THE EFFECTIVENESS OF TEACHER OBSERVED BEHAVIORAL AND ACADEMIC TRAITS AS PREDICTORS OF READING DIFFICULTY IN A THIRD GRADE POPULATION

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CHAPTER I

INTRODUCTION

Literacy is virtually imperative in today's society. It is becoming increasingly important for an individual to be capable of effectively responding to massive stimuli that are largely verbal in nature. An abundance of recent literature, both lay and professional in nature, has helped alert the general population to needs for verbal proficiency. School age children of our society are subject to innumerable pressures to excel verbally. The focal point of such pressures seems to lie primarily in reading areas, reading being the verbal activity which best lends itself to observation and subjective assessment by parents, school personnel, and the child himself. Parents begin early to observe their child's reading progress. Oftentimes, unwarranted alarm results in undue academic pressures being brought to bear on the child. Classroom emphasis on reading excellence need only be acknowledged; it is unfortunate, however, that this emphasis can lead to extreme frustration and generalized academic withdrawal in the child suffering from a reading handicap. Thus, youngsters unable to read

at appropriate levels not only fall behind in their school work, but suffer emotional and social repercussions as well.

It has been estimated that some thirty per cent of our school children evidence marked reading difficulty (24). Leon Eisenberg, professor of Child Psychiatry at John Hopkins, emphasizes the urgency of the problem: "The magnitude of the reading problem and the shattering impact of reading disability on personal and vocational adjustment should accord proposals for its correction as a major position in mental hygiene programs." (9, p. 365). Adverse emotional factors associated with reading difficulty have been shown to endure even into collegiate years (21). It would seem imperative, then, to identify potential reading failures early in a child's academic career, as concomitant disturbances are apt to intensify as he moves along the academic course (5). De Hirsh, et al., state: "Adverse emotional reactions to reading failure appear very early in the elementary grades and complicate primary difficulties with verbal symbolic functioning. It is therefore essential to identify children destined to fail at the earliest possible moment." (7, p. xv).

Overall debilitation associated with reading impairment has long been of concern to educational and psychological researchers. Markedly hampered in their intellectual,

academic, and emotional growth, poor readers all too often become frustrated individuals unable to meet important needs in those spheres (4). The social and emotional handicaps occurring concomitant with reading disability have been investigated within numerous theoretical frameworks. Emotional disturbance has been cited as both the cause and the result of reading disability. Psychoanalytical and neo-analytical viewpoints hold that emotional involvement precipitates reading disability. Interfering obsessive thoughts (10), inadequate goal orientation (11), and rejection of threatening impulses given rise through letters and words (18) are considered causal factors in reading difficulty. Emotional disturbance as a result of reading retardation has been discussed by Gates (12), Skinner, et al. (26), and de Hirsh, et al. (7). These authors hold that early defeat in the reading situation leads to impairment of personal adjustment, as feelings of inadequacy and anticipation of failure are apt to become an integral part of an individual's self image. A more thorough review of the causal relationship between emotional factors and reading retardation would not prove contributory to this study; suffice it to say that the poor reader has consistently shown a less effective degree of overall adjustment than has the competent reader (12).

The vast amounts of literature dealing with reading involvement present confusing, sometimes conflicting, information concerning the origin, development, and diagnosis of reading disability. In a comprehensive review of research centered about reading difficulties, Westman, Arthur, and Scheidler point out that, while great stores of information have accumulated, "Noticeable gaps in interdisciplinary communication have prevented full use of what is known." (28, p. 359). Vague, ambiguous interdisciplinary communications have resulted in hazy definition of "reading disability," preventing consistent cross-discipline diagnosis and description of specific reading problems. However, there have evolved a number of behavioral and academic characteristics commonly presented as highly associated with the occurrence or reading disability. These functional correlates of reading involvement have necessarily been determined via highly technical instrumentation and observation; however, their overt manifestations are readily apparent to parents, teachers, and others in daily contact with the child.

