Research study of visual perceptual skills and success in beginning reading achievement

Mary Alma Soler

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A RESEARCH STUDY
OF VISUAL PERCEPTUAL SKILLS
AND
SUCCESS IN BEGINNING
READING ACHIEVEMENT

by
Sister Mary Alma Soler, SSND

A RESEARCH PAPER
SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS OF THE DEGREE
OF
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This research paper has been approved for the Graduate Committee of the Cardinal Stritch College by

George [Signature]
(Advisor)

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CHAPTER I

THE PROBLEM

Introduction

The last few decades have seen increasingly rapid changes in every aspect of society particularly in the field of education. Students in the field of reading instructions have come to the realization that in order to grasp the fundamental nature of the reading act, investigators must gain an understanding of the individual's perceptive and cognitive skills.

It is a known fact that reading achievement is greatly influenced by a variety of factors. In recent years there has been a remarkable increase in methods and materials for training perceptual skills. Since reading is recognized as a perceptual act, authorities agree that perception plays a vital role in the success or failure of beginning reading. The assertion has been made that perceptual and conceptual deprivation during the pre-school and early years of school life can be a significant cause of reading difficulties.
Preventing learning problems is more effective than curing them. Therefore, educators feel that children should be diagnosed for perceptual deficiencies and a perceptual training program should be inculcated. Today educators are still attempting to determine the comparative effectiveness of the primary channels of learning, particularly in the area of visual perception.

**Statement of the Problem**

The purpose of this study is to try to determine, by examining results of past and recent research studies, the effect of planned instructions in the visual perceptual skills on beginning reading achievement. In accordance with this purpose, the study had the following specific objectives:

1. to determine if visual perceptual training affects Kindergarten and First Grade reading.
2. to gather from past and recent research ideas that can be implemented in the school curriculum.

**Significance of the Study**

At the base of man's human functions is an ability to perceive the world around him. His unique method of observing influences his decisions, ideas, values, and knowledge. Although educators have acknowledged the importance of perceiving in learning, the curriculum often does not provide adequate opportunities for instruction in the perceptual skills. If research shows that there is a
high correlation between perceptual ability and beginning reading achievement, it will aid curriculum planners in determining the degree to which perceptual training should be included in the curriculum for early childhood education.

The significance of the proposed study lies in large part to the importance visual perception plays in the role of the reading act. Goins succinctly states the point by defining reading "as an activity involving the use of visual apparatus by means of which verbal symbols are apprehended and appropriate meanings are elicited." ¹

Limitations and Scope of the Study

Numerous studies have been made in the area of reading achievement and the factors that influence it. This study was limited to the literature which discussed perception, particularly in the visual area and its effects upon reading achievement in Kindergarten and First Grade. The writer did not attempt to discuss implications for the exceptional child.

Visual Perception Defined

Good defines visual perception as:

A term referring to the individual who is mainly concerned with his optical impressions, that is, with

appearances, with differences of color, light and shade, with atmosphere, with perspective space; such a person looks at his work from outside and feels like a spectator. ²

Strang interprets perception as:

A cognitive process by which visual impressions become meaningful in the light of the individuals past experiences and present needs. It involves understanding, comprehending and organizing . . . . Perception is an active process and the first step in a sequence that leads to further abstraction and then to generalization. ³

Scott's concept of perception is "an immediate interpretation of incoming sensory information," through the medium of the eyes, which from infancy on is built up in a memory of visual perceptual experiences, which becomes internalized to form the foundations of concepts. ⁴

If a child has a rich and varied fund of meaningful visual perceptual experiences from which to draw, he will be able to recall images internally, without having to resort to direct sensory clues.

Visual perception is an extremely important process for it is a means by which raw materials of thinking become available. The information which an individual possesses


has been gathered through the operation of the visual organ, after which it is stored in the human cortex.

Since in almost every action we take, visual perception is involved, proficiency in this area is of great importance. Particularly in the reading process does visual perception play a vital role. The necessity of clear visual impressions has always been recognized as a requisite to reading.

