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Exercises for developing imagery in grades five and six

Chalmers, Elizabeth

Boston University

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Boston University
The Gift of Elizabeth Chalmers
EXERCISES FOR DEVELOPING IMAGERY

IN GRADES FIVE AND SIX

Submitted by

Elizabeth Chalmers
(B.A., Wellesley College, 1945)

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First Reader: Dr. Donald D. Durrell, Professor of Education

Second Reader: Dr. Helen Blair Sullivan, Professor of Education
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CHAPTER I

INTRODUCTION TO THE STUDY
CHAPTER I

I. INTRODUCTION

There is a cartoon which shows a small boy, chalk stub in grimy hand, writing this phrase over and over on the seemingly endless expanse of blackboard: Books are friends, Books are friends, Books are friends. The hostility of the sentiment to his own way of thinking is evident from the boy's expression. It is to be hoped that he has since grown up and found the truth to what he wrote, but at a moment such as that one, he and his kind present to all teachers the difficult question of why some children regard books as bosom companions and others see in them only a sparring partner to be avoided if possible, or at best wrestled with joylessly.

In almost every grade there are some children who are unable to read the books commonly considered suitable for the grade. Naturally they get nothing out of books if this is so. It is not the purpose of this paper to deal with the question of the badly retarded reader. There is, however, an idea in the minds of some educators that one of the reasons some children do not enjoy and are not interested in what they read is that these children may have little or no power of imagery. They may be able to read the isolated words in the story, but if no mental picture accompanies the repetition of the words to synthesize the words into some meaning or some
idea, then what is there for the child to be interested in? Books for them are mere bunches of words and not "the bequest of wings," of which Emily Dickinson speaks.

The idea for this study came out of a suggestion made by Vida S. Clough in her Master's Thesis. She suggests that:

If imagery contributes to enjoyment of reading, if imagery contributes to success in reading, if it can be developed through training, as those who have made investigations believe it can, then activities, exercises, and books for its development should be provided.

The purposes of this paper are:

1. To make some suggestions of the values which may accompany imagery.

2. To develop exercises to teach imagery to children in grades five and six.

1/ V.S. Clough, An Analysis of Mental Imagery In Children's Silent Reading, unpublished Master's Thesis, Boston University, 1943,
II. DEFINITION

There are as many definitions of the word imagery as there are people to write them. Depending upon the point of view of the author, restrictions and qualifications are made and differences in definition appear. In every case that this writer has encountered, however, imagery is described as a mental process and is linked to sense perception.

MacLennan gives this definition: "Imagery is a name for concrete mental processes taken in their immediate and varied individualities." 2/

Galton says of imagery that: "A visual image is the most perfect form of mental representative wherever the shape, position, and relation of objects in space is concerned." 3/

Vida Clough makes an inclusive definition in setting the stage for her research in this field: "Mental imagery shall be thought of throughout this discussion as the precept in the mind's eye which accompanies silent reading and includes visual, auditory, olfactory, gustatory, kinesthetic, and miscellaneous imagery." 4/


Langfeld and Allport would add tactual, thermal, and pain to the list.  

Wilfred Lay's definition is perhaps the most inclusive: "Under mental imagery I wish to place not only the images of the so-called five senses, but all the mental representations that are in part or in entirety, the reflection or echo of the world of sensations." He lists the types of imagery as follows: "Visual, auditory, tactile, gustatory, olfactory, thermal, motor, those of pain, organic, those of emotion."

Lay also makes a distinction between mental imagery and imagination. Imagination is to him a creative force and is therefore separate from mental imagery which almost everyone experiences to some degree. "The possession of the creative imagination implies that of mental imagery, but not vice versa." For the purposes of working with children, however, it seems to this writer that an attempt to separate the two is unnecessary and unwise because fine points of distinction of this kind would serve only to create confusion with the children.

There is another definition of imagery which includes mention of the purposes images may serve. Vaughan says that:


7/ Ibid., p. 4.

8/ Ibid., p. 2.
"Images are the mental pictures involved in the memory of past experiences, or in the anticipation of the future. They are the elements of our ideas."

These definitions indicate that a mental image is a picture in the mind's eye which occurs there as a result of perception. The lists of types of sensory perceptions suggest not only the vast possibilities there are for imagery and for ways it might be developed, but also an important idea which has been suggested in the research in this field. That idea is that although practically no one will respond to all these possibilities for mental imagery, that the greater majority of people will be sensitive to some combination of these possibilities. "If one were to generalize from this single set of answers," said French, "he would conclude that in most people the mind is capable by effort of all kinds of sense imagery, although as a usual thing its contents is limited to one or two special forms."

The definition which this writer would like to suggest for teachers of the intermediate grades is that a mental image is a mental picture appearing in the mind as a result of some external suggestion.

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III. THE CASE FOR IMAGERY

"But, why bother?" say the unconvinced. It is the opinion of this writer that a strong case can be made for the importance of the function of imagery. Galton early saw the need for further study of the matter:

A faculty that is of importance in all technical and artistic occupations, that gives accuracy to our perceptions, and justness to our generalizations, is starved by lazy disuse, instead of being cultivated judiciously in such a way as will on the whole bring the best return. I believe that a serious study of the best method of developing and utilizing this faculty, without prejudice of abstract thought in symbols, is one of the many pressing desiderata in the yet unformed science of education. 11/

Although there are some scholars who feel that imagery is not essential, such as Aveling who says: "Visual images are not necessary in processes of thinking such as were investigated," 12/ all students of the subject feel that it is of some importance.

F.C. Bartlett, writing the third article in the same series from which Aveling was just quoted, gives this interpretation of the function of imagery: "... in general the image is a device for picking bits out of schemes, for increasing the chance of variability in the reconstruction of past stimuli and situations, for surmounting the chronology of presentations." 13/ He goes on to say in the next sentence:

By the aid of the image, and particularly the visual image, a man can take out of its setting something that happened a year ago, reinstate it with much if not all of its individuality unimpaired, compare, condense, and combine it with something that happened yesterday and use them both to help him solve a problem with which he is confronted today. 14/

Bartlett points out in the above quotation the importance of imagery as a factor in the thought process. In another article he emphasizes the importance of imagery as a factor in making judgments. "For the primary function of the image is to manifest itself when a reaction is hesitating, and to lead to a response which is decision." 15/

Bentley also remarks on the future value of imagery: "Simply as a part of the past the image has had little value, but as an index of the future its function has been important." 16/

But imagery has another function in addition to its usefulness in the process of thought, and in making decisions, and that value is enjoyment. The pleasure which those who image derive from their surroundings, from what happens to them, and from what they read, is great. The importance of this factor in the teaching of children is obvious. As Pear puts it:

14/ Bartlett, loc. cit.


