

1-1-1969

Study of the effectiveness of specific remediation in the amelioration of psycholinguistic disabilities in visual-motor and auditory-vocal memory sequencing

M. Emeria Brundage

Follow this and additional works at: <https://digitalcommons.stritch.edu/etd>



Part of the [Education Commons](#)

Recommended Citation

Brundage, M. Emeria, "Study of the effectiveness of specific remediation in the amelioration of psycholinguistic disabilities in visual-motor and auditory-vocal memory sequencing" (1969). *Master's Theses, Capstones, and Projects*. 991.
<https://digitalcommons.stritch.edu/etd/991>

This Research Paper is brought to you for free and open access by Stritch Shares. It has been accepted for inclusion in Master's Theses, Capstones, and Projects by an authorized administrator of Stritch Shares. For more information, please contact smbagley@stritch.edu.

A STUDY OF THE EFFECTIVENESS OF SPECIFIC REMEDIATION
IN THE AMELIORATION OF PSYCHOLINGUISTIC DISABILITIES
IN VISUAL-MOTOR AND AUDITORY-VOCAL MEMORY SEQUENCING

by

Sister M. Emeria Brundage, I.H.M.

AN INTERNSHIP PAPER
SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS IN EDUCATION (SPECIAL EDUCATION)
AT THE CARDINAL STRITCH COLLEGE

Milwaukee, Wisconsin

1969

This research paper has been
approved for the Graduate Committee
of the Cardinal Stritch College by

Sr. M. Evodia O.S.F.
(Adviser)

Date October 7, 1968

The Cardinal Stritch College

Milwaukee, Wisconsin

A Study of the Effectiveness of Specific Remediation
in the Amelioration of Psycholinguistic Disabilities
in Visual-Motor and Auditory-Vocal Memory Sequencing

Submitted as part of a Graduate Internship,
and in partial fulfillment of the
requirements for a Master's Degree
in Education in the Program for the
Mentally Handicapped

September, 1968

Sister M. Emeria Brundage, I.H.M.

TABLE OF CONTENTS

	Page
PURPOSE.....	1
INTRODUCTION.....	3
THE STUDY.....	10
RESULTS OF THE STUDY.....	14
SUMMARY.....	25
BIBLIOGRAPHY.....	28

PURPOSE

In the past, little or no consideration in our teacher training programs was given to the area of diagnosis-remediation for many of the latent problems existing in the language development of children. With the advent of The Illinois Test of Psycholinguistic Abilities (McCarthy and Kirk, 1961) new emphasis was focused on language--its assets and liabilities. It is now possible to evaluate language on two levels: representational and automatic-sequential. These two levels are further sub-divided into nine specific channels: auditory decoding, visual decoding, auditory-vocal association, visual-motor association, vocal encoding, motor encoding, auditory-vocal automatic, auditory-vocal sequential, and visual-motor sequential. Performance on each of these sub-tests is diagnosed separately, and the results are graphed on individual profiles. In this way it is possible to observe at a glance the points of indication as to specific abilities and/or disabilities, the end result being remediation if so warranted.

The purpose of this paper is to report on a study that attempted to remediate children with known learning disabilities at the automatic-sequential level and more specifically in the channels of visual-motor and auditory-vocal memory sequencing.

The major goal of the study was to undertake remediation in these definite low-score areas as charted on four individual profiles of The Illinois Test of Psycholinguistic Abilities (ITPA) in an effort to

ameliorate the deficits. These weak areas were approached by the presentation of skills in the stronger ability channels. Thus, if a child was experiencing a learning deficit in the visual-motor memory sequencing area, materials and information were presented that consistently involved his strong auditory-vocal memory sequencing receptors as indicated on his ITPA profile, while simultaneously structuring the visual-motor channel, and hopefully, improving related areas also.

INTRODUCTION

The times we are living in are uniquely troubled times. Civilization is undergoing many changes. The great minds of yesterday who contributed so vastly to the shaping of renowned world cultures are now riding on the turbulent waters of today. The collapse of social and political structures that deny man the realization of his destiny, the elimination of wars, and the reconstruction of a new, harmonious and peaceful society is the hope of every man. However, social reform will not be effected simply through theory, or through a few who would seek to organize. Rather, it will emerge slowly, constantly, realistically as does a butterfly from a cocoon; as do stimulating changes in the midst of an old system.

History has pointed out to man that he has become a victim of the very institutions he has set out to form and govern. Why can he not become their master? Is it because he is not educated to the task? Has education come to mean the simple passing on of knowledge from one generation to another? Hopefully its goals are not so limited. If in the act of imparting knowledge to the child, we establish him in his rightful place as a created and creative personality, encourage and assist him to develop his innate powers, and prepare his soul to achieve true greatness, then we can be said to educate him. Perhaps too, we will then have prepared the man to shape his own destiny, to

govern civilization, and to build this new, harmonious and peaceful society which is his hope. Let us understand at the outset that this process begins early in life:

We must therefore turn to the child as to the lighthouse of our future life. Anyone wishing to succeed in some aim for the good of society, must necessarily turn to the child not only to save him from deviation, but also to learn from him the practical secret of our own life. From this point of view the figure of the child presents itself as potent and mysterious, an object of meditation; for the child who holds in himself the secret of our nature becomes our Master.¹

We look upon the child as a human being, growing, changing, subject to the laws of nature, interacting with his environment, and following his own unique patterns of function or dysfunction. The writer is aware of the tremendous task of studying the child in toto. Yet, in so doing, specific developmental areas of this whole child must be isolated for the purpose of clarity in evaluating them and their relationship to the total organism. In assessing language, we are concerned not so much with speech, as with communication--psycholinguistic development.

To communicate, we need language symbols--vocal and motor. For these symbols to be meaningful they must communicate experiences. Because human beings are, for the most part, visually oriented, a vast amount of visual experiences are needed before the child can become truly conscious of the world around him. To these experiences he attaches meaning, labels them, and finally communicates by means of language.

¹Maria Montessori, The Secret of Childhood (Calcutta, India: Orient Longmans Private Ltd.), p. 239.

