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Vocabulary building through the use of visual reinforcements

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VOCABULARY BUILDING THROUGH THE USE OF VISUAL REINFORCEMENT

Submitted by

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CHAPTER I

NATURE AND PURPOSE OF THE STUDY

Problem:-- The purpose of this project is to determine the effectiveness of a method of teaching vocabulary with visual reinforcement in grade seven.

Justification of the problem:-- The justification for such a study comes from a "realization of the inadequacy of experimentation in the vocabulary field to weigh the effectiveness of present teaching devices."[1] In spite of the research, much is unfinished. Colvin points out: "There are many opportunities for research in the area of measuring vocabulary and of developing vocabulary in children. More study on methods of increasing size is needed."[2] Lewis, in a brief discussion of the relationship between vocabulary and personal, professional, and intellectual success says: "The Human Engineering Laboratry, an institution which tests peoples' attitudes, has found that the only common characteristic of successful people in this country is an unusual grasp of the meaning of words."[3]

1/New England Association of Teachers of English, "Vocabulary Study," The English Leaflet, Vol. 50, (April, 1951, pp.54-55).

2/Colvin, Cynthia M., "A Re-examination of the Vocabulary Question," Elementary English Review, Vol. 28, (Oct., 1951).

3/Lewis, Norman, Word Power Made Easy, Perma Books, New York, 1961, p.9.

Vocabulary has value as a diagnostic instrument, according to Hartman:[1]

> "Facility in verbal expression has long been recognized as one of the best signs of high mental ability while variations in language skill have ordinarily been readily diagnosed by differences in the extent of one's knowledge of words."

An awareness of the importance, depth, and nature of vocabulary instruction has precipitated much research in all areas touched by it. The diffuse aspects of its nature create many problems. The National Council of Teachers of English observes:[2]

> "Each subject area in the secondary school imposes a "technical vocabulary" of new terms and familiar terms carrying new meanings...that..... cannot be explained by synonyms or graphic portrayal; their meanings must be built inductively through specific illustrations which are related to the students' level of experience."

The importance of concept development in vocabulary building has received great attention. Herrick notes:[3]

> "Relationships between words and facts, between ideas and the words which stand for those ideas are essentials. All this should be accompanied by a degree of repetition which insures retention."

1/Hartman, G.W., "Critique of the Common Method of Estimating Vocabulary Size," Journal of Educational Psychology, Vol. 32 pp. 351-358

2/National Council of Teachers of English, The English Language Arts in the Secondary School, Appleton-Century-Crofts, New York, 1956, Vol. 3, p. 166

3/Herrick, Virgil and Leland B. Jacobs, Children and the Language Arts, Englewood Cliffs: Prentice-Hall, Inc., 1955, p. 323

This same belief is further stressed by McCarthy who recommends assisting students in the formation of mental pictures. In order to do this, she stresses, whenever possible, "the use of pictorial illustrations as an aid to the visualization of word pictures."[1/]

The purpose of this experiment is to gather a useful list of words for seventh-grade students to aid them in their reading, to improve their spelling ability, and to increase their powers of observation. The purpose is not to teach vocabulary through pictures, but, rather, to eliminate some aspects of verbalism.

Scope and delimitations:-- The study involved a specialized vocabulary of one-hundred words gathered from textbooks, source materials, the Vantage Verbal listing,[2/] and class lectures. (A complete bibliography of sources is in Appendix A on page 44.) Two classes of twenty-three students each participated as experimental and control groups.

1/McCarthy, Mary Prosser, A Critical Analysis of Methods of Teaching Poetry in the Tenth Grade, Boston University, Unpublished Master's Thesis, 1950, p. 19.

2/Coombs, Miriam S., Vantage Verbal, Lincoln-Sudbury Regional High School, Sudbury, Mass.

Procedures and techniques:--The general plan followed was:

1. Both experimental and control groups were given a battery of teacher-prepared tests based upon material that was common to both. A series of pre-tests to arrive at a final list of one hundred unknown words was designed to include only those words which would be encountered by the students as part of their studies in English class. (See Appendix A, pages 45-50 for original test and final selection).

At the beginning of the experiment, the teacher-prepared pre-test was given to both groups to determine that neither group was familiar with the words to be studied. Only those words missed by all the students were selected for the experiment. Students were responsible for ten words each day for a total of twenty days.

In the Experimental group the words were defined inductively and reinforced by a visual device designed to aid in the development of concepts and associations. Members of the Experimental group contributed original illustrations for an assigned number of words. The visual devices included pictures, models, mock-ups, and charts designed to assist in the recognition of multiple meanings for each vocabulary word.

The Control group studied the same words but without the visual reinforcement. Here the method was direct

instruction on the words with the dictionary as the chief source of definitions.

2. Students in both groups wrote each word of the vocabulary list in an original sentence.

3. A final test on all the words of the original list of one hundred words was given at the end of ten days.

4. A re-test on the original word list was given at the end of three weeks.

5. Among the factors necessary for the conducting of the project were:

a. The study of sources of vocabulary to arrive at one hundred basic but unfamiliar words,

b. The construction of a pre-test based upon research,

c. The compilation of a study list from the results of the pre-test,

d. The selection of a series of illustrative devices to support the final word list,

e. The plotting of the progress of both the Experimental and Control groups on the daily quizzes,

f. The comparison of the final test scores of the two groups to determine word gain,

g. Administration of a follow-up test on the original list after a three-week interval to determine word gain and retention.

6. The following factors were used to determine the homogeneity of the groups:

a. Mental Age

b. Chronological Age

c. Results of the California Short-Form Test of Mental Maturity, Intermediate S-Form [1]

d. Results of the Iowa Every-Pupil Tests of Basic Skills, Form O, Form L. [2]

7. The information needed was gathered from pupils' records, guidance department folders, and test results.

Assumptions made:-- The assumptions made were:

1. Vocabulary is improved if the vocabulary material is meaningful.
2. Progress in vocabulary building is influenced by the ability to recognize word relationships and uses.
3. The study of vocabulary in complete isolation leads to little permanent learning.
4. Visual reinforcement can be a valuable aid in teaching vocabulary.
5. A definite relationship exists between vocabulary and reading ability and intelligence.

1/Spitzer, H.F., Iowa Every-Pupil Tests of Basic Skills, Form O, Form L, Intermediate Battery, Houghton-Mifflin Co., Boston, 1943.

2/Sullivan, Elizabeth; Clark, Willis; Tiegs, Ernest, Calif. Test of Mental Maturity, Inter. S-Form, Calif. Test Bureau, Los Angeles, California, 1939.

Definition of terms:-- For the purposes of this experiment direct instruction and inductive teaching with visual reinforcement are defined as follows:

1. Direct instruction is an attempt to build word power by the teaching of synonyms and antonyms in connection with direct use of the dictionary.
2. Inductive teaching with visual reinforcement is an attempt to build word power by the discussion of unfamiliar words which are visually reinforced in order to form meaningful concepts and associations.

Summary of the problem:-- It is the purpose of this study to test the effectiveness of vocabulary building through the use of visual reinforcement. All pertinent data connected with both groups is recorded in the hope that it may furnish some insight into current educational methods.

CHAPTER II

PREVIOUS RESEARCH IN THE FIELD OF VOCABULARY STUDY

It is unnecessary to belabor the importance of vocabulary in both academic and professional life. The famous article by O'Connor in 1934 noting the high correlation between the size of a person's vocabulary and the degree of his success as measured by his accomplishments and position stimulated a series of investigations that have been continuous and meaningful.[1] To develop vocabulary at various grade levels, many teaching aids have been designed and published. Nevertheless, experimentation designed to determine effectiveness has been limited.

One reason is that vocabulary can be enlarged in a variety of ways. A convenient summary of the chief methods by which vocabulary is enlarged is offered by O'Sullivan who suggests:[2]

1. Direct instruction in
    a. The use of the dictionary
    b. Synonyms

1/O'Connor, Johnson, "Vocabulary and Success," Atlantic Monthly, Volume 53, (February, 1934), pp. 160-166

2/O'Sullivan, Elizabeth, A Summary of Research on the Methods of Improving Vocabulary in the Secondary School, Boston University, Unpublished Master's Thesis, 1949, pp. 1-2.

c. Antonyms

d. Analogies

e. Roots and affixes

f. Etymology

2. The contextual method

3. Incidental learning through extensive reading

4. The unit method

5. The semantic approach.

The use of word lists and vocabulary notebooks are considered by her as direct methods of instruction.

The inherent obstacle to teaching vocabulary in any of these activities is pointed out by Stearns:[1]

> "The increasing emphasis in recent years upon the semantic point of view in regard to word study has drawn attention to the fact that meaning is determined by a number of factors operating outside of the word itself. The word is merely a printed symbol which stimulates the mind to associate an idea with that symbol, but since the circumstance under which the stimulation is given is seldom twice alike, it is seldom that exactly the same idea can be associated with the given symbol in different uses. For this reason, true understanding cannot be always achieved by consideration of the word in isolation."

The disadvantage of any system that depends upon the study of words apart from use is reinforced by Green[2] who

1/Stearns, Gertrude B., The Construction and Validation of a Test of the Ability of Junior-Senior High School Pupils to Understand Word Meanings Through the Use of Context, Boston University, Unpublished Doctoral Dissertation, 1954, p. 21.

2/Greene, Ansel, "Vocabulary; Essential Equipment," American School Board Journal, (October, 1947), Volume 115.

states that giving pupils word lists with the requirement that they look up ten words at a time and write a sentence for each is definitely wasteful. He believes that there is no felt need in such a list.

