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Early identification of learning problems in high risk preschool children

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EARLY IDENTIFICATION OF
LEARNING PROBLEMS
IN HIGH RISK PRESCHOOL CHILDREN

by

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A RESEARCH PAPER
SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
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CHAPTER I

Introduction

In the past few years, there has been a growing concern for the education of high-risk preschool children. Research suggests that the preschool years are of great importance not only for social and emotional but also intellectual growth.

In the past, children with learning disabilities were indentified primarily in the elementary school age period; but by identifying these children as preschoolers before they encounter difficulty, it may be possible to diagnose their disabilities and institute remedial education to prevent potential learning problems from occurring.¹

There has been increasing evidence that the early childhood years influence the later success of the child. Early identification of children with potential learning problems has received wide support from medical, psychological, and educational professionals as well as from parents. Researchers show that by the time the child fails in school much is already lost. It is important to recognize such high risk children in order to prevent possible failure.

A school age child with a learning disability is usually identified by a discrepancy between the mental capacity and

¹J. Lerner, Children with Learning Disabilities, (Houghton Mifflin Company, 1976), p.29.

achievement in the academic area. "A child with average or above average intelligence who is not achieving at a normal or average rate in reading, writing, spelling, arithmetic or language, and who has a significant discrepancy (two years or more) between his mental capacity and achievement, is usually considered to have a learning disability."²

Since academic achievement at the preschool age level is not a factor, different criteria must be evolved. Instead of identifying a discrepancy in academic achievement, the preschool criteria would show a discrepancy in growth in motor, cognitive, linguistic and perceptual abilities. The problem with this definition is the inability to measure accurately these functions in young children.

The writer chose to investigate and report research on Preschool Education in the areas of (1) Intervention with high-risk infants (2) Identification of learning problems in high-risk preschool children (3) Programs and guidelines for early identification of high-risk preschool children (4) Tests and screening devices used for identifying high-risk preschool children, and (5) Problems in early identification.

²Samuel A. Kirk and John Elkins, "Identifying Developmental Discrepancies at the Preschool Level," Journal of Learning Disabilities, Vol. 8, (August/September, 1975) p. 417.

CHAPTER II

REVIEW OF RESEARCH

Intervention with High-Risk Infants

The following section reviews the philosophy and procedures of the educational intervention program that is part of the Infant Studies Project at the University of California at Los Angeles. This project was organized in July, 1971, with dual aims of developing methods of identification of high-risk infants and techniques of intervention with such infants.

The term "risk" is used to imply an increased probability of handicap in childhood. In the past, infants at risk have been identified on the basis of factors related to infant mortality. The use of single indicators has not been successful in predicting delayed development in individual infants. Deviant behavior tends to unfold and become more definitive during the first year. For this reason, the Infant Studies Project has developed a cumulative risk system that scores the infant's performance on various measures from birth through nine months of age.

Philosophy of Educational Intervention. Clinical support services are often not enough to facilitate development of high-risk infants. For such infants and mothers, a concentrated program of educational intervention is required. The goal of educational intervention is to

promote optimal development of high-risk infants through implementation of special programs of intervention focused on mother-child interactions. Both educational intervention and clinical support services are based on the belief that a strong, positive, and mutually satisfying mother-infant attachment is a primary factor in maximizing infant development. In the case of high-risk infants, this mutual relationship between mother and child is often distorted, leading to child care practices that interfere with normal growth. Educational intervention is directed specifically at providing mothers with techniques, practices, and observational skills that enhance maternal ability.

Educational intervention involves content and process. Content includes the kinds and sequences of mother-child activities to be initiated, elicited, and encouraged; process consists of how this program of activities is to be conveyed or taught to the mother or mother surrogate. Each educational program planned for each infant and family is highly individualized, and is based on careful assessment of three areas (1) developmental characteristics of the infant, (2) the nature of the parent-child interaction, and (3) the environmental resources and limitations of the family and home.

The high-risk population includes infants with such diverse characteristics and handicaps that a single standardized intervention procedure cannot be applied to all infants. Each intervention must follow its own course with a high-risk infant, but the organization of intervention as a process and the recording of information can be made standard. Process

parameters have been specified and found to be consistent across subjects. Specified content varies with each mother-child unit. Increased diagnostic and treatment experience with high-risk infants will allow the development of new intervention procedures.³

Most previous programs have worked either directly with the infant on his developmental problems or with the mother concerning her emotional adjustment to the child. In this program, the focus of concentration is on improving the infant and mother interaction by training the mother to respond to the specific cognitive and developmental strengths and weaknesses of her infant. It takes into account the infant's developmental needs, the mother's characteristics and her ability to carry out specific intervention plans.

