortgages on a property:  
preferred first primary prior preference
99. A bond issued by the U. S. government to raise money to carry on the World War:  
municipal-bond government-bond liberty-bond coupon indemnity
100. A town or city which has local self-government:  
borough corporation municipality metropolis urban
101. A conditional transfer of property to insure the payment of a loan:  
barter exchange mortgage guarantee lease
102. The exact amount expressed on a note, bond, etc.  
interest par dues net face
103. Any legally authorized bond issued by village, township, city, county or state:  
municipal liberty mortgage government guaranteed
104. All of one's debts:  
assets arrears deficit mortgage liabilities
105. A sum of money lent at interest:  
loan bonus dividend stock rent
106. Low, as General Motors low for April 24th was 184:  
low-yield low-profit low-earnings low-point low-number
107. Free from all charges, deductions, etc.  
profit gross net gain yield
108. Wall-Street:  
financial-Chicago financial-NewYork riches power capital
109. Volume: printing quantity figure cost water
110. A paper which shows that one owes a debt and promises payment:  
mortgage contract note receipt liability

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APPENDIX E

FINAL TEST FORM B

A TEST OF BUSINESS TERMS

Prepared by Edgar Dale, Graduate Student,  
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NAME \_\_\_\_\_ AGE \_\_\_\_\_ YEARS \_\_\_\_\_ MONTHS \_\_\_\_\_

BOY OR GIRL \_\_\_\_\_ GRADE \_\_\_\_\_ DATE \_\_\_\_\_ SCHOOL \_\_\_\_\_

CITY OR TOWN \_\_\_\_\_ STATE \_\_\_\_\_

Do you have a savings account? \_\_\_\_\_ Stock? \_\_\_\_\_ Bonds? \_\_\_\_\_

D I R E C T I O N S

This booklet contains a set of exercises whose purpose is to test your understanding of common business terms. There are two kinds of exercises. In the first kind a definition is given. Five words follow the definition. Any of the five may be partly right but only one of them is the best answer. Underline the word that you think best fits the definition. Do this one:

To get something by paying for it:  
sell    earn    buy    lend    borrow

In the other kind only one word is given. You are to find a word among the five words which follow it which is most like it in meaning. Do this one:

Price:            cost    tax    earnings    loan    rent

Can you do this one:

Tontine:            security    insurance    loan    bond    rent

Most likely you cannot since very few adults can. When you come to a hard word like this one whose meaning you are sure you do not know, skip it. DO NOT TRY TO GUESS WHEN YOU ARE SURE THAT YOU DO NOT KNOW THE RIGHT ANSWER. Now turn over the page and do the exercises that you find there.

- 111. A business transaction: bill check negotiation suit debt
- 112. The time when a note or bond is due:  
expectancy contingency maturity specification stipulation
- 113. The money which a corporation pays for the use of borrowed money:  
interest-charges bonus accrued-interest net gross
- 114. The 3% which banks usually pay on savings accounts is called:  
profit income discount interest-rate gain
- 115. Buying property in order to get a safe yearly income:  
gambling speculating defrauding profiteering investing
- 116. To put out stock in a company:  
dispense issue deliver print sell
- 117. To enter on an official catalog or register:  
list issue mature lease bond
- 118. To offer: bid rent exchange order retire
- 119. Any person who holds an office:  
politician officer clerk judge senator
- 120. Dealings in stocks or any commodity, especially speculatively:  
profiteering operations investment defrauding discounting
- 121. Option: opposition optical wish vision privilege
- 122. A sudden wide-spread fright in business affairs accompanied by  
a frenzied attempt to convert property into cash:  
bankruptcy deflation panic anxiety crash
- 123. A term used to refer to notes, checks, bills of exchange, etc.  
paper contracts investments invoices discounts
- 124. Tax-exempt: tax-burden tax-free high-tax low-tax war-tax
- 125. A charge fixed by a standard or scale:  
return rate savings capital security
- 126. That which is either grown or manufactured:  
linen paper product wheat silk
- 127. A time when business is dull:  
loss depreciation failure calmness depression
- 128. Taxation: taxing worry money property real-estate
- 129. Retire: repair withdraw sleep earn yield
- 130. A place where money is deposited, kept, and paid out:  
corporation store station warehouse treasury
- 131. An official statement of facts:  
trust bond lease report assessment
- 132. System: plan railroad association school need

133. Stability: changeableness soundness profit cost interest
134. Profitable: expensive gainful costly stable valuable
135. A change in the direction of prices from the upward tendency which had been existing up to that time:  
reaction transposition check reversion loss
136. Substantial: weak strong useful old profitable
137. A person who pays taxes:  
collector treasurer taxpayer renter store-keeper
138. Support: help profit discount supply prospect
139. Realize: gain find return lose expend
140. Statement: report lie debt truth capital
141. A business deal: speculation transaction offer fraud loan
142. To refund: earn-money pay-back charge cost tax
143. Rights: investments laws privileges taxes liens
144. Any part of a whole:  
half percentage integer 100% 25%
145. A written request to pay money:  
note contract order mortgage protest
146. An owner of the shares of a corporation:  
proprietor broker merchant trader stock-holder
147. A person who is interested in having stocks go higher in price:  
bear fox bull lion gambler
148. Sound, as a sound stock:  
peer profitable tight safe cheap
149. The legal right to the ownership of property:  
rent lease receipt contract title
150. Outstanding, as outstanding debts:  
outlying large uncollected floating current
151. Secret information about the best stocks to buy or sell:  
note intrigue confidence gambling tip
152. A definite length of time: term yield note bonus title
154. A place where there is extensive buying and selling of stocks:  
market broker Chicago office stock-exchange
155. The money paid for the use of a home or other property:  
receipt lease interest rent bonus
156. Tax: charge lien bonus privilege gain
157. Surplus: clothing excess loss addition earnings