Since this experiment is concerned with one hundred words taken from a variety of sources (see Appendix ___ on page ___) some attention must be given to types of word lists and their particular functions. These include:

1. Frequency of occurrence lists
2. Combined word lists
3. Graded word lists
4. Core vocabularies
5. Specialized vocabulary lists
6. Basic languages.[1]

A brief comment will be made on each of the preceding types.

The Frequency-of-use vocabulary lists:-- From 1911 to 1917, several collections of word lists appeared. Leading the group was Eldridge's Six Thousand Common English Words,[2] of little value to schools because it did not consider the frequency with which the words were found to occur. The succeeding lists were similar but were designed to meet

1/Speight, Mary R., The Evaluation of Specialized Vocabulary Exercises in Grade Eight, Boston University, Unpublished Master's Thesis, 1951.

2/Eldridge, E., Six Thousand Common English Words, published by Eldridge, E., Niagara Falls, New York, 1911.

a particular purpose such as determining what words would be most useful in the study of a foreign language, education of the blind, or of use in the study of shorthand. Realizing that here was the basis of an idea which could be of invaluable aid in education if properly developed, Palmer stated: "It should surely be feasible to codify the hundreds of complex factors in the problems of language, and to arrive at certain conclusions concerning them."[1] Thorndike, Lorge,[2] and Rinsland[3] made valuable contributions to teaching by considering the frequency with which words appeared in all areas of communication.[4] As an outcome of their studies, it was possible to show the frequency with which words were used in reading, writing, and speaking. The next division of words was according to suitability for various grade levels.[5]

1/Palmer, Harold E., The Scientific Study and Teachings of Languages, World Book, Yonkers-on-the-Hudson, New York, 1917.

2/Lorge, Irving and Thorndike, Edward L., Semantic Count of the English Language, Institute of Educational Research, Teachers College, Columbia University, New York, 1938.

3/Rinsland, Henry D., A Basic Vocabulary of Elementary School Children, The MacMillan Co., New York, 1945.

4/Lorge, Irving and Thorndike, Edward L., op. cit.

5/Speight, op. cit., p. 24.

Combined word lists:-- The chief reason for combined word lists was to find the most effective list for a specific purpose. Dolch[1] was a leader, attempting to find a list suitable for textbooks. Horn, Gates, and Bauer continued to experiment and from their work grew the realization that: "..by using, as far as possible, a standard vocabulary in all subjects, the teacher would be enabled more adequately to avoid irrelevant difficulties, and to diagnose any other perplexities encountered."[2]

Graded vocabulary lists:-- The purpose of graded vocabulary lists is to provide controlled vocabularies of different types. These can then be used in the writing of textbooks and supplementary reading.

The Core vocabulary:-- This is another approach to getting a vocabulary list that can be used in textbook writing. These lists attempt to include words "representing all phases of the experiences and environment of the elementary child."[3]

1/Dolch, Edward W., "Combined Word Studies," Journal of Educational Research, Volume 17, No. 1, (January, 1928), pp. 11-19.

2/Gates, Arthur L., Reading Vocabulary in the Primary Grades, Bureau of Publications, Teachers College, Columbia University, New York, 1935.

3/Shambaugh, Olive L., and Shambaugh, C. G., "A Core Vocabulary for Elementary School Pupils," The Journal of Educational Research, Volume 19, (January, 1929), p. 40.

Specialized vocabulary lists:-- One of the first to provide a specialized vocabulary was Kelty in recording important words from American history in grades four, five, and six.[1] The purpose of the specialized vocabulary is to assist students in particular areas of the curriculum by providing a basic terminology.

A basic language:-- An interesting attempt to get the over-rich English vocabulary under control was made by Ogden[2] when he invented 'Basic English'. In association with Richards,[3] Ogden attempted to establish "a language within a language." Its purpose was to determine what words are absolutely necessary for understanding within basic areas of communication. The words included are basic because they are necessary.

Vocabulary building and visual reinforcement:-- Glicksburg, in searching for the dynamics of vocabulary building, states that far more should be done to get meaning than having pupils look up words in a dictionary or glossary.

1/Kelty, Mary G., "A Suggested Basic Vocabulary in American History for the Middle Grades", Journal of Educational Research, Volume 24, (December, 1931) pp. 335-349.

2/Ogden, C. K., Basic English, Kegan Paul, London, 1932.

3/Richards, I. A. associated with Ogden, C. K., Basic English and Its Used, W. W. Norton and Company, New York, 1941.

He justifies the need for thorough-going vocabulary procedures by noting:[1]

> "The art of defining puts into play the intricate mechanics of the mind. In short, vocabulary study is fundamentally an exercise in thinking. The vocabulary is effectively enlarged by a wider contact with things and persons. It is the search for meaning that precipitates meaning."

According to Hagboldt, the willingness to search and the desire to learn are inherent human characteristics:[2]

> "The significance of interest in learning cannot be overestimated. It is the strongest motive power in all our efforts. It concentrates our attention, vivifies our impressions, insures repetition, and favors a wealth of associations."

To take advantage of this "natural" desire to enlarge the mind, it becomes necessary to provide a common background of experience within the classroom. One such method is the use of pictures to teach vocabulary within a framework which also provides information about things which are not necessarily in the students' background.

1/Glicksburg, Charles I., "The Dynamics of Vocabulary Building," The English Journal, Volume 29. No. 3, (March, 1940), p. 200.

2/Hagboldt, Peter, Language Learning , The University of Chicago Press, Chicago, 1935, p. 56.

The use of pictures as a method of visual reinforcement has many advantages. As Kinder points out:[1]

> "Pictures are a universal language, understood and appreciated everywhere....Children become acquainted with pictures long before they begin their formal schooling. The school merely picks up the picture and utilizes it more fully and systematically as a learning device. Adults who no longer partake of formal schooling continue to "read" and learn from pictures."

Brown, Lewis, and Harcleroad also note early familiarity with pictures, but point out other advantages:[2]

> "Why are pictures so helpful and so much in use? Not only because they are plentiful and cheap--but they can be easily understood. Children in our society grow up with pictures and learn to read meaning into them at a very early age.

Not only is a type of unconscious reading taking place but:[3]

> "Likewise, they learn quickly to read emotions into the features of the person in the picture; to judge what action is taking place by the relationship of the objects or persons in the picture."

Illustrations, like pictures, are effective interest-getting devices. They also help the reader interpret and remember the content of the accompanying text material.

1/Kinder, James S., Audio-Visual Materials and Techniques, American Book Company, (New York, 1959), p. 51.

2/Brown, James W., Lewis, Richard B., and Harcleroad, Fred F., Audio-Visual Instruction, McGraw-Hill, (New York, 1959) p. 408.

3/Brown, Ibid., p. 409.

Their effectiveness, however, may rely on a number of factors operating outside of the picture itself: 1/

> "Illustrations are a degree of abstraction. They are interpreted according to past experience, in a manner similar to the method of interpreting words. Therefore, we must carefully consider both the previous artistic experiences and environmental experiences of the proposed viewer. The viewer's experience with art itself may determine his success in interpreting the illustration, and his experience with the type of scene depicted may similarly affect his interpretive success."

Implications which demand recognition and consideration in the use of visual materials are the analogy between the interpreting of words and pictures, variations in picture-reading ability, and the need for care in the explanation and use of pictures.

Many problems of language arise because "words" are actually symbols carrying with them both connotative and denotative elements. As Hoban, Hoban, and Zisman point out, the letter symbol, considered to be a mark of an advanced society, actually has its origin in picture writing. Thus: 2/

> "A representation of a battle scene could show the incidents of the battle, conveying information and serving as a record. In time such a picture can come to represent a general idea so that a picture of a battle used as a story might become associated with the general idea of fighting. Eventually by abbreviation or elimination of some elements and details, the idea of combat can be shown simply by weapons of war.

1/Op. Cit., p. 410

2/Hoban, Charles F., Hoban, Charles F., Jr., and Zisman, Samuel B., Visualizing the Curriculum, Dryden Press, Inc. (New York, 1940), p. 214.

This same process of elimination and interpretation takes place when word symbols are encountered, for "to an individual any word involving symbolization is concrete or abstract in relation to the richness and variety of the former previous concrete experience."[1] Words, without a framework of association, may prove confusing or little better than meaningless. The picture, therefore, provides a common, contrived experience which can furnish richness and multiplicity of meanings to the word symbols accompanying it. With intellectual development, pictorial presentations may be used figuratively, representing abstract ideas.

Teachers easily perceive three types or levels of development in picture-reading ability:

1. Recognizing particular objects and calling them by name,
2. Determining details in a picture and describing what is seen,
3. Drawing inferences regarding past, current, or future action of the people or objects shown, and making personal interpretations based on individual backgrounds.[2]

1/ Op. Cit., p. 20

2/ Brown, Lewis, and Harcelroad, p. 409.

As Brown, Lewis, and Harcleroad note:[1]

> "Because of variations in past experiences, children differ greatly in these abilities. ...Because of these differences, teachers develop "experience" stories for first-graders based on an event in which all members of the class participate together...and, thus, have a common experience on which to build a reading vocabulary."

Successful use of visual and other educational materials is dependent upon meeting individual differences and providing explanations designed to avoid possible confusion.