Helen Robinson, a pioneer on the subject of visual perception, states:

Visual perception involves many higher processes besides viewing clear impressions. . . . intelligence, previous experiences, language facility and bodily well being.5

Sensory inputs are received through the eyes from the world around us. Visual percepts include both the changing of light waves into nerve impulses and the interpretation of these impulses. While visual perception commences with the eyes, recognition takes place in the brain. This embodies information not just limited to vision but from all sense modalities, motor activities, and behavioral responses to these sensations. As Blankenship puts it "eyes are the tools of vision which feed the environmental information to the brain." Together the eyes and the brain work to organize, analyze and synthesize all the information that comes from the environment.6


Goldberg cites:

Visual perception is the ability to recognize and use visual stimuli to interpret this stimuli by relating them to previous experiences. 7

The development of visual perception is one of the basic factors influencing reading. However, all areas of perception need to be utilized in order to attain success in reading. Because of serious problems in the reading field, the area of visual perception as related to reading has attracted a great deal of attention to educators. Many rehabilitative efforts are currently being conducted throughout the country and continued in-depth research studies on this issue are being carried on.

CHAPTER II

REVIEW OF LITERATURE

Introduction

It would appear that visual perception could be reduced to a few standard facts and principles but it is a very complex process. Perception includes and stimulates some of the most basic parts of the child's thoughtful behavior. Throughout life the individual is largely dependent upon his perceptual abilities, and as the child acquires language and breadth of experience, he becomes even more discerning. As he grows he has an accumulation of experiences which he relates to new experiences to give them meaning and to help him remember them. A number of psychologists agree that many relatively simple percepts are learned by practice. How and why persons perceive as they do is not fully understood and young people especially need help in realizing that one cannot always depend upon what is seemingly perceived. Both home and school can work concretely for the development of accurate, vivid, and varied percepts in thinking. The school can
play a major role in perfecting perceiving by giving it planned attention.¹

Development of Visual Perception

When and how does an individual develop perception? Bartley believes that from infancy to adulthood, most of the perceptual behaviors are constantly modified. Therefore, he concluded, "perceptual behavior is developmental."²

That past experiences and learning may influence one's perceptual judgment can be seen in many of Gibson's and Gibson's³ and Epstein's⁴ writings. Both believe that perception is influenced by daily exposures and learnings with which one comes in contact. It is believed by some writers in the field of perception that age is one of the contributors to perceptual development. Whether or not changes in perceptual functioning are due to definite change in one's perceptual information and the availability of a more complete terminology of describing past experiences is still not known.


Investigators in the area of visual perception tend to agree concerning importance which set or attitudes of individuals play in affecting both the rapidity and the degree to which a person perceives an object. Individuals having different sets or attitudes are likely to perceive at different depths. Hence, sets are often a result of an individual's needs, values, or past experience. 

Visual perception is not something that is developed in an individual automatically and with little effort. Experiments by Riesen point out that it appears that a number of visual experiences are necessary before one is able to recognize or perceive an object. He aptly states that "the prompt visual learning is not an innate capacity, independent of visual experiences but requires a long apprenticeship in the use of the eyes." 

According to Strang:

Visual perception is the process by which the visual form of words is recognized, small details distinguished, and the printed symbol associated with an object or

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event. From about seven years of age, the cognitive development becomes increasingly prominent.\textsuperscript{7}

Goins uses the term visual perception as a "Process by which phenomena are apprehended by the mind through the medium of the eye."\textsuperscript{8}

Some theorists place major emphasis on the development of visual perception. Experiences in dealing with the environment help to contribute to perception of the world around us. Perceptual judgments are often based on the basis of past experiences. One can see the importance of a large number of relevant and consistent experiences. If visual judgments are limited or incomplete, the degree to which perceptual judgments would be successful as a guide to our actions would be very slight.

Prior to the sixties, educators for the most part accepted the fact that it is generally conceded that the period of maximum visual perception normally occurs with the child's general development between the ages of three and one-half and seven and one-half. By the time the child is exposed to the formal reading process his visual perception should have reached maturity. However, it has been found approximately twenty to twenty-five percent of children

\textsuperscript{7}Ruth Strang, \textit{Reading Diagnosis and Remediation} (Delaware: International Reading Association, 1968), p. 27.

entering first grade do not have the necessary perceptual ability to succeed in beginning reading without great difficulty. Visual perceptual impairment or deprivation in the child's development could cause difficulties in learning and hamper his educational career.\(^9\)

The development of visual perception begins with the movements of a tiny baby. His babbling and flailing are not purposeless actions, but rather his desperate efforts to relate himself to his environment, his only means of continuing to perceive. The perception process begins with random movements not consciously controlled. As the child grows, control develops. A child's ability to control himself with basic perceptual skill is demonstrated by his ability to coordinate the eye and hand, sense the right side from the left, and distinguish figure and ground in objects viewed. This control is a direct product of comparing, relating, and integrating in the light of one's immediate set and one's past experience. It is a control that is vitally necessary to success in beginning reading.\(^10\)

In this age of wide exposures of children to the world, through multi-media visual aids, it is not unusual

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for children to come to school with a surprisingly expansive variety of concepts via TV commercials and educational programs, supermarkets, billboards and the daily commodities they see at home. So by utilizing the wide experience that children already have received during the pre-school years, both from first hand experiences and otherwise, the introduction to formal reading becomes a natural extension of the learning that has previously taken place in their home life.