"... the memory world and the thinking world of a person who never uses visual imagery would seem comparable to the perceptual world of an animal without eyes." 17/ 

Wilfred Lay believes that mental imagery is "... of value in our education as an awakening of the finer emotions. ..." 18/ Hicks, speaking of "a tendency of human imagination," 19/ quotes Ruskin as saying that imagination, "'rejoicing in its own excessive life, puts gestures into clouds, and joy into waves, and voices into rocks." 20/ 

Imagery is not, however, without its critics, who point to some of its dangers. Margaret Drummond makes a serious point in relation to imagery in children and in connection with the teaching of reading:

These images frequently are representatives of incidents in the past of the subject and are often not at all appropriate; in the case of reading, they are often misrepresentations of the matter read. One can scarcely doubt that many children are victims of this automatic functioning of the associative process. The false tales told in good faith by many children are evidence of this. 21/

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18/ Lay, op. cit., p. 56.


20/ Loc. cit.

This statement of Margaret Drummond is of real significance and should be kept in mind by a teacher concerned with this subject. It seems to this writer, however, that this statement is not of a nature to discourage the teaching of imagery, but rather a challenge to see if there is not some way in which children can be taught to associate accurately.

It is obvious that if this writer did not feel that the question of: "why, bother?" asked at the beginning of this section had been convincingly answered, that the rest of this paper would never have been written. It is important to this study, however, to keep in mind that it is the teacher's job to be concerned with these matters, but it is not important to trouble the pupil with the ins and outs of the abstract concepts of imagery. It is the problem of the last section of this paper to show how the teacher, realizing the importance of imagery, can teach it by the subtlest of means.
CHAPTER II

RESEARCH CHAPTER
CHAPTER II

RESEARCH CHAPTER

PART I: VIEWS ON GENERAL QUESTIONS RELATING TO IMAGERY

It is not the purpose of this chapter to deal with the research in the field of imagery in detailed chronological order. Such a job has been done by Vida Clough in her Master's Thesis. It is, however, the purpose of this chapter to present some of the questions which have been raised in this field which are of importance to teachers because of their educational implications, and to indicate the answers that have been given by various scholars throughout the time this subject has been considered.

Although imagery is mentioned by Aristotle, real investigation of the subject did not begin until the latter half of the nineteenth century. Then we find several men publishing articles on the subject: Gustave Fechner in 1860; Francis Galton in 1883; Wilfred Lay in 1898; and Madison Bentley in 1899. Although early studies dealt for the most part with investigations of imagery in adults, the implications of their conclusions for education were soon recognized.

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It is the opinion of this writer that the following subjects should be discussed and their educational implications raised: The Relation of Imagery to Thought; The Relation of Perception to Imagery; The Relation of Past Experience to Imagery; The Relation of Images and Words; Individual Differences in Imagery.

I. THE RELATION OF IMAGERY TO THOUGHT

"Some psychologists insist that thought consists of a succession of images, and some psychologists maintain that images are unnecessary, even superfluous." 2/ This is the question on which there has been much speculation. In the 1927-28 volume of the British Journal of Psychology, there appears a series of three articles on, "The Relevance of Mental Imagery to the Process of Thinking." 3/ T.H. Pear, F. Aveling, and F.C. Bartlett all speak to the same subject. Pear says: "In this paper will be expressed the difficulties which prevent me from believing that visual images are necessarily lowly vehicles of thought and that they are often irrelevant to or discrepant from the thought which proceeds independently of or even hampered by them." 4/ He concludes,

2/ Vaughan, op. cit., p. 470.


"... that visual images are generally relevant and useful, and that in some types of abstraction they may be uniquely useful." He would find himself on the side of William James who says that: "A person whose visual imagination is strong finds it hard to understand how those who are without the faculty can think at all."

In making a case for the importance of imagery Aveling's point of view has already been indicated. He concedes that imagery may have its part in thinking, but that is is not essential, because of a distinction he makes between image and thought. If a visual image of a thing occurs:

... it can as I have said, only be known to be such by being compared with the thing (percept), not now an image but thought. The thought object, or relation, must thus be independent of the image, since it is the standard by which the image is judged.

This may seem to be splitting hairs, but it does show the extent and complexity of thought on the subject.

Bartlett adds another thought of which more will be said later, and that is the connection between words, images, and thought:

... I normally find that visual images have to come to the help of words, and words have to connect and arrange visual images, that I am far more interested in the functional questions involved in our main problem than in the question of introspective description.

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7/ Aveling, op. cit., pp. 21-22.

8/ Bartlett, "Relevance of Mental Imagery," op. cit., p.23.
MacLennan comments on the role of imagery in thought.

Another proof of the close dependence of meaning upon imagery is found in the constant resort to imagery when thought is baffled. So long as we use symbols which are quite familiar and so long as the combinations made from them fall within the beaten tracks of experience and habit, we pay very little attention to the flights of images which bring home the significance of our thought. The moment, however, that some new thought or some new combination of thoughts arises, we search for the concrete imagery in which the conception may be appropriately embodied.  

There is also considerable discussion as to the role of imagery in different kinds of thinking. Galton raised the question when he discovered that scientists on the whole have very little imagery, even though thought is their realm. Galton says that: "A habit of suppressing mental imagery must therefore characterize men who deal much with abstract ideas."  

Alexander, referring to Galton's observations, notices that the "... effort to understand geometrical conceptions is vastly furthered by mental pictures..." He also says that: "The kinds of ideas which one entertains makes all the difference in the kinds of medium demanded."

In view of these comments, this writer concludes that imagery has a definite role to play in the process of thought recognizing the qualifications referred to.