The importance of preparation and planning in the use of visual aids, while obvious, cannot be overstressed. The distinctive educational opportunities offered by the use of pictures can also be the cause of much confusion. While pictures can provide a common experience for interpretation and association of concepts, "if a picture is true but far removed from the life pattern or experience of the viewer, care must be taken in explaining and using it."[2]

The strongest defense for the use of pictures lies in their contribution to the elimination of verbalism:

> "Pictures can be used to reduce the verbal load in instruction, especially for poor word readers. Verbal instruction without pictures or real experiences can result in funny and, sometimes, even pathetic misunderstandings. Pictures can be extremely important in vocabulary development and

1/Brown, Lewis, and Harcelroad, p. 409.

2/Ibid.

the presentation of new ideas."[1]

An important summary of the actual physiological process involved in picture-reading was made by Buswell of the University of Chicago. Five important conclusions taken from his study are:

1. In the initial glance at a picture the eyes fall immediately on the center of interest and then move rapidly all over the picture in short fixation periods.
2. The initial general survey is followed by a closer examination of details with longer fixation periods.
3. Directions given to subjects before they look at a picture appear to have a direct bearing on eye movements and periods of fixation.
4. There are extensive individual differences in "picture seeing."
5. Colored pictures do not have the strong effects on subjects which were anticipated.[2]

Item 3. in Buswell's conclusions bears directly on the use of pictures in teaching. There seems to be scientific evidence that picture values can be taught, and that directions are important.

1/Op. Cit., p. 418

2/Buswell, G. T.,"Learning to Look at Pictures," Progressive Education, (October, 1936) Chap. 13, pp. 422-426.

With this in mind the statement of Hoban, Hoban, and Zisman assumes new importance:[1]

> "An inference to be drawn is that if the child's attention can be centered sufficiently on certain aspects of the picture to induce him to examine those parts in detail, there may result an interest in the picture which will become so compelling that the child will study the picture until he can call it really his own."

The possibilities of the use of visual reinforcement as an aid to motivation, learning, and retention seem practicable on all grade levels.

1/Hoban, Hoban, and Zisman, p. 185.

CHAPTER III

THE EXPERIMENT

In order to conduct the experiment, it was necessary to (1) select two comparable groups, (2) compile a list of one hundred unfamiliar words to be presented to both Experimental and Control groups, and (3) select appropriate visual material to reinforce the conceptual learnings of the vocabulary list.

Selection of the groups.-- One factor operating in the selection of the groups was the opportunity offered by the experiment for the writer to learn more about seventh-grade students. The Experimental group was one assigned to the writer in the suburban community where the study took place. The Control group was one assigned to another teacher.

It is the policy of the school system to group students according to ability and achievement. Since both classes were considered accelerated, it seemed a safe assumption that it would be possible to compare their results on the experiment with reasonable validity. However, the following criteria were considered essential:

1. Mental Age
2. Chronological Age

3. Results of the California Short-Form Test of Mental Maturity, Intermediate S-Form

4. Results of the Iowa Every-Pupil Tests of Basic Skills, Form O, Form L, Intermediate battery.

The California Test of Mental Maturity furnished the following information:

1. Chronological age
2. Non-language I.Q.
3. Language I.Q.
4. Mental age taken on the total factor I.Q.

The Iowa Tests gave scores in:

1. Reading comprehension
2. Vocabulary
3. Spelling
4. Work-Study skills
5. Language skills

The Guidance Director for grade seven was available to assist in interpreting results into grade norms and percentiles.

Students were then assigned numbers ranging from 1 to 46, with the lower half assigned to the Experimental Group and the upper half to the Control Group.

Compiling the vocabulary list:-- The problem was to compile a listing of one-hundred unfamiliar words which the students would encounter in the course of their

studies, and to select only those which would be suitable for visual reinforcement. As O'Sullivan states:[1]

> "The teaching of a vocabulary unrelated to time, place, and circumstance in which words are to be used causes one to be skeptical of the results. Words should be meaningful for the pupil; he should be shown definite reason for the time he spends on vocabulary."

In order to provide a meaningful vocabulary, it was necessary to establish certain long-range goals. This led to a consideration of the following: three units, (Taking a Word Picture of Yourself," "Developing a Personality Scale," and "Choosing a Career,"), a reference book of children's literature, a novel, several vocabulary texts, and a variety of anthologies. (See complete listing in Appendix A on page 44). From these sources two hundred words likely to prove troublesome were selected for a pre-test and administered to both the Experimental and Control groups. Since the words would be encountered by all students in the course of their studies, a check on the frequency with which they occur was not deemed important to the study.

The final form of the pre-test was as follows. On the left side of the paper a word was given, beside it, a blank space. To the right of the blank space, three columns were labeled: "I know the word,", "I think I know the word," "I don't know the word." The directions

1/O'Sullivan, p.43

asked for a synonym wherever possible, but because of the unit on careers, a synonym was not always possible.

The results of the first test were significant in respect to the career words. A few words were missed by some students but the majority found no difficulty with any words relating to careers, probably because the community is fairly prosperous and includes many professional people. Either through home environment or contact with other children, most seventh-graders seemed to have a remarkably good understanding of what various professions entailed. Although goals might change, students had already chosen, or begun, to think about colleges and careers.

From succeeding tests and class discussions, the final list of words gradually emerged. (See Appendix A on pages 45-55 for original test and final vocabulary used.)

Selecting the visual materials:-- The comment of Kinder played an important part in helping the writer choose materials: "There are also three stages of growth in artistic ability--symbolism, realism, and abstraction."[1/] Paralleling the remark of Brown, Lewis, and Harcleroad (see page 18), it calls attention to the fact that since there are three levels of picture-reading ability, whatever illustrative material is chosen must be selected upon the basis of what experience it will furnish on all stages of growth.

1/Kinder, p.54

Because of the fact that the use of pictures, slides, and photographs is a contrived experience designed primarily to aid in the formation of associations and concepts, a further theme was needed. Therefore, illustrative material was grouped in the following way:

1. Scenes with or without the presence of people, children, or animals ("Putting Yourself in the Picture")
2. Scenes depicting cultures or times different from our own
3. Scenes concerned with the graphic presentation of abstractions.

Because evidence of the superiority of colored pictures to black-and-white is inconclusive, content became the sole criteria in selection. Here the chief problem was choosing only illustrative material that qualified for the established grouping. A weakness was having to assume what would be most effective with students in grade seven.

Because pictures varied in size, they were mounted and projected for class use according to suggestions by Haas and Packer:[1/]

1. Use of construction paper for mounts.
2. A neutral color such as tan or gray may be used safely with most pictures. For

1/ Haas, Kenneth B., and Packer, Harry Q., Preparation and Use of Audio-Visual Aids, New York, Prentice-Hall, 1950.

a striking effect, select a color that blends with the predominant color in the picture.

3. Use mounts in the following sizes:
   a. 8½ x 11 for large
   b. 8 x 9 for intermediate
   c. 3½ x 5½ for small

The materials were attached by coating rubber cement because there are considered to be four distinct advantages in using this medium:

1. It does not warp the paper or cardboard.
2. Surplus rubber cement can be removed easily from the face of the paper, photograph, etc.
3. It results in a neat, clean job.
4. Rubber cement does not discolor paper.[1/]

The pictures were then considered ready for use with the Bausch and Lomb Opaque Projector.

Mounting the pictures had several advantages:

1. They were easier to handle.
2. They could be stored more easily.
3. When related by a central theme, they could also furnish the basis of a bulletin-board display.

1/ Weaver, Gilbert G., and Bollinger, Elroyp W., Visual Aids: Their Construction and Use, New York, D. Van Nostrand and Co., In., 1949

It was however necessary to facilitate their use as a reference system.

Thirty-three pictures were chosen for the experiment so that at least one word on each level of picture-reading would be applied to a single illustration. For ease in sorting and identifying and filing, pictures were numbered from 1 to 33 in the upper right hand corner of the mount. In addition to a number, each picture was given a letter corresponding with its general classification. Thus P, C, and A signified Personality, Culture, or Abstraction. If these pictures could be used with other grades, an additional number followed the letter value. For example, 11 A-12 would show that it was picture 11 in the seventh-grade series dealing with abstract words and could also be used in grade 12. Since the pictures are reversed when placed in the projector, the numbers and letters were also placed in what would be the upper right corner during projection.

The problem of associating vocabulary with the pictures still threatened to inhibit effectiveness. The vocabulary list and the group of pictures were not usuable in isolated forms. A dual cross-reference index system using 4 x 6 inch cards as suggested by Doerfert was used to indicate which pictures could be used to illustrate certain words. [1]

1/ Doerfert, H.M., Use of Pictures in Teaching English to Navajo Children, Boston Univ., Unpub., Master's Thesis, 1956

Card set A, numbering 1 to 33 to correspond with the illustrations, contained a list of the words for which each picture was useful. These words were organized alphabetically in a column at the left side. Helpful words and phrases were listed to the right of the vocabulary words so that the writer might readily find the intended items or objects in the picture.

The second, Card Set B, was organized alphabetically with one card for each of the one-hundred words in the vocabulary. On each card all pictures which would be helpful in illustrating the word were listed by number. (See Appendix B for cross-reference listing of the words and numbers of pictures as used originally in Card Set B.)

The dual-card system, as expected, provided a useful, simplified reference source and the desired pictures for any given lesson could quickly be assembled. As new pictures are added to the collection, cards can be added to Card Set A listing the words illustrated. Card Set B is considered complete with one card for each word in the vocabulary whether a picture is available or not, but additional words can always be put into alphabetical sequence. As new pictures are added, their numbers can easily be put on the cards of the words they illustrate.