Through experience and communication the more complex process of thought development emerges.

The structure of functional language follows a pattern that has been imitated or learned incidentally by the child from his environment, provided the sense modalities of sight, hearing, touch, taste and smell receive and respond to external stimuli. Beyond this, there is need for mature neurological development that includes intact cortical functions capable of interpreting sensory presentations, assimilating their meaning, associating these with experiential knowledge and learning, to produce a judgment and a response both motorically and symbolically. On the part of the child there is needed also, the proper emotional stability, motivation and environment conducive to interaction.

Not only does the child utilize environmental stimuli to nourish his own growth, but growth must adapt and modify itself in accordance with the particular environment within which it takes place. Of the many possible languages a child can learn, he learns the one to which he is exposed. The same holds true for his concepts and percepts which are, in part at least, determined by the social and physical milieu in which he grows up.....¹

Children who show meager, vague or total lack of response to the spoken language usually evidence varying degrees of dysfunction in their own language and speech development. A review of the literature shows that very little has been done to assist the regular classroom teacher in her task of rescuing the child with specific learning disabilities

¹David Elkind, "Piaget and Montessori," Harvard Educational Review, XXXVII, No. 4 (1967), p. 535.

who may or may not be mentally handicapped. Much time and effort have gone into the structuring of various instruments that measure verbal and/or performance capacity in a global way. Test summaries verify and emphasize certain behavioral characteristics. Other types of etiological studies can be narrowed down to mere speculation. Evaluations of these types have resulted in a dead end--telling us very little other than the mere fact of an existing problem, which a teacher already suspected when she referred a specific child for screening.

Since it is in the realm of psychology, pathology and medicine to diagnose, and in the field of education to remediate, a dichotomy exists. Special Educators, for the most part, have not concerned themselves with communication and language disorders underlying many academic disorders and/or disabilities. Who, then, is the child with a learning disability?

While the medical specialist is concerned with etiology of a possible dysfunction in children, the special educator is concerned primarily with the assessment of behavioral symptoms and with special methods of ameliorating the disability. In education, a child who has the intellectual capacity to learn, to speak, to read, or to develop language, but who does not learn after adequate instruction, is classified as having a learning disability. Specific classifications are made for spelling disabilities, writing disabilities, receptive and expressive language disabilities, and arithmetic disabilities. Since in many cases it is difficult to determine whether or not there is cerebral dysfunction except by inference from behavior, the special educator is interested chiefly in the behavioral deficits rather than in the location or extent of brain damage.¹

¹Samuel A. Kirk, The Diagnosis and Remediation of Psycholinguistic Abilities (Institute for Research on Exceptional Children: University of Illinois, 1966), p. 7.

To say, then, that a child has a learning disability is to imply a discrepancy between the is and the ought--what he is now, and what he ought to be--the gap between these two being the problem area. But, precisely, in what does this gap consist?

Bateman (1965)¹ offers a schematic representation of the diagnostic-remedial procedures:

1. Comparison of Capacity and Achievement
2. Behavioral Analysis
3. Correlates of Disability
4. Hypothesis
5. Specific Remediation
6. Broadening Remedial Application

The Illinois Test of Psycholinguistic Abilities, at the level of diagnosis, is probably the most helpful survey instrument of specific language behavior. As was discussed earlier in this paper, it evaluates language in nine specific channels and pinpoints assets and liabilities. For this test to be effective, it is imperative that the teacher be aware of the degree of non-performance that constitutes a learning disability for a particular child, whether or not this deficit can be remediated, and what procedures best meet the needs of this individual child. The following educators offer many possibilities in diversified areas: Fernald² contributed significantly by her visual-kinesthetic system of

¹Barbara Bateman, "Learning Disabilities--An Overview," Journal of School Psychology, III, No. 3 (1965) p. 8.

²Grace Fernald, Remedial Techniques in Basic School Subjects (New York: McGraw-Hill, Inc., 1943), pp. 35-41.

remedial reading; Wepman's¹ efforts were spent in developing auditory discrimination techniques; Kephart² advocates a program in sensory-receptive, assimilative and motor-expressive skills; Frostig³ focused mostly on visual perception, with a little attention in the area of motor skills; Delacato's⁴ approach is in the area of neurological organization by means of sensory-motor development, beginning at the medulla level and continuing through hierarchical ascendancy until development at cortical level is reached; in 1967, Englemann⁵ sought to meet the needs of the culturally disadvantaged pre-school and kindergarten youngster with his design for evaluation and placement, as well as remedial techniques for concept development; Valett's⁶ inventory is a differential diagnosis. The child suspected of

¹J. M. Wepman, "Auditory Discrimination, Speech and Reading," Elementary School Journal, LX (1960), pp. 325-33.

²Newell Kephart, The Slow Learner in the Classroom (Columbus, Ohio: Charles E. Merrill Books Inc., p. 13.

³Marianne Frostig, D. W. Lefever, and J. Whittlesey, Developmental Test of Visual Perception (Palo Alto, California: Consulting Psychologists Press, 1961), p. 5.

⁴Carl H. Delacato, The Diagnosis and Treatment of Speech and Reading Problems (Springfield, Ill.: Charles C. Thomas Pub., 1963), pp. 47-58.

⁵Siegfried Englemann, The Basic Concept Inventory (Chicago, Ill.: Follett Publishing Co., 1967), pp. 5-6.

⁶Robert E. Valett, The Remediation of Learning Disabilities: A Handbook of Psychoeducational Resource Programs (Palo Alto, California: Fearon Publishing Co., 1968), Major Learning Areas 1-6 (pages unnumbered).

having a learning disability is diagnosed in the following areas: gross motor development, sensory-motor development, perceptual-motor skills, language development, conceptual skills, and social skills. The specific feature that makes it so widely acclaimed is the fact that it is an instrument with a "built-in" program for remediation.