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9/ MacLennan, op. cit., p. 74.
10/ Galton, op. cit., p. 110.
12/ Ibid., p. 335.
The importance of the relation of imagery to thinking for a child seems clear. Clear thinking may develop along with the ability to image. Galton adds a further point in relation to children: "There is reason to believe that it (imagery) is very high in some young children, who seem to spend years of difficulty in distinguishing between the subjective and the objective world."  

II. THE RELATION OF PERCEPTION TO IMAGERY

Everyone who concedes that there are images agree that images come as a result of some perception on the part of the individual to some stimulus. It is of importance to this study to notice that perception in such a regard refers to more than merely being in the presence of the stimulus. Hicks states it, "... that in perception the knowing mind is directly apprehending given external fact." He also says that: "... perception consists neither in the passive reception of what is nor yet in merely contemplating the given, but that it is essentially an act of discriminating, of distinguishing, and of comparing the features or characteristics of the given." If this is so, as this writer would agree, then habits of observation must necessarily be established if imagery is to be developed.

13/ Galton, op. cit., p. 100.
14/ Hicks, op. cit., p. 126.
15/ Loc. cit.
Perception also seems to bear a direct relation to imagination, for one is unable to imagine something totally new. Everything imagined is compounded of other elements already perceived. A person may be able to imagine an animal with the beak of a bird, the body of a mole, and the tail of a squirrel, but he is unable to imagine an animal completely unlike any animal previously perceived in every respect. "... imagination is continuous with perception and grows out of it." 16/ "... imaginative activity is clearly limited, and strictly limited, by what has already been apprehended through the instrumentality of sense. " 17/

Perception seems to have a cummulative quality of enrichment besides. Hicks, remarks on the story of Robinson Crusoe and Friday looking out from their isolation to see a ship on the horizon. 18/ To Friday it was but a distant shape and blur; to Crusoe it immediately took on the appearance of a ship, sails, masts, and prow, a configuration that was present in his imagination as a result of intimate acquaintance with ships. "In other words, the perception of a mature mind is interpenetrated with what accrues to it from a long series of perceptive acts." 19/

16/ Ibid., p. 124.
17/ Ibid., pp. 124-125.
18/ Ibid., pp. 129-130.
19/ Ibid., p. 130.
These observations on perception bear a close relation to the next subject to be considered which is that of the relation of past experience and imagery.

III. THE RELATION OF PAST EXPERIENCE TO IMAGERY

The matter of the dependence of imagery on the experience of a person's past is of great importance when working with children, for many children, like Friday, never having seen a ship, are therefore unable to form an accurate or vivid picture in their minds when the word "ship" is mentioned. In the research for this paper there has been no source read which has negated the importance of past experience in imagery of the present, although some feel it is more important than others. Hicks, in defining imagery brings out the importance of past experience:

... the term 'images' ought to be reserved for such contents as in memory and imagination do appear to stand over against the cognizing mind as objects, and upon which the act of apprehension seems (to the conscious subject in question) to be directed. ... There is always, in their case, a nucleus, however scanty and concealed it may be; of something actually present to the senses upon which the act of discriminating is initially directed, and that around this nucleus a penumbra of imagery gathers, owing to the circumstance that the act of apprehension which is directed upon the real object is saturated, so to speak, with revived or retained awareness of the nature already described.  

20  

20/ Ibid., pp. 133-134.
Ardra Wavle relates these facts to reading: "Imagery is dependent upon previous perception; upon previous experience. On the adequacy of the background of experience depends, in part, the relevance of the image that accompanies reading to the subject matter read." 21/

Galton not only considers past experience important in the forming of images, but also points to a significant fact about such experiences. "There is an absence of flexibility in the mental imagery of most persons. They find that the first image they have acquired of any scene is apt to hold its place tenaciously in spite of subsequent need of correction." 22/ This would indicate that a child forming an incorrect image or conception of a word, or any other thing learned, would be at a serious handicap. These observations would also indicate that one of the ways of teaching imagery is to provide opportunities for varied experiences.


22/ Galton, op. cit., p. 108.
IV. THE RELATION OF IMAGES AND WORDS

To what extent we think with visual images, and to what extent we think with words or verbal images has been much discussed. There seems to be some indication that there is an historical development which has tended to decrease the use of images in thinking and to increase the use of words. "The acquirement of language, spoken and written, has made an essential change in the modes of memory. Visual and auditory images of things have been through it largely replaced by verbal memories." Those people with low powers of imagery will use words more. "Some people undoubtedly have no visual images at all worthy of the name, and instead of seeing their breakfast table, they tell you that they remember it, or know what was on it. This knowing and remembering takes place undoubtedly by means of verbal images." It would seem to this writer that imagery and words could be said to complement each other and it is at this point that the implications for education appear. Well chosen words will undoubtedly be one of the keys for unlocking the door to imagery for children.

23/ Bentley, op. cit., p. 23.

24/ James, op. cit., pp. 57-58.
"Language is undoubtedly the supremely facile agent of thought, but it is by no means the only efficient one."  
"Language because of its fixity, requires to be supplemented by images which hold the concrete event for future use."

V. INDIVIDUAL DIFFERENCES IN IMAGERY

In speaking of imagery and words those people who have low powers of imagery have already been mentioned as using verbal images instead. Some people are definitely less able and less inclined to image than others. There are extremes. There are variations from the man who visualizes almost nothing, all the way up to the man Galton describes who visualized so accurately and vividly that when working mathematical problems he visualized the part of the slide rule which he needed to use, made the proper adjustments in the image, and thus obtained his answer. It is generally felt that: "A person who excels in one kind of imagery is apt, generally speaking, to excel in other kinds." The conclusions of French, generalizing from his one experiment, have already been mentioned: "... That in most people the mind is capable by effort of all kinds of sense imagery, although as a usual thing its content is limited to one or two special forms."

27/ Galton, op. cit., 95.  
28/ Vaughan, op. cit., p. 387.  
29/ French, op. cit., p. 58.
The recognition that there are individual differences in quality and kind of imagery is essential if one is to attempt to teach in relation to this field. No child can be forced to develop along any one set path. On the other hand, it has been ably pointed out by Marjorie Brennan that an understanding of a child's type of imagery and mind can give the teacher a clue as to how that particular child can be most effectively appealed to. "... There are different modalities and that many of the individual differences that they find existing in the children are due to this variation in their imagery. The child then who was strongly inclined toward the auditory modality could be approached through this modality when attempts along the visual line have apparently failed and vice versa." 

