The development of a model for identifying, diagnosing and correcting dyslexic problems in third grade Nigerian

Catherine Maffiong Essien
Portland State University

Let us know how access to this document benefits you.
Follow this and additional works at: https://pdxscholar.library.pdx.edu/open_access_etds
Part of the Disability and Equity in Education Commons, and the Educational Assessment, Evaluation, and Research Commons

Recommended Citation

10.15760/etd.2271

This Thesis is brought to you for free and open access. It has been accepted for inclusion in Dissertations and Theses by an authorized administrator of PDXScholar. For more information, please contact pdxscholar@pdx.edu.
The Nigerian educational system is humanistic, nationally centered and open to all cultural, ethnic and tribal influences. The policy of Nigeria is to realize mass and practical education. However, the present system is highly selective and academically oriented. This study is done while education in Nigeria is in a period of revolution. Radical changes have been taken to keep up the national demand for progress and power.

Dyslexia, one of the leading causes of reading difficulties, is a term still unknown to some educators in Nigerian schools. This stems mainly from the fact that Nigerian public schools lack sufficient
personnels trained in the area of Special Education in general and Remedial Reading in particular.

The traditional Nigerian school, influenced by the British colonialism for many years, has been subjected to negative treatments of children with learning disabilities.

It has been determined in studies conducted in nations more advanced in the science of education that dyslexia is an important element of learning disability. This study will attempt to adapt to suit Nigerian children, the recommended procedures widely used in American and European schools for the diagnosis and treatment of visual and auditory dyslexia. If the Nigerian system of education has goals that aim at producing citizens who are socially, emotionally, intellectually and civicly open-minded, it will be worthwhile to make provision to train disabled learners. After all, the retarded learners need more help than the so-called "normal students."

The important variables which might affect the educational systems in Nigeria along with possible causes of reading difficulties have been analyzed, interpreted and brought into discussion. Different motivational techniques which highlight the main objective have been proposed with enlightened perspectives. The role of the classroom teacher, reading specialist and parents as coworkers in the correction of dyslexia has been well defined.

A systematic program for identifying and treating of dyslexia based on the specific need of the Nigerian child has been developed. First, the program is focused on the skills of reading, stating each of these in performance terms. Second, it provides an instructional
strategy for mastering these skills including alternative techniques for teaching each skill. Where necessary, references have been made to "Efik" Nigerian words that can be used to substitute some English words. Third, it focuses on the teaching-learning act itself and not on any theoretical conditions. Fourth, emphasis has been placed on the importance of interest, and attitude of the learner, teacher and parents. Terminologies have been defined in simple terms that can be understood by professionals and paraprofessionals.

Although this study has a broad range of utility and a number of distinctive features which, carefully followed should help correct cases of dyslexia, it is not guaranteed to correct all cases of dyslexia, neither is it an answer to all reading difficulties. Nevertheless, it is strongly hoped that the program will help alleviate the persisting reading problem stemming from auditory and visual dyslexia.

The writer will welcome any suggestions and/or recommendation which will help fight against "dyslexia," the undiscovered plague in Nigerian primary schools.
THE DEVELOPMENT OF A MODEL FOR IDENTIFYING,
DIAGNOSING AND CORRECTING DYSLEXIC PROBLEMS
IN THIRD GRADE NIGERIAN STUDENTS

by

CATHERINE MAFFIONG ESSIEN

A thesis submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE
in
EDUCATION

Portland State University
1976
TO THE OFFICE OF GRADUATE STUDIES AND RESEARCH

The members of the Committee approved the thesis of
Catherine Maffiong Essien presented February 27, 1976

George Timmons, Chairman

John Lind

David Krug

APPROVED:

Ronald G. Petrie, Dean, School of Education

Richard B. Halley, Acting Dean of Graduate Studies and Research
ACKNOWLEDGMENTS

It is my pleasure to express a sincere gratitude to all persons and group of persons who have contributed morally and financially towards my education.

To my parents, Mr. and Mrs. Joseph N.U. Ekong, who have made several sacrifices for my sake, I owe my thanks and deep respect.

To my children, Goddy, Law, Carol, Mary Anne, Ronald Imo, and Mercy, who have been deprived of many childhood privileges, and waited in patience for many agonizing years while Mommy went to school, I say thank you.

I am greatly indebted to Mr. Robert Stuckart, his wife Cecilia, and all their children for making my education in the United States possible. My husband and I were introduced to this wonderful family by Sr. Mary Blanche who is their relative. For three years the Stuckhart's have given us full financial support. Their love, generosity and willingness to help have reflected our work in school. To all of them, I wish God's blessing and guidance.

To Sr. Mary Blanche, for her very special devoted motherly love, her care and understanding, I am in deep appreciation. She has spent her time and energy working to provide my husband and I the comfort necessary for our studies. Her kindness will ever remain green in my memory.

Sincere thanks are due to all the Benedictine Sisters at Mt. Angel, Oregon, whose immeasurable love, encouragement and hospitality have
contributed immensely towards my school success. Special mention is due Sr. Mary Antoinatte, the prioress, Sr. Adele and others, who on behalf of the society sponsored my coming into the United States, Sr. Mary Magdelene financed my first Telecast lessons, Sr. Mary Immaculata for her generosity to me and my children, Srs. Luella and Eustel for the respective parts they played in helping with some of our needs. To all the older nuns in the infirmary whose prayers and good wishes have blessed my work with good fruits. It is not possible within the scope of a paper of this nature to relate the contributions of the Benedictine Sisters, but my thanks goes to all of them.

To all my friends in Forest Grove, Monmouth and Portland, Oregon, who made me feel at home far away from home, I owe my gratitude.

Thanks are also due to my relatives at home and abroad, particularly Bishop Dominic I. Ekandem who has contributed vitally in shaping my future.

I also wish to express my gratitude to Dr. George Timmons, my advisor and chairman of the Thesis Committee, his secretary Evelyn, Dr. David Krug, and Dr. John Lind for helpful suggestions about various sections of this thesis.

Thanks to Jim, my husband, who has exercised an unflagging interest, cooperation and patience during my student days.

Finally, the author wishes to express deep appreciation and grateful acknowledgment of the efforts of Miss Bebbie Roggi who volunteered to type this thesis.

I have gathered sufficient evidence and experiences to draw a conclusion that though America may be the home of hospitality, the seat is located in Oregon.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>ACKNOWLEDGMENTS</th>
<th>iii</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF ILLUSTRATIONS</td>
<td>ix</td>
</tr>
</tbody>
</table>

## CHAPTER

### I INTRODUCTION AND STATEMENT OF PROBLEM
- 1

### II REVIEW OF THE LITERATURE
- Hypothesis: 7
- Limitations of the Study: 7
- Gathering Data and Procedure: 8
- Data Analysis: 9
- Definition of Terms: 10

### III ANALYSIS OF THE PROBLEM FACED BY THE SLOW LEARNER
- African Traditional System of Thought and Their Implications for the Treatment of Nigerian Dyslexic Students: 13
- Social and Emotional Factors in Learning Disabilities: 18
- Encouraging Social Integration in School: 19

### IV DYSLEXIA - WHAT IT MEANS
- Historical Literature on Dyslexia: Medical Perspective: 24
- Historical Literature: Educational Perspectives: 26
- Difference in Perspective Over the Use of the Term "Dyslexia": 27
<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>POSSIBLE CAUSES OF DYSLEXIA AMONG NIGERIAN CHILDREN</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Malnutrition</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Language and Reading</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Language and Reading</td>
<td>32</td>
</tr>
<tr>
<td>VI</td>
<td>KINDS OF DYSLEXIA</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Visual Dyslexia</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Characteristics of Visual Dyslexia Which Can Help</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>the Teacher, Psychologist or Clinician in the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identification Process</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correcting Visual Dyslexia</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Educational Procedures for Visual Dyslexia</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Teaching Letter Sounds</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Teach Words That Begin With Each Sound</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>Teach Identification of Letter to Its Sound</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>Word Sound Associations</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>Blend Sounds Into Meaningful Words</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Present Word Families</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Introduce Two-Letter Consonant Blends</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Introduce Long Vowel Combinations and Consonant</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>Groupings That Are Represented by a Single Sound</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Simple Sentences, Paragraphs and Stories</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>Improving Visual Deficits</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Prepare Material Carefully</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Improve Scanning and Develop Orderly Inspection</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>of Materials</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Form and Configuration</td>
<td>52</td>
</tr>
<tr>
<td>CHAPTER</td>
<td>PAGE</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>Perceiving Detail</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>Orientation of Letters</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>VII AUDITORY DYSLEXIA</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Characteristics of Auditory Dyslexia</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Principles for Correcting Auditory Dyslexia</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>Educational Procedures for Correcting Auditory Dyslexia</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Develop Auditory-Visual Correspondence</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Select a Meaningful Reading Vocabulary</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>Relate Printed Symbol with Experience</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>Introduce Simple Phrases and Sentences</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>Use of Experience Stories</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>Improving Auditory Deficits</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>Auditory Discrimination</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Match Sounds</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>Encourage Reauditorization</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>Utilize Visual and Kinesthetic Cues</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>Sequentialization</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Develop Awareness and Recognition of Nonverbal Auditory Patterns</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Imitate Sound and Rhythm Patterns</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Coordinate Auditory and Visual Patterns</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Develop Awareness of the Number of Syllables Within Words</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Emphasize the Rhythmic Sequence of Words</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>Blending and Integration</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>Blend Syllable Into Words</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>CHAPTER</td>
<td>SUMMARY AND CONCLUSION</td>
<td>RECOMMENDATIONS</td>
</tr>
<tr>
<td>---------</td>
<td>------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>VII</td>
<td>Combine Individual Sounds Into Words</td>
<td>Basic Principles of Remedial Instruction for the Dyslexics</td>
</tr>
<tr>
<td></td>
<td>Analysis and Synthesis</td>
<td>Treatment Must be Based on the Child's Instructional Needs</td>
</tr>
<tr>
<td></td>
<td>Utilize Visual Symbols to Improve Auditory Discrimination and Analysis</td>
<td>Clearly Formulate the Remedial Program</td>
</tr>
<tr>
<td></td>
<td>Use Concrete, Manipulate Materials</td>
<td>Modify the Remedial Program as Needed</td>
</tr>
<tr>
<td></td>
<td>Encourage Reauditorization and Mental Manipulation of Sounds</td>
<td>Use a Variety of Remedial Techniques</td>
</tr>
<tr>
<td></td>
<td>Stress on Tactual Learning</td>
<td>Remedial Program Should be Highly Individualized</td>
</tr>
<tr>
<td></td>
<td>Reading Comprehension</td>
<td>Remedial Instruction Must be Organized Instruction</td>
</tr>
<tr>
<td>VIII</td>
<td>SUMMARY AND CONCLUSION</td>
<td>The Reading Process Must be Made Meaningful to the Learner</td>
</tr>
<tr>
<td>IX</td>
<td>RECOMMENDATIONS</td>
<td>Remedial Process Should be as Nearly Like the Reading Act as Possible</td>
</tr>
<tr>
<td></td>
<td>Basic Principles of Remedial Instruction for the Dyslexics</td>
<td>Consideration of the Child's Personal Worth is Necessary</td>
</tr>
<tr>
<td></td>
<td>Treatment Must be Based on the Child's Instructional Needs</td>
<td>The Remedial Program Must be Encouraging to the Child</td>
</tr>
<tr>
<td></td>
<td>Clearly Formulate the Remedial Program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Modify the Remedial Program as Needed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use a Variety of Remedial Techniques</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remedial Program Should be Highly Individualized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remedial Instruction Must be Organized Instruction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Reading Process Must be Made Meaningful to the Learner</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remedial Process Should be as Nearly Like the Reading Act as Possible</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consideration of the Child's Personal Worth is Necessary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Remedial Program Must be Encouraging to the Child</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>BIBLIOGRAPHY</td>
<td></td>
</tr>
</tbody>
</table>
# LIST OF ILLUSTRATIONS

<table>
<thead>
<tr>
<th>ILLUSTRATION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I       Copying of a Six Year Old Dyslexic</td>
<td>37</td>
</tr>
<tr>
<td>II      Dolch Basic 220 Sight Vocabulary</td>
<td>41</td>
</tr>
<tr>
<td>III     Exercise For Visual Discrimination</td>
<td>57</td>
</tr>
<tr>
<td>IV      Example for Teaching Auditory Dyslexics to Perceive Rhyme</td>
<td>72</td>
</tr>
<tr>
<td>V       Exercise to Improve Auditory Discrimination of Short Vowels</td>
<td>73</td>
</tr>
<tr>
<td>VI      A Model for Improving Reading Skills</td>
<td>76</td>
</tr>
<tr>
<td>VII     An Accuracy Bar Chart - Weekly Record</td>
<td>88</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION AND STATEMENT OF PROBLEM

Some years of experience in the classroom have revealed one of the mysterious dilemmas which confront most teachers. Certain intelligent children never learn to read, write or spell at grade level no matter what method of instructions are being utilized. Diligent teachers may sense that this puzzling failure is not due to laziness alone, as these failing members are sometimes the most industrious pupils. On the other hand, some teachers due to limited information on learning problems, blame these category of students for failure to work as hard as other members of the class.

Parents and teachers are increasingly concerned about the future of such children. They are unable to progress satisfactorily in school, and later because of severe retardation in reading, these children are unlikely to find suitable employment. At least moderate reading proficiency is needed even to apply for most jobs. Furthermore, if employment is secured, advancement for the severely retarded reader becomes either difficult or impossible. Thus, proficient reading is necessary for success in all levels of education and in almost every vocation.

The impact of a reading disability perhaps never can be fully understood by the person who can read and write. When in a foreign country we experience frustrations because we are unable to read the language, but this situation is not comparable to being unable to read
in any language. Initially, parents of children with reading
disabilities are concerned with academic achievement or the vocational
limitations which result from such school failure. Such concerns are
justified but the effects are more debilitating. An inability to read
not only creates problems in school learning but limits social maturity,
social relationships and the assumption of responsibility. It leads to
dependency on others to an extent not expected of children with normal
intelligence.

There are many reasons for reading failure in children, including
mental retardation, sensory impairment, emotional problems,
neurological disturbance, and inadequate teaching. The concern of this
study is with the group who cannot read because of dysfunctions in the
brain. This disorder has been designed "word-blindness" (Orton, 1937)
"developmental dyslexia" (Critchley, 1966), and "dyslexia" (Myklebust
and Johnson, 1962). In all instances these designations concern
children with normal intelligence but who could not read. Widespread
interest in this problem, though, has developed only during the past
decade.