The above studies suggest areas of disability often found as the basis of underachievement. In order to relate specific remediation with the disabilities diagnosed on an individual profile, it is necessary to know the processes that can be remediated, those that are related, and the types of remediation concomitant with low-score areas and the M.A. of the child, together with his language age. This is known as differential remediation as it relates to differential diagnosis. Furthermore, it is emphasized here that diagnostic-remedial evaluation is an ongoing process. As the child's life experiences grow and his human development expands, so the methods of meeting his psychological and intellectual needs must grow and expand.

THE STUDY

This study took place at The St. Coletta School for Exceptional Children in Jefferson, Wisconsin. It included four subjects between the chronological ages of 9-5 and 10-11. According to their initial evaluation on a Stanford-Binet Psychological Examination they were classified as educable mentally retarded whose I.Q. scores ranged from 52 to 54, while their M.A.'s fell between 3-6 and 5-3. They exhibited no gross motor or sensory disturbance. These particular Ss were chosen because of similarities among their C.A., M.A., and I.Q. scores, as well as their educational placement.

After an ITPA pre-test had been administered, specific learning disabilities together with notable discrepancies among channels of psycholinguistic development were readily observable. This method of differential diagnosis clearly defined the areas of visual-motor and auditory-vocal memory sequencing as the primary areas of remediation.

Over a period of approximately six-weeks, each S received instruction on a one-to-one basis for thirty minutes per day in his particular area of disability. Techniques included the presentation of materials at the highest level of success in each S's strong area of development in order to stimulate a response that would be encoded in the weaker, remedial areas. Thus, if a child showed notable lag in visual-motor memory sequencing, yet his auditory-vocal skills were

strong, activities were geared to require a visual memory response through an auditory receptor.

Individual instruction was begun after an initial period of time was spent in class teaching, during which apparent satisfactory communication had been established. Motivation was important for the Ss, and probably the best form of this was personal relationship on a one-to-one basis, with the tutor's individual attention and her immediate rewards for work well done.

Techniques of Remediation

In order for remediation to be effective it was necessary to consider the M.A. of each child. Therefore, activities were geared to include the range from 3-6 to 5-3. Noted earlier in this paper was the fact that use was made of strong areas of development to aid in remediating the weaker ones. In view of this fact, then, both auditory and visual materials were presented with variations to accommodate the opposite sense modality. As a result, the following materials¹ were found helpful with appropriate modifications:

1. Peabody Language Development Kit
2. The Developmental Program in Visual Perception
3. Montessori Didactic Materials for the Education of the Senses
4. Listening Aids Through the Grades
5. Hegge, Kirk, and Kirk Remedial Reading Drills
6. Sequence Cards
7. Sounds I Can Hear
8. Show 'N Tell
9. Bead Stringing

¹These materials are listed in the Materials Bibliography

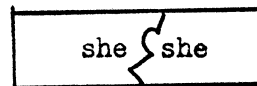
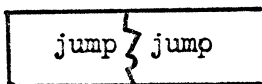
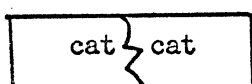
10. Teacher-constructed materials:

- a. picture pairing (fine-line toy drawings)
- b. following red, blue, and orange dot sequence
- c. matching miscellaneous picture sequence that followed a one-minute exposure
- d. repeating sequentially, numbers, letters, pronouns, animal names, articles of clothing, color names, atmospheric conditions, after auditory exposure
- e. clapping in rhythmic and numerical sequence
- f. singing songs that require repetition of names and objects
- g. matching pairs of bell tones

Keeping in mind the purpose of the project, the goals for improvement of language development, and the avoidance of any routinized or possibly useless repetition, the Ss were advanced to a higher level of remediation involving more formal and direct readiness skills. This was not originally planned, but seemed to develop as a result of the foregoing experiences.

Reading Readiness

Sight words were printed on 2-x-7-inch cards of soft, green tagboard. These words were chosen from the S's environment and experiential vocabulary. Each word was printed twice on each card, and separated by an irregular line:



Nouns were considered first, verbs followed, and pronouns were introduced last. As each word was learned, the Ss were instructed to cut the card at the jagged line, thus forming puzzle-like parts.

An increase in the number of sight words resulted in the increased number of puzzle-like parts.

When the Ss were able to identify and assemble their words sufficiently well, short sentences were dictated for construction in order to fulfill the dual purpose of involving auditory and visual sense modalities simultaneously. Later, experience charts were designed utilizing this identical vocabulary as a further re-inforcement. The Ss continued to use their own individual cards to copy sentences from the charts. These were read, and transition to chart reading followed.

RESULTS OF THE STUDY

At the completion of the allotted time for the study, the Ss seemed to have reached some level of language development beyond that which was indicated on their initial ITPA. As far as Reading Readiness level is concerned, it was as much a surprise to the Ss as it was an occasion of joy. The future of this area is not within the scope of this paper. Results of the ITPA post-test, together with the initial findings, as well as profiles in graphic form, appear for each S on subsequent pages.

The first S to be discussed is Tommy. Results of his ITPA post-test show a 6 mo. gain in general language development as compared to a 3-2 gain in the channel undergoing remediation--visual-motor memory sequencing. In the related area of visual-motor association, an increase of 1-0 was observable also. In visual decoding, however, a loss of 5 mo. did not appear to be consistent with either the initial score on the 1967 pre-test, nor the gain of 3-2 in visual-motor memory sequencing on the post-test. Except where raw scores remained the same, increases in language age among other subtests were between 9 mo. and 1-10.