CHAPTER IV

PRESENTATION OF MATERIALS

Although thirty-three pictures were needed for this experiment, far more were collected as a result of research. The main criteria in selection were content, interest, and experiences contained in each picture. Once the vocabulary had been distributed at the ratio of three words for each of thirty-two pictures and four words to the remaining picture, the others were used to introduce the experiments. The methods employed were composition and discussion.

On Friday of the week preceding the beginning of the study, students were told that the class was to take part in an exercise to test ability for accurate observation and communication. Because the class realized that marks would not be affected, interest and curiosity concerning the experiment were very high.

During the weekend, pictures to be used for the introductory activities were numbered and classified according to difficulty. The categorizing of each, from simple to abstract, was done subjectively. The chief considerations were:

1. Which pictures are concerned with more than one concept?

2. How difficult of comprehension are the impressions furnished by each picture?

Before class on Monday, the Bausch and Lomb Opaque Projector was borrowed from the Audio-visual Aids Department and placed at the back of the room. Some preliminary projections were made and it was decided that the best image resulted when the projector was twenty-one feet from the screen. The room in which the pictures were shown has a length five times greater than its width because of a platform stage at the rear. When the projector was twenty-one feet from the screen, the projected image was in clear focus to all viewers.

When class began, directions were given to the students. Four pictures would be shown on the screen. Each projection would last a total of thirty seconds. On paper provided, students were to write a brief, but accurate description of what they saw. The four pictures and the words they were chosen to illustrate were as follows:

1. Picture one:-- A single branch of large yellow apples is placed against a grey background. At the upper left and lower right corners are single green leaves.
   Words illustrated: comestible, symetrical, stark, succulent.

2. Picture two:-- Three witches are seen with distended hands, dilated eyes, disheveled hair and evil grimaces.
   Words illustrated:-- distend, dilate, dishevel, grimace.
3. Picture three:-- Here is a portion of a place showing part of a ballroom and a balcony. The frescoed ceiling of gold and white stands out vividly against the crystal chandeliers.
   Words illustrated: frescoe, ornate, chandelier.
4. Picture four:-- This picture shows the upper section of a pillar and traces the series of arcs it forms with the ceiling.
   Words illustrated: parallel, concentric, geometric.

During this activity, the teacher gave directions and acted as both timekeeper and projectionist. During the loading and unloading of the projector the light was flashed off so that times for observation would be relatively constant. The total time given for viewing was thirty second and one minute for writing.

After all the pictures had been shown, students were asked to read aloud what they had written. Participation and enthusiasm were very high. A few descriptions were actually interpretations of what had been shown. To correct any confusion, some time was then used to discuss

the nature and purpose of descriptive writing. No student, however, had any real difficulty in recognizing what was pictorially depicted.

As soon as a description had been read, the picture was again shown to the class. Other class members pointed out weaknesses of the descriptions. Because of the large participation, pictures were kept on the screen while other papers were read. Eventually the class decided that the chief weaknesses of all descriptions were vagueness in word choice and failure on the part of students to "say what you mean".

The class then examined the ways in which pictures could be described. These ranged from simple enumeration of seen objects to symbolic and visual interpretation of an implied concept. Students were then given the words illustrated by the pictures. These were on a list projected on the screen. While students copied them into their notebooks, the teacher pronounced each one slowly, emphasizing the syllabication. This was considered one way of reinforcing the analogy of the importance of each part to the whole and assisting students with their spelling. As the students wrote they pronounced the words in unison.

As their homework assignment students were asked two things: to attempt to apply the given words to the pictures and to state the mood or impression created

in them by looking at each picture. Here the class was limited to a selection of one word for each picture. After making their selections, pupils were asked to check their words with their dictionnaries for all possible meanings.

The next day students were asked to apply the vocabulary list to the pictures that were once again projected. Although not particularly successful as a whole, the class efforts were promising. All students made an honest attempt at forming associations. As the words were discussed and "dictionary" definitions had been simplified, concepts gradually began to crystallize.

As the second part of the assignment, students were asked to read aloud what they considered as the most difficult definition of the word they had originally written. Other members of the class were asked to guess at the original word. A few were successful, but most were not. In the discussions that followed it was established that:

1. The original descriptions had been poor because of vague words used.
2. Students could not guess what the new words meant because they were not familiar with the words and could not form any of the associations needed for learning.

Students were now told the purpose of the experiment:- to improve their ability with words and test the effectiveness of visual reinforcement as an aid to learning.

To keep interest at a high level throughout the daily assignments for student participation were given out. Among the tasks to be covered were putting the blinds in place to darken the room and raising them at the conclusion of the lesson, getting the projector from the Visual-Aids Room where it is stored overnight, plugging in the projector and placing it at its desired distance from the screen, setting up the screen for projection, operating the projector, receiving pictures as they come out of the machine, and turning out the room lights.

The pictures for Lesson I (see p.56) were projected on the screen. The words for the lesson were given as the discussion proceeded. These words were then applied to the pictures and written on the board. At the conclusion of the picture series a list of ten words was also projected on the screen. Students were asked to copy these words in their notebooks and were requested to check definitions in their dictionaries. Students were to use each word in an original sentence which was also a part of their English notebooks. A quiz was scheduled for the following day on the assignment just completed. The same procedure was followed for ten successive lessons.

All words in the lesson were pronounced aloud, first by the teacher and then by the group in unison. As a final review, each student was responsible for a visual presentation of four words from the total list of one hundred. Since there were twenty-three students involved in the experiment, this left eight words unassigned. Volunteers were assigned to these words.

Class activities for each lesson began with a quiz on the previous day's assignment. Words were dictated to the students and time allowed for the filling in of definitions. Marks were taken on spelling and vocabulary. All quizzes were corrected by the teacher and results made known the following day. The only exceptions to this were the tests given after the fifth and tenth lessons.

After the second test, the review of one hundred words took place. Students were asked to present their visual reinforcements of assigned words. Approximately three periods were needed because not all associations with material were clear or logical. The words were then redefined and pronounced. The following day the complete list of words was given and two test scores taken. Results were compared for ~~total~~ word gain for each student and the class in general. Notebooks were collected, sentences checked, and visual materials were possible refining.

As part of the introductory activities for the Control group, several mail-order catalogues were brought to class. Students were asked to consider what might be the chief problem in the compilation of such a work. Discussion established that catalogues contained many items and descriptions. Because of this all items should be described in brief, but complete, terms. If merchandise is to sell it must appeal to the logic and emotions of its prospective customers.

Selecting items at random from various catalogues, the teacher read the factual copy accompanying the item listing. Such things as weight, size, shape, and color were given. The class was then given the problem of being faced with the writing of the catalogue. They were given items designed to appeal to men and women.

After a reasonable length of time, students were asked to read what they had written. A discussion of the good and bad points of each student's article established the need for clarity, vividness, and exactness.

Reading the description of the item as it actually appeared elicited further discussion. Students felt that work was both overly-long and vague. Because words did not mean the same to all students much effectiveness was lost. It was decided that words were important, possessed a multiplicity of meanings, and contained a connotative denotative quality that could be either an asset or a

hindrance to effective communication.

A similiar procedure to that described was followed in the Control group. Students were told that they would try to add one hundred new words to their vocabularies. Ten word lists were given to each student. All members of the class were asked to keep English notebooks in which they would place their lists of words. An additional requirement was to use each word in an original sentence. In addition to daily quizzes, students were given tests at the end of the fifth and tenth lessons. At the completion of the second test, they were examined on the original list of one hundred words.

All quizzes in the Control group were corrected daily and returned to the students at the next meeting. Like the Experimental group, they were expected to keep a list of words missed. Each quiz produced a mark in spelling and vocabulary.

Three weeks after the final examination on the list of one hundred words, a re-test was given to both groups. The results of this test were compared to determine word gain for both groups.

CHAPTER V

SUMMARIES AND CONCLUSIONS

A summary of the testing results obtained during and at the end of the experiment follows:

1. From Iowa Every-Pupil Tests of Basic Skills, Vocabulary scores (see Tables on pages 75 and 76).

a. The experimental group gained on the median score 1.1;

b. The control group gained .9;

c. Two losses, experimental group;

d. One loss, control group.

e. The range of gain in the experimental group was from .4 to 2.0 years.

f. The range of gain in the control group was from .1 to 2.3 years.

g. Twelve pupils gained 1 to 2 years in the experimental group.

h. Seven pupils gained 1 to 2 years in the control group.

Summary of Iowa testing:-- There was a difference of .2 at the median point in favor of the experimental group in the final tests. The experimental group had twelve pupils gaining to two years from the beginning to the final test.

The control group had seven pupils gaining one to two years from the beginning to the final test. From individual scores it appears that the experimental group made larger gains in the middle and upper classifications.

2. Informal testing

a. On the daily quizzes the experimental group earned 38 scores of 100, 77 scores of 90, and 88 scores of 80.

b. On the daily quizzes the control group earned 12 scores of 100, 55 scores of 90, and 131 scores of 80.

c. On the weekly tests, the experimental group earned one score of 100, 5 scores of 90 - 98, and 32 scores of 80 - 88.

d. On the weekly test the control group earned one score of 100, 2 scores of 90 - 98, and 27 scores of 80 - 88.

f. On the final test the experimental group earned one score of 100, 2 scores of 95 - 99, 3 scores of 90 - 94, and 15 scores of 80 - 89.

g. On the final test the control group earned zero scores of 100, 1 score of 95 to 99, 1 score of 90 - 94, and 15 scores of 80 - 89.

h. On the re-test the experimental group earned zero scores of 100, 5 scores of 90 - 99, 13 scores of 80 - 89, and 3 scores of 70 - 78.

i. On the re-test the control group earned zero scores of 100, one score of 90, 10 scores of 80 - 89, and 3 scores of 70 - 79.

j. Five students in the control group failed in the re-test.

k. Two students in the experimental group failed the re-test.

l. Although students in both groups received a spelling mark on the daily quizzes, no significant differences could be measured during or at the end of the experiment.