Intervention Plan. The team members formulate an initial plan that is shared with the pediatrician, nurse, and social worker who have been responsible for the family. The plan covers the following subjects; (1) goals, (2) special considerations, (3) implementation of goals, and (4) evaluation. It also includes a proposed schedule of visits and preferred methods of communicating techniques.

There are four major objectives in the initial plan.

(1) One major objective may be to increase the mother's

³Theodore D. Tjossen, Intervention Strategies for High-Risk Infants and Young Children (Baltimore: University Park Press, 1976).

sensitivity to her child. (2) A second major goal may be to improve the infant's skills, particularly in specific areas of delayed development. For instance, improve adaptive and language skills, or the infant may be encouraged to develop more advanced social behaviors and a longer attention span. The area of fine motor or gross motor behavior may become the focus of intervention. (3) A third focus of intervention may be on the overall environment. For instance, the assessment procedure may indicate that the infant would benefit from less intense, less varied, visual and auditory stimulation. (4) A major objective in all intervention cases is to develop a comfortable working relationship with the family.⁴

Review of Cases. Although the Infant Studies Project was organized in July, 1971, the first year of the project was devoted to pilot studies. The first infants diagnosed as high-risk on the basis of the cumulative risk score did not begin intervention until June, 1973. Consequently, the intervention staff has had a two-year pilot period in which to develop procedures and techniques of intervention. At present, four high-risk infants have entered the intervention program; two of these infants have been in the program for more than six months. Two infants suffer from general delays in development, while two others show significant motor problems as well as developmental lags.

⁴Tjossen, op. cit., p. 540.

During the pilot project, twenty-seven infants were followed by the intervention staff, and sixteen are still in the program. These children were referred by the well-baby clinic staff. While fewer than half of the pilot cases were born prematurely, almost all suffer disabilities. According to Gesell developmental examinations, all the infants in the pilot group were behind age expectations in developmental progress. Eight children also suffered problems in motor coordination, two had impaired hearing, and two had limited vision.

Among the twelve infants followed for more than one year, seven had deficits in a specific area that became a focus of intervention, while five mothers were helped to develop greater sensitivity and to provide more appropriate environments for their children. In the majority of those cases with a specific focus, language was the area of concentration in the intervention program. It appears that all intervention programs must attempt to set a balance between a focus on the child's development and responsiveness to the family's needs and style.⁵

The majority of research involving high-risk infants does not specifically involve learning disabilities. Instead, it encompasses all areas of special education (hearing impaired, physically handicapped, down syndrome, mental retardation, etc).

The following research will pinpoint the high-risk preschool child with potential learning problems.

⁵Tjossen, op. cit., p. 541.

Identification of Learning Problems
in High-Risk Preschool Children

Support for early identification of learning problems comes from medical, psychological, and educational professionals, as well as parents. The sooner the treatment is begun, the greater the likelihood of impact of treatment. By identifying these children as preschoolers before they encounter difficulty, it may be possible to prevent potential learning problems from occurring.

The early identification of handicapped children has received both state and national support. On the federal level, The Bureau of Education for the Handicapped (BEH) of the Office of Education has given top priority to early childhood programs.⁶ Recent legislation in many states is designed to assure that schools develop programs for identifying potential failures and providing preventive services. Many states have passed laws that require schools to provide appropriate educational services for handicapped children from ages three through twenty-one with some states providing service for children as young as two years of age.

⁶ Edwin Martin, "Bureau of Education for the Handicapped Commitment and Program Early Childhood Education," Exceptional Children, (May, 1972), pp. 661-665.

Texas, the first state to pass comprehensive mandatory legislation in 1970 as part of its "Plan A", provides educational help for all handicapped persons from age three through twenty-one. Of the forty to fifty thousand three-, four-, and five-year olds screened in the first year of the Texas project, twenty-five hundred were identified as learning disabled, which can be translated into a prevalence rate of 5 to 6 percent of learning-disabled preschoolers in the general preschool population.⁷

It is time that those working in early childhood education turn their attention to: (1) The identification and ongoing diagnosis of preschool and kindergarten children who are handicapped by significantly deviant emotional, visual motor, or auditory vocal growth patterns. (2) The development of curriculum and guided group learning experiences to meet the specific needs of these children.