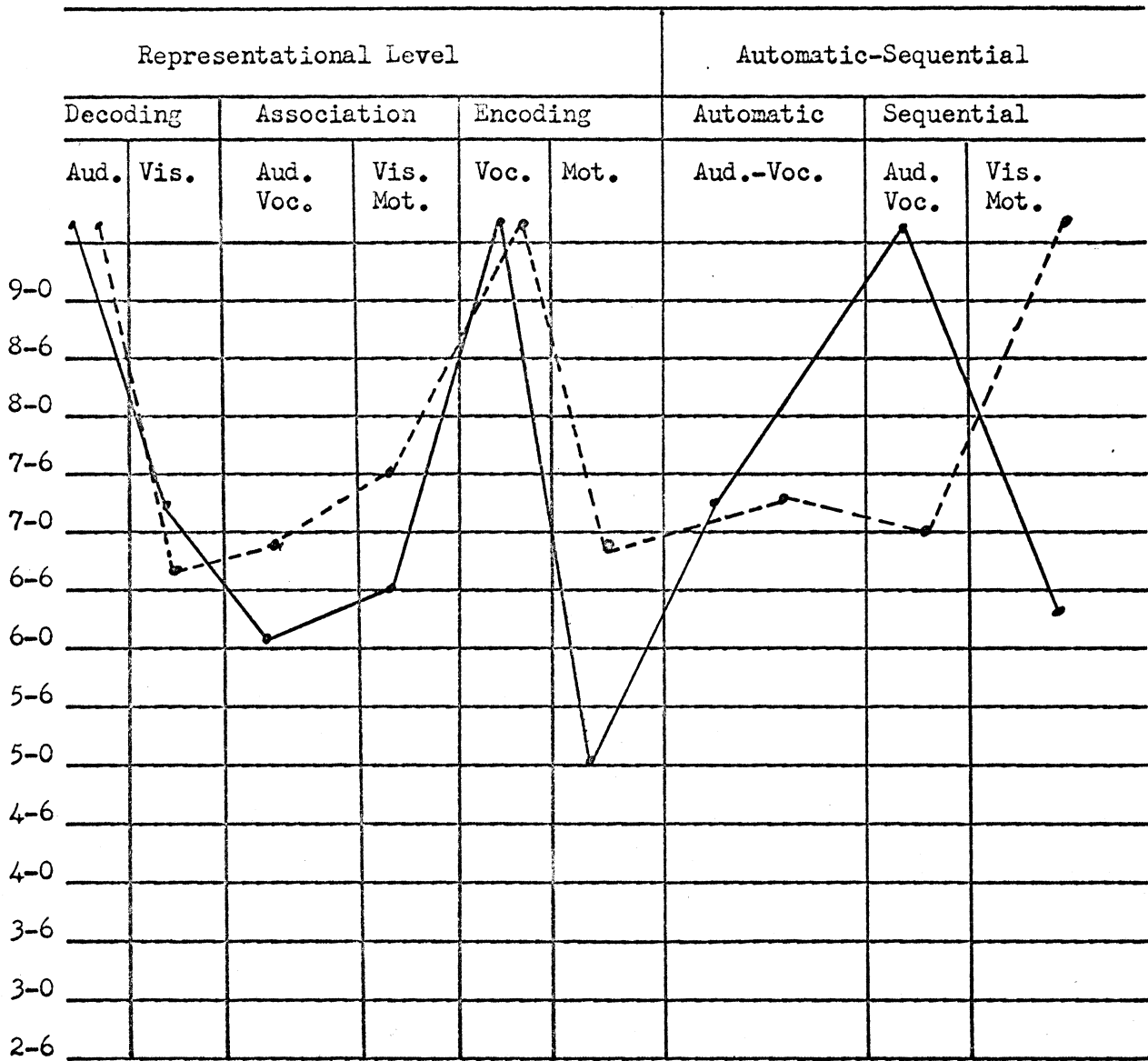
In the area designated as one of strength, auditory-vocal memory sequencing, a language-age score Above Norms was charted on Tommy's initial profile. On his post-test, however, a loss of 2-6 was noted. Because information was geared to remediate poor visual-motor performance,

the auditory-vocal channel was only semi-active, and therefore, conducive to a lowered performance level. As facility in visual-motor performance increased, a depression in auditory skills became apparent.

TABLE 1

Subject: <u>Tommy</u>	<u>C.A. 11-10</u>	<u>M.A. 3-6</u>	<u>I.Q. 53</u>	
Point of Remedial Emphasis: Visual-Motor Memory Sequencing				
ITPA SUMMARY	1967		1968	
	Raw Scores	Language Age	Raw Scores	Language Age
Auditory Decoding	30	AN	30	AN
Visual Decoding	15	7-3	14	6-8
Auditory-Vocal Association	17	6-1	19	6-10
Visual-Motor Association	16	6-6	19	7-6
Vocal Encoding	34	AN	33	AN
Motor Encoding	12	5-0	16	6-10
Auditory-Vocal Automatic	15	7-3	15	7-3
Auditory-Vocal Sequencing	28	AN	24	7-0
Visual-Motor Sequencing	15	6-4	21	AN
Total	182	7-9	191	8-5
Gain:				
Visual-Motor Memory Sequencing	3-2			
Total Language Development	6 mo.			

Profile 1 (Tommy)