Strang theorizes that children who have a rich background of pre-reading experiences will be ready for reading since such experiences are a prelude to success in beginning reading.\textsuperscript{11} The home plays a vital role in the child's learning and the foundations of learning are laid early during the child's life.

Spache investigates the problem of visual perception as it relates to the act of reading and the classroom teacher's responsibility for assuring effective vision screening of the students. Most of the vision skills are learned. Skills such as orientation, coordination, accommodation, mobility and fusion mature at varying ages. Change takes place progressively as the child grows from


Visual perception starts very early in the life of an infant. Already at the age of six months the infant perceives differences in brightness and soon learns to differentiate between his parents. Rapidly he develops an ability to recognize various objects in the home. Thus his surroundings become differentiated into perceived objects. Without the capacity to perceive, the human mind could not form associations with symbols and their meanings or discover likenesses and differences in word forms. Such skills are basic in reading and in learning to read.\footnote{13}{Nilan Banton Smith, \textit{Reading Instructions for Today's Children} (New Jersey: Prentice-Hall Inc., 1963), p. 40.}

Betts clearly defines reading as:

\begin{quote}
\begin{itemize}
\item a perceptuomotor task which requires a complex of visual skills. . . . peripheral vision signals, central vision responses, saccadic eye movements between fixation pauses and other visual-motor skills for reconstructing spatial sequences of graphemes as times sequences in speech. As this complex of perceptuomotor skills is developed, the efficiency of the oculomotor system is increased for executing more precise sequential saccadic movements in reading. From this point of view, reading is more than decoding visual symbols into speech symbols; it is a
\end{itemize}
\end{quote}
visual sampling process of confirming or disconfirming perceptual expectations.  

Buswell believes that:

The teaching of reading is basically a problem of visual perception and that there is no substitute for this ability. One must learn the printed word and associate meaning with it.  

According to de Hirsch, a child of six or older who manifests a relatively primitive visual-motor perceptual and conceptual performance is most likely to encounter difficulties in the area of reading. Children beginning school have a great and exacting visual adjustment to make in preparing for reading. Deficiency to perceive a word clearly and to remember what it looks like can be a cause of reading disability. The way a child is taught to perceive words, will strongly influence the way he actually perceives it.

As Ruth Strang explains it:

The reader must get a series of clear visual impressions on the retina of the eye as it moves across the line of print. The nervous impulses thus aroused are transmitted to the visual center of the brain where they are decoded and their meaning is recognized and the words have now been perceived.  

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17 Strang, et. al. op. cit., p. 15.
There is some disagreement as to whether the visual perception of children on entry to school is sufficiently mature to enable them to identify letter shapes. Although children by the age of six may be adept in the perception of simple forms, they may, however, encounter more difficulty in the more complex tasks, which may affect their ability to read. The capacity to perceive, analyze, memorize forms correctly, and their spatial orientation and order in sequence, develops gradually in children. The ability to read depends primarily on a reasonably accurate perception of the printed words and letters from which they are formed. Without this capacity to perceive the child would not be able to form associations with symbols and thus give meaning to what he sees.

An examination of early reading instruction reveals the vital role visual perception and visual discrimination plays in the process of reading. Betts cites that "visual discrimination is a prerequisite to the recognition of words in the reading process and is based on trained observational skills." He gives several possible major causes of inadequate visual perception or discrimination; namely, defective vision, lack of background experiences which is pertinent to insure adequate concepts, lack of mental maturity and associative learning handicaps.\(^\text{18}\)

Since reading is a complex process which encompasses numerous perceptual, sensory, motoric, conceptual and communication skills, defective sensory functioning, such as vision, could be the cause of producing reading retardation. Although remediation deems necessary a more comprehensive approach to the reduction of reading disabilities requires the delineation of causal factors. Such an approach would lead to early diagnosis of learning problems and thereby prevent failures and negative attitudes toward reading.