3. Limitations to the study.

The number of pupils and the time involved in this study was small. Forty-six students were involved in an experiment which took slightly less than two months.

Vocabulary is measured by the Iowa Every-Pupil Vocabulary Test. This test is an indication of whether an individual or a class is below, at, or above the norms, but it does not reveal all the areas or fields of experience in which the student does well or poorly.

It was not possible to eliminate subjectivity in selecting materials for visual reinforcement. While clear to the writer, some of the concepts proved confusing to the class.

The experiment does not include a test to determine increase in reading skills.

All possible factors contributing to success on the tests are not considered. Among those not considered are: (1) variables in teaching, (2) interest, (3) study habits, and (4) adaptability.

4. Suggestions for further research

a. A similar study using visual reinforcement as a method of improving spelling,

b. A similar study using visual reinforcement in creative and descriptive writing,

c. Development of vocabulary lists of technical terms needed in subject matter fields in the secondary school,

d. There is a need for more studies using visual reinforcement as a means of providing common, contrived experiences for all students.

e. More information is needed concerning word associations at various grade levels. The imaginations of the students can be a valuable key to new methods of teaching.

APPENDIX A

WORDS USED IN THE EXPERIMENT

Since the vocabulary to be taught was to be used in conjunction with visual reinforcement the words chosen had to be those possessing certain vivid and descriptive features. The final list was the result of several pre-tests based upon the word sources listed in Appendix on page

The vocabulary, listed alphabetically was divided into groups of ten. To aid association words were grouped according to those which seemed close to the original three groupings previously mentioned on page

WORD SOURCES USED IN EXPERIMENT

1. Agnew, J. Kenner, Prose and Poetry Journeys, L. W. Singer, Inc., New York, 1951, "Journeys with People," pp. 435-514.

2. Bailey, Matilda, and Leavell, Ullin W., Worlds to Explore, American Book Company, New York, 1951, "Hall of Fame," pp. 198-267.

3. Forbes, Esther, Johnny Tremaine, Houghton Mifflin Company, 1960.

4. Hardwick, H. C., Words are Important, First Book, C. S.Hammond & Co., Maplewood, New Jersey, 1960.

5. Hardwick, H. C., Words are Important, Second Book, C. S. Hammond & Co., Maplewood, New Jersey, 1960.

6. Hardwick, H. C., Words are Important, Third Book, C. S. Hammond & Co., Maplewood, New Jersey, 1960.

7. Hardwick, H. C., Words are Important, Fourth Book, C. S. Hammond & Co., Maplewood, New Jersey, 1960.

8. Lewis, Norman, Word Power Made Easy, Perma Books, New York, 1961.

9. Lodge, Evan, and Braymer, Marjorie, Adventures in Reading, Harcourt, Brace and Co., New York, 1958.

10. Meigs, Cornelia, A Critical History of Children's Literature, MacMillan Co., New York, 1953.

11. Miller, Ward S., Word Wealth, Junior, Henry Holt and Co., New York, 1950.

12. Witty, Paul; Peterson, Miriam E., and Parker, Alfred E., Reading Roundup, D. C. Heath and Co., Boston, 1954, "Ourselves and Others," pp. 2-62.

A LETTER TO THE STUDENT

Dear Student,

The following is a list of words that you will be encountering in your English classes during the next few weeks. In order to help you with your studies, it is necessary to find out which words may present problems.

You will not be marked on this test!

In order to assist us, read the directions carefully and answer each item to the best of your ability.

Directions:--On the left hand side of the page you will find a word anticipated to present some difficulty. Beside this word is a blank. In the space provided, try to define each word with, whenever possible, a synonym. After this, check (/) one of the three columns to the right: "I KNOW THE WORD", "I THINK I KNOW THE WORD","I DON'T KNOW THE WORD".

After we have cpmpleted our study of the words missed by all the students and you have taken the daily quizzes and weekly tests, you will be given a test based upon these difficult words so that you will know how many words you have added to your own vocabulary.

PRE-TEST

WORD	DEFINITION	I KNOW THE WORD	I THINK I KNOW THE WORD	I DON'T KNOW THE WORD
1. abyss				
2. admonish				
3. adjacent				
4. aegis				
5. aesthetic				
6. amorphous				
7. ancillary				
8. apathetic				
9. apocryphal				
10. aquiline				
11. arid				
12. artifice				
13. assent				
14. austere				
15. authentic				
16. avert				
17. awe				
18. bagatelle				
19. booty				
20. buccal				
21. cadaverous				
22. carrion				
23. celibate				
24. chauvinistic				
25. chicanery				
26. chimera				
27. coincide				
28. comestible				
29. complacent				
30. comply				
31. concerted				
32. conflagration				
33. conjecture				
34. consort				
35. contour				
36. copious				
37. counterpart				
38. culinary				
39. cumbersome				
40. cursory				
41. deface				
42. delineation				
43. demure				
44. demure				

	WORD	DEFINITION	I KNOW THE WORD	I THINK I KNOW THE WORD	I DON'T KNOW THE WORD
45.	desultory				
46.	dilate				
47.	dingy				
48.	disband				
49.	discern				
50.	distend				
51.	diurnal				
52.	divers				
53.	doleful				
54.	dotage				
55.	ecstasy				
56.	effusive				
57.	eke				
58.	embellish				
59.	embryo				
60.	emit				
61.	endorsse				
62.	enhance				
63.	enjoin				
64.	ensconced				
65.	enterprise				
66.	enthrall				
67.	environs				
68.	epithet				
69.	eulogize				
70.	evolve				
71.	excruciating				
72.	expedient				
73.	expire				
74.	fallow				
75.	feline				
76.	fetish				
77.	fissure				
78.	flaccid				
79.	forfeit				
80.	formidable				
81.	frugal				
82.	futile				
83.	fruition				
84.	galaxy				
85.	germane				
86.	glacial				
87.	glean				
88.	grotesque				
89.	guise				
90.	habitat				
91.	haggard				
92.	halcyon				

WORD	DEFINITION	I KNOW THE WORD	I THINK I KNOW THE WORD	I DON'T KNOW THE WORD
93. havoc				
94. impale				
95. impending				
96. imperial				
97. imposing				
98. impregnable				
99. impromptu				
100. inchoate				
101. incongruous				
102. indigenous				
103. indomitable				
104. infamous				
105. inflict				
106. inherent				
107. innate				
108. insatiable				
109. insulate				
110. intricate				
111. intrinsic				
112. macabre				
113. maelstrom				
114. marauder				
115. martinet				
116. martial				
117. masterful				
118. masterly				
119. menial				
120. panacea				
121. panorama				
122. paroxysm				
123. pensive				
124. peregination				
125. perennial				
126. perpetrate				
127. perverse				
128. pillage				
129. ponderous				
130. pot-pourri				
131. predatory				
132. preponderance				
133. pretentious				
134. primeval				
135. procedure				
136. prodigious				
137. proletariat				
138. protract				
139. proximity				
140. quaff				

	WORD	DEFINITION	I KNOW THE WORD	I THINK I KNOW THE WORD	I DON'T KNOW THE WORD
141.	raucous				
142.	recede				
143.	renaissance				
144.	repine				
145.	replete				
146.	residue				
147.	respite				
148.	resplendent				
149.	rigors				
150.	rudiments				
151.	sallow				
152.	sartorial				
153.	sequestered				
154.	serried				
155.	servile				
156.	simian				
157.	slough				
158.	sophistry				
159.	specter				
160.	spurious				
161.	stoical				
162.	subsist				
163.	succulent				
164.	sustenance				
165.	swarthy				
166.	sycophant				
167.	tenacious				
168.	tangible				
169.	tenet				
170.	timbre				
171.	torpid				
172.	torrid				
173.	transit				
174.	turgid				
175.	ubiquitous				
176.	uniform				
177.	unique				
178.	vacillate				
179.	vacuous				
180.	vagrant				
181.	vapid				
182.	verdure				
183.	verisimilitude				
184.	vestige				
185.	vie				
186.	vogue				
187.	volatile				
188.	voluble				

	WORD	DEFINITION	I KNOW THE WORD	I THINK I KNOW THE WORD	I DON'T KNOW THE WORD
189.	voluminous				
190.	voracious				
191.	wayward				
192.	wheedle				
193.	whet				
194.	winnow				
195.	winsome				
196.	wreak				
197.	wry				
198.	zephyr				
199.	zenith				
200.	zest				

WORDS MISSED BY ALL STUDENTS ON PRE-TESTS

abyss	ancilliary	assent
admonish	apathetic	austere
adjacent	apocryphal	authentic
aegis	aquiline	avert
aesthetic	arid	awe
amorphous	artifice	
bagatelle	booty	bucal
cadaverous	comestible	contour
carrion	complacent	copious
celibate	comply	counterpart
chauvinistic	concerted	culinary
chicanery	conflagration	cumbersome
chimera	conjecture	cursory
coincide	consort	
deface	dilate	diurnal
delineation	dingy	divers
demure	disband	doleful
desuetude	discern	dotage
desultory	distend	
ecstasy	enhance	eulogize
effusive	enjoin	evolve
eke	ensconced	excruciating
embellish	enterprise	expedient
embryo	enthrall	expire
emit	environs	
endorse	epithet	
fallow	flaccid	fruition
feline	forfeit	futile
fetish	formidable	
fissure	frugal	
galaxy	glacial	grotesque
germane	glean	guise
habitat	halcyon	havoc
haggard		
impale	inchoate	inherent
impending	incongruous	innate
imperial	indigenous	insatiable
imposing	indomitable	insulate
impregnable	infamous	intricate
impromptu	inflict	intrinsic