In this regard, we are not talking about the grossly handicapped child such as the mentally deficient, the cerebral palsied, the deaf, and the blind. Nor are we referring to the culturally disadvantaged child. We are speaking of the child that will prove to be a "specific learning disability" casualty when he enters regular school. These youngsters come to be known by various diagnostic labels, depending on the focus of particular professional discipline involved. They may be

⁷ALCD Newsbrief, no. 90 (May, 1974), p. 3.

identified as suffering from organic brain damage, cerebral dysfunction, or as handicapped by perceptual and conceptual deficits.⁸

These are the children who comprised the remedial population to which Barch referred - those children who float between regular and special classrooms in elementary school. These children are near average, average, or above average in general intelligence, who have developmental disorders that range from mild to severe in degree.⁹ Formal IQ measures scatter in subtest scores. Deviations may be manifested in various combinations of deficits in perception, conceptualization, language, memory, control of attention and impulse or motor function. Families have a difficult time responding to these children. The nursery school and kindergarten teachers of these children come to know them as problem children or children who cannot handle the regular curriculum. Many professionals in the past have rationalized that maturation will correct the developmental lags and the child will become sufficiently integrated to be able to adapt to the curriculum model demands of elementary school. Although some of these youngsters may survive, many do not. Instead, they become learning disability casualties.

⁸Eleanore Kenney, "A Diagnostic Preschool for Atypical Child," Exceptional Children (November, 1969), pp. 193-199.

⁹R.H. Barch, Achieving Perceptual - Motor Efficiency - A Space Oriented Approach to Learning (Special Child Publication, Seattle, 1967).

Many researchers believe these children should be identified and helped specifically by nursery and kindergarten teachers before they undertake formal academic work. A number of them will need special programs before they are ready to undertake the regular classroom curriculum

Another benefit of early diagnosis is that treatment may prevent development or minimize compounding problems. Dietary treatment of phenylketonuria (PKU) is a dramatic example of the prevention of further damage to a child, depending upon early recognition. Many other secondary problems, for example, disruption of parental and family relationships, emotional problems, interpersonal disturbances, may be prevented or minimized if recognition and treatment are begun early. As noted by Hurst:

the results of learning disabilities to the child and to the nation demands urgent action since the cost of diagnosing and treating learning disabilities during the critical period is a fraction of what it entails to maintain failures in school and throughout adult life..... Effectiveness will depend on the severity of the problem, and the age at time of attempted correction. Certainly the effectiveness will be greatly strengthened by attacking the problem at an early age, or if the problem itself is relatively minor in scope.¹⁰

DeHirsh, Jansky, and Langford state:

Twenty years of clinical experience with intelligent, but educationally disabled children, whose learning drive has become severely damaged, has convinced

¹⁰W. Hurst, "A Basis of Diagnosing and Treating Learning Disabilities within the School System," Journal of Learning Disabilities, Vol. 1, No. 4 (April, 1968).

us that many of these children would not have required help had their difficulties been recognized at an early age.....¹¹

Wolfsenberger noted that:

Early diagnosis is desirable when it leads to prevention, early treatment, or constructive counseling; it is irrelevant if it is purely academic and does not change the course of events, child or family reap more disadvantages than benefits.¹²

It seems reasonable that early identification or prediction of learning problems must stand the same tests.

Programs and Guidelines for Early Identification of High-Risk Preschool Children

Few established guidelines are available to aid in the development of early identification programs. Most are still in the developmental or experimental stages. Typically, the programs provide for the following phases: (1) screening to identify high-risk children; (2) intensive diagnosis of selected children to determine the nature of the problem and make further referrals if necessary; (3) placement of some children in a developmental disabilities class for further observation and teaching; and (4) making decision for further educational placement, i.e., regular kindergarten, a transitional kindergarten or a special class. To avoid stigmatization, the school district might encourage all

¹¹K. deHirsh, J. Jansky, W. Langford, Predicting Reading Failure (New York: Harper and Row, 1966).

¹²W. Wolfsenberger, "Diagnosis Diagnoses," Journal of Mental Subnormality, (November, 1965), pp. 62-70.

three- to five-year-olds to be brought in for initial screening. Problems encountered in this approach include finding the preschool children, notifying all parents, encouraging all parents to bring their children, and finally, informing parents of the results.¹³ Feshbach and Adelman proposed a "personalized classroom" for identifying child and situational variables of importance and developed a "prediction and prevention" program now in progress.¹⁴

In a review of cognitive and language factors in early identification, Faust emphasized that individual characteristics change as a function of interaction with the environment and that there are, thus, few inherent, stable traits of the individual which allow long-term prediction.¹⁵ Reading and other school learning tasks are made up of many components and require perceptual, cognitive, and motor skills; child characteristics vary in relation to the learning task and situation. Many facets of the child's development and experience may be directly relevant to tasks to be learned. There are few obvious one-to-one relationships between specific preschool characteristics and specific

¹³Lerner, op. cit., p. 29.