In a country as fast developing as Nigeria, some educators are
still unfamiliar with the term "dyslexia" which is regarded as one of
the leading causes of reading difficulties in other developed nations
of the world. In studies done by Jordan (1972), Myklebust (1968), and
Schmitt (1967) it has been disclosed that fifteen percent of the
American school children are dyslexics. Although statistical data is
hard to locate, but one might assume that the percentage of dyslexia
might be higher among Nigerian school children because of the following
reasons.

The present population of Nigerian school children is made up of "war babies", that is children who were either born during the Nigerian/Biafran war (1966-70) or were toddlers during that era of national struggle. This means that most of these children were exposed to physical, social, and emotional problems.

One of the commonest diseases which afflicted most so-called "war babies" was "kwashiorkor" which was the result of starvation. According to National Geographic (1975) "Kwashiorkor" is a West African word and is typified by the bloated look so incongruous with starvation. "Caused by an acute lack of protein, "Kwashiorkor" can bring brain damage, anemia, diarrhea, irritability, apathy, and loss of appetite."

That malnutrition can cause a learning disability is clearly pointed out in an observation by Cravitor et al (1966), which will be discussed in Chapter V.

Another factor which might contribute to dyslexia among Nigerian school children is the emotional and social traumas that accompanied the war. Most "war babies" came in close contact with areas where bombing, shelling, killing and other war hostilities were in operation. According to Bond and Tinker (1973) emotional problems can cause reading difficulty.

Also, most Nigerian schools are still using reading materials which are foreign in content and context. This naturally does not motivate the slow learner to read since he cannot relate well to what he reads.
Lastly, Nigeria being a pluralistic country, children are always alienated to the language, culture and even the school system should their parents happen to move from one state to another on a transfer.

Another reason for assuming that the percentage of dyslexia may be higher among Nigerian school children is that the greater majority of them belong to the low income group or come from socially disadvantaged homes.

In a study of neurological aspects of learning disabilities done by Coleman (1970) he made the following remarks:

There is a growing recognition that cases of central nervous system (CNS) damage or dysfunction in children, which is closely related to one of the causes of visual dyslexia are not randomly distributed in the population at large. Rates of CNS pathology appear to run higher in the socially disadvantaged and/or minority groups of the community. There is considerable empirical evidence, much of it medical in nature, supporting this statement.

The evidence deriving from a psycheducational perspective are also accumulative. Cohen (1969) and Coleman (1970) reviewed several empirical studies indicating that disadvantaged and minority-group children exhibit higher rates of visual-motor malfunction, auditory-perceptual handicaps, intellectual deficits, and psycholinguistic disabilities. Since most Nigerian school children fall within the above category -- namely -- minority-group and disadvantaged, there is an assumption that they also suffer those disabilities which contribute visual and auditory dyslexia.
CHAPTER II

REVIEW OF THE LITERATURE

It is the intention of this study to examine the characteristics usually displayed by two kinds of dyslexia. Namely, visual dyslexia, and auditory dyslexia. These characteristics will help the clinician and the classroom teacher in proper diagnosis and planning of educational program of correction.

An impressive body of literature accrued which indicates that dyslexia can be corrected with the proper monitoring of teaching techniques which include a medical evaluation and behavioral assessment.

Evans et al (1972) studied the effect of preschool language training on later academic achievement of children with language and learning disability. This pilot study revealed marked differences in later academic achievement of the subjects. The result of the study supported the use of the language and learning Assessment of Training battery as an initial identifying instrument during preschool years and the use of follow-up programs for children with learning disabilities.

Sabatino and Streissguth (1972) studied word form configuration training of visual perceptual strengths of children with learning disabilities. The purpose of their study was to investigate whether training directed at a child's strengths or at his weaknesses is most effective. A sample of dyslexic children were divided into two groups,
one with auditory perceptual strengths (audilies), the other with visual perceptual strengths (visilies). The difference between the weak and the strong perceptual skills were statistically significant. An experimental Word Form Configuration Training Program, which directed all teaching input through the visual perceptual behavior and reading achievement of the visile and not the audile children in the experimental groups.

Haring (1969) investigated the effect of improved learning conditions in the establishment of reading skills with disabled readers. The subjects for his study consisted of four elementary school children diagnosed as dyslexics.

Learning conditions were individually programmed in a group setting to provide sequential arrangement of reading materials and systematic presentation of reinforcing events to optimize each child's performance.

Arrangement of reinforcing events were designed first to accelerate performance rate, then to maintain the high rate. When learning conditions were individually appropriate, each child averaged between 100 and 200 correct responses everyday and spent very few minutes avoiding reading.

The result was that the students not only made more correct responses daily and worked longer, but also progressed in instructional reading levels from one and one-half to four years over five months of instruction.

Lehman and Hall (1967) wondered about this puzzling phenomenon in reading disabled children when they said:
Who is this child? He is not mentally retarded. He is not emotionally disturbed; yet he may have developed emotional problems as a result of his difficulties. What he is not is often more obvious than what he is. Parents are perplexed and bewildered and, accordingly take their child to a doctor, psychologist, or child guidance center for diagnosis. After tests and symptoms have been evaluated, the proper diagnosis will reveal that this child has learning disabilities resulting from what specialists call minimal brain dysfunction.

The focus of this paper will be on those children who fail to acquire normal reading proficiency despite conventional instruction, sociocultural opportunity, average intelligence, and freedom from gross sensory, emotional or neurological handicap. In short, the study will deal mainly with children who fit under the definition of dyslexia as will be reviewed in the study.

Hypothesis

Two hypothesis were made about the study:

1. It is hypothesized that there will be a significant difference in academic achievement between children who are diagnosed as dyslexic and given remedial treatment and those who are not.

2. It is hypothesized that children who have early diagnosis and treatment will show significant difference in their academic achievement while in school, and in their social and economic endeavors later on in life.

Limitations of the Study

The diagnosis and remedial techniques in correcting dyslexia will be tested with the third grade students of Christ The King School, Uyo Nigeria.
The program will only be used in students diagnosed by either a physician, psychologist, special teacher, or any person possessing the diagnostic skills and tools.

This study will be concerned mainly with the causes, symptoms, kinds, diagnostic and treatment of specific dyslexia. No attempt will be made to treat other areas or causes of reading difficulties.

Gathering Data and Procedure

Subjects for this study will include 30 third grade students diagnosed by qualified professionals as dyslexics. They will be randomly assigned to an experimental and a control group.

The experimental group, which will consist of 15 dyslexic students, will be exposed to all the remedial techniques recommended in this study. The experimental group will meet regularly for thirty minutes a day during the regular reading periods for five times a week. Teaching will be conducted by a reading specialist or someone trained to carry out the remediation. There will be a special room set aside for the meetings. The instructor will keep a close record of work done by each student. Achievement gains will be measured by pre and post test monitored weekly in both the experimental and control groups.

The control group will consist of the other 15 dyslexic students. This group will remain in the normal classroom setting and taught by the regular teachers during the reading lessons as well as other subjects. Their performance will also be recorded weekly based on the same pre and post tests jointly set by the remedial and the regular classroom teacher. Gains made by each group will be compared quarterly.
Since this is going to be quasi longitudinal study, there will be a follow-up program and recording of these subjects performances from the third through the sixth grade. At the end of the sixth grade, when all the pupils take the First School Leaving Certification Examination (FSLCE), final results of children from the control and experimental groups will be compared.

After the First School Leaving Certificate Examination (FSLCE), the final scores will be collected. Four test scores will be monitored. These are:

1. The mean scores of the experimental group from test scores from the three years.
2. The mean scores of the control group for the three years.
3. The FSLCE test score for the experimental group.
4. The FSLCE test score for the control group.

Data Analysis

Upon completion of the program, the experimenter working with the experimental subjects and the classroom teacher working with the control group in the regular classroom setting will compute, compare, make an analysis of variance on all the scores.

The hypothesis will be accepted if a significant difference is found between the control and experimental groups. The trustworthiness of the remedial program for correcting dyslexics in Nigerian elementary grades will be decided if a probability ($p>.01$) is indicated in the data analysis.
Definition of Terms

Culture. The enlightenment and refinement of taste acquired by intellectual and aesthetic training.

Diagnosis. The art or act of recognizing disease from its symptoms, based on scientific determination, critical scrutiny or its resulting judgement. Educational diagnosis then is the appraisal of pupils progress towards desirable educational objectives. This leads to identification and classification of causes of malfunctions and breakdowns in the learning process.

Ethnic group. Pertaining to, or designating races or groups of races discriminated on the basis of common traits, customs, language, and beliefs.

FSLCE. First School Leaving Certificate Examination is an intelligence test taken by all Nigerian Primary schools at the end of grade school which is usually the sixth grade. This examination serves as an entry into a secondary school and also as a passport for applying for an average job.

Remedial reading. Remedial Instruction provided outside the framework of the total group teaching situation. If the teacher works with a child or small group outside regular class hours or if a special teacher works with children in special periods.

Reading retardation. The amount of retardation in any one individual's reading ability depends upon how much ability (intelligence) he has for learning to read.
Remedial technique. Different methods used to correct reading
difficulties.

Dyslexia. An impairment of the ability to read when exposed to an
educational program which most children learn to read. It is a term
derived from the field of neurology and should be reserved for children
of normal intelligence, with no significant emotional problem who do
not read because of neurologic dysfunction.

Retarded readers. The retarded reader is one whose reading
achievement is less than that expected of his peer group. This includes
all individuals who are behind in the "normal" or expected pattern of
achievement.

Reading disability. The reading disability case is the individual
who is significantly achieving below his capability level for achieve­
ment and is a logical candidate for remediation. He possesses
sufficient learning aptitude to read better than he is now reading.

Kwashiorkor. A West African word which means malnutrition. The
patient is typified by a bloated stomach, pale look and loss of hair.
CHAPTER III

ANALYSIS OF THE PROBLEM FACED BY THE SLOW LEARNER

Normally when we encounter a stranger we try (often unconsciously) to assign him to a certain category; we also have certain expectations about the sort of characteristics or abilities which a person in that category will possess, and these give him a "social identity". We are not really aware of these expectations until we meet someone who possesses an attribute which makes him different from others in that category, Goffman (1963) calls "stigma"; it could also be called a "failing", a "shortcoming", or a "handicap". Goffman (1963) distinguishes three very different types of stigma: First, physical deformities, secondly, blemishes of character and, thirdly, what he calls the "tribal" stigma of race, nation or religion. To those, I should add a fourth type, which is mental stigma. In general, he states that the behavior of "normal" towards a person with a stigma is "to exercise varieties of discrimination through which we effectively, if often unthinkingly, reduce his chances of a happy and successful life".

It is perhaps worth noting here that a disabled learner in a Nigerian village stands a rather high risk of social stigma. As it is true in most societies, news and gossips spread faster in small village groups than it would otherwise be the case in larger towns. This is because the same people meet often in market places, churches and
other social gatherings and are likely to discuss family problems.

Moreover, in Nigerian schools, parents, and guardians are invited to participate in schools final examination results which are read before a large audience while students from each class take their stands in order of merit. This publicity helps to bring pressure and shame to the failing children which include dyslexics.

**African Traditional System of Thought and Their Implications for the Treatment of Nigerian Dyslexic Students.**

Ever since the epoch-making, researchers of Malinowski and others in the first quarter of this century had revealed a surprisingly high level of cultural integration among the so-called primitive people, such as Trobrained Islanders of Melansia, tremendous such studies have been carried out in different parts of the world. In African context, in among the best known of such studies are E. E. Evans Pritchard's study of the Azande (Pritchard, 1965), Father Temple's study of the Luba people, (Temple, 1962) and a collection of such studies edited by Daryll Forde (Forde, 1969). These and other studies have amply demonstrated that African pre-industrial societies have for centuries based their routines of living on a principle of causation link events, on the logical implications of ideas, and on an understanding of mechanical and organic process. It is precisely those principles of causation and the quality of the understanding of mechanical and organic processes that call for closer understanding.

Such an examination of African traditional societies instantaneously reveals that "it is religion, more than anything else that colours their understanding of the universe and their empirical
participation in that universe". Forde (1969) concluded that for the African man "The universe is full of spirits", as it is of the Yorubas of Western Nigeria and the Ibibios of South Eastern Nigeria who are reputed to have over a thousand divinities. In spite of the richness and variety of the myths and folklore associated with various African peoples, their view is basically religious oriented. Their explanations for various facets of human existence mirror the same basic religious orientation.

Traditional African societies, no matter how Westernized, draw with varying degrees of articulations, the ontological distinction between man, nature and spirits or gods. Even though the conception of a Supreme God of Spirit is also present in many cases, it must not be forgotten that traditional African religions have been polytheistic rather than monotheistic. Now in the osmologies of the various African societies, it is widely believed that there is mutual involvement between nature and spirit. Thus a tree, a river, the sky and so on may be inhabited by a spirit or spirits. Similarly a natural phenomenon, for example multiple birth, retardation of all kinds, physical or mental handicaps may be associated in one way or another with a god, since most often than not, the so-called god-caused events stem from negative premises. It is generally believed that gods and spirits, especially the ancestral spirits, as well as other supernatural forces directly influence everyday occurrences and therefore the lives of people. Such osmological beliefs as the foregoing provide the background of the understanding of a disabled child.
Hortin, (1967) in his writing about African traditional thoughts and Western science in Africa, has further elaborated by drawing certain parallels between African traditional thoughts and science. He explains that like atoms, molecules and waves, the gods of Africa serve to introduce unity into diversity, simplicity into complexity, order into disorder, regularity into abnormality. African traditional thought may be called "magico-religious" system of thought. Theoretically, there may be as many such systems as there are different cultural configurations in Africa, but they have certain common characteristics that sharply distinguish them and constitute them into a system vis-a-vis the systems of thought which Nigerians associate with Western industrial society.

Such are the basic principles which surround the treatment of the disabled student at home, in the society and at school. The crippled child must have had his/her leg mutilated by the feared "mother-spirit" (Eka Abasi) or it's simply the work of witchcraft. The children born with some brain damage is attributed to the anger of the spirit of creation (Obot-Eyen) whom the mother of the child must have failed to appease during pregnancy, and so on. Every type of disability is associated to a cause and parents will spend time and money in the vain hope of soliciting the gods. Such children are rejected on the same premises by their parents, environment, school if they are lucky to attend one.

The dyslexic child, since he has no visible handicap like the blind or crippled is most often mistaken for normal. When his failure in school begins to show up around the second or third grade, most
often he is considered to be "pinned" by the witchcraft. Instead of seeking medical aid or remedial teachings the witch-doctor's aid is often sought.