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PART II. SPECIFIC REFERENCES TO IMAGERY IN CHILDREN

In the preceding section of this chapter, general questions related to imagery have been discussed, and their implications for education drawn. It is the purpose of this section to deal with the questions in this field which relate more specifically to the teaching of children: Teachability; The Relation of Imagery To Reading; Interest As A Factor In Imagery; The Relation of Imagery To Recall.

I. TEACHABILITY

It has been interesting to this writer to note that when the subject for this paper has been under discussion in conversation with friends, usually the first question has been: "Well, how can anything so intangible be taught. You either do image or you don't, and that's all there is to it."

From the earliest research, however, the possibility of teaching imagery has been considered. (Let a note be made that in the phrase "teaching imagery" the word teaching must be considered as meaning "developing" for it is not teaching in the sense of subject matter teaching, but rather the development of a quality of mind.)Galton says that: "There is abundant evidence that the visualizing faculty admits to being developed by education." 31/ He tells of a man of his

31/ Galton, op. cit., p. 105.
acquaintance who was able to visualize form, but not color. Some weeks after Galton had questioned him in connection with his study of imagery, Galton heard from the man: "He told me that my inquiries had induced him to practice his colour memory, and that he had done so with such success that he was become an adept at it, and that the newly acquired power was a source of much pleasure to him." 32/

Pear also reports an increased power of imagery in a certain specific regard after his attention had been directed to it. "That such imagery can be cultivated seems probable. Since my interest in human movement has increased I enjoy visualizing a human being in movement, instead of getting a slow succession of static images of the performance." 33/

Anyone trying to paint for the first time will have the experience of noticing that things have more facets than ever before observed. The brick wall outside one's window, seen every day, is not the flat pink surface faintly divided into sections as it has always appeared; when one tries to paint it on canvas, it becomes a mixture of shades, shadows, and textures.

An interesting correlation between imagery and observation is mentioned by French in his conclusions to his work with the Juniors at Vassar College. He says that:

33/ Pear, "Relevance of Mental Imagery," op. cit., p. 4.
"Several report an increase in their ability to visualize since entering college, due to the training given by the department of English incident to the work in composition." Training in the kind of observation necessary to achieving the power to describe either in paint or with words would seem to be accompanied by increased power of imagery.

From the above observations this writer concludes that not only is the power of imagery subject to development, but also that one of the primary factors in this development on the part of those who have experienced it has been an increased awareness of a type of imagery after having had their attention called to it. The cultivation of the power of imagery has also been due to an increased habit of critical or discriminating observation.

II. THE RELATION OF IMAGERY TO READING

The relation of imagery to reading has been referred to before, and is of course, basic to the whole concept of this paper. Although there is much research still to be done in this field, certain questions which will undoubtedly come to the minds of teachers have already been answered by research.

Vida Clough's conclusions are as follows: "It seems probable that successful reading in the middle grades may depend on imagery as one of the important factors."

34/ French, op. cit., p. 49.
35/ Clough, op. cit., p. 95.
"If children, who make a high score in mental imagery, are the ones who like to read the best, it must be that these mental pictures, when used to help clarify thought and build correct percepts and concepts, are a desirable \(^{36/}\) accompaniment to reading."

She goes on to make other conclusions regarding imagery in children, which she ultimately relates to their reading. In the matter of age of children and their ability to image she says: "... chronological age does not apparently affect the imagery score, that as the child advances in grade level, he is not receiving training which is increasing his score in mental imagery," \(^{37/}\) "The mental age of a pupil shows no correlation with scores in mental imagery," \(^{38/}\) But, she concludes: "The reading age of a pupil shows a fair correlation with the degree of imagery present in silent reading." \(^{39/}\) She also says that: "Grouping pupils, according to ability in reading correlates with ability in imagery." \(^{40/}\)

\(^{36/}\) Ibid., p. 96.
\(^{37/}\) Ibid., p. 91.
\(^{38/}\) Ibid., p. 114.
\(^{39/}\) Loc. cit.
\(^{40/}\) Loc. cit.
In the matter of sex differences Clough concludes that: "... in all three grades the girls made higher scores in imagery than the boys." She makes an interesting observation from this fact. "These differences possibly may indicate one of the reasons why boys seemingly have more trouble than girls in learning to read, why there are more reading disability cases among boys than girls." Further correlations with imagery scores which she notes are: "Enjoyment of reading, the amount of reading, success in reading, the kind of stories like, associations in reading, and reading one's own stories, all show substantial correlation with imagery scores." These conclusions were made on the basis of material gathered from normal classroom situations. Vaughan also remarks on the relation of imagery, reading and observation in the case of the remedial pupil: "Reading disability is often attributed to defective eyes, when the actual source of the difficulty is faulty training in observation. Remedial teaching, which corrects the faulty habits of observing enables the child to see better and thus to improve his reading capacities."
III. INTEREST AS A FACTOR IN IMAGERY

It is also important to observe that interest in subject will have a correlation with the amount of imagery a child has. According to Wavle, "... it would seem that the presence of imagery depends more upon interest in the selection than upon the subject matter of the selection." 45/ Clough also notes the correlation of interest with imagery. 46/

It may be concluded then, that the child who knows and loves boats will have far more interest in and imagery of a story connected with boats, than his friend whose passion may be for horses. This fact will be of particular importance in beginning work with imagery; later work with imagery should seek to broaden the field of interest of the child.

IV. THE RELATION OF IMAGERY TO RECALL

The importance of imagery as a factor in recall has been much discussed. The kind of mind that mentally flips pages and reads the contents, or visualizes the score of a symphony in the mind, would use imagery as their agent of recall almost entirely. The minds of this kind, however, are the exception. For the most part, research seems to indicate that to the extent which imagery increases associations, it

45/ Wavle, op. cit., p. 53.
46/ Clough, op. cit., p. 115.
aids in recall. "For recall of individual items from series of visual data which fall into classes photographic visual imagery is of less importance than concepts, the use of analogy, verbal description and commentary." 

According to Clough: "There is no doubt in the writer's mind, that imagery helps to build associations which in turn assist in recall and form a basis for learning and retention."