**Early Research**

Perception has been a controversial issue through the years. Some reading authorities believe that visual perception is essential for reading while others maintain that auditory skills to be more necessary. Many studies have been made of the relationship between visual perception and success in beginning reading. In general, the correlation is not very high but tends to be positive.

One of the earliest and most important investigations on visual perception was conducted by Gates in 1922. He found that tests using words as visual discrimination tasks were the only ones giving a substantial correlation with reading. In a later study, Gates found there is little relation between reading success and visual discrimination of geometric and digital figures. This study suggested that scores based on these two variables will not correlate
highly in reading. On the other hand, Gates' findings suggest that the scores obtained from tests consisting of alphabetic symbols may be expected to show high positive correlation with reading performance. 19

In an early study of twenty-two seriously retarded reading cases, Helen Robinson discovered that 73% of the cases had visual defects and that in 50% of the cases the visual factor was considered the contributing cause of reading failure. She concluded:

The advantage of clear visual impressions had long been recognized as a requisite to reading. This fact accounts for the numerous attempts to identify all interference with visual perception. Visual perception, however, involves far more than receiving clear impressions. . . . Consequently, the full importance of visual interference with reading necessitates a broader study. 20

Goins did an extensive study in 1958 on the predictive validity of fourteen tests of visual perception for first grade reading achievement. She found that the total score on all the tests of visual perception correlated with reading achievement at the end of first grade at approximately .50. Goins discovered that visual perception tests of pattern copying and reversals predicted first grade reading performance more accurately than did intelligence tests.


20 Robinson, op. cit., p. 223.
The results of this study also suggest that there are various types of perceptual abilities and different levels of perceptual competence among first grade pupils.\textsuperscript{21}

Lowenfield has classified individuals as perceptual types: (1) visibles, those who perceive best through sight; (2) audiles, those who perceive best through hearing; and (3) haptics, those who perceive best through touch. In a study of 1,128 subjects, 47 percent were classified as visibles, 23 percent as haptics, and the remaining 30 percent were not identified. His conclusion was that this shows the importance of vision.\textsuperscript{22}

Harrington's study of primary children concerning the effect of perceptual ability and mental maturity on reading achievement, showed a correlation between perceptual achievement and reading achievement ranging from .54 to .64 while the correlation between mental age and reading age was .23 which seems to support other authors in their assumption that kindergarten training in perceptual skills could be beneficial.\textsuperscript{23}

\begin{itemize}
\item \textsuperscript{21}Goins, \textit{op. cit.}, p. 76.
\item \textsuperscript{22}Victor Lowenfield, "Perceptual Imagery," \textit{American Journal of Psychology}, LVIII (January, 1945), pp. 100-111.
\item \textsuperscript{23}Sister Mary James Harrington and Donald D. Durrell, "Mental Maturity Versus Perception Abilities in Primary Reading," \textit{Journal of Educational Psychology}, XLVI (October, 1955), p. 380.
\end{itemize}
There is some controversy among authors about the value of tachistoscopic training. Goins made a study of two groups using tachistoscopic training with one group and not the other, and found that it did not affect reading achievement significantly.\textsuperscript{24} MacLatchy's study showed evidence that this training was helpful in reading progress.\textsuperscript{25} Cleland's study showed little evidence of carry-over from this training to improved reading.\textsuperscript{26}

From the studies it appears that differences in reading abilities may depend considerably upon the specific skills pupils have of perceiving a certain kind of material, namely, printed words.

\textbf{Recent Research}

Past research clearly indicates the important role visual perception and discrimination plays in the reading process. Within the last ten years researchers have lent support to this theory by in-depth studies in this area. A number of studies of the relation of perceptual ability to reading achievement have been made with various results.

\textsuperscript{24}Goins, \textit{op. cit.}, p. 95.


\textsuperscript{26}Donald L. Cleland, "An Experimental Study of Tachistoscopic Training as it Relates to Speed and Comprehension" (Unpublished Ph.D. dissertation, University of Pittsburgh, 1950).
In 1964, Bond and Dykstra, under the Cooperative Research Studies Program, did an extensive study of first grade reading instruction. Among the attributes measured in one of the studies, knowledge of letter names and the ability to discriminate between word sounds appeared to have the greatest relationship to reading success under each of the various methods employed. The best single predictor of first grade reading success among the pre-measures in the investigation was the Murphy-Durrell Letter Names Test. This test correlated between .52 and .60 with both the Stanford Word Reading and Stanford Paragraph Meaning sub-tests for each of treatments used in the investigation. From the correlation relationship found in the study, visual discrimination and pre-first grade knowledge with print and intelligence are all substantially related to success in learning to read.  