As many children rarely see physicians for medical check-ups, the classroom teacher, clinician or specialist teachers and parents in this area of child care would involve increased attention to suggested signs of inadequate nutrition. Some of which are: frequent and prolonged infection involving the skin, mouth, or respiratory tract; clumsiness or falling easily; delayed healing of minor injuries, irritability and restlessness; nail biting; inability to sit still, inability to fall asleep easily at night, restless sleep or awakening with fright, tiring easily or lacking ambition, frequent headaches, abdominal pains and constipation, pain in the extremities, frequent urination and a child's "going to pieces" if a mother or teacher corrects him.

If parents can be educated to prepare properly the prenatal and postnatal nutrition of their infants, and if such education can be supplemented by availability of requisite nutrients for at least the first few years of life, it is conceivable that there will be a lessening of the percentage of children who develop problems necessitating "exceptional" treatment academically.

Teasing. The problem of "teasing" the slow learner by his peers and even sometimes by the teachers themselves is usually a matter of great concern to both the child and his parents as well. The most common form of teasing in most Nigerian schools is "name calling". In some situations the names are initiated by the teachers and readily picked up by the class. Such popular names as "the good for nothing
fellow", "the dunces", and the "upside down cakes" for children with reversal problems are among the list. Most parents, teachers, and children acquainted with the classroom in the South Eastern State of Nigeria are familiar with such tunes as "adia iwaiwa ikpebke nwed", which indicates that the slow learner's job is eating and not learning.

Mimicking of the dyslexics is another common attitude of some teachers and students in Nigerian schools. Most often a child's mistake is imitated both inside the classroom and outside to arouse the curiosity of other children in the school. Once this is spread, the dyslexic child is bound to become infamous, has few or no friends to play with, and may end up devising means and excuses for absenting himself from school. This, if not carefully followed up may eventually lead to a school drop out.

A study was done by Anderson (1973) to determine the extent of teasing done to a handicapped child if placed in an ordinary school. In this study both parents and class teachers were asked a series of questions designed to give a clearer picture of what happened. The teachers were of course only able to describe the situation as it existed then.

The first thing they noticed was that more teasing was going on than teachers were aware of. Their reports indicated that only 16% of the group were being teased whereas parents reported this for half the group. It was remarked that boys and girls seemed equally likely to be teased, although the teachers were more aware that this was going on in the case of the girls.

These embarrassing social attitudes could be eliminated and the
learning disabled child spared, if the nature of learning difficulties could be understood by both the class teachers and the children.

Social and Emotional Factors in Learning Disabilities

Every culture has an unwritten list of valued traits, beliefs and motives that it expects its members to possess. Among the most highly valued of these traits in a developing Nigerian society are success and achievement. If an individual desires to reap the greatest rewards our culture bestows on its members -- recognition, wealth, and power -- it usually is necessary for him to achieve high goals and to surpass the expectations that society holds for him.

The goals a person strives for are determined largely by his role, which defines what behaviours are expected of him. For example, the role of the father traditionally involves being head of the family and bread-winner. Tasks are structured clearly for him: he is supposed to hold a job, provide subsistence, make major decisions, protect the family, and so forth. The mother's position has evolved in recent years, but in the immediate past, she was expected to farm, be in the home, to raise children, and to provide strength for her husband and nurturance for her children. The child likewise has a role, which varies according to age; but perhaps his major task, at least between the ages of five and 16, is to attend school and achieve, to succeed and bring credit on himself and on his family. The child's role demands that he masters the basic school subjects -- particularly reading and that he learns certain skills as required in Nigerian Society. The acquiring of these academic skills is thus one of the primary problems facing him.
During the first years of life the family is the main instrument in the child's education and socialization. At age five, he leaves his home and enters school; from that time until mid-adolescence this situation plays an essential role in shaping his total development. Parents retain considerable influence over their children, but now share with the school the responsibility for educating and socializing their offspring to almost an immeasurable degree. How a youngster fares, both academically and socially, is most influential in determining his later life style. If he fails to master basic subjects we can say with a high degree of probability that he will not hold an esteemed position in our social structure; he will neither attain high status nor achieve substantial material rewards.

In an achievement-oriented culture, in which successful performance of one's role is paramount, the effects of "non-success" can be both extensive and intensive. For members of any society, failure can have far-reaching consequences that may become permanent. His academic failure as a child thus limits his future attainments as an adult and, more likely, predetermines that he will live a life far different from that which his family had originally hoped for. In a real sense, then, a child who fails in school, or more specifically cannot read, is denied an education and all of the economic and cultural benefits that follow. He is deprived of many of the rewards that a normal child would otherwise have.

**Encouraging Social Integration in School**

It is, nevertheless, true that dyslexics may have difficulties
establishing satisfactory social relationships. The question inevitably follows of what teachers can do to help in this situation. An article which is useful in this context is the discussion by Lippit and Gold (1959) of how children's perceptions of each other develop. In attempting to analyze what it is which maintains and aggravates the undesirable social situation of certain children in the classroom group, they found that difficulties appeared to be "created and maintained" by a circular social process, contributed to by the individual, his classmates and his teachers. If the individual child is focused on, he is seen to contribute to the unhealthy situation by his negative self-evaluation and his response to this, by his hostility towards others, by his unskilled and unrealistic behavior which may include either assertive aggressiveness or withdrawing non-contributing, and by his insensitive and defensive reception of feedback from others which might potentially give him more guidance for his own behavior. If his classmates are considered, the source of difficulty for the individual child is seen to be firstly, a very rapid evaluative labeling of the child, and a strong tendency to maintain this evaluative consensus despite further information; secondly, very inadequate skills of the group is providing the member with feedback which communicates sympathetic guidance rather than rejecting or ignoring; thirdly, a lack of group standards concerning the acceptance and support of deviancy. Finally, when the teacher's contribution was considered, Lippit and Gold (1959) found a lack of teaching effort that focused on developing personal attitudes and group standards about good human relationships, a lack of any attempt to group the children in such a
way as to help the unaccepted children, and a lack of any clear presentation of constructive behaviour patterns towards low achieving students which could be imitated by the other pupils.

This clear analysis suggests a number of different points at which the problem could be attacked and gives some idea of its complexity. Simple solutions are unlikely to be effective. As Northway (1967) points out,

...simply placing isolated children in existing groups is not always the best way to help them. It is not likely to result in the child being accepted unless he has a definite contribution to make to the activities of the group.

What is important is that the teacher approaches the question with a clear and constructive policy right from the start. Each teacher will have a somewhat different approach, but two points are worth considering. One concerns giving the class sufficient and appropriate information in terms of the child's nature and cause of reading difficulty.

On the other hand, this practice may not be used with very young children. Webb (1967) points out, in the following statement:

It is unrealistic to expect very young children to show compassion, and better expectations are for courtesy, ordinary kindness and tolerance. Long talks about the dyslexic children may be dangerous as the children may repeat the pattern without understanding it, and may dislike the child who gets so much of an adult's attention. It would be sufficient to explain quite simply that a child has difficulty to read like the rest because he had a slight brain injury at birth etc, and that he will be able to catch-up with the rest as soon as his difficulties are corrected in a remedial reading class. They would further be made to understand that teasing or mimicking the child's mistakes only helps to aggravate his condition. The teacher himself should set a good example to the children.

A second useful approach of coping with social problems which is
suggested by Lippitt and Gold (1959), is for the teacher to work in conjunction with the "high power" children who have the most influence on the social-emotional structure of the class. The authors also suggest that it is easier to do this with older children, and an obvious problem is that faced by a new class, a teacher may not know which children to select. In a Nigerian elementary school setting, the best places to spot out such dynamic pupils might be during a lining-up procedure for moving assembly, on the playground, during gardening and during class activities.
CHAPTER IV

DYSLEXIA - WHAT IT MEANS

The word dyslexia is derived from the Greek for "difficulty to read", according to Lerner (1971). Many professionals have attempted to define this educational deficiency. Great differences exist between various definitions and philosophies. In connection with this, Crosby (1969) remarked in his article that the word dyslexia had for some time been misused by teachers, parents, school administrators, etc. Today the term is an acceptable meaning for inability to read because of neurological misfunction.

The word dyslexia has a diverse definition. It includes.

1. Evidence of an etiological brain damage.
2. The observation of behavioural manifestations of the central nervous system dysfunctions.
3. The indication of a genetic or inherited cause of reading problems.
4. The inclusion of a general language disability along with the reading problem.
5. The presence of a syndrome of a naturational lag.
6. A synonym for reading retardation.
7. The description of a child who has been unable to read through the normal classroom methods.

Some of the terms that fall under the nebulous umbrella of
dyslexia include visual dyslexia, auditory dyslexia, minimal brain damage, strephosymbolia, word blindness, cerebral dysfunction, Gerstman syndrome, neurological disorganization. Experts subdivide dyslexia under the heading of: 1) congenital, 2) developmental lag, 3) brain damage. (Freshour, 1974).

Though the subject of dyslexia is being viewed here from a teacher's point of view, it is impossible to deal with it without mentioning its medical aspect. The following are some of the historical literatures on the origin of the word "dyslexia" from both the medical and the educational perspectives.

**Historical Literature on Dyslexia: Medical Perspective**

Schell and Burns, (1972) report on the work of an English physician, who in 1896 described a condition he called a "congenital word blindness" in a fourteen year old boy with extreme reading difficulties in spite of good arithmetic abilities. The report attributed a neurological etiology to congenital word blindness.

In another report by Schell and Burns (1972) Hinshelwood, an ophthalmologist from Scotland, in defining word blindness in 1917, concluded that it was a pathological condition due to a disorder of the visual centers of the brain which produced difficulty in interpreting printed and written language. He further stated that the condition was not due to visual or intellectual defects; yet, ordinary teaching methods would not work in teaching the child to read.

Schmidt, in 1918, used the terms "developmental Alexia" for "dyslexia" to signify cases of congenital word-blindness. Schmidt's rational for the term, "dyslexia" had its root from the term "alexia", 
defined as a loss of ability to read because of a known injury to the brain, such as cerebral stroke. He also admitted that "alexia" also called "acquired" word-blindness, occurs in adults who had learned to read.

In 1937 Orton, an American neurologist, broadened the concept of dyslexia to a specific language disability and developed a theory based on the lack of establishment of cerebral dominance as a cause of language and reading difficulty.

Working in Sweden, Hallgren, in 1950 made a statistical analysis of 276 cases of dyslexia patterns and concluded that it is a hereditary characteristic and genetic in nature.

Herman, a Danish neurologist, in 1961 attempted to establish a medical explanation for extreme reading handicaps, which he called word-blindness or congenital dyslexia.

Money reported on Asymposium held at John's University in 1962 for the purpose of evolving a syndrome of dyslexia.

Working with the medical and speech schools at North Western University, Myklebust and Johnson (1968) concluded that dyslexia is reading disorder which results from a dysfunction in the brain. These authors view dyslexia as not only being reading disorder but also part of a basic learning and language disability, and as a disorder of symbolic behavior. They subdivided the condition into auditory dyslexia and visual dyslexia.

Schell and Burns (1972) estimate that the medical perspective of the phenomenon called dyslexia has been under study for about seventy years.
Historical Literature: Educational Perspective

The other group of scholars concerned with the reading problems come from the discipline of education, psychology and reading.

The early studies of Monroe (1932), and Robinson (1966), which were careful investigations of the cause of reading failure, discussed the neurological factor but concluded that early theories had not been strongly established.

In 1958, Vernon, an English psychologist, examined the available evidence of congenital word-blindness and cerebral dominance and found "no clear evidence as to the existence of any innate organic condition which causes reading disabilities" (Vernon 1958). Further, she asserted that the term "dyslexia" was unaccepted because it is not comparable to "alexia" which is the loss of reading ability produced by cortical injury.

Harris, 1961, stated that early views of reading disabilities assumed that the child showed no observable difference of general mental development or health, the reading difficulties were the result of brain defect which made it difficult or impossible for the child to remember and identify printed words.

In 1957, Bond and Tinker viewed the concept of dyslexia as having little diagnostic and prognostic value. Ten years later, in 1967, Bond and Tinker, the same authors remarked, that it is practically impossible to distinguish "specific dyslexia" cases from other severe reading disabilities and suggested that the clinical worker may question the value of the term. (Bond and Tinker, 1967)
In their most recent work, however, Bond and Tinker carefully avoided the use of the word "dyslexia". They contended that "evidence seems to indicate that brain damage is relatively a rare cause of reading disability". They also admit that there is in adults a rare acquired defect known as "word-blindness" or "alexia" that is attributable to a pathological condition in certain areas of the brain, (Bond and Tinker, 1973).

**Difference in Perspective Over the Use of the Term "Dyslexia"**

The workers within the educational framework are concerned with children who display symptoms which appear to be identical to those symptoms described as dyslexic by the workers within the medical framework. They find it difficult to accept the term dyslexia as a diagnostic entity. They reason that when no other cause for reading problems could be found, workers within the medical perspective made an assumption, based on "a leap of faith" and assigned brain injury and neurological dysfunction as the single cause of reading failure. (Schell 1972)

Goin (1958) noted that although the educational perspective workers prefer not to use the dyslexia concept, the research he made in this field probed such basic issues as the way that different children learn to read and the manner in which individual children perceive the world. He extrapolated that researchers from the field of reading generally conclude that a single cause of reading problems cannot be ascertained, they examine emotional, social, psychological, cultural, and language factors along with the neurological in their
attempt to diagnose the causes of reading disability. Moreover, this group concludes that the case of an adult who has lost his ability to read through cortical damage, (alexia) cannot be linked to the child who is unable to learn the reading process.

Burns (1972) examined the differences between the two disciplines and came up with the following conclusion:

1. While the workers within the medical perspective search for a single factor (etiological) as casual, the scholars from the educational perspective seek a combination of causes, feeling it is not likely that a single factor can be the cause.

2. The educators are likely to place emphasis on the developmental sequence of reading skills with more search for the child's break on the developmental reading sequence. The medically oriented student is likely to place greater focus on the language related areas such as speech, oral language, and on other related disabilities such as arithmetic, perception, motor development, and social skills.

3. For the educator, alexia or the loss of reading skill in the case of an adult is different from the inability to learn to read in a child.

4. Educators see the diagnosis of dyslexia as lacking operationally, in that it does not lead to appropriate teaching strategies.