158. The face value of a stock or bond:  
100% standard net true par
159. Payable: conservative due profitable earning costly
160. Per Cent:  
by-the cent by-the-hundred by-the-thousand cheap expensive
161. Refusal to pay a lawfully contracted debt:  
liquidation bankruptcy liability deficit repudiation
162. Requirement: loss gain need interest charge
163. The tools, machinery, fixtures, etc. of any trade or business:  
store plant office bazaar department
164. To pay in full:  
receipt bill pay-off bond discount
165. A person to whom an insurance policy has been granted:  
shareholder stockholder policyholder beneficiary bearer
166. A stock which has a claim upon the property and earnings of a corporation prior to some other stock:  
common primary preferred premium first
167. The money paid for insurance by the insured:  
dividend policy check premium interest
168. The sum of money upon which interest is paid:  
principal holdings credit profits yield
169. A pen which costs \$3 is sold for \$4.50. The difference between these two prices is called the:  
interest profit dividend saving per-cent
170. Purchase: buy sell lend receive exchange
171. The capital of a corporation in the form of transferable shares:  
stock bond property dividend capital
172. Privileges: investments laws rights taxes liens
173. That which is either grown or manufactured:  
linen paper product wheat silk
174. To help the growth or aid the advancement of:  
yield promote tax credit pay-off
175. Prospects: guess prosperity mining expectations sales
176. Prosperity: sales profits property ownership success
177. To supply: protect furnish find earn apply
178. A property interest held for another's benefit:  
credit trust bonus bond dividend
179. Yield, as the investment yields 6%.  
to-cost to-pay to-lose to-be-taxed to-promote



180. Return: cost dividend price payment yield
181. Property turned over to a lender of money to keep until the debt is paid: security holdings assets note interest
182. The uninvested cash kept on hand by a bank or corporation to meet demands made on it: reserve assets resources capital currency
183. To mention exactly or in detail: specify testify classify record instruct
184. A fund formed by a corporation or government by gradually accumulating money: reservation collateral funded-debt sinking-fund capital
185. To organize: systematize yield invest speculate specify
186. Stocks, bonds, notes, etc. are known as: capital funds wealth speculations securities
187. Buying property not for a safe income but to sell at a higher price: investing speculating gambling defrauding profiting
188. Labor done for another: occupation vocation service security reservation
189. A security issued <sup>to run</sup> for a comparatively short period of time: short-term long-term bond stock mortgage
190. A life insurance policy whose face amount is payable at death and upon which premiums cease after a certain number of payments. endowment limited-payment term ordinary-life liability
191. A distinct portion or plot of land: lot real-estate agriculture improvement building
192. A sum above the nominal or par value of anything: premium quotation discount face-value brokerage
193. Position: place profit surety value salary
194. Transferable by delivery, with or without endorsement: redeemable negotiable profitable payable liable
195. A tax on earnings: income-tax property-tax customs duty license
196. A base: report foundation service duty improvement
197. A written statement which tells that something is true: check note letter certificate bill
198. Establish: shop insure lose win build-up
199. Factor: element profit interest factory business
200. Obligation: debt property income security loss

201. Provision: specification charge credit custom interest
202. The North Shore Gas Co., the Northwestern Railroad Co, the Bell Telephone Co. etc. are known as:  
public-utilities quasi-corporations municipalities  
speculators investments
203. Revenue: interest profits sales ship income
204. Naming the present price of a stock or bond:  
quotation statement auction appraisal announcement
205. The assessment on certain property for a new sidewalk was \$20. Assessment means  
bill tax interest bonus cost
206. At a sale a discount of 20% was given. Discount means:  
reduction increase interest installment extension
207. Farmers have been alarmed over the decline in prices. Decline means  
lowering raising increase fluctuation change
208. People who cannot afford to lose money should buy conservative investments. Conservative means:  
healthy speculative bond risky safe
209. The prospects for a good crop are excellent. Prospects means  
soil-conditions expectations prices tools Needs
210. Banks must invest their money in sound businesses. Sound means  
poor profitable safe cheap tight
211. Enterprise, as a business enterprise:  
entertainment undertaking entry-fee medal gift
212. Bankers sometimes advise people not to put all of their eggs into one basket but to diversify their investments. Diversify means  
choose vary advertise share enjoy
213. It is an advantage to have marketable stocks. Marketable means  
expensive salable conservative fresh cheap
214. Amounts owed subject to constant change, such as accounts payable, bills payable, loans payable, interest and dividends accrued towards the next payments, pay rolls, etc.  
current-assets current-liabilities income credit earnings
215. A rule, usually made by a legislature, which people must follow:  
order affidavit law paper offering
216. To sell something which you do not own with the expectation that the market price of the same will decline so that the security or commodity can be bought at a less price in season to fill the order:  
sell-short sell-long discount profiteer fraud
217. An evidence of indebtedness issued by a corporation having precedence over its preferred and common stocks. It is commonly nothing more than a note, very likely in coupon form, and not secured by a mortgage:  
bearer-bond debenture-bond mortgage-bond municipal-bond deed