Barrett has conducted considerable research on the relationship of visual perception and primary grade reading success, using picture directions, word matching and reading letters, number subtests from the Gates Test and pattern copying, picture sequence and reversals from the Goins test.  


Strong showing by pattern copying and to a lesser degree those by picture sequence and reversals gave support to the finding by Goins. Although in Barretts' 1962 investigation the reading of letters and numbers was the best predictor of first grade reading achievement, no cause and effect relationship was implied of children who were able to read letters and numbers capably when beginning first grade and likely came from environment that reinforced this behavior. Therefore it does not follow that the success in first grade reading will be insured by simply teaching students to recognize and name letters. 29

Byran reports in his study of visual perceptual ability of primary grades that visual perception correlates more highly with reading readiness than did intelligence. It is well to note that in examining each grade separately Byron found that in grade one, visual perception had a greater predictive value for reading readiness, comprehension and vocabulary than did intelligence; whereas, in grade two it had a greater predictive value for reading comprehension but less for reading vocabulary than did intelligence. By the time the child has reached third grade intelligence scores have more value than visual perception scores in predicting reading success. 30

29 Goins, op. cit., p. 76.

Kerfoot set up a research plan in 1964 to discover the relationship of visual and auditory reading readiness measures to first and second grade reading and spelling. Sixteen measures of visual discrimination and seven measures of achievement were utilized. For predicting first grade reading achievement, the most useful variables in the visual area were pattern copying and word matching, naming letters and numbers. Measures of visual discrimination were better predictors of reading and spelling achievement than measures of auditory discrimination. This suggests that visual factors may be more important than auditory factors in reading success. Intelligence was less effective as a predictor than visual discrimination but better than auditory discrimination. 31

Rosen was involved in a study of first grade pupils of seventy-four schools in Minneapolis. The purpose of his study was to discover the effects of a specifically defined program of visual perceptual training on reading achievement. His experimental classes received fifteen minutes less time each day in reading instruction and thirty minutes per day in visual perception training. The control group received only an additional fifteen minutes per day in

reading instruction. The results appeared to favor the control group with the extra reading instruction time. Before these results can be accepted, more research is needed on pupils initially diagnosed as low perceivers, and a study is needed on sex differences which apparently is related to initial perceptual capacity. Perceptual training, as defined and explained in this report, does not appear to contribute to reading achievement as measured by a typical school achievement instrument for the pupils in this study.32

Faustman did an extensive study in California using fourteen kindergarten classes in the control group and the same number in the experimental group. The children were tested with the Winterhaven Perceptual Ability Forms Test and the Goodenough Draw-A-Man Test. Perceptual training included such activities as manipulating objects, using templates, stringing beads, drawing, cutting with scissors, listening, discriminating words and letters. The groups received the same basic training except that planned perceptual training was added to the curriculum for the experimental group. The experimental group showed greater gains throughout the study, seemingly due to the effect of perceptual training. The control group scored 62.16 in

perception on the P. A. F. T. and the experimental group, 69.79. The teachers said that the experiment might have been even more successful in a full day kindergarten, as they felt pressured in trying to accomplish so much in a half day. This study points out the value of training in the perceptual skills. It will be interesting to see the results of a post-study that will be made to determine any future effects. 33

Another study by Meyerson involved a training program for perceptually handicapped kindergarten children with normal vision. Training in large muscle coordination and eye movements had no effect. It appears that the socio-economic factors have more effect in determining reading readiness level than does visual acuity. However, the limitations on this study make the results doubtful since the children studied were in the low socio-economic group and the tests given were for the average middle class child. Also, the training period of eight weeks was relatively short, which does not make for good sampling. 34

Gould felt that training in visual perception ability should utilize oral language to help children overcome

33Marion N. Faustman, "Some Effects of Perception Training in Kindergarten on First Grade Success in Reading" (Unpublished Ph.D. dissertation, University of California, 1966).