5. While the clinical oriented clinician is likely to focus chiefly on the handicapped child, emphasizing individual treatment, the educationally oriented worker is likely to perceive a broader role and function within the school.
CHAPTER V

POSSIBLE CAUSES OF DYSLEXIA AMONG NIGERIAN CHILDREN

Malnutrition

The present population of Nigerian school children today is composed of students who were either infants or toddlers during the Nigerian civil war (1966-70). These children suffered both physically and emotionally, particularly if they lived in the war affected areas which were the Eastern and Southern states.

During that era, the new medical terminology that enriched the vocabulary of both literate and illiterate citizens alike, was the word "Kwashiorkor". This was interpreted in lay man's language to mean malnutrition arising from deficiencies of proteins. It was a well known disease because it affected children in about 80% of the families, centering mostly within the middle and lower socio-economic groups.

That malnutrition may contribute to dyslexia is based upon the fact that function in part depends upon growth that is, change in body size through cell multiplication and cell enlargement. As an example, a child does not walk until his bone structure and muscles system has the strength to support him and he has had the opportunity to practice. Inadequate function may stem from inadequate growth, and growth of the human body depends in part upon the sufficient maintenance of cellular structure. As the cell is the basic unit of the human organisms, the cell must be properly nourished. It is believed that a common factor such as cellular imbalance due to malnutrition could possibly be
included in the etiology of a "developmental lag" or neurologic deficit. Cravioto (1966) pointed out that variations in alertness, comprehension, and intelligence sometimes can be accounted for by minute shifts in the balance and utilization of various nutrients such as proteins, carbohydrates, and minerals.

Intelligence and comprehension are measured by the child's responses to stimuli, and the responses are in part determined by the central nervous system with its complex interweaving of biochemical components. Within the past decade, a number of observers have begun to emphasize the effects of malnutrition on central nervous system activity in the preschool child: on neuromuscular function, behavior, and intelligence. An increasing body of evidence suggests that some abnormalities of the central nervous system may arise from changes in the brain as it develops prenatally and in the early years -- specifically, one to four years, and that such changes may be permanent, resulting in lowered performance for the child.

Examples of such lowered performances have been demonstrated experimentally with animals, and malnutrition has resulted in immaturity of brain tissues. Even when proper nutrition was established for the animals after early deprivation, the deficiencies were not repaired. (Under nutrition..., Nutrition Review, 1967c). Early restriction show the rate of cell multiplication, while later restriction affects cell size, according to this same study. Animals, though failed to grow to the size of the control, acted much younger. Cravioto et al (1966) have summarized the problem sufficiently:
Animals experimentally deprived are persistently delayed in achieving simple developmental landmarks, appear to be less adequate in environmental responsiveness and slower in learning as well as poorer in retention of that which has been learned than normal controls. Considering the animal experiments and the findings in humans as well as unit one is led to be concerned with what in ecological sense could be called a 'spiral' effect. A low level of adaptive capacity, ignorance, social custom, infection, or environmental capacity of food-stuffs appear to result in malnutrition which may produce a large pool of individuals who come to function in suboptimal ways. Such persons are less effective than otherwise would be the case in their social adaptations. In turn they may rear children under conditions and in a fashion designed to produce a new generation of malnourished individuals.

One of the most important nutrients and unfortunately the most lacking in most Nigerian diets is protein. Protein deficiency may result in marked disturbance in cortical function, modification of acquisition rate, processes of internal inhibition, and the intensity of positive reflex organization. A deficiency of protein can also cause children to become withdrawn, (Cravioto et al, (1966). Dreyfus (1966) had said that there is a general agreement that protein calorie deficiency in early life "adversely affects malnutritional processes. Permanent mental retardation may result from the deficiency in the first six months of life". They also agree that language development is often more affected than motor development, with a decrease in the child's desire to explore.

Besides protein and vitamin deficiencies, any interference with the oxygen supply can be damaging to the brain.

With all these facts one wonders about the future of thousands of Nigerian children who were born in underground trenches, crowded refugee camps and even some in war fronts with all the shellings and
bombings. Though popular as Africa's oil rich and leading nation, Nigeria still has the majority of its citizens living from "hand to mouth". An average Nigerian can hardly afford three square meals a day that would contain all the nutrients and vitamins essential for an adequate development of the body.

There is no denying the fact that Nigeria is a land of plenty as far as food and natural resources are concerned, but the point is that nutritional failure is common in our nation. There are three groups of the needy: (1) those with a frank deficiency disease, (2) those whose deficiency is milder and more elusive, and (3) those who merely approach the brink of nutritional needs. Food must be available -- that is within the economic reach of everyone; but it is the homemaker's knowledge of nutrition requirements that determines the choice of food prepared for the adults and children in the family. Parents must be educated on the proper nutrition for their families.

Language and Reading

Because speaking precedes writing in the learning of a native language, linguists assert that the same sequence should be followed in learning a second language. This view, and the resultant changes in methodology, according to Horn (1970), proved themselves effective during the Second World War with the countless students who not only learned foreign languages more efficiently than with earlier methods but could actually communicate in them when course week was finished.

The majority of linguistics and educators, however, have concluded from research and observation that reading should not be
introduced until some facility in the spoken language has been achieved. For this reason, the writer has substituted some Nigerian words in the "Efik" vernacular to be utilized whenever possible.

It is not however uncommon to see a child being taught Vernacular Reading and English Reading concurrently from the first grade when formal education begins. This technique might work with normal children, but may be too much burden for the dyslexic child. For this reason I would suggest that the classroom teacher working to remediate dyslexia begins the child from where he is, that is, start remediation from reading the vernacular. This method might not work in a city school where children from different ethnic groups speak different languages, and might be difficult for the teacher to comprehend. On the other hand, it would be an ideal device for a teacher in the village school.

Language is an aspect of culture, and culture, including its related speech system, is made up of a complex set of habitual modes of behavior, perception, and reaction to the world. Together, culture and language establish the frame of reference within which a society lives and functions, but the cultural linguistic framework of social group may diverge radically from that of another and different community. For this reason, the teacher of dyslexic children and/or of normal children should respect the child's culture and language if he happens to be linguistically different.
CHAPTER VI

KINDS OF DYSLEXIA

In traditional classroom methodologies it has been assumed that all children can master three kinds of language symbols: oral-aural symbols used in speaking and listening; printed symbols used in reading; and written symbols used in handwriting. Educators have also assumed that all children are automatically capable of progressing from left to right across the page, as well as from top to bottom down the page. Publishers have also produced materials fashioned upon these assumptions. Unfortunately these materials do not meet the demand of school children who are dyslexics. (Dale Jordan, 1972) There are three phases of dyslexia: visual, auditory, and graphic.

Visual Dyslexia

The most prevalent form of dyslexic handicap is that of visual dyslexia. This is basically the inability to translate printed language symbols into meaning. Visual dyslexia has nothing to do with vision itself, (Goldberg 1967). Children with severe visual impairment are not dyslexic because of loss of sight. Keeny and Keeny (1968) comment on confusion of loss of insight and dyslexia by stating:

Although errors in refraction, muscle balance, or other peripheral visual defects, have at times been claimed, particularly by nonmedical examiners to be the cause of symbolic confusion or dyslexia, neither a true case-and-effect relationship serves to support this contention.
Most visual dyslexics function within normal range of vision test. Visual dyslexia is not a matter of seeing poorly; it is a matter of not interpreting accurately what is seen. Anapolle (1971)

Characteristics of Visual Dyslexia Which Can Help the Classroom Teacher, Psychologist or Clinician in the Identification Process

The following characteristics are displayed by most dyslexics:

1. Most visual dyslexics see certain letters backwards and upside down.

2. They rarely learn from a global word approach (sight) because they cannot retain an entire sequence of letters.

3. They have memory impairment and may be unable to visualize letters and words.

4. Owing to lack of memory for sequence, in reading, they fail to remember the sequence of letters or sounds within words so they misread or mispell words.

5. They may also have difficulty in learning a series; days of the week, months of the year, or the alphabet. They may know that there are 12 months in the year but can't give the correct order. In a study of 60 dyslexics done by Johnson and Myklebust (1958), only 16 were able to give the months of the year correctly.

6. A disturbance of learning through the visual modality interferes with the ability to read -- defect of sight and visual fields impede this ability.

7. They have difficulty in differentiating, interpreting, or remembering words.
8. Not all visual learning disabilities affect reading. Some affect nonverbal function more than reading. Others interfere with several forms of symbolic behavior including arithmetic and music. Still others are limited almost entirely to reading. The degree to which reading is affected depends upon the severity of the disorder. Some are so severe that children are totally unable to read. Others with less involvement have difficulty only with syllabication of multisyllabic words or with the development of sight vocabulary.

9. They have visual discrimination difficulties, and confuse similar appearing letters or words. They fail to note internal detail and confuse such words as "beg" and "bog".

10. Also have problem with general configuration -- "ship" for "snip".

11. They have problem of rate perception--difficulty recognizing both pictures and words tachistoscopically at a rapid rate.

12. Many show reversal tendencies both in reading and writing, tending to read "dig" for "big".

13. Some have inversion tendencies and misread "u" for "n" and "m" for "w". The effect of such a disturbance is shown in the writing of a six-year old who tried to copy the letters in Illustration 1.

14. They prefer auditory activities (sport). They may memorize stories but cannot read a word in isolation.

15. Many visual dyslexics do not enjoy activities such as building models, however, others may perform well until they are
given the written instruction.

16. Faulty Reading Comprehension: fails to identify main idea, tells story events out of sequence; loses meaning of sentences of paragraphs before reaching the end; fails to draw inferences from what has been read; has difficulty recalling details when answering comprehensive questions.

17. Faulty at following directions: cannot remember daily routines at home, cannot follow teacher's direction in the classroom; needs individual explanations; needs constant reminding of what to do.

18. Errors in copying: loses place on board (far point), mis-spells on paper, fails to observe capital letters, fails to observe punctuation cues, fails to space properly, erases frequently, overprints to correct mistakes, telescopes, perseverates works unusually slowly, seeks to terminate to avoid copying tasks. (Jordan, 1972)

Note: Some of the above characteristics can also be displayed by other kinds of dyslexia.

Correcting Visual Dyslexia

Teachers are frequently advised there is nothing they can do for dyslexics in the classroom. Many professionals contend that remediation of the perceptual impairment is a job for specially trained clinicians. Eddie D. Kennedy, (1971), agrees that complex cases of dyslexia requires, the attention of specialists who have unique materials and equipments not available in regular classrooms. Most
dyslexic students can respond to the corrective measures that are feasible within the typical classroom setting. When teachers are able to follow certain basic guidelines and establish flexible routines most dyslexics can learn to cope with their handicaps without attending specialized clinics. The following techniques for correcting dyslexia may prove useful to the diligent classroom teacher, (Jordan, 1972).

Principle 1 -- The Self-Fulfilling Prophesy. Students tend to accomplish what the teacher expects them to accomplish. Jordan, (1972), says in relation to this that the attitude the teacher exerts over the success or failure of his pupils has much power. In other words, positive teacher attitudes will lead youngsters to succeed.

Principle 2 -- Students Needs. Corrective programs should be both prescriptive and diagnostic. Jordan, (1972), confirms that unless teaching techniques meet actual student needs, valuable time and energy are wasted, so far as educational growth is concerned. Crosby (1969) advises that those who are involved with the child, the classroom teacher, the remedial teacher, the school administrator, or principal, the parents are all concerned with the remediation of the dyslexic child. Bruininks adds that students' present needs must be met. The needs should be relevant to the difficulty displayed by the teacher.

Principle 3 -- Relax the Pressure. The dyslexic child has two mortal enemies: a rapid rate and pressure for quantity. One of the deadliest experiences for the dyslexic child is to threaten him with speed. The teacher should be on the defensive particularly when production is determined on the basis of each student's needs.
Principle 4 -- Keep it Simple. The dyslexic child is unable to tune out irrelevant stimuli. Jordan (1972) warns that the child should be presented with controlled stimulus factors when learning tasks. This means that remediation calls for a step by step routine. Keep the lessons structured and, most of all, let the child know that he is accepted.

Educational Procedures for Visual Dyslexia

The visual dyslexic is rarely able to learn by an idaeo-visual approach since he cannot associate words with their meanings (Johnson, 1968). He has difficulties in retaining the visual image of a whole word and consequently needs a more phonetic or elemental approach to reading. Certain methodologies stress the teaching of Dolch 220 Basic Sight Words, Illustration 2, before beginning work on phonics or analytical skills.