ITPA SUMMARY:
 1967 _____
 1968 -----

TABLE 2

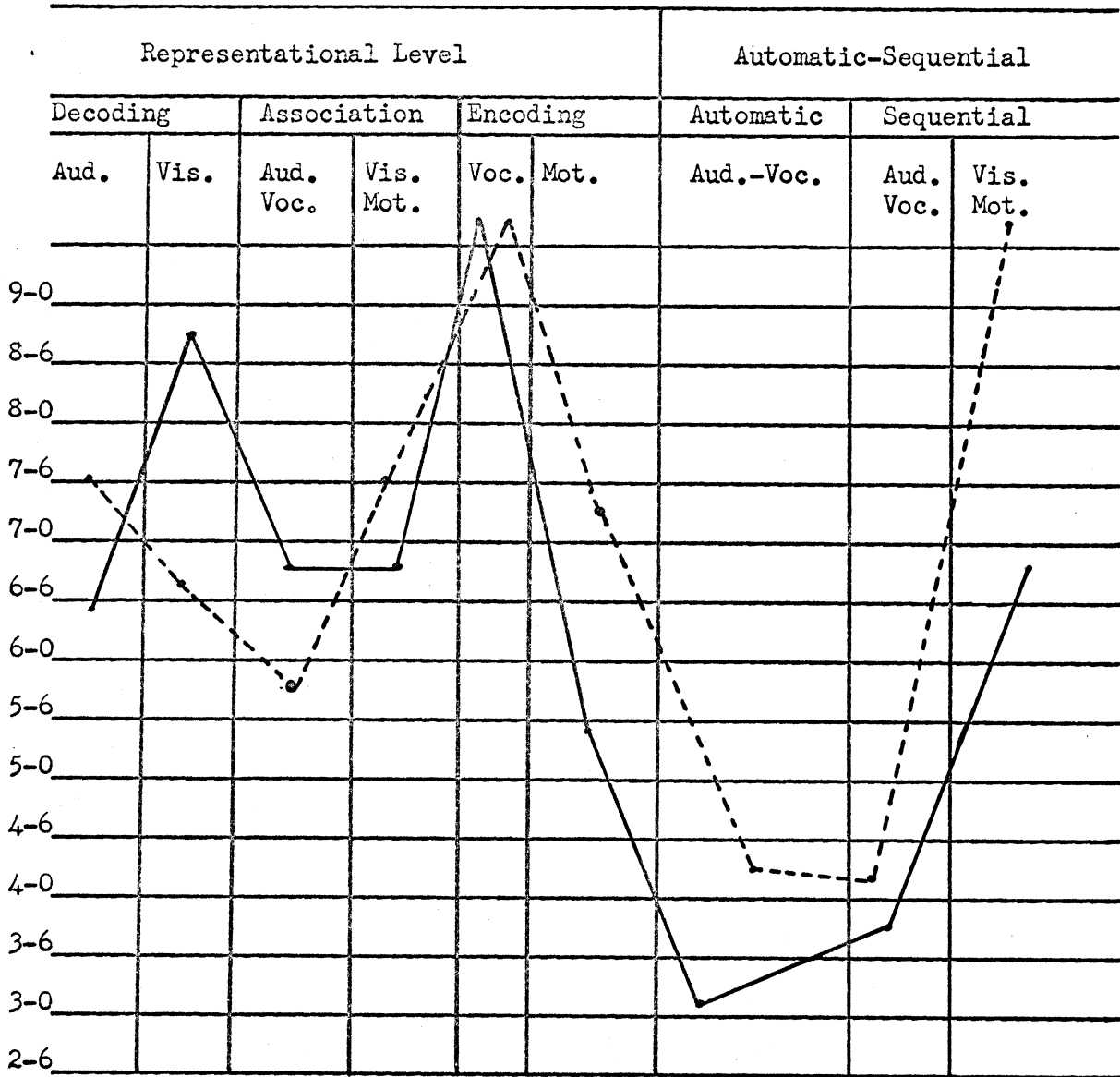
ITPA SUMMARY		1967		1968	
	Raw Scores	Language Age	Raw Scores	Language Age	
Auditory Decoding	23	6-5	26	7-6	
Visual Decoding	17	8-9	14	6-8	
Auditory-Vocal Association	19	6-10	16	5-10	
Visual-Motor Association	17	6-10	19	7-6	
Vocal Encoding	24	AN	26	AN	
Motor Encoding	13	5-5	17	7-4	
Auditory-Vocal Automatic	4	3-1	7	4-3	
Auditory-Vocal Sequencing	12	3-9	14	4-2	
Visual-Motor Sequencing	16	6-9	23	AN	
Total	145	6-1	158	6-7	

Gain:		
Auditory-Vocal Memory Sequencing	3 mo.	
Total Language Development	6 mo.	

Remediation in auditory-vocal memory sequencing shows a 3 mo. total language gain. In the related auditory channels, however, there is a 1-1 gain in auditory decoding, and a 1-2 gain in auditory-vocal automatic. A loss of 1-0 is recorded in auditory vocal association. Stevie's profile was unique, in that the visual channels, designated as strengths, and through which remediation was approached in order to correct the auditory deficit, show increases greater than any scored in

the auditory areas, with the exception of visual decoding which records a loss of 2-0. However, visual-motor sequencing evidences a 2-7 gain. Hand in hand with gains in the visual channels, was the increase of 1-9 in motor encoding. Perhaps there is greater potential in the modality of vision than in auditory skills. It appears to have taken this pattern in Stevie's profile.

Profile 2 (Stevie)