difficulties in identifying and transforming visual patterns. His training program in visual discrimination required the children to transform visual patterns in some way. A Vision-Motor-Perception Program was used in the Brentwood Public Schools of New York to develop the children's perceptual abilities in kindergarten and the primary grades. This program, designed to lead to the general goal of having the children learn how to learn, is the first phase in a wider program to revise the school curriculum from K-12. The prime objective of the program is to allow the child to develop his perceptual abilities as fully as possible. The program integrates many procedures concerned with a variety of perception and perceptual activity. These procedures follow the developmental sequence of child development described by psychologists. There is evidence that the program has influenced the learning ability of the child in the classroom. Teacher evaluations show that children improved in attentiveness, in concentrating on a task, in giving and following directions, and in willingness to communicate with peers and teachers. Preliminary test results support the premise that the children in the program show higher achievement in reading skills and number concepts than those who were not participating in the Brentwood Public Schools.  

In 1967 Wheelock and Silvaroli conducted a study to determine if training in the instant visual recognition of capital letters influenced subsequent visual discrimination ability. This was done by means of tachistoscopic training. Forty-five children were in the control group and forty-five in the experimental group. All were similar in ability and came from socio-economic groups comparable to each other. The results were favorable and the children labeled as low socio-economic category profited most by the training. Apparently, there is a significance in visual discrimination ability between two groups entering first grade coming from different environments. Although the sample was selected carefully and the study was presented in a clear manner, the teacher variable was not discussed nor the class organizational patterns.36

Goldberg makes the statement that too much emphasis is placed on the importance of good vision as it affects children with reading problems. He continues, "The simple fact is that there is little evidence of any relationship between visual ability and the reading problems of symbol interpretation". Goldberg cites G. E. Park and R. V. Shearer as lending support to this theory. To affect children's ability to learn, particularly at the near reading range, Goldberg feels that visual acuity must be reduced to

approximately 50%. A child may then have difficulty seeing
details and may be a slow reader but not necessarily a
disabled reader.\textsuperscript{37}

A study was made by Fisher and Turner in 1970 of
the relation of perceptual training to success in beginning
reading. The Metropolitan Readiness Test was used as a
measure of the dependent variable. In their findings they
reported that children receiving perceptual motor training
during their entire year in kindergarten and first grade
did significantly better than the control group on the
Metropolitan test at the end of kindergarten and at the
beginning of first grade. However, because of the results
of the Boehm Concept Test, they suggest that this effect
was due to the exposure to the verbal concepts associated
with the instruction rather than to the perceptual-motor
activities themselves.\textsuperscript{38}

Bosworth investigated the effect of specific training
upon kindergarten children's ability to copy selected geo-
metric figures in order to discover if discrimination of
words was improved by this type of training. The Visual-

\textsuperscript{37}Goldberg, \textit{op. cit.}, pp. 102-103.

\textsuperscript{38}Maurice D. Fisher and Robert V. Turner, "Analysis
of the Effect of a Perceptual-Motor Training Program on
Cognitive and Motor Development of Disadvantaged Children,"
pp. 649-650.
Motor Test and Word Form Test were utilized with both kindergarten groups. The analysis of covariance, used to test the significance of the experimental versus control group indicated a significant gain in the experimental group. This seems to indicate that visual motor training does improve word discrimination.39

Buckland conducted a research study in sixteen first grade classrooms on the effects of the Frostig visual perception workbook training program in relation to reading readiness and word perceptual skills among children who manifested low readiness skills as judged by low Metropolitan Readiness Test scores. The groups were divided into the experimental group receiving Frostig visual perceptual training while the control group received training in listening skills and discussed taped stories for fifteen minutes daily for forty days. Appropriate experimental research proceedings were carried out during the time stipulated for the allotted study. At the end of the experiment no difference was reported between the control and experimental group. At the commencement of the Frostig test, the control group exceeded the experimental group and after the post-test treatment of visual perception it was found that the Frostig training group did no better than the story

listening group. Although some individual children in the Frostig showed gains, there were no statistical significant differences between the two groups on the readiness or word recognition test.  

Balow cites Olson, Jacobs, McBeath, Rosen and Cohen, who utilized the Frostig technique in their studies and whose studies support Buckland's conclusion that no significant difference was reported by those who used the Frostig Program and those who did not. To recapitulate, these studies offer little support to the hypothesis that visual perceptual training is effective in predicting success in beginning reading.  