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48/ Clough, op. cit., p. 102.
CHAPTER III

PLAN OF THE STUDY
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PLAN OF THE STUDY

I. PURPOSE

This study is an attempt to:

1. Make suggestions to teachers of the values which may accompany work with pupils in the field of imagery.

2. Present three types of exercises suitable for teaching imagery to children in grades five and six.

The research indicates that imagery may be an important factor in the thought and reading processes, and that those who do image have a source of pleasure. The implications to teachers from these findings is that attempting to teach imagery may help children to:

1. Obtain more meaning and pleasure from their reading.

2. Learn to think more clearly.

There are also indications that the teacher can learn much about the way a child's mind works by observing his responses in this type of work.

It is the feeling of many that the power to image can be developed.
II. CONSTRUCTION OF THE EXERCISES

In the construction of the exercises the following basic assumptions were made:

1. That the picture in the mind we call an image occurs there as a result of the gathering of ideas and memories which are ours from our past experiences to form a new picture in a new situation.

2. That the new situation may be anything perceived at a given moment by the senses.

3. That an image may have one or several of ten types of content:
   a. Central Figure: The person, persons, or object about which the image is concerned.
   b. Physical Surroundings: The total scene of the image in which the central figure is located and in which the action takes place.
   c. Motor Content: Movement if any within the image.
   d. Time Content: Reference to the time of day or year.
   e. Color Content:
   f. Kinesthetic Content: Reference to any feeling of bodily pressure or muscular activity.
   g. Olfactory Content: Reference to smells or odors.
   h. Auditory Content: Reference to sounds or noises.
   i. Tactile Content: Reference to touch.
   j. Emotional Content: Reference to mood or feeling.
4. That for the purposes of teaching reading the most important relationship to be established is between words and the images they evoke.

5. That the power to describe is necessary if the content of the image is to be made known.

6. That the power to observe is essential to imagery if there are to be ideas and memories from which images can be formed.

7. That the order of difficulty of the expression of imagery content is from oral discussion to individual written description.

8. That an answer in this field can be judged right or wrong only in matters of time, space, shape, and size.

9. That a class period of twenty minutes, three times a week, in connection with the reading period or with the written composition period could profitably be devoted to this type of work.

10. That an informal adventurous approach to this material will probably bring the best results.

Three types of exercises were constructed, picture exercises, language exercises, and activity exercises.
The Picture Exercises

The purpose of the picture exercises is to give practice in describing pictures. It was felt that if the child is to be asked to describe the picture he sees in his mind, he should be given practice in describing a picture he sees before his eyes. There are three situations in the picture section.

1. The purpose of the first situation is to discover the extent of observation and the kind of description which occurs to each child spontaneously.

The type of picture required was one which would permit a wide variety of description. An outdoor scene, in which the central figures are children, in which there are many different objects which can be named and described, in which there is a great deal of color, and in which the spring season, with its associations of odors and feeling, is implied, was chosen for this exercise.

2. The purpose of the second situation is to discover the extent to which a child can observe and recall the details of a picture when specific questions are called for.

The type of picture required was one which would have in it a wide variety of detail to be observed, but which would differ markedly from the picture presented in the first situation. An outdoor scene, set in the winter time, in which there are several figures, in which there is the contrast of land and water, in which the movement of the boat can be imagined,
and into which it is possible to project a mood and a situation, was chosen for this exercise.

3. The purpose of the third situation is to discover whether when presented with a scene, the child can describe the scene, and can imagine what might be happening in the picture even though no figures appear.

The type of picture required was one which would present a complete and colorful scene, and one in which several possible types of situation would be suggested. A scene, in which both outdoors and indoors are clearly defined, in which several types of activity are suggested, and in which there is a great deal of color, suggestions of sounds, and odors, was chosen for this exercise.

Language Exercises

The purpose of the language exercises is to create images through words, and thus to establish the relationship between words and the images they may evoke. Five types of exercises, with at least four examples of each type, were constructed for this purpose.

The order of these exercises has been arranged to present the children first with words, then with sentences, and finally with paragraphs. This has had to be an arbitrary decision as
it is yet to be investigated whether the one word stimulus is more or less difficult to respond to than words presented in sentences and paragraphs.

1. In the exercises of the first type, the child is to be presented with words in isolation, and is asked to tell what other words he thinks of when he reads a word such as HOUSE.

The type of words required for these exercises were words which could reasonably be expected to be in the experience background of most children. The words chosen were classified as: Outdoors; Dwellings; People; Situations; Words of Motion.

A sample lesson was constructed to accompany this exercise to show the possibilities of developing a lesson in imagery on the basis of single words. The lesson provides both for oral discussion and individual written description. It is the intention that the teacher using this material will choose from the list of words those which will have meaning for the children in her situation.

2. In the exercises of the second type the child is to be presented with sentences. Each important word in the sentence is accompanied by suggestions for describing the picture that word might evoke. The child is to indicate which of the suggestions most nearly corresponds to his own image as he read the sentence. He is then to describe the picture he saw in his mind.
In the writing of the sentences it was the writer's aim:

a. To have the sentence deal with a common experience.

b. To leave out descriptive elements in the sentence so that the child's own image would not be prescribed.

3. In exercises of the third type the children are again to be presented with sentences, but this time no suggestions are made for them to check. These sentence exercises were designed to be used in either of two ways:

a. As a basis for oral discussion. The sentences are accompanied by the group of questions they were designed to raise in order to give the teacher suggestions for the discussion.

b. As a basis for individual written description. The teacher may wish to use these sentences in one or both of the ways suggested depending upon the needs of her pupils.

4. In exercises of the fourth type the child is presented with paragraphs. The paragraphs are accompanied by questions to which the child is to write the replies. The paragraphs were designed to sample various kinds of experiences.

In writing the paragraphs an attempt was made to make them descriptive, but to leave some of the possible description unsaid. The questions were designed to carry the child beyond the limits of the words of the paragraph, and to see how much of what was not described he can image.
5. In exercises of the fifth type the child is presented with short paragraphs. Each paragraph is accompanied by multiple choice questions. The child is to read the paragraph first and then turn over the page and answer the questions without looking back.