ITPA SUMMARY:
 1967 _____
 1968 - - - - -

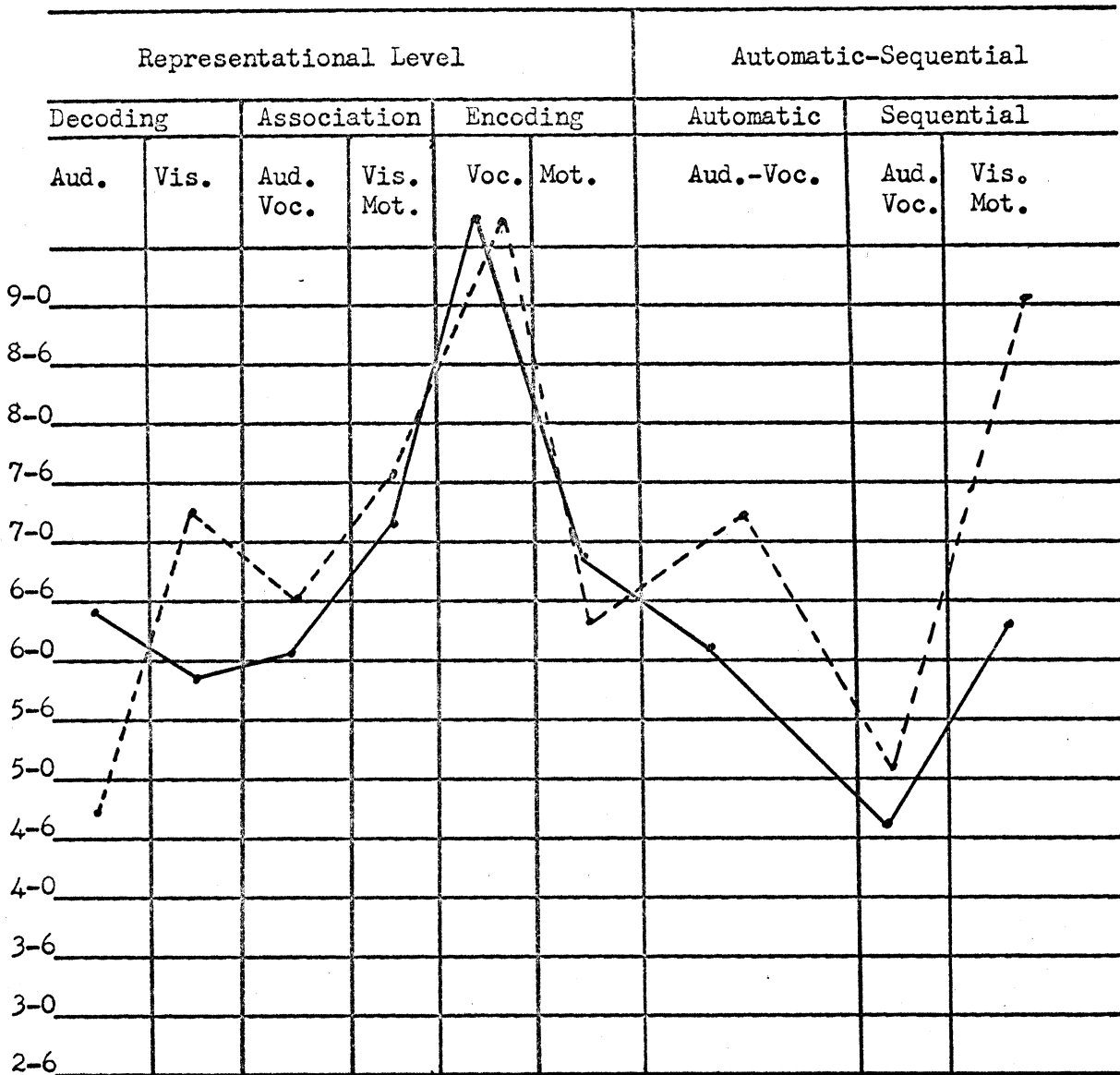
TABLE 3

Subject: <u>Alan</u>	<u>C.A. 11-8</u>	<u>M.A. 5-3</u>	<u>I.Q. 52</u>
Point of Remedial Emphasis: Auditory-Vocal Memory Sequencing			
ITPA SUMMARY	1967		1968
	Raw Scores	Language Age	Raw Scores Language Age
Auditory Decoding	23	6-5	16 4-9
Visual Decoding	12	5-10	15 7-3
Auditory-Vocal Association	17	6-1	18 6-6
Visual-Motor Association	18	7-2	19 7-6
Vocal Encoding	27	AN	27 AN
Motor Encoding	16	6-10	15 6-4
Auditory-Vocal Automatic	12	6-1	15 7-3
Auditory-Vocal Sequencing	16	4-7	18 5-1
Visual-Motor Sequencing	15	6-4	20 9-0
Total	156	6-6	163 6-10
Gain:			
Auditory-Vocal Sequencing	4 mo.		
Total Language Development	4 mo.		

According to his initial ITPA (1967), Alan's primary deficits were found in the auditory channels of psycholinguistic abilities. His strengths were located in the visual areas. For this reason, remediation was pursued through visual-motor activities and carried out by means of auditory commands. This proved frustrating for Alan on many occasions because of an inability to attend aurally. His 1968 profile charts the following results: a significant loss of 1-0 was scored in auditory decoding,

while increases were attained in other auditory areas--auditory-vocal association, 5 mo.; auditory-vocal automatic, 1-2; auditory-vocal sequential, 4 mo. Apparently, Alan is still relying heavily on visual skills as evidenced by the fact that in spite of a consistent auditory approach, gains were made in visual decoding (1-3), visual-motor association (4 mo.) and visual-motor sequential (2-6).

Profile 3 (Alan)



ITPA SUMMARY:
 1967 _____
 1968 - - - - -

TABLE 4

ITPA SUMMARY		1967		1968	
	Raw Scores	Language Age	Raw Scores	Language Age	
Auditory Decoding	28	8-10	24	6-9	
Visual Decoding	16	7-10	15	7-3	
Auditory-Vocal Association	17	6-1	20	7-3	
Visual-Motor Association	19	7-6	18	7-2	
Vocal Encoding	20	7-9	30	AN	
Motor Encoding	19	8-8	19	8-8	
Auditory-Vocal Automatic	12	6-1	16	7-7	
Auditory-Vocal Sequencing	26	7-10	33	AN	
Visual-Motor Sequencing	8	4-4	10	4-10	
Total	166	7-0	185	8-0	

Gain:

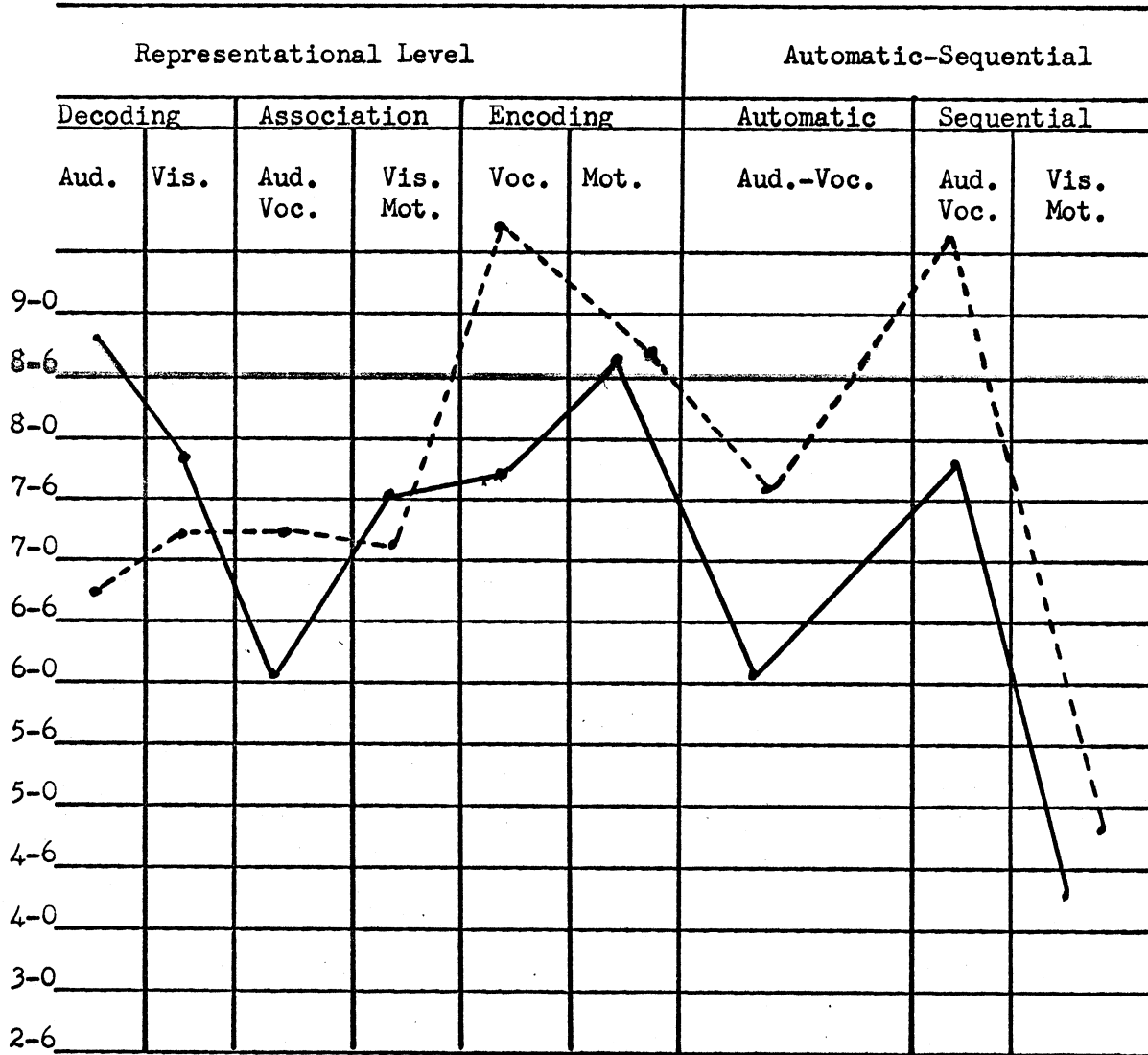
Visual-Motor Sequencing	6 mo.
Total Language Development	12 mo.

In an effort to ameliorate weak visual-motor memory sequencing, Luke's remedial activities included skills in visual perception which were inaugurated through the strong auditory channel. Results include a total language development of 12 mo. Remediation raised the area of visual-motor memory sequencing 6 mo. beyond the initial language age.

In the related auditory areas, decoding registered a loss of 2-1, while auditory-vocal association, auditory-vocal automatic, and auditory-

vocal sequencing increased 1-2, 1-6, and 1-6 respectively. Allied with the gains in the auditory channels was vocal encoding with an increased language age of 1-7.

Profile 4 (Luke)



ITPA SUMMARY:
 1967 _____
 1968 - - - - -

SUMMARY

A diagnostic evaluation of language at the representational and automatic-sequential levels was carried out on four Ss utilizing the ITPA as the criterion of measurement. Raw scores were converted to Language-Age norms and these were charted on four ITPA profiles. It was observed that two Ss obtained low scores in visual-motor memory sequencing, while the other two indicated deficits in auditory-vocal memory sequencing.

Previous to this, a Stanford-Binet Psychological had been administered to determine the M.A. and I.Q. correlates. They were as follows:

<u>Subject</u>	<u>C.A.</u>	<u>M.A.</u>	<u>I.Q.</u>	<u>Language Age</u>
Tommy	8-8	3-6	53	7-9
Stevie	11-1	3-6	53	6-1
Alan	10-11	5-3	52	6-6
Luke	10-4	4-10	54	7-0

These Ss were chosen because of similarities in language deficits, educational placement, as well as the above-cited characteristics. Also, an effort was made to pair Ss who would have deficits in opposite sense modalities, in order to study the effect of remediation that would be approached by way of each S's opposite, and stronger ability-channel.

After an initial period of class teaching, during which communication was established between Ss and tutor, a six-week remedial period was begun. Tutoring was conducted on a one-to-one basis for thirty minutes per day. Remedial skills were of two types: auditory-vocal and visual-motor, presented on an automatic-sequential level, and utilizing each S's strong sense modality to approach his language disability. Rewards, by means of gummed stars placed in each calendar block for the six-week period, were part of the re-inforcement.

At the end of the study, the Ss seemed to have reached the attempted level of formal readiness for reading. A sight vocabulary was developed comprising environmental and experiential words--nouns, verbs, and pronouns. From this beginning there was advancement to a transitional experience-chart reading which was done with a certain amount of success. The future of this readiness period is beyond the scope of this paper; however, in a follow-up discussion between the writer and the teacher of these Ss, it was noted that they were proudly displaying their latest discovery--their experience charts--and were anxious to share their findings among the other "less able" members of the class.

From the post-test which was forthcoming at the termination of the study, gains were observable in total language development for all four Ss, and were within the range from 4 mo. to 1 yr. There were no losses in total language development.

<u>Subject</u>	<u>C.A.</u>	<u>M.A.</u>	<u>I.Q.</u>	<u>Language Age</u>
Tommy	9-8	3-6	53	8-5
Stevie	12-0	3-6	53	6-7
Alan	11-10	5-3	52	6-10
Luke	11-1	4-10	54	8-0

Individually, some variations are noted in the channels of specific remediation. There was no instance where gains were observable for all nine channels of psycholinguistic abilities. In the areas of remediation, increases were scored by all four Ss. Alan's profile was the only one indicating increases in language age for all related channels in the visual area. The remediated, auditory areas however, show both gains and losses.