Schoephoerster, Barnhart and Loomer undertook a study in 1966 of 496 kindergarten children and statistically equated the groups by administering the Lorge-Thorndike Primary I.Q. Test and a Pre-Reading I Inventory Skills Basic to Beginning Reading. An informal type of reading program was carried on for the control group while the experimental group was instructed on a formal type of readiness program which involved using workbook exercises from Getting Ready to Read which dealt with distinguishing letter forms from one another and its corresponding sound so that letter or

40 Pearl Buckland, "The Effect of Visual Perceptual Training on Reading Achievement in Low Readiness First Grade Pupils" (Unpublished Ph.D., University of Minnesota, 1969).

groups of letters will call forth the correct letter and sound. Spoken context was utilized as a preparation for the later use of printed context as part of a technique of word identification. According to the post-test administered it was found that the children of the experimental group were able to surpass the required standards for passing Test I and II. The mean difference was significant at the .01 level of confidence in favor of the experimental below-average group over the control average group as well as in the case of the total experimental over the total control group. Schoephoerster and his associates concluded that it would appear that a formal readiness program complete with pupil workbooks profits children of all ability levels more than does informal readiness programs. 42

Perceptual Training in the Readiness Program

Consideration must be given to all of the children in a given classroom, noting the variety of environments from which they come and the experiences they have had. The backgrounds and modes of seeing the world will differ greatly. It is assumed that what, how, and why persons perceive as they do are factors that should receive major attention if the school is to help develop individuals who can view the world in all its richness and beauty and with

a minimum of distortion. Most persons have a wealth of material to use but it must be developed. This is the purpose of the readiness period which is the cornerstone of the readiness curriculum and a unique and precious opportunity for both teacher and child. Children pass through a succession of stages in an orderly way, each stage depending on the other, and with no two children progressing at the same rate. Proficiency in the perceptual skills is a necessity for learning to read. In the readiness period, challenging activities should be provided daily in which visual and auditory discriminations are utilized to achieve the ends sought. According to Russell, modern reading programs advise a period of reading readiness during which specific practice is given in noting similarities and differences. To be successful in learning to read, children need abilities in both visual and auditory perception. These skills can be taught and improved by practice.

Harris feels that even if eyes are normal, children of preschool age have not developed the ability to perceive visual similarities and differences. He feels when children are given specific perceptual training, rapid progression in both visual and auditory skills is made. Harris suggests that an effective readiness program will make use of tests

43 Berman, op. cit., pp. 53-55.
to locate weaknesses in all perceptual skills and will provide specific learning sequences in each area in which a weakness is found.45

Fitzgerald says that reading elicits from the child a total response involving the whole nervous system. She feels that as adults learn the significance of the basic perception skills, their own perception of the process of reading and an understanding of the child's problem will continue to grow and deepen. The reading teacher's problem is to build an integrated perceptual pattern that will bring meaning to relationships within a figure or figures.46

Gould believes that perceptual training should be part of the curriculum. He aptly says:

... learning has as a prerequisite the ability to perceive differences and changes in the environment. Cognitive development depends on sensori-motor achievements, which in turn depend on the child's perceptual abilities and his capabilities to respond.

He also makes this statement:

We have recognized the need to structure curriculum so that the child will be able to use his perceptual experiences as a part of the foundation he needs for future intellectual growth.47

Jenkinson's writings indicate that individual modes of perception differ from one task to another. This shows

46Fitzgerald, op. cit., p. 415.
47Gould, op. cit., p. 381.
the importance of teaching in a way that provides the child with the opportunity to use several different modes in developing perceptual judgments. Another statement by Jenkinson, "the more varied the different types of sensations, the more accurate and persistent is the concept that is formed," shows the importance of the multi-sensory approach to teaching.

Perception is then important to education both as a means and an end. Learning to perceive is a prerequisite to all other types of learning and as accumulated perceptions ultimately lead and stimulate most of human thinking they become dimensions of thought, not just a cause of it.48

Gibson reviewed several studies and the facts gathered show the effects of training on perceptual judgments. Some of these conclusions appear applicable to the teaching of reading:

1. Practice plays an important role in improving perceptual judgments.
2. Frequency of practice improves one's perceptual judgments.
3. Being reinforced with the knowledge of results enhances perceptual learning.
4. Ordered practice or progressive training aids perceptual learning.

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5. The amount of retention of learning appears to vary according to the nature of the learned performance. 49

Educators must be concerned with changes in perception for a major task of education is to help the child obtain organizational information from the world around him. This necessarily involves changes in his perceptual ability. To achieve this goal, we need to know the conditions that help or hinder perceptual learning.