By virtue of symptomatic manifestation, these "observable" facets of behavior and academic performance, regardless of their theoretical origins, lend themselves to empirical study by those not prepared for technical assessment. Their established relationship to reading disability

would seemingly facilitate detection of such symptoms by responsible observers in the child's environment. It is recognized that behavioral and/or academic patterns to be presented as "typical" of retarded readers are not found in all children with reading disability, nor does the presence of symptomatic traits necessarily imply the child cannot read adequately. However, research with retarded readers has shown a number of functional characteristics to occur with greater frequency than expected in a "normal" population.

At this point, it can be stated that the present discussion will draw only from investigations considered valid and well-based. The wide array of non-professional, sensational, poorly researched publications dealing with reading disability and associated behaviors has gone far toward misinforming the general public. Their influence is perhaps most strongly felt among parents, who often rapidly assimilate such information and move toward correction of perceived problems on an irrational basis. However, the educational, psychological, and medical professions have made valuable contributions toward clarification of the nature of reading disability. It is from the literature of these fields that those behavioral and academic correlates utilized in this study have been derived. The following section was developed

to present bases for acceptance of said correlates as being highly related to reading difficulty.

Theoretical Background

Among those syndromes typically exhibited by youngsters with reading difficulty is the "hyperkinetic syndrome," manifested through hyperactivity, short attention span, distractibility, impulsivity, and emotional instability (28). While these are not unusual traits for very young children, de Hirsh, Jansky, and Langford found that, among children with marked reading problems, such patterns persist past the end of the second grade (7). (The youngsters observed during the initial phase of the present study were beginning third graders.)

Natchez found that among elementary school children, retarded readers were significantly less able to deal with frustrating situations than were adequate readers. The demands presented by the oral reading circle were thought to constitute a "frustrating situation." She observed youngsters in the oral reading circle, and found the reactions of poor readers to be characterized by dependency, agression, withdrawal (20). Oral reading skills have long been utilized as a superficial index of reading ability,

and their measurement has frequently proven an important gauge by which ability-appropriate reading materials are chosen (27).

Related to oral reading difficulties is the frequent occurence of hampered speech among poor readers. The comprehensive work of de Hirsh, Jansky, and Langford revealed, among disabled readers, "persisting defects in all aspects of oral language." (7, p. 55). Among a group of eleven to fifteen year olds with a history of reading retardation, these authors observed word finding difficulties, trouble with word formulation, and cluttered, dysrhythmic speech (7). Such symptomology is readily observable in a classroom setting. Further, Schubert points out that a reciprocal relationship may well exist between speech defects and early classroom demands for proficient oral reading (25). While the nature or extent of such a relationship is not of particular relevance to this study, it supports, from a dissimilar framework, Sanchez's contention that oral reading frustrations are circularly related to reading retardation.

Retarded readers have consistently demonstrated perceptual-motor developmental lags, as evidenced through unusual awkwardness, a large number of concomitant movements, fine motor incoordination, ill-defined lateralization. Those conditions were found true even among older non-readers

of superior intellect who came from high social strata (7). Bender referred to this type difficulty as "plasticity," i.e., pervasive perceptuo-motor instability likely based on central nervous system disorganization; she felt it to be the characteristic dysfunction in maturational lags often exhibited in conjunction with retarded reading development (2). Rather closely related to perceptual-motor development is an "academic symptom," i.e., bizarre spelling, thought to be the result of early perceptual difficulties. The high relationship between reading and spelling difficulty has proven particularly true among elementary school children (8). Jastak and Jastak stated in the Wide-Range Achievement Test Manual: "Reading is the process of transcoding a series of visual-motor symbols into oral or sub-oral sound sequences. Writing is the process of transcoding oral or sub-oral speech sounds into their visual-motor correlates . . . . Reading disability is an impairment of this process of transcoding." (16, p. 25). By inference, it is therefore logical to assume that transcoding impairments would result in inability to manipulate symbols on spelling tasks (16).