The other three Ss show gains and losses in visual and auditory channels for areas remediated, as well as those of strength. It is felt that remediation should not be considered specifically for low-score areas. Rather, remedial skills should include those designed to improve channels of disability as part of a structured program geared toward improvement of related areas, while working towards the extension of the entire field of language development. Further, it would seem that definite periods of time should be allotted to the remediation of the disability, while incorporating skills for this same disability into additional periods that accommodate strong parallel channels, in a final effort to arrive at the level where the tutor is able to expand her scope to include the Ss broader problem area.

BIBLIOGRAPHY

- Barsch, R. H. A Perceptual-Motor Curriculum. Seattle, Wash.: Special Child Publications, 1967.
- Bateman, Barbara. "Learning Disabilities--Yesterday, Today, and Tomorrow." Educating Children With Learning Disabilities. Edited by E. C. Frierson, and W. B. Barbe. New York: Appleton-Century-Crofts, 1967.
- Bereiter, C., and Englemann, S. Teaching Disadvantaged Children in the Preschool. Englewood Cliffs, N. J.: Prentice Hall, 1966.
- Cruickshank, W. M., ed. The Teacher of Brain-Injured Children. Syracuse, N. Y.: Syracuse University Press, 1966.
- Delacato, C., et al. "Neurological Organization: The Basis for Learning." Learning Disorders, Vol. II. Edited by J. Hellmuth. Seattle, Wash.: Special Child Publications, 1966.
- _____. The Diagnosis and Treatment of Speech and Reading Problems. Springfield, Ill.: Charles C. Thomas, 1966.
- Englemann, S., and Englemann, T. Give Your Child A Superior Mind. New York: Simon and Schuster, 1966.
- Frierson, E. C., and Barbe, W. B., eds. Educating Children With Learning Disabilities. New York: Appleton-Century-Crofts, 1967.
- Hirsch de, Katrina. "Plasticity and Language Disabilities." Learning Disorders, Vol. I. Edited by J. Hellmuth. Seattle, Wash.: Special Child Publications, 1965.
- _____. "Tests Designed to Discover Potential Reading Difficulties at the Six-Year-Old Level." Educating Children With Learning Disabilities. Edited by E. C. Frierson, and W. B. Barbe. New York: Appleton-Century-Crofts, 1967.
- Kephart, N. The Slow Learner in the Classroom. Columbus, Ohio: Charles E. Merrill Books, 1960.

- Kirk, S. A., and McCarthy, J. J. "The Illinois Test of Psycholinguistic Abilities--An Approach to Differential Diagnosis." Educating Children With Learning Disabilities. Edited by E. C. Frierson, and W. B. Barbe. New York: Appleton-Century-Crofts, 1967.
- _____. The Diagnosis and Remediation of Psycholinguistic Disabilities. Urbana, Ill.: University of Illinois, Institute for Research on Exceptional Children, 1966.
- Molloy, Julia S. Trainable Children: Curriculum and Procedures. New York: John Day Co., 1963.
- Montessori, Maria. The Secret of Childhood. Calcutta, India: Orient Longmans Private Ltd., 1936.
- Strauss, A. A., and Lehtinen, L. E. Psychopathology and Education of the Brain-Injured Child. Vol. I. New York: Grune and Stratton, 1947.
- Wolinsky, Gloria F. "Piaget's Theory of Perception: Insights for Educational Practices With Children Who Have Perceptual Difficulties." Educating Children With Learning Disabilities. Edited by E. C. Frierson, and W. B. Barbe. New York: Appleton-Century-Crofts, 1967.

Periodicals

- Bateman, Barbara. "Learning Disabilities--An Overview." J. School Psychology. III (Spring, 1965), 1-12.
- _____. "Learning Disorders." Review of Ed. Research. XXXVI (February, 1966), 93-119.
- Elkind, David. "Piaget and Montessori." Harvard Educational Review. XXXVII (Fall, 1967), 535-45.
- Kirk, S. A., and Bateman, B. "Diagnosis and Remediation of Learning Disabilities." Exceptional Children. 29 (1962), 73-78.
- Wepman, J. M. "Auditory Discrimination, Speech and Reading." Elementary School Journal. LX (1960), 325-33.

Testing Materials and Methods

- Dunn, Lloyd M., and Smith, James O. Peabody Language Development Kit: Level #1. Circle Pines, Minn.: American Guidance Service Inc., 1965.
- Engelmann, S. The Basic Concept Inventory. Chicago, Ill.: Follett Publishing Co., 1967.
- Frostig, Marianne, and Horne, D. The Frostig Program for the Development of Visual Perception. (Teacher's Guide). Chicago, Ill.: Follett Publishing Co., 1964.
- _____, and Horne, D. The Developmental Program in Visual Perception: Intermediate Pictures and Patterns. Chicago, Ill.: Follett Publishing Co., 1966.
- Hegge, T. G., Kirk, S. A., and Kirk, Winifred. Remedial Reading Drills. Ann Arbor, Mich.: Wahr Publishing Co., 1940.
- Kirk, S. A., and McCarthy, J. J. The Illinois Test of Psycholinguistic Abilities. (Manual). Experimental Edition. Urbana, Ill.: Institute for Research on Exceptional Children, 1966.
- Montessori, Maria. Dr. Montessori's Own Handbook. New York: Schocken Books, 1965.
- Russell, David H., and Russell, Elizabeth F. Listening Aids Through the Grades. New York: Columbia University, Teacher's College, Bureau of Publications, 1959.
- Valett, Robert E. The Remediation of Learning Disabilities: A Handbook of Psychoeducational Resource Programs. Palo Alto, California: Fearon Publishers, 1968.
- Sequence Cards. #7524. Springfield, Mass.: Milton Bradley Co.
- Show 'N Tell. "The Elephant and His Nose." Picture Sound Program, General Electric Co., 1964.
- Sounds I Can Hear. "Sounds Around the Neighborhood." Vol. 3. Oakland, N. J.: Scott, Foresman Co., 1966. (33 1/3 RPM Record with accompanying Visual Aids).