¹⁴S. Feshbach and S. Adelman, "An Experimental Program of Personalized Classroom Instruction in Disadvantaged Area Schools," Psychology in the Schools, VIII (August, 1971), pp. 114-120.

¹⁵M. Faust, "Cognitive and Language Factors," in B.K. Keough (ed.) "Early Identification of Children with Potential Learning Problems," Journal of Special Education (April, 1970) pp. 335-346.

school learnings. As argued by Adelman, a substantial number of school learning problems may be attributed to the interaction of child and learning situation.¹⁶ Yet, instructional variables and situational effects are usually not assessed as part of the evaluation of the child.

In a study of 253 children in special public school programs for the educationally handicapped, Hansen found that the majority of children were placed with recommendation for individualized instruction in a small class setting, for perceptual training, and for counseling.¹⁷ Bloom proposed that most children are able to perform school tasks at a mastery level given adjustments in time, materials, and teaching strategies.¹⁸

McLeod estimates that 15 to 20 percent of the children entering kindergarten are unable to obtain the full benefits of the instructional program.¹⁹

Valett expressed the belief that careful initial diagnosis and teacher involvement in direct and systematic

¹⁶H. Adelman, "Learning Problems Part I - An Interactional View of Causality," Academic Therapy, VI (1970), pp. 117-124.

¹⁷P. Hansen, "Educationally Handicapped Programs in Selected School Districts of Southern California," (University of California, Los Angeles, 1970).

¹⁸B. Bloom, "Learning for Master," UCLA Evaluation Comment, 1(2) (1968), pp. 1-12.

¹⁹P. McLeod, Readings for Learning: A Program for Visual and Auditory Perceptual-Motor Training (New York: Lippincott, 1965).

appraisal of the pupil is required in the development of an educational program geared to individual needs of pupils.²⁰ Coffman and Dunlap reported significant gains in the areas of audition, vision, cognition, and language with a program stressing personalized programming.²¹

Spicker devised a model for early childhood programs for children with potential learning disabilities which includes a curriculum in three areas: cognitive development, perceptual-motor development and preacademic skills development. The cognitive development program attempts to improve concept formation, general information and comprehension, problem-solving ability, memory, and discrimination learning. The perceptual-motor program stresses visual discrimination, visual-motor integration, gross and fine motor skills, and perceptual skills. The preacademic skills curriculum provides systematic instruction in certain readiness skills needed for reading and arithmetic.²²

According to Lerner, a fourth curricular area should

²⁰R. Valett, "A Developmental Task Approach to Early Childhood Education," Journal of School Psychology, V (1967), pp. 136-147.

²¹A. Coffman and J. Dunlap, "The Effects of Assessment and Personalized Programming on Subsequent Intellectual Development of Prekindergarten Children," U.S. Department of Health, Education, and Welfare (1967).

²²H. Spicker, "Intellectual Development Through Early Childhood Education," Exceptional Children, XXXVII (May, 1971), pp. 629-642.

be added--language development. This would help the child with oral language development, listening skills, vocabulary, and sentence development.²³

Calovini and Zimmerman stated although some children have specific needs depending on their own particular endowments, all have the following basic needs:

1. An enriched, stimulating environment in which he can move.
2. Time to explore, discover, and organize information gleaned from his excursion.
3. Motivating material to encourage active involvement in the learning process and to help him understand his environment.
4. Success in a hurry.
5. Play - self absorbed, socializing, imaginative, role playing.
6. Respect - acceptance for what he is and approval.
7. Responsible direction and challenge to do his best.
8. Free choice - giving form and substance to his capabilities, and practice in decision making.
9. Help in determining his own behavior; building on privileges.
10. A place he can call his own; secret places into which he can curl.²⁴

²³Lerner, op. cit., p. 31.

²⁴G. Calovini and L. Zimmerman, "Toys as Learning Materials for Preschool Children," Exceptional Children, Vol. 37 (May, 1971), pp. 642-645.