Instruction should begin with the presentation of short visual units (generally single letters) which can be blended into words. Simultaneously, this type of pupil should receive training in other deficit areas, for example, visual memory and sequentialization. The purpose of this instruction is to give the subjects a systematic means of attacking words, but also to aid him in learning a sight vocabulary. Because of specific visual deficits, instant recognition of whole words may occur only after months or even years of training. Johnson (1968) stated that after ten months of training a severe visual dyslexic remarked that he could finally see words in his mind. Nevertheless, a teacher should not wait until a child builds up all visual skills
<table>
<thead>
<tr>
<th>1. by</th>
<th>at</th>
<th>a</th>
<th>it</th>
<th>sit</th>
<th>me</th>
<th>to</th>
<th>the</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. in</td>
<td>I</td>
<td>be</td>
<td>big</td>
<td>not</td>
<td>of</td>
<td>we</td>
<td>so</td>
</tr>
<tr>
<td>3. did</td>
<td>good</td>
<td>do</td>
<td>go</td>
<td>red</td>
<td>too</td>
<td>seven</td>
<td>walk</td>
</tr>
<tr>
<td>4. all</td>
<td>are</td>
<td>any</td>
<td>an</td>
<td>six</td>
<td>start</td>
<td>show</td>
<td>stop</td>
</tr>
<tr>
<td>5. had</td>
<td>have</td>
<td>him</td>
<td>drink</td>
<td>put</td>
<td>round</td>
<td>right</td>
<td>pull</td>
</tr>
<tr>
<td>6. its</td>
<td>is</td>
<td>into</td>
<td>if</td>
<td>no</td>
<td>on</td>
<td>or</td>
<td>old</td>
</tr>
<tr>
<td>7. ask</td>
<td>may</td>
<td>as</td>
<td>am</td>
<td>yellow</td>
<td>you</td>
<td>your</td>
<td>yes</td>
</tr>
<tr>
<td>8. many</td>
<td>cut</td>
<td>keep</td>
<td>know</td>
<td>please</td>
<td>pick</td>
<td>play</td>
<td>pretty</td>
</tr>
<tr>
<td>9. does</td>
<td>goes</td>
<td>going</td>
<td>and</td>
<td>take</td>
<td>ten</td>
<td>they</td>
<td>today</td>
</tr>
<tr>
<td>10. has</td>
<td>he</td>
<td>his</td>
<td>far</td>
<td>my</td>
<td>much</td>
<td>must</td>
<td>together</td>
</tr>
<tr>
<td>11. but</td>
<td>jump</td>
<td>just</td>
<td>buy</td>
<td>own</td>
<td>under</td>
<td>off</td>
<td>over</td>
</tr>
<tr>
<td>12. black</td>
<td>kind</td>
<td>blue</td>
<td>find</td>
<td>out</td>
<td>new</td>
<td>now</td>
<td>our</td>
</tr>
<tr>
<td>13. fast</td>
<td>first</td>
<td>are</td>
<td>eat</td>
<td>open</td>
<td>one</td>
<td>only</td>
<td>once</td>
</tr>
<tr>
<td>14. help</td>
<td>but</td>
<td>both</td>
<td>hold</td>
<td>try</td>
<td>myself</td>
<td>never</td>
<td>two</td>
</tr>
<tr>
<td>15. brown</td>
<td>grow</td>
<td>bring</td>
<td>green</td>
<td>us</td>
<td>up</td>
<td>upon</td>
<td>use</td>
</tr>
<tr>
<td>16. four</td>
<td>every</td>
<td>found</td>
<td>eight</td>
<td>with</td>
<td>white</td>
<td>was</td>
<td>wash</td>
</tr>
<tr>
<td>17. from</td>
<td>make</td>
<td>for</td>
<td>made</td>
<td>shall</td>
<td>she</td>
<td>sleep</td>
<td>small</td>
</tr>
<tr>
<td>18. around</td>
<td>funny</td>
<td>always</td>
<td>because</td>
<td>who</td>
<td>write</td>
<td>would</td>
<td>why</td>
</tr>
<tr>
<td>19. long</td>
<td>let</td>
<td>little</td>
<td>look</td>
<td>some</td>
<td>very</td>
<td>sing</td>
<td>upon</td>
</tr>
<tr>
<td>20. away</td>
<td>again</td>
<td>after</td>
<td>about</td>
<td>wish</td>
<td>well</td>
<td>work</td>
<td>will</td>
</tr>
<tr>
<td>21. cold</td>
<td>can</td>
<td>could</td>
<td>clean</td>
<td>ran</td>
<td>read</td>
<td>run</td>
<td>ride</td>
</tr>
<tr>
<td>22. tall</td>
<td>fall</td>
<td>five</td>
<td>fly</td>
<td>then</td>
<td>tell</td>
<td>their</td>
<td>them</td>
</tr>
<tr>
<td>23. before</td>
<td>best</td>
<td>better</td>
<td>been</td>
<td>see</td>
<td>saw</td>
<td>say</td>
<td>said</td>
</tr>
<tr>
<td>24. live</td>
<td>like</td>
<td>laugh</td>
<td>light</td>
<td>that</td>
<td>there</td>
<td>these</td>
<td>three</td>
</tr>
<tr>
<td>25. her</td>
<td>here</td>
<td>how</td>
<td>hurt</td>
<td>when</td>
<td>which</td>
<td>where</td>
<td>what</td>
</tr>
<tr>
<td>26. down</td>
<td>done</td>
<td>draw</td>
<td>don't</td>
<td>thank</td>
<td>those</td>
<td>this</td>
<td>think</td>
</tr>
<tr>
<td>27. give</td>
<td>get</td>
<td>gave</td>
<td>got</td>
<td>want</td>
<td>went</td>
<td>were</td>
<td>warm</td>
</tr>
<tr>
<td>28. came</td>
<td>carry</td>
<td>call</td>
<td>come</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ILLUSTRATION 2.** Dolch Basic 220 Sight Vocabulary.
before teaching him to read.

The purpose of all reading instruction is to give him a means of identifying the words he sees. The normal child sees many clues including word form, context, structural and phonetic analysis. Because of specific learning deficits the dyslexic has only a few clues available. He is much more limited in the means whereby he can identify words. It should be emphasized to the teacher or clinicians that the child's problem is not one of verbal comprehension, but is an inability to release or "unlock" meanings. If he were able to tranduce the visual symbol to its auditory equivalent he would have no difficulty understanding the material.

The approach to remediation which has been recommended as most successful with this type of dyslexia is similar to that described by Gillingham and Stillman (1965), referred to as an aphabetic or phonovisual approach. Basically, it involves teaching isolated sounds or phonograms and blending them into meaningful words. Since this approach requires a high degree of auditory integrity, the teacher must evaluate the child's ability to blend sounds. If he is unable to combine two or three sounds, this approach is not the most satisfactory; a whole word approach with some emphasis on taction and kinesthesis will be used.

Teaching Letter Sounds

Two or three consonants which are different both in appearance and sound (e.g., m, t, s) will be selected. Effort will be made to see that the child can differentiate one letter from another. Each
letter will be written on a flash card in lower case (small letters) with heavy, black ink. It is unnecessary to use large print since some children with visual disabilities cannot grasp the whole if letters are too big. Letters varying from two to three inches in height have been recommended as being most successful (Johnson 1968). The important factors are the clarity of the stimulus and the consistency of form. If letters are not well formed or if lines are irregular, the child cannot recognize them quickly. The type of print should be kept constant. The letter "a", for example, should not be written as if is in textbooks at one time and in lower case manuscript at another. Similarly, capital letters should not be introduced until the child has a degree of ability to read words in lower case print.

A step in teaching this will include holding one flash card and saying the sound of the letter. The letter (es for s) will not be introduced at this time. Many dyslexics are confused if given both the sound and name of the letter. The letter is pronounced as it is heard in a word so the child can relate the auditory and visual components of words.

When using this approach to reading, the teacher will be careful of the important fact that neither he (the teacher) nor child say consonants followed by a vowel sound. For example: the "p" sound should be said slightly and not pronounced "puh". If the vowel sound is accentuated it is nearly impossible for children to blend sound into words. A child who sounds "pat" as "puh-a-tuh" will have difficulty understanding what it means. Gillingham (1956) also stressed the importance of an easy production of consonant sounds to avoid
distortions in pronunciation.

Teach Words That Begin With Each Sound

Next, ask the child to think of words that begin with each sound. Generally, it is assumed that the visual dyslexics are able to think of several words; while those with auditory involvement need help with this type of task.

Teach Identification of Letter To Its Sound

After presenting three or four consonants, show the child the flash cards and ask him to identify the letter that goes with the sound you say, e.g., give me the "m". The purpose is to build a strong association between visual and auditory symbols and to help the student tranduce from one to another. When he hears a sound, he will know how it looks, and when he sees a letter, he will be able to recall the sound.

In some instances it is necessary to utilize taction and kinesothesis. If, after several trials, the child is unable to make the visual-auditory associations, he should be encouraged to trace over the letters while simultaneously saying the letter sound. This step will only be used when necessarily indicated, because some children are by the multisensory stimulation and do less well when bombarded from all modalities.

Word Sound Associations

Some educators stress the teaching of a sound in association with a key word e.g., "a" for "apple", whereas Anapolle (1971) reported that they found this technique confusing to many dyslexics.
After the dyslexic has learned three to four consonants, present one or two vowel sounds. Generally, the short "a" and the "i" or the long vowel combination "ee" are easiest to learn. Those who have both auditory and visual problems may need to have the long vowels presented first inasmuch as they are easier to differentiate auditorily. If, however, the dyslexic is good auditorily and can discriminate short vowels, these will be presented first since he has only a single visual unit to remember, whereas he must remember two-letter combinations when learning long vowel sounds e.g., ai, ay, ea, oa. The stress will be on the simplest auditory-visual correspondence possible, that is, on letter-representations.

Only one sound will be taught with each letter or letter combination; exceptions will be presented later. Hartlage (1972) pointed out that some reading specialists do not recommend teaching isolated sounds on the basis that children will have to unlearn some things they learned previously. Slow readers need a systematic approach to reading in the early periods of training and they need not be told all of the exceptions until they have established some ability to read, Johnson (1968).

The teacher of children with learning disabilities who presents all of the possible sounds of the single vowel "e" in the first few lessons will only confuse the children. Therefore, one sound is given for each letter.
Blend Sounds into Meaningful Words

1. As soon as -- child knows a few consonants and vowels, teach him to blend (critical point) these sounds into meaningful words.

2. He is not taught to -- blend sounds into nonsense syllables but to read the words in his spoken vocabulary (Language experience story -- select words from this source or his "normal" language.)

3. To avoid breakdowns in blending, it is -- helpful to begin with words composed of nasal consonants and vowels so there are no pauses between letter (man, am, man).

4. Occasionally a line is -- drawn under the words.

5. After sounds have been blended into -- a word, ask child to tell what it means and use in a sentence.

6. In past critics of -- strong phonics approach felt that comprehension might suffer -- if meaning included -- little need for concern.

7. Visual dyslexic has no -- difficulty comprehending what he reads -- his problem is reaching the meaning. He cannot go from the visual symbol to meaning -- therefore emphasis is on auditory-visual associations.

8. Teaching only meaningful words -- provides child with a means of monitoring what he reads.

9. When sounding out words he can -- use meaning as a checking device.
10. He does not accept -- his own inaccurate attempts because he realized that these do not constitute words (M-U-N, M-I-N).

11. When asked to -- practice on nonsense syllables, child has no idea whether he has produced them correctly (we either).

Present Word Families

1. Man -- Pan, fan, ran, (changing initial consonants).

2. Dyslexic cannot -- manipulate letters to form word families "in his mind" -- letters must be so that he can see how the words are alike -- then must through the physical operation of changing the initial or final consonants (anagrams or cutout letters can be used).

Introduce Two-Letter Consonant Blends

1. Child is now required to -- remember longer visual units (if necessary he can still read individual sounds).

2. He repeats the -- blend several times -- encouraged to think of both the sequence of the sounds and the letters.

3. He must -- relate a temporal sequence with a visual sequence and note the change in sounds when letters arranged in a different order (ts, st, sk, ks).

4. After consonant blends are -- learned many new words can be added to the reading vocabulary since they can be placed in either the final or initial position. (plan, stand, etc.) (grab, step, rust, stop, rest, bets, best)

5. Child is encouraged to -- think of the blend as a single unit but he may need to sound them out individually until
they are well established.

Introduce Long Vowel Combinations and Consonant Groupings That Are Represented by a Single Sound

1. Child is now told that -- he will see two or more letters but he will hear only one sound (ay, ee, oa, th, wh, ch, sh).
2. This frequently is a -- difficult step for the visual dyslexic whose memory span is short.
3. If he has achieved -- success in reading words which have a consistent sound for letter correspondence he usually can master it.
4. Very few rules are -- taught. Rules assume ability to remember, to generalize, and to apply principles.
5. Children with learning disabilities are -- inferior in this type of application. Some can memorize rules but not apply them; others, whose memories are deficient, are frustrated because they cannot remember the rules.
6. Therefore, the -- vowel or letter combination are presented with a simple statement -- e.g., "When you see these two letters together, they usually say______."  
7. Likewise, the terminology -- "Short vowels" or "Long vowels" is confusing -- some think of a letter which should look short or long. It also requires that they go through a translation process to determine the meaning of a short vowel or a long vowel.
8. Reading vocabulary taught in -- early stages -- highly phonetic.
9. Words selected on basis of -- consistency of sound to letter or auditory-visual correspondence so that the child has a systematic means of attacking them.

10. The words should include -- sounds or combinations of sounds that have been taught and should be part of the spoken language vocabulary.

11. A considerable amount of -- writing and spelling is used in this approach.

12. No child is asked to -- write that which he cannot read, but as soon as he has learned to sound out a few words, he is asked to write them.

13. When he sees the -- letter, he should know how it sounds, and when he hears it, he should know how it looks.

14. Throughout the training -- emphasis on helping visual dyslexic look for pronunciation units within words.

15. When he looks at a -- word, he should see letters or letter groupings which represent auditory patterns.

Simple Sentences, Paragraphs and Stories

1. As soon as the child can -- read several words, write simple sentences, paragraphs and stories for him to read.

2. Introduce nonphonetic words -- (I, the, you, they, etc.) through context.

3. If they can -- attack most of the words in a paragraph systematically, they can begin to grasp the silent vocabulary from the context.
4. The teacher can -- write stories about the child's experiences.

5. In writing stories the -- sentence structure should be similar to the child's spoken language so he has a means of anticipating the next word in the sentence; the dyslexic must rely on the "feel" of the next word in context.

6. He senses this only when -- the sentence structure is similar to his spoken language.

7. Stay away from -- reading books until dyslexic's reading vocabulary is large enough to assure success. Have him scan page first -- help with difficult words (meanings, too). Never exceed instructional level. You're attempting to prevent a break in the flow of his reading and thinking.

Improving Visual Deficits

1. An elemental phonic -- approach is used with the visual dyslexic in the initial stages of training.

2. However, every effort is -- made to build deficient visual functions so that eventually he can learn to read without going through auditory analytical processes.

3. Not all visual dyslexics will -- need every following procedure, some may only require assistance in noting sequence or directional detail. Teachers should be aware of the several types of disturbances and be prepared to deal with them.
Prepare Material Carefully

1. Because the problem is -- one of visual interpretation -- especially important that materials be selected and prepared with care. Neat -- boundaries well defined -- clear and well spaced.

2. Some children do not -- grasp the whole if materials are unusually large -- but those to be traced must be large enough so he can "feel" the variations in line and form.

Improve Scanning and Develop Orderly Inspection of Materials

1. When teaching -- visual discrimination and memory skills, it is necessary to develop improved habits of "looking".

2. Dyslexic frequently not -- consistent or orderly in their inspection of materials.

3. Those who are -- distractible skip around -- often fixate on details and do not notice the important features.

4. May be necessary to -- "Lead their looking"

   Encourage child to compare words and letters in a systematic fashion, e.g., walk and wall.

5. In work concerned with -- skill in matching or discrimination, make certain that children understand concepts of same and different.

6. When comprehension problems are -- noted, reduce language to the lowest possible level.

Balance Input Stimulation

1. Cannot assume that -- visual dyslexic will profit from doing
exercises designed to improve the visual skills of normal child.

2. The visual dyslexic does -- not make generalizations from casual visual inspection; he must have supplemental cues to help him see similarities and differences in letters and words.

3. The task of the teacher is -- to determine whether to provide stimulation from all modalities (VAKT), combining audition and vision, combining kinesthesis and vision, or prescribe periodic reduction of vision and emphasis on kinesthesis (blind tracing).