In a study investigating perceptual-motor, spelling, attention, retention, and auditory discrimination abilities

children significantly inferior in reproducing letter sequences and less able to accurately reproduce words that had been presented auditorily. Their performance improved with increased sound intensity and provision of contextual clues. They showed great difficulty in discriminating between monosyllabic words which differed in only a single phoneme (29). McLeod's findings supported other studies tapped in this discussion, suggesting that the youngster with reading difficulty is apt to evidence perceptual-motor involvement, hampered attention and retention skills, as well as difficulty in both oral and written word reproduction.

While there are doubtless other behavioral and academic patterns related to reading difficulty, those discussed are among the most prominent in recent literature. Of major import in the present study, these patterns lend themselves readily to detection through observation, without need for specialized and highly technical instruments not generally at the command of in-school personnel.

Related Research

Public schools throughout the nation utilize readiness instruments toward early assessment of a chid's preparedness to handle educational materials (8). Instruments

used in prediction of later reading achievement. Existing reading tests, according to de Hirsh, Jansky, and Langford, do not lend themselves easily to the formulation of specific educational stratagies (7). The Metropolitan Readiness Test, "used extensively and with a fair amount of success," is thought by Ilg and Ames to fall considerably short of an evaluation of the total organism (15).

Even the use of intelligence tests for prediction of reading difficulty has been challenged, as the intelligence quotient represents a global, rather than differentiated, measure of abilities and fails to tap some aspects of perceptual functioning involved in reading effectiveness (13). Critchley found severe reading problems at all levels of intellectual functioning, which further questions the use of intelligence tests alone as predictors of reading inability (6). However, in defense of such instruments, Jastak and Jastak found sub-test variance on individual intelligence tests, e.g., the Stanford-Binet Intelligence Scale and the Wechsler Intelligence Scale for Children, helpful in diagnosis of reading disability (16); these authors did not explore use of such as predictors of later reading dysfunction, although they would seem to offer potential in that capacity.

The Gesell Institute developed a series of behavioral tests to be used toward assessment of a child's overall developmental level, "developmental level" being considered parallel to "school readiness level." They found, in a group of kindergarten and primary school children, a highly significant correlation between their test results and actual school performance six years later. Teachers, they found, were generally quite amazed by their results. Apparently, teachers had been aware of "immature" behavior on the part of many of these children, but were unable to interpret their behavior in a way which might later prove academically meaningful. Regarding teacher reactions to the accuracy of their battery, Gesell investigators stated: "Their interest was intense. They appeared ready for new insights." (15, p. 27). Ilg and Ames felt that teachers, particularly those beyond the kindergarten level, needed aid in effective understanding of a child's classroom conduct, as they tended to become increasingly ego-involved in their students' behavior. The primary teachers' judgement, in attempts to assess a child's functioning, showed less clarity than did that of the kindergarten teacher (15).

In Predicting Reading Failure (1966), de Hirsh et al. presented a predictive index, still in the process of validation, designed to identify pre-schoolers who run a high risk of academic failure. This excellent and comprehensive study

proposed predictive and diagnostic techniques which might be utilized within the school setting. Twenty-two perceptuo-motor and oral language tests were administered to a kindergarten population; results were found significantly correlated with later reading, writing, and spelling achievement. This held true for both controls and normals, although predictive power was greater for the former. Their control group consisted of several premature children who, in general, appeared very immature in relation to agemates. Initial tests were administered toward assessment of development in the following areas: behavioral patterning, motility patterning, oral-language, sentence development, reading readiness, and style of attacking a task. They found behavior patterning (typified by hyperactivity, distractibility, and disinhibition) to be highly predictive of second grade reading difficulty. Lags in fine motor control, as evidenced in kindergarten printing and drawing tasks, were predictive of later reading impairment. It was of particular interest that a child's inability to draw a human figure, thought reflective of poor integration of proprioceptive, sensorimotor, emotional, and social stimuli, was significantly related to reading progress. In oral-receptive language areas, temporal organization, auditory discrimination, and word-pictorial association skills proved highly predictive.