The situations presented in these exercises attempt to discover the accuracy of the child's imagery in matters of space, time, shape, and size.

Activity Exercises

Believing that the power to observe bears an important relationship to the power to image, three types of activities were designed to broaden the child's experience background, and to give directed practice in observation:

1. Trips
2. Pictures and Movies
3. Small activities for directed observation.

These suggestions were designed not only to point out new experiences which the children might have, but also to make them more aware of details in their daily living.
Diagnostic Measure

Having completed the exercises it seemed necessary to have some measure and record of the child's imagery before this course of study was embarked upon.

A short diagnostic measure was constructed to give specific opportunity for the ten types of imagery content.

Each of the questions has two items. The exercise may be given in its entirety at the beginning of the course of study, or one item from each question may be given at the beginning of the study and one item from each question be given at the end to check progress.

A complete copy of the exercises follows in Chapter IV.
CHAPTER IV

THE EXERCISES
PICTURE EXERCISES
Present the following picture* to the children and give them plenty of time to look at it. They should not be allowed to talk while they are examining it because individual response is desired. They should be provided with pencils and paper so that when they have finished looking at the picture they are ready to work.

After each child has had a chance to examine the picture ask the children to write a description of what is happening in the picture. If they seem stuck, further questioning of the type: "What are the boy and girl doing?" may be necessary, but questioning suggesting the answers should be avoided.

After the papers are in, discuss with the children the following questions:

1. Who are the people in the picture? What do they look like?
2. Where are they? What does the place look like?
3. Do you see anything moving?
4. What colors did you see?
5. Could you feel anything touching you if you were in the picture?
6. Could you smell anything if you were in the picture?
7. What time of day is it? What time of year?
8. How do you think the children are feeling?

The written descriptions should be checked to see how many of the types of imagery content are present in the description. It should also be noted which type is predominant.

* The original was in color. This picture is taken from: Number Two Joy Street, D. Appleton and Company.
II

* Present the following picture to the children and give them plenty of time to look at it. They should not be allowed to talk while they are examining it because individual response is desired.

After they have examined the picture, present them with the following questions and ask them to write their answers.

Questions:

1. Where does this scene take place?
2. What do you think is happening in the picture?
3. Do you feel anything moving? Can you see anything moving?
4. Do you hear any sounds?
5. Do you smell anything?
6. How would you be feeling if you were the child on the dock?

* The original was in color.
Present the following picture to the children and give them plenty of time to look at it. As they are looking at it, ask them to be thinking about what might happen in that picture.

When they are ready to write, ask them to imagine that the picture is a stage. They are to put the characters on the stage. Ask them to describe what could happen on the stage.

* The original was in color. This picture is called the "Blue Door."
LANGUAGE EXERCISES
Directions:

From the following list of words the teacher should choose those which have meaning for the children of her locale.

The words should be presented in isolation. It would be unwise to present more than two in the course of one twenty minute teaching period.

The word should be written on the board.

The children should be provided with scratch paper, and allowed to write their responses to the question:

What other words do you think of when you see the word HOUSE?

Collect the responses on the board after everyone is finished writing.

In a group discussion, discriminate between the good and accurate responses, and the farflung answers.

Have the children write a description of the picture they see in their minds when they see the word HOUSE.

A sample lesson and the list of words follows.
Sample Lesson

1. Write the word HOUSE on the board.
   Ask: What other words do you think of when you see this word?
   Write the other words on your scratch paper.

2. Collect the responses on the board, each child contributing.
   Possible answers: large, small, tall, white, silly,
   with shutters, old, new, ugly, beautiful, nice, with dormers,
   funnylooking, with two chimneys, on a hill, an apartment
   house, by the road, with steps in front, vinecovered,
   porch, haunted.

3. Some of these words describe HOUSE better than others. Discuss
   what is meant by words which describe well.
   Ask: Which ones would you cross out as not being very good.?
   Possible answers: by the process of group discussion they
   might eliminate: silly, tall, nice, funnylooking, as not
   being good descriptive words.

4. Ask the children to: Write a description of the picture you
   see in your mind when you see HOUSE. You may use the words we
   have collected if you want to, or you may use your own words.
   Give the description a title.

   Possible results: Paragraphs might be written on:
   The House on the Hill
   The Haunted House
   Life in an Apartment House
   My Favorite House
   The House With Two Chimneys
Word List For Exercise I

Outdoors:

house, meadow, forest, lake, hill, seashore, frozen pond,
town, city, village, plain, river, field, brook, street,
avenue, road, downtown.

Dwellings:

house, cottage, apartment, living room, den, dining room,
kitchen, barn, workshop, cellar, attic.

People:

girl, boy, woman, man, workman, teacher, mother, grocer,
father, train conductor, farmer, sister, brother,

Situations:

home, school, church, party, stores, train, bus.

Words of Motion:

run, stand, throw, catch, climb, stretch, reach, walk,
stroll, hike, hurry, ride.
Directions:

A copy of the exercises as they appear here should be duplicated for each child.

The sentence is to be read silently. The directions should be read aloud with the children. The directions read as follows:

Read the sentence. Close your eyes and think for a minute.

Open your eyes and underline the words which most nearly describe the picture you saw in your mind after you read the sentence.

When you have finished, write a short description of the whole picture you saw in your mind when you read the sentence.
Directions:

Read the sentence. Close your eyes and think for a minute.
Open your eyes and underline the words which most nearly describe the picture you saw in your mind after you read the sentence.

The boy stopped and watched the men working.

Boy:
short, thin, chubby, about ten, about sixteen, tall,
brown hair, light hair, in shorts, in long trousers,
in a jacket, in shirt sleeves, wearing a cap, wearing a sweater.

Stopped:
suddenly, with surprise, slowly came to a stop.

Watched:
eagerly, interestedly, curiously, for a minute, for a long time.

Men Working:
building a house, moving furniture, fixing a flat tire,
repairing a road, paving a street, fixing telephone wires,
clearing snow away, pitching hay, working down a man hole,
painting a house, trimming trees, chopping wood.

When you have finished write a short description of the whole picture you saw in your mind when you read the sentence.
Directions:

Read the sentence. Close your eyes and think for a minute.
Open your eyes and underline the words which most nearly describe the picture you saw in your mind after you read the sentence.