4. Teacher may need -- trial learning sessions (Mill's Learning Test).

General Form and Configuration

1. Beneficial to -- begin below the child's level of functioning (A feeling of success).

2. Therefore, initial pictures and pre-letter forms is recommended.

3. Match pictures to outline drawings -- heavy black outline around edge of picture.

4. Match objects to outlines -- (Xerox -- penny, paper clip, key, etc.) If child has difficulty -- child traces around object with his finger -- next have him select other objects and draw around them -- then ask him to remove object and observe shape he has drawn (Homework).
5. Draw designs or pre-letter forms -- on flash cards with heavy black ink, second set on onionskin paper -- have child superimpose figures and determine whether they are the same.

6. Prepare figures: squares, rectangles, triangles, etc. Leave unmounted. Give him (or he could select at random) two figures and ask him to tell you whether they look alike. If he cannot, have him close his eyes and feel if they are the same.

7. Prepare exercises -- first have child draw around the word where, observing that the "h" is taller than the other letters. Next have him write each letter in the boxes provided. At the bottom of the page he must relate the general outline of the word to its shape and write it in the proper box.

Perceiving Detail

1. Some children identify words on -- the basis of general configuration without perceiving detail. Misread such words as come and came because they do not see differences in the second letter, or they misread words with e and o because they fail to note the horizontal line in the "e".

2. Without discouraging their -- use of general configuration, exercises should be given to assist them in becoming aware of internal and external details in figures, letters, and words.

3. Prepare drawings -- draw the internal designs (the door of the house or the horizontal line of the circle) in a
different color so the child will observe it more closely.

4. Prepare figures -- for use on the flannelgraph. Cut two large outlines of figures (houses, faces, etc.). Place parts of the figures within the outline (doors, windows, eyes, nose, different shaped mouth, etc.) and have child tell whether they are the same, or have him arrange parts in the same way as the teacher's model. Cutout figures are preferable since pieces can be manipulated to illustrate similarities and differences. Some dyslexics unable to work with mental images -- must be shown how things look by moving a part from one place to another.

5. Use anagrams and cutout letters -- for those whose greatest problem is in reading. Arrange sequences of letters (come and came) -- ask child whether they are the same. Show him the differences by removing the o from one word and superimpose it on the a in the second word. Then ask him to select a letter that would make the two words exactly the same.

Orientation of Letters

1. Analysis of visual reading skills should -- give consideration to problems associated with orientation of letters on the page.

2. In English -- many symbols which are similar in general configuration but which differ in their position when printed. (The U and the N are merely inversions of the same general configuration.)
3. Similarly, the $R$, $D$, $P$, $O$ are the same shape but vary in rotation and orientation on the page.

4. Some dyslexics are able to make differentiations of general shape but have great difficulty with rotated figures. A disability of this type affects both reading and writing.

5. Money (1962) states that children are confronted with two different spatial problems, position and orientation.

6. But when he begins to read he learns there is only one acceptable position for each letter.

7. He cannot write the letter $U$ upside down because then he has written a symbol which sounds different and which changes the meaning of a word.

8. As with other discrimination skills the concept of position must be clear to the child.

9. He must be fully cognizant of what is expected; if he does not know that he is to give attention to the position of letters, he will not be successful.

10. Teacher can establish the importance of position by having him perform various activities, i.e., turning objects in various positions to demonstrate differences in appearance.

11. When working on pre-letter forms or letters-use unmounted figures so they can be rotated and manipulated.

12. Often the child cannot visualize or manipulate figures in his mind. Cutout figures which can be rotated or superimposed on others are useful in helping child perceive similarities and differences.
13. Select two or three toy cars -- place them in various positions on a table and ask child to tell whether they are all going the same way or ask him to select the car that is going in a different direction. Similar exercises can be done with pictures like those found in reading readiness books, but real objects are recommended first.

14. Prepare exercises as seen in Illustration 3 -- ask child to look closely at first figure in each row and find another that is the same.
ILLUSTRATION 3. Exercise For Visual Discrimination.
CHAPTER VII

AUDITORY DYSLEXIA

This is the second type of dyslexia. Jordan (1972) contends that auditory dyslexia is similar to tone deafness. The disability has nothing to do with hearing accuracy, as many dyslexics exhibit keen hearing ability outside the classroom. Auditory dyslexia refers to the inability to distinguish, separate or discrete elements of spoken language. Since the child does not perceive the components of the spoken language accurately, he is unable to associate speech sound with traditional spelling symbols or patterns. This makes it difficult for the student to write down his thought, according to the traditional standards of usage. Cravioto and Joaquin (1967) add that auditory dyslexics do not master because they do not comprehend, or perceive sound symbol relationship accurately.

Characteristics of Auditory Dyslexia

1. The inability to comprehend the variations of vowel sounds.
2. They cannot learn through phonics.
3. They have difficulty discriminating the long and the short sounds, and such close words like "big" and "beg" (Cravioto, 1967).
4. They confuse the words alike or different. Jordan, (1972) stated, "One of the remarks of auditory dyslexia, is the student's inability to tell whether words are the same or
different”.


6. They transpose consonant elements. Jordan, (1972) warns that dyslexics habitually break up consonant clusters, particularly beginning blends with “r” or “l” as the second letter, e.g., barn becomes bran and play becomes paly.

7. They tend to have confusion with rhyming elements.

8. Reinforcement while writing or reading, vocalized or whispers while reading silently or writing.

Principles for Correcting Auditory Dyslexia

Principle 1 -- Make immediate tangible application of Abstract Rules. Concrete illustrations are absolutely necessary in teaching the auditory dyslexic. In dealing with generalizations about phonics, regardless of the student's age, it is usually necessary to provide concrete associative experiences between sounds and their symbol counterparts. (Adams, 1969).

Principle 2 -- Provide multisensory experiences. The more senses are involved in learning experience, the more fully the experience is learned. This is a key to successful remediation of auditory dyslexia in the classroom. These children must begin with concrete letter form, matching them, arranging them in prescribed sequence, and spelling out simple words the teacher provides as models. Gradually, by using tangible forms as the tactile base pupils begin to associate specific
concepts with the symbols they can touch, feel, and manipulate. (Aquino, et al, 1969).

**Principle 3 -- Provide for Kinesthetic Reactions.** Riessman has expressed an important teaching concept in his "styles of learning" which should help the teacher. First, the majority of students learn best through Style One: Silent, passive, visual activities such as reading, viewing graphic materials. For them the quiet hush of a library is ideal. Style Two: for those who learn primarily through physical involvement. These students must be provided with plenty of physical activities. (Riessman, 1966)

**Principle 4 -- Build a Stock of Menmonic Cues.** Help children devise their own system for recalling specific learning patterns.

**Principle 5 -- Emphasize Consistent Spelling Pattern.** Jordan (1972) encourages the technique of drilling "word families". This, he said will introduce children to stable, similar configuration that stays within the rules.

**Principle 6 -- Provide Visual Cues.** Forcing a dyslexic child to work from memory, for example at a test, when his memory is erratic, is a questionable educational practice. Visual cues should be provided in the form of pictures, graphs, charts, colors, or textures.

Johnson and Myklebust (1968) pointed out, "Although reading is primarily a visual symbol system, many auditory intergrities are essential for its acquisition". These intergrities include ability to distinguish similarities and differences in sounds, to perceive a sound within a word, to syntehsize sounds into words, and to divide them into syllables. If a child cannot perform these intransensory
auditory functions, he will have difficulty learning to read. Although some who cannot normally learn to read have a history of speech and language disorders, these are not universal characteristics. The auditory capacities necessary for reading, especially those involved in relating a temporal sequence to a visual-spatial sequence, differ from those required for speaking. The latter concerns the relationship of a temporal to a motor sequence. Thus, there is not always a direct correlation between speech and reading problems.

The ways in which reading is affected in the auditory dyslexic vary from those of the visual dyslexic. Crosby (1969), Harris (1970), Clements (1970), Flax (1972), all agree that the visual dyslexic cannot learn whole words, but this may be the principle means whereby the auditory dyslexic learns them. He cannot synthesize sounds into words or analyze words into parts; consequently, he does not learn with an alphabetic or phonetic approach. The auditory dyslexic, unlike the child with visual disabilities, may be able to associate the word "milk" with the liquid inside the carton after seeing it several times; however, he does not relate visual components of words to their auditory equivalents. That is, he sees the similarities in word parts but does not relate them to their auditory counterparts so he does not make the generalizations required in learning to read.

Moreover, unlike the normal child he does not relate a part of a word to the whole and therefore must learn each new word as a unique entity. The average first-grader is taught the word "look" and retains both the auditory and the visual image. Later when he sees the word "book" he mentally compares it with the word "look", sees the
similarities in word endings, relates it to the sound, and changes the initial consonant so he can make a direct association between the symbol and the experience, or unless each new word is said for him. However, Gillingham and Stillman (1965) strongly recommend the training of dyslexics which involves association of visual, auditory and kinesthetic presentations. Gillespie and Johnson (1974) also recommend the Multisensory Approach to the leading of dyslexics.

Educational Procedures for Correcting Auditory Dyslexia

Children with auditory involvements respond best to a whole word or ideo-visual approach during the initial stages of reading instruction Johnson and Myklebust (1968). Because of these problems in auditory perception, memory, and integration, they are unable to handle the skills required for phonetic analysis. Some may be able to develop auditory skills only after having learned a sight vocabulary. As with visual dyslexic, debilited functions cannot be ignored. Even though able to learn by a global method, he cannot possibly retain visual images for every word, he must acquire a systematic means if attacking unfamiliar words.

The visual dyslexic begins by learning the sounds of letters and integrating them into whole words; the auditory dyslexic, in contrast, works from the whole to the part.

Develop Auditory-Visual Correspondence

Often it is necessary for the teacher to begin instruction by explaining to the children that things have names we can "hear" and "see" and that what we "say" can also be written. Some auditory
dyslexics, in particular, are unaware of the relationship between the spoken word and the printed symbol contended Johnson (1968). In attempting to achieve auditory-visual integration, it is essential that the child knows what constitutes a word. Johnson and Myklebust (1968) said in relation to auditory-visual integration:

Many do not know that a unit of letters divided by spaces represent a word, some think, for example, that each letter represents a word. Therefore, the teacher should illustrate that the spaces are the dividing lines between words we see or say.

Auditory-visual correspondence should be emphasized in order to learn the sounds of individual letters as well as of individual words.

Select a Meaningful Reading Vocabulary

Begin with words that are in the child's spoken vocabulary and which are different in both auditory and visual configuration. Words are selected which look and sound differently so that he can identify them more easily. First, nouns are presented and the child learns to match the printed symbols with an object. He should auditorily know the name of each object before teaching him to read. Ask him to say the name of each object and match with the printed symbol. Words should be written in manuscript form, not in cursive writing.

Relate Printed Symbol with Experience

Label various objects in room (door, window, home-made toys, pencils, crayons, etc.) to help him relate printed symbols with experience. Also point out words on cartons, boxes, cans etc. Bruininks (1970) recommends the use of as many sensories as possible. The child should "see", "hear", and say the word. Emphasis should
also be put on oral reading. The sequence of presentation is also critical. Make sure that the child knows the auditory name of the subject, then concentrate on matching the printed word with the object, and finally say the printed word.

**Introduce Simple Phrases and Sentences**

Teach parts of speech such as adjectives and prepositions, and develop short phrases and sentences (a red ball, a red hat, a red dress; a blue ball, blue dress; in the house, in the farm, in the bus, etc.) Sentence and action pictures are also useful.

**Use of Experience Stories**

The child tells of something he has done and the teacher prints what he says. He is then encouraged to read his own story.

Another method suggested by Blank (1968) is beginning the reading lesson with a direct experience, e.g., a trip to the post office, hospital or market place. When the class returns they talk about what they have seen and write a story. He warns about the difficulty of the words that must be included to make an interesting story.

**Improving Auditory Deficits**

While an idea-visual approach is used to develop a basic reading vocabulary, Freshour (1974) advises that simultaneous emphasis should be given to debilitated auditory functions. Without this two-pronged plan he warns the auditory dyslexic may not be able to read unfamiliar words. His usual memory, although good, is inadequate for remembering all the word encounters and he cannot always rely on context to
identify words. Therefore, some structural and phonetic analysis should be taught. According to different authors, Glass (1967), Crosby (1969), if auditory skills remain undeveloped the affect on spelling is even greater than on reading.

Auditory Discrimination

A few writers (Monroe, 1932, Myklebust, 1967, Robinson, 1968,) have stressed the importance of auditory functions in both spoken reading and spoken language. Robinson found that a functional auditory disturbance, such as inadequate auditory discrimination or insufficient auditory memory span for sounds, was present in about forty-six percent of her sample with reading disability. Wepman also reported a positive relationship between poor discrimination and poor reading. He also found that poor discrimination may be at the root of both speech and reading difficulties but often the imposition affects only reading and spelling.

The exact degree of auditory efficiency that is necessary for learning to read normally is unknown (Johnson 1968), but current research Gates (1955) observed that "other things being equal, the more familiar the child is with the sound characteristics of words and the more skillful he is in identifying and blending the sound units of the words, the better he is equipped to utilize the phonetic techniques." Blau (1969) used the term "listening skills" in relation to reading and concluded that:

When listening ability is low, reading ability tends to be low. When listening ability is high, reading ability is not predictable. When reading ability is low, listening ability is not predictable. When reading ability is high, listening
ability is to some extent predictable, likely to be high.

Match Sounds

Because many children have both discrimination and memory problems, they should not be required to remember a sound until they can compare two sounds presented simultaneously. Ask the child to say a consonant sound which can be sustained (m, s, sh, v). Tell him to continue emitting one sound of the sounds while you say others (r, m, l) and ask him to stop as soon as you say the one he is producing.

Encourage Reauditorization

After the child can distinguish similarities and words by matching them, make the task more complex by having him reauditorzie the sound (say it to himself). E.g., listen for the sound "m" but try to remember it without saying it aloud.

Utilize Visual and Kinesthetic Cues

While the child is producing a sound, have him concentrate on the position of the tongue and lips or watch himself in the mirror, a technique recommended by several writers, (Kambara, 1971; Forest, 1972). Four decades ago, Orton (1937) noted that differentiation of short vowels sounds is apt to be defective and that children with this difficulty learn by themselves to cultivate a visual aid, e.g., watching the lips of the speaker. Those who do not learn these strategies spontaneously need to be instructed to utilize cues from other sensory modities. If visual cues are effective, show the child pictures of persons saying various sounds such as "oh" or "n" and have him relate
the sound to the picture.