As Birch says:

For the adequately endowed child, a wide variety of environments suffice to permit adequate, if not optimal development. For the handicapped child, limited in his adaptive capacity, there is considerable restriction in the number of environments within which effective development is possible. School programs are designed with the average child in mind. They provide an opportunity for overlearning the required tasks and so take into account the variability in average performance. The "brain-damaged" child needs more than this usually sufficient quantitative surplus and often a qualitatively different kind of learning experience.²⁵

Programs of early identification will be effective relative to the educational programs which are available to accommodate the child. If we are to identify a child as a high-risk, then we must devise a program that will meet the individual needs of that child.

Tests and Screening Devices Used for Identifying High-Risk Preschool Children

Obviously, the springboard for early detection of learning problems lies in assessment. Instruments for assessment vary. It is not the purpose of the writer to present an exhaustive bibliography of testing instruments, but to provide some examples of various approaches to evaluation.

In recent years, the work of Drs. Ilg and Ames has generated much interest and many devoted followers. The developmental scale is used to place children in essentially homogeneous groups, according to chronological age.²⁶

²⁵H. Birch, Brain Damage In Children (Baltimore: Williams and Wilkins, 1964), p. 63.

²⁶F. Ilg and L. Ames, School Readiness (Harper and Row, New York, 1965).

inventory which requires direct response of the child is the Cooperative Preschool Inventory which samples personal information, knowledge of body parts, ability to follow instructions and understand various concepts.²⁷ The Fresno, California, Unified School District has devised TOT (Teacher Observation Techniques), an observation guide for Kindergarten teachers' use in early identification of potential learning disorders.²⁸ They have illustrated most of the behaviors considered significant in an excellent film "Early Recognition of Learning Difficulties".

To help school districts in Illinois plan for the screening phase of early identification programs, the state sponsored a Learning Disabilities Early Childhood Research Project known as Developmental Indicators for the Assessment of Learning (DIAL), which was conducted by Mardell and Goldenberg.²⁹ The DIAL preschool screening test was used to develop a system for observing and recording behavior of children between the ages of two and one-half and five and one-half. It was designed to be administered by well-trained professionals or paraprofessionals, to assess

²⁷B. Caldwell, "Cooperative Preschool Inventory," Educational Testing Service (Cooperative Test Division, Syracuse, New York, 1967).

²⁸Fresno City Unified School District, TOT (Teacher Observation Technique), Fresno, California (1967).

²⁹C. Mardell and D. Goldenberg, "For Prekindergarten Screening Information; DIAL," Journal of Learning Disabilities, VIII (March, 1975), pp. 18-24.

many areas of behavior to take less than thirty minutes; and of minimal cost per child for the school district.

The model for the DIAL project was planned for the assessment of the following areas; (1) sensory, (2) motor, (3) affective, (4) social, (5) conceptual, and (6) language (communication). Children were screened by trained operators in stations set up in a large room for each area of testing. The entire procedure required twenty-five to thirty minutes per child. Each of the assessment areas is briefly described in the following section: (1) Sensory. Children were screened for visual acuity and auditory acuity. If visual or auditory defects were suspected from the screening tests, the child was referred for a professional visual or hearing examination. (2) Motor. Children were screened for both gross motor and fine motor development. Gross motor tests included walking a balance beam; throwing and catching a beanbag (noting handedness); jumping, hopping, skipping, standing still for a thirty-second time period, and identifying the parts of the body (nose, ear, neck, hip, knee, elbow, ankle, chin, wrist, shoulder). Fine motor tests included matching ten designs, building three-block designs from a model, cutting out two patterns with a scissors, copying four geometric designs (circle, cross, square, and triangle), copying four letters (D, N, E, and S), demonstrating finger agility (copying the operator's demonstration by consecutively touching each finger on one hand to the thumb

of the same hand, and then repeating the task on the other hand), and repeating a hand-clapping pattern. (3) Affective. The child's affective level - anxiety, emotional stability, attention, focus, and task persistence - was assessed on an observational rating check list that the operators filled out. In addition, the child's behavior was observed throughout the screening session. (4) Social. The developers of DIAL note that at present there are limited procedures for the social skill assessment. However, the DIAL project used the same check list for social behaviors that was used for affective behaviors. (5) Conceptual. Tests included duplication a learning task of sorting, identifying six colors, rote counting to ten, showing one-to-one correspondence of one, three, and five, demonstrating five propositions (on, beside, front, back, and under), following three verbal directions, and identifying fourteen given concepts (by, fast, hot, tall, empty, day, more, little, slow, cold, short, full, high, and less) on pictures. (6) Language (communication). In the communication component, children were tested in the skills of receiving and expressing language, including articulating sixteen words, repeating a series of numbers given verbally by the operator, describing ten pictorial figures for noun descriptions, describing six pictorial figures for verb descriptions, answering four problem-solving questions about hunger, sleep, cold, and toys, self-identification of a Polaroid

picture, self-identification of sex, naming foods, and describing a picture. In assessing the child's verbal description of the pictures, the operator recorded total output, sentence length, quality of story, and the parts of speech.