He climbed as high as he could.

He:
boy, man, short, big, about ten, dark hair, light hair,
in shirt sleeves, in a plaid jacket, wearing a sweater.

Climbed:
a ladder, a tree, a wall, a hill, a mountain, a telephone pole,
up the barn rafters, up the haystack, up the pole.

When you have finished, write a short description of the whole picture you saw in your mind when you read the sentence.
Directions:

Read the sentence. Close your eyes and think for a minute.

Open your eyes and underline the words which most nearly describe the picture you saw in your mind after you read the sentence.

She could not get him to part with his old sweater.

She: 

his mother, his wife, his sister.

Him: 

boy, man, my brother,

Sweater: 

brown, green, red, blue, patched at the elbows, turtlenecked, with his school letter on it, worn out, torn, frayed.

When you have finished, write a short description of the whole picture you saw in your mind when you read the sentence.
Directions:

Read the sentence. Close your eyes and think for a minute.

Open your eyes and underline the words which most nearly describe the picture you saw in your mind after you read the sentence.

It was a wonderful place for sledding and everyone was out that day.

Place for Sledding:

long hill, gentle slope, wide slope, steep hill, firmly packed run, slick, deep snow.

Everyone:

all my friends, all the children from school, a big crowd of people, older people too.

When you have finished, write a short description of the whole picture you saw in your mind when you read the sentence.
III

Directions:

The following sentences have been constructed to be used in either of two ways:

1. As a basis for group discussion.

2. As a written exercise.

If the response is to be oral, the sentence should be written on the board and then discussed.

If the response is to be written the sentence should be written on the board, and the children asked to: "Write a description of the picture you see in your mind when you read this sentence."

The sentence itself appears underlined. Each sentence is followed by the questions which the sentence is intended to raise. These questions may be used either as a basis for the discussions, or as suggestions for the written description.
1.

The man sat in the corner.

What does the man look like? What is he sitting on?
What is he wearing? What does the rest of the room look like?
What can you see out the window by his side? How does the man feel?

2.

Mother went into the next room.

What room had Mother just come from? What room did she go into? Which direction did she walk? What did she go into the other room for? What does the other room look like? How long does she stay in the other room? What kind of a door is between the two rooms?

3.

Jim chased the ball he had tried to catch.

Where is Jim? What was he playing? Do you see one or two pictures in your mind when you read this sentence? Do you see Jim standing and missing and then chasing the ball? How many other people are there in the picture besides Jim? What kind of a day is it? How does Jim feel? Can you see him moving? What does he do when he finally gets the ball?
4.

The wind blew hard, but the little boy just stayed there.

Where was the little boy? What kind of a wind was it?
What did the little boy look like? What was he doing there?
How did he feel about being there? Do you hear any noise?
Do you feel anything hitting you? How long has the boy been there? What do you think he is going to do?

5.

The children were so excited they could hardly keep still.

Who are the children? What do they look like? Where are they? What are they excited about?
In this question the answers given to the question: "Where are they?" Will determine what the rest of the questions should be.

6.

The boys were splashing happily in the pond.

Were the boys swimming, wading, or fishing? How many are there? What kind of a day is it? Was the water cool or warm? What does the pond look like? Do you hear any noises? Do you feel anything touching you? Do you smell anything? Do you see any colors?
Everyone came to the carnival.

Where was the carnival? What time of year was it? What time of day? What kind of a carnival was it? What colors do you see? What sounds do you hear? What different kinds of people do you see?

Everything was waking up.

If the reply to the question: What is waking up? indicates that in the children’s minds the sentence refers to the spring season when the earth is waking up then the following questions should be raised:

Do you smell anything? What do you smell? What sounds do you hear? How do you feel? What kinds of things are waking up and growing?

If the response to the question: What is waking up? indicates that in the children’s minds the sentence refers to waking up in the morning, then the following questions should be raised:

What sounds do you hear? Where are you? Do you feel anything touching you? Are you warm or cold? Do you hear any sounds from outside? Do you smell anything? (like bacon cooking).
9.

The beautiful hemlock was the only green thing in sight.

Where do you see the hemlock? What else do you see in the picture? What time of year is it? Is the ground covered with snow, or is the hemlock standing in a parched pasture in the middle of summer?

10.

It was a very important occasion.

What is the occasion? Describe the scene you see?
IV

Directions:

The following paragraphs may be written on the board or duplicated so that each child can have a copy. Each child should read the paragraph silently, and then write the replies.

Before the exercise is begun the teacher should say to the children:

"As you read this paragraph, try to see more than the words actually tell you. When you have read the paragraph carefully, write your answers to the questions."
A Snowy Morning

It was a snowy morning. It was Saturday and Jean lay a long time in bed after her mother had closed the window and turned up the heat. She could see just enough out her window from where she lay to see that the trees were covered with a think layer of snow. It was going to be a wonderful day. After awhile she heard voices calling her from outside. They rang out loud through the clear air. She jumped out of bed and went to the window. She opened it wide. Whew, it was cold. Laughing and shivering she shouted to her friends that she would be right out.

Questions:

1. Do you see Jean's room? What does it look like?
2. Do you see any colors? What are they?
3. What could Jean see when she looked out her window besides her friends?
4. Do you feel anything?
   How did Jean feel lying in bed?
   What did she feel when she opened the window?
5. Do you hear any sounds? What are they?
The thing Jim liked to do best of all was to climb trees. He had climbed all the good trees near his house, but there was one tree which was his favorite. It was high up on a hill. It was old and knotty, and it stood there all by itself. It was perfect for climbing because there were lots of footholds and handholds. There was a wide notch up near the top. When Jim climbed up there he could see all the land for miles around.

Questions:

1. What kind of a boy is Jim and what does he look like?
2. Describe the view Jim saw from his favorite tree?
3. What things could Jim touch and feel when he climbed?
The water lapped against the sides of the little sailboat. The floor boards were so hot from the sun, that Dick had to step carefully to keep from burning his bare feet. It didn't take long to get the sail up, for the rigging was simple. There wasn't much wind in the cove, but when Dick got the boat out into the open water the breeze stiffened. It was a perfect day for sailing.