**Sequentialization**

Many dimensions of sequentializations are essential in teaching the dyslexic. When learning to use spoken language, a child holds a pattern of sounds within a word; a series of words within a sentence, and series of ideas within a story. Reading methodologists stress the importance of visual patterning inasmuch as the child must understand that letters in words remain in a particular order. (Johnson 1968) Auditory sequentialization in reading is equally important and is frequently found to be deficient in dyslexics.

They tend to omit or distort syllables in talking, reading, and spelling. The objective in remedial reading is to instill consciousness of both the number and the order of sounds within words.

**Develop Awareness and Recognition of Nonverbal Auditory Patterns**

Present two sets of sounds and ask the child to tell whether they are the same e.g.

**During English Reading Lesson:**

1. mat - bed - mat v.s. mat - bed - mat
2. mat - mat - bed v.s. bed - mat - mat

**Present in Vernacular Readings:**

1. ikpaz - usan - ikpas v.s. ikpan - usan - ikpaz
2. ikpaz - usan - usan v.s. usan - ikza - ikaz

Present a series of rhythmic taps or code-like patterns and ask him to listen to pairs of sounds and tell whether they are the same.
Imitate Sound and Rhythm Patterns

Place several noise makers in front of the child. Present patterns, as described above, and ask the child to imitate them. Also start a rhythmic pattern using drums, interrupt it, and see if the child can continue it. Watch for ability to hold the sequence.

Coordinate Auditory and Visual Patterns

Sometimes it is easier for a child to work with auditory and visual sequences simultaneously than with intrasensory auditory information.

He cannot retain an auditory sequence without seeing the visual pattern. The code-like patterns will be used, with explanation that a short sound will be represented by a dot and a long sound by a dash. The visual sequence (. - .), then he will be asked to listen to the auditory pattern and determine whether it goes with the ones he sees. If drum hits are used, visual sequence with spaces of varying lengths between dots will be presented both during the English and the Efik (Vernacular) lessons, e.g.

1. . . . , . . . .
2. , . . . . , . . .

Develop Awareness of the Number of Syllables Within Words

Suggest the repetition of words of varying lengths and asking the children to tap the number of syllables in each word. Here, the speed with which the words are said will be modified since the rate of auditory perception is critical; some dyslexics can differentiate the number of syllables only when the sounds are heard at the rate of one
per second. Then the rate will be gradually increased until the child can differentiate the number of syllables when the words are spoken at a normal rate.

**Emphasize the Rhythmic Sequence of Words**

The subjects will be asked to listen to multi-syllable words and relate the rhythm of the word to visual nonverbal patterns. For example, the word "potato" will be said with a slight stress on the medial syllable and the subjects will be shown a nonverbal visual pattern that corresponds with the accent and rhythm of the word (.-.). Later, the subjects will be asked to listen to words and then draw the rhythmic sequence they hear.

**Blending and Integration**

Ingram (1972), studied children who, because of synthesizing difficulties, could not construct words from their sound components. Dyslexics with this problem, they suspect, may know all of the letters sounds but not be able to read because they cannot combine them into words.

**Blend Syllable Into Words**

After the subject can differentiate the number of syllables within words, the teacher will have him put them together. The experimenter will repeat the words with only a slight pause between syllables, then gradually increase the length of the pause to foster reauditorization. Exercises of this type will sometimes be prepared on tape recorders. The teacher says the whole word so the subject knows what he is to say,
the individual syllables will be repeated and the subject(s) will be asked to put them together.

Combine Individual Sounds Into Words

Bond (1973) indicates that it is easier for children to blend syllables than individual sounds, but emphasis will be given to both skills.

First, the students will be made aware of the number of sounds by saying the sounds very slowly and making a mark on paper for each sound. After he can tell the number of sounds, the experimenter will repeat the words very slowly, sound by sound (m - a - n), and have the subjects blend them together.

Analysis and Synthesis

Gates (1968) observed that children hear words as total sound units and do not realize that the same sound occurs in many different words. In contrast, the auditory dyslexic does not make these differentiations and may not be able to do so until after he has learned a few sight vocabulary words, explained Johnson (1968). They also add that the auditory deficits in dyslexics need the simultaneous presentation of visual symbols in order to learn to hear similarities.

Utilize Visual Symbols to Improve Auditory Discrimination and Analysis

The teacher/experimenter will write two or three words the child has learned to read and that begin and end with the same sound. For English Lesson these words will be used:

sit  man
sand  pan
sun  can
For Vernacular (Efik) lesson words like the following will be used:

kan  ebet
kim  obot
kot  mbat

The students will be asked to distinguish the similarities as well as differences in the words.

**Use Concrete, Manipulate Materials**

Doren (1972) indicates that before children can execute the complex mental operation of analysis and synthesis, they must work directly with materials they can manipulate. Bond and Tinker (1973) adds that the single most important factor in working with dyslexics is to help him perform simultaneous auditory-visual analytical operations.

The experimenter will use cutout letters or anagrams and ask a student to spell a word he knows, such as "pan". He will be asked to say the word, then remove the initial letter and replace it with a different letter (f, m, etc.).

The same procedure will be used during the Vernacular (Efik) reading lessons.

**Encourage Reauditorization and Mental Manipulation of Sounds**

Myklebust (1968) observed that the normal child works with spoken words and pictures before the printed symbol, but the auditory dyslexic may not be able to hear sounds within words or select pictures beginning with the same sound until he first learns the printed word. Hence, the sequence of presentation in remediation will take the following sequence:
1. The teacher will prepare exercises which provide visual clues to aid auditory discrimination. Write groups of rhyming words and have the subjects underline the ones that have the same ending, then instruct him to say the words so he can hear as well as see the similarities.

2. The teacher will prepare other exercises like the one shown in Illustration 4 and ask the subject to write a word in the blank space that rhymes with the underlined word. The teacher will provide a multiple choice so that the subject can see the differences in the word endings. He will gradually eliminate the printed symbols as the subjects improve and replace it with picture to encourage reauditorization without seeing the visual equivalent.

Eno put a bat on the mat chair.

Eno put a cup in the ____. 

ILLUSTRATION 4. Example for Teaching Auditory Dyslexics to Perceive Rhyme.

3. The teacher will attempt to improve and reinforce short vowel discrimination by utilizing pictures and visual letters. The students will be presented with a series of pictures and asked to draw lines between the pictures and the vowel sound they hear in the word.

English Lesson: Pictures

<table>
<thead>
<tr>
<th>Pictures</th>
<th>Printed Letters</th>
</tr>
</thead>
<tbody>
<tr>
<td>pin</td>
<td>i</td>
</tr>
<tr>
<td>pen</td>
<td>e</td>
</tr>
<tr>
<td>pan</td>
<td>a</td>
</tr>
</tbody>
</table>
The same procedure will be used for the Vernacular (Efik) lesson.

4. The visual symbol (the printed word) will be reduced but auditory stimulation will be provided until the student can internally hear the components of words. For example, he will be given the words in Illustration 5 and asked to underline the one the teacher says.

UNDERLINE THE WORD THAT YOU HEAR

1. tap  top  tip
2. ten  tin  tan
3. tun  tin  tan
4. hot  hit  hat
5. hem  him  ham
6. pot  pit  pet
7. bad  bed  bud
8. big  bed  bag

ILLUSTRATION 5. Exercise to Improve Auditory Discrimination of Short Vowels

The same procedure for the Vernacular (Efik) lesson will be used.

5. The teacher will continue to reduce the printed symbol but provide the spoken word to assist the child in making the proper discriminations. He will prepare pictures like those in Illustration 4 and ask the students to mark the one that rhymes with "me" or "sock" (block, and clock; bee and key).
Stress on Tactual Learning

Bond and Tinker (1973) recommends that dyslexics who have both auditory and visual disabilities often profit from being taught through the tactual modality. Procedures similar to those recommended by Fernald (1971) will be used. Essentially, this will be a tracing-sounding-writing method. Fernald stresses the necessity of using large script print, the child tracing over the word with forefinger, and saying each part of the word as he traces it.

Reading Comprehension

As Zintz (1974) remarked, the purpose of reading is to acquire meaning from the printed word. In this study the emphasis has been on factors which interfere with the Nigerian child's ability to reach meaning. I do not minimize comprehension, but any teaching experience and certain research studies suggest that the major problem of the dyslexic is not in "understanding" what he reads but in "transducing," in visual-audio processing. Johnson and Myklebust (1968) noted that dyslexics fail to comprehend because they cannot convert the visual symbol into the previously acquired auditory symbol.

Many children with mixed problems need training both in word attack and in meaning. The following skills are basic and essential to reading.

1. Ability to associate meaning with the graphic symbol.
2. Ability to understand words in context and to select the meaning that fits the context.
3. Ability to read in thought units.
4. Ability to understand units of increasing size: the phrase, clause, sentence, paragraph, and whole selection.
5. Ability to acquire word meaning.
6. Ability to select and understand the main idea.
7. Ability to follow directions.
8. Ability to draw inferences.
9. Ability to understand the writers organization.
10. Ability to evaluate what is read: to recognize literary devices and to identify the tone, mood, and intent of the writer.
11. Ability to retain ideas.
12. Ability to apply ideas and to integrate them with one's past experience.

It is also considered that a child's comprehension can be improved by using techniques such as surveying main headings, reading for principle ideas, reading in thought units, and forming the habit of grouping supporting details about main ideas in a thought-outline form.

The instructional strategy will be diagrammed as shown in Illustration 6. As can be seen, a learner will proceed through the skill hierarchy in a sequential fashion, from the simplest to the most complex. For each skill, he must take a pretest. If he passes the pretest he needs no instruction in that skill, and he moves to the next skill and takes the pretest. If he fails a pretest, he will be taught that skill; he is provided with instruction, and his performance is then tested again. If he passes this posttest, he moves to the next skill. If he does not, he receives instruction in the skill until he
demonstrates his mastery of the skill on a posttest.

ILLUSTRATION 6. A Model for Improving Reading Skill.
CHAPTER VIII

SUMMARY AND CONCLUSION

Some guidelines towards the diagnosis and treatment of visual, auditory and handwriting disorders has been formulated by the writer to help the specialist teacher and particularly the classroom teacher in helping improve the standard of reading among dyslexic children. Some sympathetic teachers organize individualized instruction for retarded readers, but a typical Nigerian classroom teacher groups and instructs all children using the same teaching methodology. Even when individualized, drills for the retarded readers are often not diagnosed or organized. This has much to do with shortage of specialists in the field of Special Education as a whole and Remedial Reading in particular.

With the advent of the recent economic boom in Nigeria, the new sophisticated lifestyle, the multiple language, and the "educational revolution," there is need for the young citizens to be able to read to function well in society like this. In view of this emergency need, the writer has proposed a diagnostic and a remedial program which should help bring the dyslexic children to instructional level and curtail some school drop out arising from frustration.

The length of the remedial session should be so planned that the child will not become fatigued or inattentive. It should take the normal reading period.
Remedial instruction for the dyslexic child should be well organized in order that skills and abilities may be developed smoothly with no overdue burden for the child, with little chance for emphasis, and with no omissions of essential learning. The teacher should not only maintain an orderly sequence of skill development, but also should make the steps involved meaningful to the child.

The remedial reading program must be encouraging to the child since much of his trouble arose because he had lost confidence in his ability to learn. The successes should be emphasized; the teacher should be optimistic; and his progress should be demonstrated to him.

Materials must be suitable to the child's reading abilities and instructional needs; they should be suitable in level of difficulty and type of content; they should be as nearly as possible appropriate in level of interest; and they should look "mature" to the child.

However, the success of this remedial program rests to a large part on the shoulders of parents and teachers alike. Closing with the words of Codwell (1970) who said:

If today's educators are to play their respective roles in changing the learning patterns of the intellectually different, educators must dedicate themselves to the concept that behavior, regardless of a person's age or experience, is influenced by the way in which environments help satisfy drive for love, social identity, recognition, belonging participation and security. Any program of formal education that is not directed towards such commitments, no matter how sophisticated, inventive, or innovative, is doomed to failure.

Martin (1972) gave a final hint, "One should not be leery of any treatment program promising a cure. The answer to helping these children will undoubtedly lie in educational research and practice."
CHAPTER IX

RECOMMENDATIONS

Basic Principles of Remedial Instruction for the Dyslexics

In this study, the two basic forms of specific dyslexic -- namely visual dyslexia and auditory dyslexia, have been discussed. The remedial techniques that could help towards the correction of each of the two aspects have also been recommended. Even with all these, there still is a puzzling question as to what type of instruction will work best for the Nigerian dyslexic children.

Since their learning problems are many and varied and not a unitary disorder calling for a uniform program of treatment, the remedial or classroom teacher must find the modality that seems to work best with each child. In relation to the variety of reading difficulty and the complexity of reading, Bond and Tinker (1973) have the following to say:

The complexity of the reading act, the nature of reading difficulties, and the many characteristics of child growth and development that have a bearing on reading success make it clear that no two cases of disabilities are exactly alike. Four detailed aspects of this general fact have also been shown; no two cases of reading disability result from the same set of circumstances, no two have exactly the same reading patterns, no two cases have the same instructional needs and no two can be treated in exactly the same manner. Every child is different in many ways from every other child. Because his difficulties in reading stem from a wide variety of causes, the diagnosis of his case involves a study of the child to find out his instructional needs and everything else that will influence a remedial program for him.
The remedial teacher will study the diagnostic findings and then arrange a learning situation that will enable the child to grow henceforth in an accelerated rate. The remedial teacher will appraise materials and methods in order to select the combination that will best suit a given disabled reader. Nonetheless, there are some basic principles underlying remedial instruction and my suggestion is that these basic principles be utilized by both remedial teachers and classroom teachers working with dyslexic children (or other children) irrespective of their specific nature of dyslexia.

Among the more important general categories of basic principles underlying treatment of disabled reading are the following points which will later be discussed individually: (Bond and Tinker, 1973; Zintz, 1974; Durkin, 1973).

1. Treatment must be based on an understanding of the child's instructional needs.
2. Remedial instruction must be highly individualized.
3. Remedial instruction must be organized instruction.
4. The reading process must be made meaningful to the learner.
5. Remedial procedure must be as nearly like the reading as is possible.
6. Consideration of the child's personal worth is necessary.
7. The reading program must be encouraging to the child.
8. Materials and exercises must be suitable to the child's reading ability and instructional needs.
9. Sound teaching procedures must be employed.
10. The remedial teacher, parents and the school personnel involved with the child must be understanding, patient and sympathetic.