WORDS MISSED BY ALL STUDENTS ON PRE-TESTS (Cont.)

jejune

latent	luxuriant	luxurious
macabre	martial	meteoric
maelstrom	masterful	morose
marauder	masterly	motif
martinet	menial	mystic
nadir	necromancy	nomadic
nebulous	nether	nominal
obeisance	offset	ostensible
oblique	olfactory	ostentatious
obviate	orifice	
occult	ornate	
panacea	perverse	primeval
panorama	pillage	procedure
paroxysm	ponderous	prodigious
pensive	pot-pourri	proletariat
peregination	predatory	protract
perennial	preponderance	proximity
perpetrate	pretentious	

quaff

raucous	replete	rigors
recede	residue	rudiments
renaissance	respite	
repine	resplendent	
sallow	slough	succulent
sartorial	sophistry	sustenance
sequestered	specter	swarthy
serried	spurious	sycophant
servile	stoical	
simian	subsist	
tenacious	tenet	torpid
tangible	timbre	transit
		turgid
ubiquitous	uniform	unique

WORDS MISSED BY ALL STUDENTS ON PRE-TESTS (Cont.)

vacillate	veresimilitude	voluble
vacuous	vestige	voluminous
vagrant	vie	voracious
vapid	vogue	
verdure	volatile	
wayward	winnow	wry
wheedle	winsome	
whet	wreak	
zephyr	zenith	zest

LIST OF WORDS USED IN THE EXPERIMENT

abyss
admonish
adjacent
aesthetic
amorphous

aquiline
arid
austere
authentic

cadaverous
coincide
comestible
complacent
concerted
conflagration
consort

contour
copious
counterpart
culinary
cumbersome
cursory

deface
desuetude
desultory
dilate
disband

discern
distend
divers
doleful

embellish
embryo
endorse
enhance
ensconced

enthrall
environs
eulogize
excruciating

fallow
fetish
fissure

flaccid
frugal
fruition

galaxy
germane

glacial
glean

habitat

halcyon

impending
imperial
imposing
impregnable
inchoate
incongruous

indigenous
indomitable
inherent
innate
insatiable
intrinsic

latent

luxuriant

martinet
masterful
masterly

meteoric
morose
motif

LIST OF WORDS USED IN THE EXPERIMENT

nadir
nebulous
necromancy
nether
nomadic
nominal

oblique
occult
olfactory
orifice
ornate
ostensible
ostentatious

panorama
pensive
ponderous
predatory
pretentious
prodigious
proletariat
proximity

quaff

recede
replete
residue
respite
resplendent
rudiments

DAILY LESSONS

LESSON ONE

1. abyss
2. adjacent
3. amorphous
4. contour
5. glacial
6. imposing
7. inchoate
8. luxuriant
9. panorama
10. predatory

LESSON TWO

1. aquiline
2. austere
3. cadaverous
4. complacent
5. doleful
6. fallow
7. flaccid
8. masterful
9. morose
10. pensive

LESSON THREE

1. aesthetic
2. concerted
3. enhance
4. enthrall
5. eulogize
6. galaxy
7. halcyon
8. inherent
9. meteoric
10. replete

LESSON FOUR

1. admonish
2. coincide
3. consort
4. deface
5. dilate
6. disband
7. embellish
8. impending
9. innate
10. recede

LESSON FIVE

1. nominal
2. oblique
3. olfactory
4. ornate
5. ostensible
6. proletariat
7. proximity
8. residue
9. resplendent
10. rudiments

LESSON SIX

1. arid
2. conflagration
3. embryo
4. ensconced
5. excruciating
6. fetish
7. fruition
8. indomitable
9. latent
10. quaff

LESSON SEVEN

1. authentic
2. comestible
3. culinary
4. divers
5. frugal
6. glean
7. imperial
8. insatiable
9. nether
10. orifice

LESSON EIGHT

1. copious
2. cumbersome
3. endorse
4. environs
5. germane
6. impregnable
7. indigenous
8. intrinsic
9. motif
10. nebulous

LESSON NINE

1. cursory
2. desuetude
3. desultory
4. discern
5. fissure
6. habitat
7. nomadic
8. pretentious
9. ponderous
10. respite

LESSON TEN

1. counterpart
2. distend
3. incongruous
4. martinet
5. masterly
6. nadir
7. necromancy
8. occult
9. ostentatious
10. prodigious

TEST GIVEN AT THE END OF THE FIRST WEEK

	WORD	DEFINITION	I KNOW THE WORD	I THINK I KNOW THE WORD	I DON'T KNOW THE WORD
1.	abyss				
2.	admonish				
3.	adjacent				
4.	aesthetic				
5.	amorphous				
6.	aquiline				
7.	austere				
8.	cadaverous				
9.	coincide				
10.	complacent				
11.	concerted				
12.	consort				
13.	contour				
14.	deface				
15.	dilate				
16.	disband				
17.	doleful				
18.	embellish				
19.	enhance				
20.	enthrall				
21.	eulogize				
22.	fallow				
23.	flaccid				
24.	galaxy				
25.	glacial				
26.	halcyon				
27.	impending				
28.	imposing				
29.	inchoate				
30.	inherent				
31.	innate				
32.	luxuriant				
33.	masterful				
34.	meteoric				
35.	morose				
36.	nominal				
37.	oblique				
38.	olfactory				
39.	ornate				
40.	ostensible				
41.	panorama				
42.	pensive				
43.	predatory				
44.	proletariat				
45.	proximity				

TEST GIVEN AT THE END OF THE FIRST WEEK (Cont.)

WORD	DEFINITION	I KNOW THE WORD	I THINK I KNOW THE WORD	I DON'T KNOW THE WORD
46. recede				
47. replete				
48. residue				
49. resplendent				
50. rudiments				

TEST GIVEN AT END OF SECOND WEEK

WORD	DEFINITION	I KNOW THE WORD	I THINK I KNOW THE WORD	I DON'T KNOW THE WORD
1. arid				
2. authentic				
3. comestible				
4. conflagration				
5. copious				
6. counterpart				
7. culinary				
8. cumbersome				
9. cursory				
10. desuetude				
11. desultory				
12. discern				
13. distend				
14. divers				
15. embryo				
16. endorse				
17. ensconced				
18. environs				
19. excruciating				
20. fetish				
21. fissure				
22. frugal				
23. fruition				
24. germane				
25. glean				
26. habitat				
27. imperial				
28. impregnable				
29. incongruous				
30. indigenous				
31. indomitable				
32. insatiable				
33. intrinsic				
34. latent				
35. martinet				
36. masterly				
37. motif				
38. nadir				
39. nebulous				
40. necromancy				
41. nether				
42. nomadic				
43. occult				
44. orifice				
45. ostentatious				

WORD	DEFINITION	I KNOW THE WORD	I THINK I KNOW THE WORD	I DON'T KNOW THE WORD
46. ponderous				
47. pretentious				
48. prodigious				
49. quaff				
50. respite				

FINAL TEST

	WORD	DEFINITION	I KNOW THE WORD	I THINK I KNOW THE WORD	I DON'T KNOW THE WORD
1.	abyss				
2.	admonish				
3.	adjacent				
4.	aesthetic				
5.	amorphous				
6.	aquiline				
7.	arid				
8.	austere				
9.	authentic				
10.	cadaverous				
11.	coincide				
12.	comestible				
13.	complacent				
14.	concerted				
15.	conflagration				
16.	consort				
17.	contour				
18.	copious				
19.	counterpart				
20.	culinary				
21.	cumbersome				
22.	cursory				
23.	deface				
24.	desuetude				
25.	desultory				
26.	dilate				
27.	disband				
28.	discern				
29.	distend				
30.	divers				
31.	doleful				
32.	embellish				
33.	embryo				
34.	endorse				
35.	enhance				
36.	ensconced				
37.	enthrall				
38.	environs				
39.	eulogize				
40.	excruciating				
41.	fallow				
42.	fetish				
43.	fissure				
44.	flaccid				
45.	frugal				

	WORD	DEFINITION	I KNOW THE WORD	I THINK I KNOW THE WORD	I DON'T KNOW THE WORD
46.	fruition				
47.	galaxy				
48.	germane				
49.	glacial				
50.	glean				
51.	habitat				
52.	halcyon				
53.	impending				
54.	imperial				
55.	imposing				
56.	impregnable				
57.	inchoate				
58.	incongruous				
59.	indigenous				
60.	indomitable				
61.	inherent				
62.	innate				
63.	insatiable				
64.	intrinsic				
65.	latent				
66.	luxuriant				
67.	martinet				
68.	masterful				
69.	masterly				
70.	meteoric				
71.	morose				
72.	motif				
73.	nadir				
74.	nebulous				
75.	necromancy				
76.	nether				
77.	nomadic				
78.	nominal				
79.	oblique				
80.	occult				
81.	olfactory				
82.	orifice				
83.	ornate				
84.	ostensible				
85.	ostentatious				
86.	panorama				
87.	pensive				
88.	ponderous				
89.	predatory				
90.	pretentious				
91.	prodigious				
92.	proletariat				

WORD	DEFINITION	I KNOW THE WORD	I THINK I KNOW THE WORD	I DON'T KNOW THE WORD
93. proximity				
94. quaff				
95. recede				
96. replete				
97. residue				
98. respite				
99. resplendent				
100. rudiments				

APPENDIX B

TABLE

Experimental Group Grade VII

PSYCHOLOGICAL TEST RESULTS
CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY, S-FORM

Pupil	C.A.	I.Q. Non-Lang.	I.Q. Lang.	M.A. Taken on Total Factor I.Q.
1.	12-6	119	126	14-2
2.	13-1	114	107	12-11
3.	12-7	127	132	15-6
4.	12-8	109	100	13-9
5.	13-4	123	112	15-10
6.	12-6	95	114	13-9
7.	12-7	111	109	14-0
8.	12-5	115	125	14-9
9.	12-7	109	115	14-11
10.	13-3	126	128	15-10
11.	12-8	123	122	16-0
12.	12-11	117	128	14-10
13.	12-6	100	119	13-11
14.	12-10	125	131	15-6
15.	13-1	121	123	14-4
16.	12-11	132	126	16-2
17.	12-9	121	117	15-2
18.	12-10	109	99	14-2
19.	12-7	107	120	13-11
20.	12-6	100	114	13-11
21.	13-0	122	124	15-8
22.	12-8	119	133	15-10
23.	13-0	121	117	15-9

SUMMARY

An effort was made to match the Mental Ages of pupils in Experimental and Control Groups.