The DIAL screening tests were field tested in Illinois with 4,423 preschool children in eight regional sites. The instrument proved to aid in the identification of high-risk preschoolers.³⁰

Lerner states that besides DIAL a few other tests for early identification screening of preschool-age children have been developed, including Meeting Street School Screening Test, Early Detection Inventory, Boehm Test of Basic Concepts, Evanston Early Identification Scale, Peabody Picture Vocabulary Test, and Comprehensive Assessment in Nursery School and Kindergarten (CIRCUS).³¹

In summary, research suggests a definite need for screening instruments to detect and identify high-risk preschool children.

Problems In Early Identification

Some authorities are concerned with the potential dangers of early identification. By identifying and labeling a child at three or four years of age, educators actually

³⁰Lerner, op. cit., pp. 31-32.

³¹Ibid., pp. 29-30.

may be creating certain problems. Since children do not mature at the same rate, readiness for school often is a matter of timing. Some children have developmental lags that may disappear by the time they are ready for formal schooling.³² The term "self-fulfilling prophecy" has been used by Rosenthal and Jacobson to describe effects of teacher expectancy on pupil performance. It is possible that early identification might serve to impose limits on teacher expectancies and to develop an atmosphere that reinforces the child's learning.³³ Another issue is that at the time the child is identified, the learning disability has not yet occurred. If not treated, the child may or may not develop a problem. Even if a treated child is successful in a later learning situation, one can never be certain if that success was due to early identification and treatment. Keogh and Becker believe predictive validity is low.³⁴ Another problem in early identification is the difficulty of determining a three-year-old's category of expectation. Diagnostic instruments are not precise, and an inappropriate label may stigmatize the child.

³²Lerner, opcit., pp. 29-30.

³³R. Rosenthal and L. Jacobson, "Teachers' Expectancies: Determinants of Pupils I.Q. Gains," Psychological Reports, XVIII(1) (1966), pp. 115-118.

³⁴B. Keogh and L. Becker, "Early Detection of Learning Problems: Questions, Cautions, and Guidelines," Exceptional Children, XL (September, 1973), pp. 5-13.

Keogh and Becker summarize concerns about early detection by asking three questions: (1) How valid are the identifying or predictive measures? (2) What are the implications of diagnostic data for remediation or early intervention? (3) Do benefits of early identification outweigh possible damaging or negative effects of such recognition?³⁵

³⁵B. Keogh and L. Becker, op. cit., pp. 5-13.

CHAPTER III

Summary and Conclusion

In summary, most research involving high-risk infants concerns children with multiple handicaps. These programs have worked with the infant on the developmental problems or with the mother concerning her emotional adjustment to the child. In other programs, the focus of concentration is on improving the infant and mother interaction by training the mother to respond to the specific cognitive and developmental strengths and weaknesses of her infant. Research involving high-risk learning disabled children concentrates primarily with the preschool and kindergarten - age child.

Research shows that children have suffered the consequences of school failure because their learning deficiencies were not detected at preschool ages, or, if these deficits were noted, appropriate teaching programs were not available. Experience indicates that in the case of learning disabilities, the longer detection and remediation is delayed, the greater the discouragement and damage to self-concept of the child, and the longer and more difficult remediation becomes. In some cases, academic success is irretrievably lost. If, then, through early

detection and training children can be saved from school failure, a year of retention, or placement in specialized programs for several years, the saving will be significant both in money and human resources.

Although there are questions as to whether early identification is an asset or deficit, most special educators believe that effective, early identification is critical and that it may accomplish much in preventing or reducing learning disorders.

Recent programs for intelligent but learning disabled children have contributed much to the development of diagnostic instruments, teaching techniques, and instructional materials and equipment.

Hopefully, early identification of high-risk children and early compensatory training programs will be a means of preventing later problems. Most preschool identification programs are still in the process of development or have been in operation for only a short period of time. The writer agrees with research that while it is difficult at this time to assess their effectiveness, the early identification movement is clearly a major development in the field of learning disabilities.

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