Questions:

1. What kind of a boy is Dick and what does he look like?
2. What does the boat look like?
3. Do you feel anything? Describe all the things you might feel if you were with Dick on the boat.
4.

The Crowd

The street was so crowded we could hardly get through. The cars didn't have a chance because the crowd had overflowed the sidewalks into the street. Mothers held tight to their children's hands for fear of losing them. Almost everyone was smiling. There was excitement in the air.

Questions:

1. Why was the street crowded? What were the people doing there? Why was everyone excited?
2. What time of year is it?
3. Do you feel anything? Describe it.
4. What sounds do you hear?
5. What colors do you see?
Directions:

These exercises should be duplicated so that each child can have a copy. The paragraph should appear on the top half of the page and the questions on the bottom half. The child should be instructed to fold the page so that only the reading is visible. After the reading of the paragraph, he should then turn over the page and do the exercises without looking back at the reading.
Read this paragraph carefully:

Johnny and his little brother raced down the stairs just in time. A minute more and they would have been late for breakfast. They slid panting into their seats and began to eat. Johnny finished way ahead of his brother.

Underline the correct answer:

1. Johnny was ______ than his brother.
   bigger smaller

2. They ______ for breakfast.
   had plenty of time were nearly late

3. The little brother finished his breakfast ______ his brother.
   before after
Read this paragraph carefully:

The sunshine shone through the tall windows on the round glass bowl filled with flowers. The bowl was on the center of the long dining room table.

Check the correct answer:

1. The windows were shaped like this:

2. The bowl looked like this:

3. The table top was this shape:
Read this paragraph carefully:

The school house was in the middle of the little town. Joe was lucky because he lived only two blocks away. Rick, however, lived two miles out in the country. When the weather was bad it took him a long time to get to school.

Do the following exercises:

1. This is a plan of the town.
   - Draw a square to show where the school is.
   - Draw an X to show where Joe lives.
   - Draw an arrow from the school to show where Rick lives.

2. Rick has to get up earlier than Joe on school days.
   - Rick can stay in bed later

3. Who takes longer to get to school?
   - Joe
   - Rick
4.

Read this paragraph carefully:

Gus was tall and skinny. Bob was short and fat. Bob could hardly keep up with Gus when they walked down the street. They were the best of friends and they both liked to play baseball. Bob would always get tired out long before Gus, but he would sit on the bench and cheer him on until it was time to go home.

Do the following exercises:

1. Draw a picture of the coat you would buy for Gus and a picture of the coat you would buy for Bob.

2. These footsteps belong to:

   a. _______
   b. _______

3. Which one of the boys would be most likely to pick an apple off a high branch?
ACTIVITY EXERCISES
Suggested Activities

1. Trips which broaden the experience of the child and enrich his background of meaning for words are important if there are to be ideas with which an image can be formed. For example, take a suburban youngster for a ride on the city subway or public transit system before he reads a story which tells about such things. Having seen it, the possibility for vivid and accurate imagery when reading will be greater.

2. Movies and pictures, showing actual scenes of what the reading is to describe, will be of help in increasing observation and in giving meaning to words. The city child who has never been in the country may make little sense out of descriptions of fields and mountains and farms, unless he has some picture with which to associate his reading.

3. There are many small activities centered around daily living which may be of help in increasing the child's powers of observation.
   
a. Take a walk and see how many different sounds you can hear. Make a list of them.

   b. Imagine what sounds you hear when your mother is getting a meal. Go home and sit in the kitchen and make a list of all the ones you hear.
c. Take a walk and see how many colors and shades of colors you can see. How many blues do you see in the sky? How many greens do you see in the grass and trees and shrubs?

d. See how many different kinds of textures you can find in your room. (wood, both rough and smooth; glass; material of rugs and curtains.)

e. Collect scraps of material and see how many different textures you can find.

f. Go and see an oil painting. Look at it closely and see how many different colored brush strokes were used to get the appearance of skin color. Now stand way back from the picture and see how the skin looks as if it were all one color.

g. Draw the different shapes you see in the room. (rectangular windows, square tables, round globe)

After the children have drawn the shapes they might hold up their drawings, and let the others guess the things in the room for which the drawing stands.

h. Make a list of all the times during your day when you feel a change of temperature. (drink of hot cocoa, cold water, the warm radiator, put your hand in the ice box to get something out, when you have too many covers on in bed, when you stand in a draft, when you put your hand under the cold or hot faucet, when you lean against a window pane.)
i. Observation of Objects Game: Have a number of small unrelated objects (button, clip, thimble, paper weight, penny, quarter, box, pin, etc.). Place the objects on a piece of paper on the table. Have the children observe them without talking or pointing to or touching the objects, for one minute. Then take the objects away and see how many the children can name.

This game can be continued by showing the objects to the children and then have the children hide their eyes while a few of the objects are removed. See how many of the ones that are now missing can be remembered.

A further variation of the game is to let the children observe the objects. Have them hide their eyes while they are put around the room in inconspicuous yet visible places. Attempt to place them so that they look as if they belonged where they have been put. See how many of them the children can recognize in their new situation.
DIAGNOSTIC MEASURE
DIAGNOSTIC MEASURE

1.

Directions:

Describe the picture you see in your mind when you read each of the following sentences:

1. He could see the whole kitchen from where he sat eating his breakfast.
2. He sat under the tree.

When this exercise is completed the teacher should check the descriptions for the following types of imagery:

1. description of central figure
2. description of physical surroundings
3. motor content
4. color content
5. mood, or emotional content

2.

Directions:

Write the answers to the questions or fill in the blanks:

Imagery of Time:

1. My cheeks tingled.
   Do you feel it when you read it?
   What time of year is it?
2. It was still light even though it was late.
   What time of day is it?
   What time of year is it?
Imagery of Touch:

1. The blanket felt __________ on my neck.
2. The pudding felt __________ and ______ on my tongue.

Kinesthetic Imagery:

1. I pushed the door open with my __________.
2. He struggled hard and finally _______ his _______ out of the deep mud.

Olfactory Imagery:

1. As soon as he opened the door he knew someone had been baking.
   How did he know?
2. I knew Mother had put my wet mittens by the fire.
   How did I know?

Auditory Imagery:

1. Think of Christmas. What sounds do you hear?
2. Think of a spring morning. What sounds do you hear?
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