<u>Experimental Group</u>

M.A. 12 to 12-11	M.A. 13 to 13-11	M.A. 14 to 14-11
One pupil	Five pupils	Seven pupils
M.A. 15 to 15-11	M.A. 16 to 16-11	
Eight pupils	Two pupils	

TABLE (Cont.)

Control Group Grade VII

PSYCHOLOGICAL TEST RESULTS
CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY, S-FORM

Pupil	C.A.	I.Q. Non-Lang.	I.Q. Lang.	M.A. Taken on Total Factor I.Q.
24.	12-5	124	105	15-8
25.	13-1	115	131	14-11
26.	12-10	119	118	13-9
27.	12-4	111	122	13-10
28.	13-1	128	109	15-10
29.	13-0	117	126	14-9
30.	12-6	119	112	15-7
31.	12-8	119	112	15-7
32.	13-2	131	122	16-0
33.	12-8	123	127	14-8
34.	12-4	141	133	16-5
35.	12-10	132	111	15-11
36.	13-3	111	122	13-10
37.	13-1	121	123	14-4
38.	12-11	133	126	16-2
39.	12-9	125	129	15-3
40.	13-4	124	109	15-8
41.	12-8	111	109	14-0
42.	13-1	120	112	13-9
43.	12-9	109	119	14-11
44.	13-4	119	131	14-10
45.	12-6	124	132	14-9
46.	13-3	115	128	14-9

SUMMARY

Control Group

M.A. 12 to 12-11	M.A. 13 to 13-11	M.A. 14 to 14-11
Zero pupils	Four pupils	Nine pupils
M.A. 15 to 15-11	M.A. 16 to 16-11	
Seven pupils	Three pupils	

RESULTS OF IOWA EVERY-PUPIL TESTS OF BASIC SKILLS, FORM O

BEGINNING OF EXPERIMENT

Experimental Group Grade VII

Pupil numbers correspond to those used in Table

Test results are given in grade equivalents.

Pupil No.	Reading Comprehension	Vocabulary	Spelling	Work-Study Skills	Language Skills
1.	9.2	10.2	6.9	9.7	9.5
2.	7.8	8.1	6.1	7.8	8.0
3.	10.2	9.4	8.7	9.2	10.0
4.	8.9	8.1	7.3	7.8	8.2
5.	9.6	10.2	8.4	9.3	10.7
6.	8.4	7.9	8.6	9.0	8.7
7.	9.0	8.7	8.9	9.9	9.2
8.	10.1	9.2	9.4	9.8	9.9
9.	10.0	10.2	8.7	10.0	10.3
10.	11.1	12.2	9.0	10.9	11.2
11.	11.3	11.9	11.0	9.9	11.3
12.	8.7	8.5	7.7	8.3	8.9
13.	9.9	9.5	8.6	8.9	10.5
14.	10.0	8.8	7.8	10.7	10.2
15.	9.6	10.1	9.0	9.6	10.2
16.	7.9	7.7	6.3	7.4	7.8
17.	8.5	7.9	8.4	8.0	8.3
18.	8.2	9.0	7.4	8.6	8.4
19.	9.0	10.2	8.6	9.1	9.3
20.	7.8	8.6	8.2	8.3	7.9
21.	8.3	6.6	7.7	7.5	7.7
22.	10.2	8.3	8.1	8.0	8.5
23.	9.9	7.9	9.0	8.6	8.9

RESULTS OF IOWA EVERY-PUPIL TESTS OF BASIC SKILLS, FORM O

BEGINNING OF EXPERIMENT

Control Group Grade VII

Pupil numbers correspond to those used in Table

Test results are given in grade equivalents.

Pupil No.	Reading Comprehension	Vocabulary	Spelling	Work-Study Skills	Language Skills
1.	8.2	7.9	7.7	8.6	8.3
2.	10.1	8.2	8.0	8.5	9.0
3.	9.4	7.9	8.3	7.9	8.5
4.	10.0	10.2	8.7	10.0	10.3
5.	7.6	8.6	8.2	8.5	7.9
6.	9.6	10.1	9.0	9.6	10.2
7.	10.1	9.2	9.5	9.6	9.8
8.	8.5	8.0	7.9	8.2	8.4
9.	11.0	11.9	10.9	10.2	10.4
10.	7.8	8.3	6.7	7.5	7.9
11.	10.0	9.3	8.8	8.6	10.0
12.	8.4	7.7	7.9	9.1	8.6
13.	9.8	8.0	8.9	8.8	8.7
14.	7.9	8.3	7.7	8.2	8.1
15.	11.3	11.9	10.8	10.7	11.2
16.	9.1	10.0	8.8	8.9	9.0
17.	11.0	12.1	10.0	9.9	11.4
18.	9.8	8.1	8.8	8.9	9.0
19.	7.9	8.7	7.6	8.0	7.8
20.	10.3	8.5	7.9	8.1	8.3
21.	9.0	10.3	8.3	8.9	9.2
22.	9.4	8.0	6.9	8.3	9.1
23.	8.3	7.9	7.2	8.0	7.9

RESULTS OF DAILY QUIZZES

Experimental Group

Number of correct words is given under word number.

Quiz	Words 1	2	3	4	5	6	7	8	9	10
1.					1	4	7	7	1	3
2.							6	10	5	2
3.							5	13	2	3
4.								17	4	2
5.						1	2	10	10	0
6.								9	10	4
7.							1	2	10	10
8.									19	4
9.								13	9	1
10.								7	7	9

RESULTS OF DAILY QUIZZES

Control Group

Number of correct words is given under word number.

Quiz	Words 1	2	3	4	5	6	7	8	9	10
1.					3	1	9	8	2	0
2.							5	13	3	2
3.						2		17	3	1
4.								19	4	0
5.							3	15	2	3
6.							1	16	4	2
7.							6	9	8	0
8.								9	13	1
9.							1	10	10	2
10.					1			15	6	1

RESULTS OF WEEKLY TESTS

Experimental Group Grade VII

Number of correct words is given under the word number.

Test	Word 5	10	15	25	30	35	40	45	50
1.						1	2	15	4	0
2.							4	17	1	1

Student scores are given according to the approximate range. For example, on Test I the results were:

Correct Answers	Number of Pupils
30 to 34	1
35 to 39	2
40 to 44	15
45 to 49	4
50	0

RESULTS OF WEEKLY TESTS

Control Group Grade VII

Number of correct words is given under word number.

Test	Word 0	5	10	15	20	25	30	35	40	45	50
1.						1	3	5	13	0	1
2.								7	14	2	

Student scores are given according to the approximate range. For example, on Test I the results were:

Correct Answers	Number of Pupils
25 to 29	1
30 to 34	3
35 to 39	5
40 to 44	13
45 to 49	0
50	1

RESULTS OF FINAL TEST AND RE-TEST

Control Group Grade VII

Number of pupils is given under percentile scores

Test	0	10	20	30	40	50	60	70	80	90	100
1.						1	2	2	15	1	
2.						5	4	3	10		

Student scores are given according to approximate range. For example, on the Final Test I, the results were:

Percentile	Number of Pupils
50 to 59	1
60 to 69	2
70 to 79	2
80 to 89	16
90 to 99	2
100	o

RESULTS OF FINAL TEST AND RE-TEST

Experimental Group Grade VII

Number of pupils is given under percentile scores.