Perceptual learning goes on all through our lives. We continually meet new situations and learn to detect different aspects of stimuli. Rydell believes that perceptual learning may be facilitated by schooling, particularly by expansion of one's vocabulary and by teaching the child to discriminate letters and sounds. 50

The initial stage of learning to read has long been recognized to be an important part of the total effect on the reading process. It is clear that the complexity of the reading act makes it incumbent that past and present instructional practices and programs, particularly in the area of visual perception, be re-examined in the light of


the knowledge constantly increasing from related disciplines. At this point it is considered highly possible that educators and theorists have underestimated the complexity and long range importance of initial learning experiences with language symbols. It appears that children should have prior development of adequate perceptual readiness before being exposed to the complexity of the reading processes.
CHAPTER III

SUMMARY AND CONCLUSIONS

Summary

The major purpose of this study was to investigate studies done in the area of visual perceptual training as related to success in beginning reading achievement. Educators agree that early childhood is the ideal time for training in the perceptual skills because of the various growth factors. The importance of visual perception in the complex tasks involved in early school reading experiences is a recognized fact. There is, however, much concern and some lack of agreement as to what readiness for reading signifies in terms of specifics, and the effect on children's reading development resulting from the training of certain skills considered crucial to this area. Visual perception is a case in point. Capability in this domain has been reiterated many times as one of the major factors in reading readiness at kindergarten and first grade level. Although educators have stressed the importance of these functions, there is much ambiguity as to what visual perception signifies and lack of scientific knowledge regarding the specific skills, if any, which, when trained

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would possibly result in significant improvements in reading achievement. Indeed, the effect of such training on reading has recently been given considerable recognition and many studies have been undertaken indicating perceptual disturbances as the major factor of differentiation in the incidence of reading problems but this research has not yet discerned convincing causal relationships. Rabinovitch succinctly concluded:

The problem does not seem to be one of perception, per se, but rather in the translation of perception and meaningful and related language function.¹

The studies reviewed have used different measuring instruments and techniques, varying ages and learning experiences of subjects, inadequate length of perceptual training or too lengthy training periods. The findings in the studies reviewed led to conflicting results and disagreement. As the review of literature seems to indicate, visual perceptual training certainly is not a panacea for all students who have problems with academic achievement. On the basis of the findings certain conclusions and educational implications have been made. The assumption that visual-motor perceptual training primarily is a predictor of first grade reading success has not been proven conclusively, since other modalities may also affect the reading

achievement. The writer concludes that no body of experimental evidence was reported to support the theory that visual perceptual training predicts success in beginning reading. There is a possibility that special treatment may be desirable for a few unusual cases but this does not support the theory in question.

The more recent studies seem to agree that knowledge and discrimination of letters, words and sounds, is an asset to the reading process, and concluded that a program related directly to the psychology of reading, would be a more reliable predictor of reading success in beginning reading.  

Conclusions

As a result of this study, a number of conclusions were formulated:

1. Perceptual ability is a specific skill that must be taught since it does not develop naturally.

2. The school can play an important role in perfecting perception by including planned, effective instruction.

3. Perception is a very complex and vital process in which a variety of percepts are formed by the senses of the individual.

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2Schoephoerster, Barnhart and Loomer, op. cit., p. 354.
4. Proficiency in the perceptual skills is a very necessary prerequisite for all other types of learning.

5. The ideal time for beginning the teaching of the perceptual skills is in kindergarten when research indicates that readiness is at its peak.

Recommendations

Perception is a developmental process beginning at infancy and maturing gradually as the child reaches adulthood. This growth process is aided by repeated exposures to various types of stimuli and is vital to the learning process involved in beginning reading.

Because of the nature of perceptual development and its importance to success in beginning reading, the following recommendations are made:

1. That the readiness program aim to provide instruction in perceptual skills with emphasis on letter, word and sound knowledge and discrimination.

2. That additional time be devoted to regular reading instructions in the school system curriculum rather than devote time to special types of visual-motor perceptual training which have not proved effective.

3. That the teacher determine the perceptual strengths and deficits of the child and plan ways and means to help the child.
4. That perceptual skills training be not required of all students at the expense of time and money when these children should be progressing in the academic areas.

5. That a multi-sensory approach to teaching the perceptual skills be utilized.

6. That since evidence in this field has not been proved significant, further research studies should be made regarding the relation of visual perceptual ability and beginning reading success.
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