11. A carefully designed follow-up program is necessary.

**Treatment Must be Based on the Child's Instructional Needs**

The remedial program must be designed to emphasize those phases of reading growth that will enable the disabled reader to grow rapidly and solidly. The program designed for each child must be based on a diagnosis of his instructional needs. Every remedial program must be made on the basis of a thorough appraisal of the child's instructional needs or deficits, his strengths and weaknesses, and the environment in which correction is to take place.

**Clearly Formulate the Remedial Program**

After the diagnosis has shown the type of dyslexia and the instructional requirement needed, the remedial program should be carefully planned. This requires writing what is to be done for each case. This is necessary because there might be difficulties in remembering each child, his needs, the level of his attainments, and his limitations with the exactness that is necessary for an effective corrective program. The written case report should indicate the nature of dyslexia and the nature of exercises recommended to correct the difficulty. It should identify the level of material that is to be used. Any indication of faulty personal adjustment or unfortunate environmental conditions should be included. (Bond and Tinker, 1973) The child's hobbies, interests and attitudes should become part of
the written record. Most important, it should include a description of the remedial program recommended and the type of exercise and material to be used.

**Modify the Remedial Program as Needed**

The original plan of remedial work is not to be considered a permanent scheme of instruction. It will need to be modified from time to time as the child progresses in reading. Adams (1969), Bannatyne (1968), Durrell (1956) all agree that remedial reading program and technique should be flexible. Inasmuch as the child's instructional needs change, it would be unwise to set him into a remedial program that resembles the production line in a factory.

In some instances, the original program for remediation does not result in improvement. When this occurs, a reevaluation of the diagnosis and perhaps additions to the diagnosis are in order. A somewhat altered approach to instruction may be necessary to bring instruction.

**Use a Variety of Remedial Techniques**

An effective remedial program will use a variety of teaching techniques and instructional procedures (Bond and Tinker 1973, Bond and Wagner 1955, Otto and McMenemy 1966). It is also the belief of those authors that remedial teachers should be eclectic in their use of teaching materials and techniques, but also warn that in attempting to use a variety of teaching methods and techniques, care must be taken that the teaching approach does not confuse the child.
Remedial Program Should be Highly Individualized

The dyslexic child is one who has failed to respond to reading programs that are designed to meet the instructional needs and characteristics of the majority of children. As Otto (1966) remarked, the onset of reading disability is usually gradual. The child who becomes a disabled reader gets into a moderate degree of difficulty, misses some instruction, or in some way, as Bond and Tinker (1973) reason, fall behind in his class work and get confused. Through his difficulties in reading or coping with his peer, the dyslexic child may possibly develop an attitude of dislike and antagonism towards reading and his sense of defeat mounts higher and higher.

The remedial program should be in keeping with the child's characteristics. The expected outcome of instruction and the method used in achieving these outcomes will need to conform to the child's characteristics.

Remedial Instruction Must be Organized Instruction

Reading instruction for the dyslexic child must be organized. The skills and abilities should grow gradually as the child meets more complex application of each. Bond and Tinker (1973) contend:

The child who is in confusion in reading requires even more systematic instruction than the child who is learning without difficulty. The remedial teacher must either be completely aware of what sequence of learning is desirable in all the areas of reading growth or she must use the basic reading material in which the orderly development of skills has been carefully planned out. The remedial teacher cannot afford to use haphazard approaches. She must follow the sequence and explain carefully each new step in it. Therefore, the most successful remedial teachers find it expedient to use basic reading programs,
modified to fit the child's specific needs whatever they may be.

The Reading Process Must be Made Meaningful to the Learner

One of the reasons why the dyslexic child is in difficulty is because he does not understand the process involved in reading due to his specific disability. The remedial teacher has the responsibility not only for maintaining orderly sequences of skill development but also for making the steps involved meaningful to the child.

Nigerian students should be made to use materials they are familiar with and objects and things within their environment. Use of foreign texts should be eliminated as much as possible. In some cases, remediation should be given in the native language of the students.

Remedial Process Should be as Nearly Like the Reading Act as Possible

While there are a few mechanical aids available in Nigerian schools for remedial instruction, most reading growth, observed Bond and Tinker (1973), will come from training which is closely allied to the reading act itself. Harris (1970) advises that many of the goals of remedial instruction can only be achieved in the reading act itself. As soon as the dyslexic child is trained to overcome his specific problems, he should be directed to select and read materials which will be of interest to him.

For this reason, the authors suggest that remedial training in reading be as closely allied with purposeful reading as is possible. Nonetheless, remedial instruction for the dyslexic children must focus upon specific skills and abilities, and the balances among them, which
the diagnosis of a child reading disability has shown to need improvement. For the Nigerian child, I would suggest that such corrective training especially needs to be done in exercises where understanding the meaning of the content read is demanded, as well as the skills and abilities involved. Such training may establish permanent learnings which transfer readily into the child's total reading activities.

Consideration of the Child's Personal Worth is Necessary

The disabled reader frequently feels insecure and defeated in school. The remedial teacher should then focus his attention at making the child "see success" in his work. Bond and Tinker (1973) comment on this issue:

Any remedial program designed to treat reading disabilities must make the child feel his successes from the start. It must also take into account the child's sense of personal worth. The child who is in serious trouble in reading is often antagonistic towards reading and thoroughly dislikes it. He would like to wake up some morning knowing how to read, but believes there is something wrong with him that precludes his learning to read. Frequently he thinks that he is mentally incapable of learning or that he has some other defect. Often he has a poor estimate of himself as a person.

The remedial teacher should consider the fact that the dyslexic child builds a barrier between himself and the reading instruction tie to his failure to read as his peers. One of the first tasks should be to build the child's confidence in himself and for the teacher. Resistance to the remedial program will be magnified if the child is classified in any unfortunate way. In my case, I will instruct the remedial teacher(s) to be very restricted in their use of the label "dyslexia". The term will be confined mainly to discussions within the staff.

The Remedial Program Must be Encouraging to the Child

Since most dyslexic children are usually discouraged about their failure to learn to read, they frequently think they cannot learn. This
lack of confidence to learn is detrimental to possible reading growth.

To encourage the remedial reader, Bond and Tinker (1973) suggest the following principles:

1. The teacher must be optimistic. They contend that a teacher who would help a child overcome a reading disability should be a "buoyant, energetic person". "She must make the child sense her confidence in him", demanded Bond and Tinker (1973).

2. The dyslexic child needs group as well as individualized work. The disabled reader needs to share experiences with other children just as much as, or even more, than, the child whose growth in reading is normal.

3. The child's success should be emphasized. In order that the remedial program may be encouraging to the child, his success rather than his failures or mistakes should be emphasized. Zintz (1974), and Bond and Tinker (1973) complain that teachers have the tendency to point out errors to children rather than to make them feel that for the most part they are doing particularly well. The authors also consider that the child whose errors are continually focusses upon may become overwhelmed by a sense of defeat. Zintz (1974) advises that we, start where the child is and build security and confidence. There is need for giving all children security in reading by working at easy levels and progressing slowly in the beginning to establish confidence. Starting where he is means starting at a sufficiently easy level so that he can feel success and learn that reading is
a pleasurable experience.

4. A positive approach should be used in pointing out errors. Bond and Tinker (1973) agree that emphasis upon success does not mean that errors are to be altogether overlooked. The fault of the dyslexic child must be brought to his attention. Faulty habits which limit his progress must also be pointed out.

**Growth in Reading Should be Demonstrated to the Child.**

The disabled reader needs to have his growth demonstrated to him. The method for demonstrating the child's progress will depend upon the nature of his problem. If, for example, the child is trying to develop a sight vocabulary, he could be asked to make a picture dictionary of the words he is trying to learn. As the dictionary becomes larger, the child would recognize that he had increased his sight vocabulary. The child who is working on accuracy of comprehension could develop a bar chart (Illustration 7) in which he would indicate his level of percent of accuracy on successive periods. This also could serve as a check on the teacher's teaching techniques and materials if a child fails to gain over a period of one week or two.
Remedial Programs Should Not be Substituted For Enjoyable Activities

The remedial teacher(s) will organize the periods of instruction that children will not be required to come for training at a time that competes with other activities of great importance to them. For example, it is a usual practice in some Nigerian schools to have children stay in during break or free-play period. The dyslexic children in this remedial program will meet only during the reading period.
The remedial programs will also be pleasant and free from undue pressures. Bond and Tinker (1973) contend that an effective remedial program should be one that is satisfying to the child, makes him feel that he is getting along well, and keeps at a minimum any anxiety which he feels about his reading progress.

Material and Exercises Must be Suitable to the Child's Reading Ability and Instructional Needs

The selection of appropriate material for remedial work is considered by several authors (Amble, 1966; Horn 1970; Shedd, 1970), as one of the most important aspects of remedial reading. Some teachers feel that the most important elements in the problem is that material should deal with a subject in which the child is interested. Others feel that the level of difficulty of the material is often of even greater importance. Still other remedial teachers I talked to believe that having the type of material that is compatible with the nature of the remedial instruction is of paramount importance. With all these views, I have been able to formulate the following conclusion in selecting material:

1. The material must be suitable in level of difficulty.
2. The material must be suitable in type.
3. The material must be at the appropriate level of interest and format.
4. The material must be abundant.

Teacher's Role in Implementing the Remedial Program

Lastly, the teacher's role in implementing and following up the
remedial program is of vital importance. Even though the dyslexic child is met for remediation by the clinician or remedial teacher in a special setting, the classroom teacher has a duty to follow-up the remediation.

That the regular teacher must assume the responsibility for identifying the student with reading difficulties is emphasized by Miles and Tinker (1952):

If it were possible in day-to-day teaching to provide for each child's progress in terms of his capabilities, few occasions for remedial work would arise. The teacher should strive for early detection and maximum prevention, but give a loud call for help when the techniques at his command do not produce satisfactory results.

Broom et al (1951) states:

...The vast majority of retarded readers can be given the attention and the remedial teaching that they need with satisfactory results in the normal classroom teaching-learning situation. The teacher who knows how to diagnose the difficulties of the great majority of disabled readers and who knows how to teach reading and what to teach in reading can and will help retarded readers grow in interest and proficiency in reading.

The role of the school administrators and counselors in grouping and planning the program for remediation cannot be over emphasized.

Parents Role in Remediation

Parents acceptance plays a major role in the correction and remediation of the dyslexic child. Bannatyne (1968) remarks:

Evidence from clinical case histories substantiates the belief that many children could have achieved their potential if only their parents had accepted their limitations and sought expert help at an early age. ...When parents are made a part of the interdisciplinary team, and are provided with the counselling they often need, they can become among the more important factors working in behalf of the child's academic improvement.
It is possible that the dyslexic child is often the most neglected in the educational system today. Too often he is left to "outgrow" his handicap. He is found struggling with failure in a regular class because he cannot fit into the current special classes.

A Clearly Designed Follow-Up

When the child has made progress sufficiently to permit his release from the concentrated remedial program, he should gradually be put into situations where he must rely to an increasing extent on his own resources. All such children should be carefully followed-up by the classroom teacher. For many, continued reinforcements by means of further remedial help are important. In a study of the long-term effects of remedial reading instruction, Balow (1965) found that continued remedial training, amounting to long-term treatment rather than a short-course program, is desirable. He concludes that concentrated remedial work gives remarkable result, but that "severe reading disability is probably best considered a relatively chronic illness needing long-term treatment than the short-course typically organized in current programs."

Many children with less severe dyslexic problems may be able to make the adjustment into regular classroom work. Even these children may become discouraged again if their work does not go well after they finish remedial instruction. Any indication of loss of interest or confusions should get immediate attention by the classroom teacher during the adjustment period.

Although the remedial work for each disabled reader must be different in certain respects, there are some common elements among the
corrective programs. The remedial program must be designed to emphasize the child's instructional needs as shown by the diagnosis, and therefore there can be no universal approach in all cases. The remedial program for each reading case must be carefully planned and what will be done should be written down. Where necessary, the writer recommends the pupils' participation in planning their own studies. It will be necessary to modify the program from time to time in order to keep abreast with the child's changing instructional needs. Even though the program is planned to give emphasis on overcoming specific disabilities, a variety of techniques should be used.

The remedial program should be highly individualized and they must be designed to be in keeping with the child's instructional needs and characteristics. Remedial instruction should not drill upon specific skills in isolation, but should provide new experiences in whatever skills are needed in connection with the child's level of reading.

The writer estimates the problem of a disabled reader in Nigeria to be a complex one which calls for many heads working together for the common good of the child. An old African poem says, "A big beef calls for a big fire" so there is need for the parents, the classroom teacher, the physician, the psychologist, the remedial teacher, the principal, school administrator and others involved with the well-being of the child to work together with a single goal of remediating the dyslexic child.

The curriculum in use in schools, as well as the materials, should be formulated to suit the Nigerian child and his environment.
More teachers should be trained to work with the retarded readers, for "The harvest indeed is great but the labourers are few."
BIBLIOGRAPHY


Advisory Committee on Dyslexia. Elementary English 46:679-80; May 1969.


Alexander, Duane "Reading Disability and the Problem of Direction Sense." Reading Teacher 20:404-09; February 1967.


Awolowo, O. The Path to Economic Freedom in Developing Countries. Lagos University Press, 1968.


Balow, B., "Young Adults Ten to Fifteen Years After Severe Reading Disability." Elementary School Journal. 66:44-48, October 1965.


Boder, Elena. "Developmental Dyslexia: A Diagnostic Screening Procedure Based on Three Characteristic Patterns of Reading and Spelling; Preliminary Report." Claremont Reading Conference Yearbook 32:173-87; 1968.


Glass, Gene V.,"The Role of Neurological Organization in Reading Performance." Reading Research Quarterly. 3(1) 50-51, 1967.


McLeod, John "Some Psycholinguistic Correlates of Reading Disability in Young Children." Reading Research Quarterly 2(3):5-31; 1967.

Meier, J. H., "Program for Children with Reading Disorders; Rocky Mountain Educational Laboratory." Reading Teacher 21:712-16; May 1968.


Shearer, M. "Reading Problems in Children." Journal of Pediatric Ophthalmology 5:5-10; February 1968.


Small, M. W., "Just What is Dyslexia?" Instructor 77:54-57; August 1967.


Taylor, R. G., Jr., and others "Correlative Study Between Reading, Laterality, Mobility and Binocularity." Exceptional Children 35:627-31; April 1969.


Tomkins, C. "Reportor at Large; Research in Specific Dyslexia at Pediatric Language Disorder Clinic." Babies Hospital. New Yorker 39:127-28; September 1963.
Trauttmansdorff, A. "They do not See as We See; Dyslexia Among Children." *Times Educational Supplement* 2823-2106; June 1969.