Test	0	10	20	30	40	50	60	70	80	90	100
1.							1	1	15	3 2	1
2.						2		3	13	5	

Student scores are given according to approximate range. For example on the Final Test I, the results were:

Percentile	Number of pupils
60 to 69	1
70 to179	1
80 to 89	15
90 to 94	3
95 to 99	2
100	1

COMPARISON OF IOWA EVERY-PUPIL TESTS OF BASIC SKILLS

Experimental Group Grade VII

Vocabulary

Pupil	Form O Beginning Test	Form L Final Test	Gain or Loss
1.	10.2	12.1	2.1
2.	8.1	9.4	1.3
3.	9.4	9.9	.5
4.	8.1	9.3	1.2
5.	10.2	10.9	.7
6.	7.9	7.3	-.6
7.	8.7	9.6	1.1
8.	9.2	10.3	1.1
9.	10.2	10.6	.4
10.	12.2	12.9	.7
11.	11.9	12.6	.7
12.	8.5	9.7	1.2
13.	9.5	10.5	1.0
14.	8.8	10.0	1.2
15.	10.1	12.1	2.0
16.	7.7	7.2	-.5
17.	7.9	9.0	1.1
18.	9.0	10.6	1.6
19.	10.2	10.9	.7
20.	7.8	8.5	.7
21.	8.3	9.6	1.3
22.	10.2	11.7	1.5
23.	9.9	10.9	1.0

Median Scores

Form O 8.8
Form L 9.9

Gains or Losses

One month to one year — seven pupils

One year to two years — twelve pupils

Two years to three years — two pupils

Three years or more — zero pupils

Losses: 2 pupils

COMPARISON OF IOWA EVERY-PUPIL TESTS OF BASIC SKILLS

Control Group Grade VII

Vocabulary

Pupil	Form O Beginning Test	Form L Final Test	Gain or Loss
1.	7.9	8.7	.6
2.	8.2	9.0	.8
3.	7.9	8.2	.3
4.	10.2	11.8	1.6
5.	8.6	9.7	1.1
6.	10.1	11.6	1.5
7.	9.2	10.7	1.5
8.	8.0	8.9	.9
9.	11.9	12.8	.9
10.	8.3	9.5	1.2
11.	9.3	9.4	.1
12.	7.7	9.1	1.4
13.	8.0	8.8	.8
14.	8.3	8.8	.5
15.	11.9	12.7	.8
16.	10.0	12.3	2.3
17.	12.1	12.6	.5
18.	8.1	8.9	.8
19.	8.7	9.6	.9
20.	8.5	8.9	.4
21.	10.3	11.4	1.1
22.	8.0	7.6	-.4
23.	7.9	8.3	.4

Median Scores

Form O 8.6
Form L 9.5

Gains or Losses.

One month to one year
fourteen pupils

One year to two years
seven pupils

Two years or more
one pupil

Three years or more
zero pupils

Losses: one pupil

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Description of Pictures

1. A Tower window of Kronborg Castle, Denmark. Clearly visible are the sheet metal plating of the roof, the spiked canopie over the panes, and the dark, formidable appearance of the scene. Black and white.

   Words illustrated:-- imposing, impregnable, nether.

2. This is a quiet moment in the Soviet Union. In the background are two large pillars between which is hung a poster of Lenin. Before this are benches on which peasant women sit. In the extreme center foreground is a young girl.

   Words illustrated:-- inherent, proletariat, incongruous, respite.

3. A study in blue is this starkly simple portrait of a young man, chin resting on his hand, looking wistfully into the distance.

   Words illustrated:-- latent, motif, desultory, aesthetic.

4. An impression rather than a picture is this study of a hen looking over its shoulder at a centaur.

   Words illustrated:-- cursory, environs, indigenous.

5. This picture shows the lower floor of Kronborg Castle. The highlights are the vaulting arches and the stairway at the right. Black and white.

   Words illustrated:-- intrinsic, habitat, divers.

6. Spirited horses and their jockeys are moving through the tall grass before the start of the race. Color.

   Words illustrated:-- indomitable, conflagration, cumbersome.

7. A scene in winter depicts the blue-white frozen stream with water indicating the coming of spring.

   Words illustrated:-- glacial, recede, co-incide.

8. The interior of a palace shows the white, gold, and crystal furnishings pointing to the highly ornate and decorated ceiling.
   Words illustrated:--ostentatious, imperial, authentic.

9. This picture shows the birth of a caterpillar and manages to capture the expression of wonderment and the unusual markings of its subject.

Words illustrated:-- embryo, germane, impending.

10. This shows a fountain in the park. In the background are majestic trees, neatly trimmed shrubs, but no people.

Words illustrated:-- halcyon, deface, panorama.

11. In the center of the picture is a cucoon hanging from a narrow branch. Gold foliage and small circles of light complete the picture.

Words illustrated:-- contour, galaxy, ornate.

12. Taken from outside the castle, the picture shows the drawbridge over the moat, the heavy gates and the iron portcullas. Black and white.

Words illustrated: - adjacent, innate, prodigious.

13. In the background is a French sidewalk cafe. In the foreground an old and a young man almost appear to collide.

Words illustrated: -- flaccid, replete, enhance.

14. In an elongated primitive manner, this picture shows two boys playing checkers before the fireplace. On the right, a woman is entering the room. In the upper left corner, another woman sits sewing.

Words illustrated:-- consort, doleful, complacent.

15.8 A camera reveals an inverted image of passersby dressed for the rain.

Words illustrated:-- proximity, nominal, oblique.

16. An embossed gaping skull in green and black fills the entire picture.

Words illustrated: admonish, cadaverous, necromancy

17. This picture shows Arabic dancers and musicians in the foreground and minarets in the distance.

Words illustrated:-- masterly, distend, fetish.

18. A bus and a crowd of people suggest speed and an anxiety to reach a destination.

Words illustrated: -- amorphous, concerted, martinet

19. This picture shows a solitary bird in the marshes. His head is bent as if to suggest drinking.

Words illustrated:-- quaff, aquiline, glean.

20. It is the voyage of the Mayflower. Below deck six men have witnessed the signing of the Compact.

Words illustrated:-- endorse, fruition, insatiable

21. Two scenes of Russia are shown in this picture. The upper scene shows a group of people waiting on the street. The lower depicts peasants trying to cross the city street.

Words illustrated: -- discern, copious, austere.

22. In the upper picture a little girl is busy with her lessons. In the lower, two children are studying the workings of a clock.

Words illustrated:-- intrinsic, counterpart, distend

23. In this scene people are hurrying up a stairway. Speed is achieved by a blurred image.

Words illustrated:-- nomadic, morose, disband.

24. A 16th century English scene shows many different types of inhabitants attending the market place.

Words illustrated:-- predatory, occult, complacent

25. A woman and two children are looking up at a great column of rock.

Words illustrated:-- abyss, arid, nadir.

26. It is a quiet Sunday and people are on their way to church. The picture is dominated by the white church which is entered by a long flight of stone stairs.

Words illustrated: inchoate, fallow, fissure

27. The rear fusilage of a jet glistens in the early dawn.

Words illustrated:- meteoric, masterful, nebulous

28. A painting of the crucifixion shows the head of Christ in the arms of his Mother.

Words illustrated:-- excruciating, embellish, eulogize

29. A butterfly is lighting on a flower of carmine and green.

Words illustrated: ensconced, frugal, culinary

30. The picture shows a large green leaf with beads of water.

Words illustrated:-- residue, ostensible, rudiments

31. The picture features the upper part of large ornate column and the balcony of a castle ballroom.

Words illustrated:-- pretentious, luxuriant, dilate

32. The picture shows dying flowers in a pitcher vase, a candle in a wine bottle, a covered pan, and some fruit.

Words illustrated:-- desuetude, comestible, olfactory

33. This picture shows a man in a blue suit against a red background.

Words illustrated:-- pensive, enthrall, orifice.

CROSS-REFERENCE OF WORDS AND PICTURES

	Word	Picture
1.	abyss	25
2.	admonish	16
3.	adjacent	12
4.	aesthetic	3
5.	amorphous.	18
6.	aquiline	19
7.	arid	25
8.	austere	21
9.	authentic.	8
10.	cadaverous	16
11.	co-incide	7
12.	comestible	32
13.	complacent	14
14.	concerted	18
15.	conflagration	6
16.	consort	14
17.	contour	11
18.	copious	21
19.	counterpart	22
20.	culinary	29
21.	cumbersome	6
22.	cursory	4
23.	deface	10
24.	desuetude	32
25.	desultory	3
26.	dilate	31
27.	disband	
28.	discern	21
29.	distend	22, 17
30.	divers	5
31.	doleful	14
32.	embellish	28
33.	embryo	9
34.	endorse	20
35.	enhance	13
36.	ensconced	29
37.	enthrall	33
38.	environs	4
39.	eulogize	28
40.	excruciating	28

CROSS-REFERENCE OF WORDS AND PICTURES (CONT.)

	Word	Picture
41.	fallow	26
42.	fetish	17
43.	fissure	26
44.	flaccid	13
45.	frugal	29
46.	fruition	20
47.	galaxy	11
48.	germane	9
49.	glacial	7
50.	glean	19
51.	habitat	5
52.	halcyon	10
53.	impending	9
54.	imperial	8
55.	imposing	1
56.	impregnable	1
57.	inchoate	26
58.	inconcruous	2
59.	indigenous	4
60.	indomitable	6
61.	inherent	2
62.	innate	12
63.	insatiable	20
64.	intrinsic	22, 5
65.	latent	3
66.	luxuriant	31
67.	martinet	27, 18
68.	masterful	
69.	masterly	17
70.	meteoric	27
71.	morose	
72.	motif	3
73.	nadir	25
74.	nebulous	27
75.	necromancy	16
76.	nether	1
77.	nomadic	
78.	nominal	15
79.	oblique	15
80.	occult	
81.	olfactory	32
82.	orifice	33

CROSS-REFERENCE OF WORDS AND PICTURES (CONT.)

	Word	Picture
83.	ornate	11
84.	ostensible	30
85.	ostentatious	8
86.	panorama	10
87.	pensive	33
88.	ponderous	
89.	predatory	
90.	pretentious	31
91.	prodigious	12
92.	proletariat	2
93.	proximity	15
94.	quaff	19
95.	recede	7
96.	replete	13
97.	residue	30
98.	respite	2
99.	resplendent	
100.	rudiments	30

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