In oral-expressive-language areas, richness of verbal output proved an excellent predictor, as did effectiveness of organizational skills. All reading readiness test performances were significantly related to later reading skill. Style of attacking a task, thought to index "ego strength" and "work attitude," was positively correlated with reading, writing, and spelling achievement (7).

These authors felt that children destined to fail in reading areas lacked the integrative abilities necessary to cope with the complex reading task. Integration was defined as "that function of the organism which combines and relates discrete cues and makes a unified response possible." (7, p. 38). They state that poorly developed integrative skills are apt to result in hampered reading progress, as the latter requires effective integration of intra-sensory information. It was hypothesized that difficulties with integration of multi-sensory cues are largely responsible for defects in ego-strength and general work attitude (7).

Both the Ilg et al. (15) and de Hirsh et al. (7) studies attempted to gauge the predictive power of numerous aspects of a child's functional make-up. Their derived indices proved of higher pragmatic value than previously developed, fragmented, highly technical predictors. One such instrument in the Frostig Test of Perceptual Development,

widely used in diagnosis of reading difficulty. An investigation by Olson (22) showed significant results between only one out of five Frostig sub-tests and California Achievement Test reading measures. In further investigation of the one previously valid Frostig sub-test, i.e., "position in space," Olson found no significant relationship between that variable and reading achievement as indexed on two reading measures (23). Kagan (17) established "reflection-impulsivity," as predictive of later reading difficulty. "Reflection-impulsivity," i.e., tendencies to make rapid decisions in problem situations with response uncertainty (17), is an interesting concept, but not one likely to be consistently perceived by the classroom teacher.

Sex differences, long recognized as an important factor in reading performance, must be considered in any study concerned with the reading process. Among the many investigations highlighting sex differences in reading progress were those reported by Bond and Dykstra (3), Ilg and Ames (7), (1), Olson (23), and Hughes (14). Girls, whose overall rate of maturation at time of school entrance is considerably beyond that of boys, are generally better able to cope with reading materials (7). The effect on prediction exercised by sex differences was quite marked in the de Hirsh, et al., study; it was found that the overwhelming majority of tests

were much better predictors for girls. This was with the exception of "Story Organization" and "Word Recognition" tasks, which proved better predictors for the male group (7).

The present study was designed to investigate the relationships existent between given behavioral and academic characteristics, as judged by classroom teachers, and reading achievement three years later. It is through the observation of classroom teacher that most learning disabilities initially come to light. It is the classroom teacher who typically first encounters and must evaluate the expressed concern of parents. Determination of the effectiveness of teacher observations toward prediction of later reading difficulty, then, would seem of some value. The dangers inherent in utilization of teacher observations are recognized. As previously stated, classroom teachers, as a result of over-involvement, have often shown inability to differentiate and evaluate various aspects of a child's functioning (15). Not all teachers possess the training, intuition, or experience needed to make reliable evaluations. However, the classroom teacher, through daily contact with the child in an academic setting, would seem of great potential aid in early detection of children likely to fail in reading.

Basic Assumptions and Limitations

Several basic assumptions were necessary to formalize the structure of this study. These are as follows:

1. The California Achievement Test provides an accurate assessment of a child's reading skills.

2. The California Mental Maturity Test provides a valid measure of global capacities, which might be utilized in determination of a realistic level of anticipated reading achievement.

3. There exists a significant difference between the sexes in development of reading skills.

4. Teachers fully understood instructions and made observational judgements on similiar intensity criterion.

5. The children involved were from an essentially "normal" population.

No assumptions regarding the lack of subjectivity of teacher ratings were formulated, as the study was designed to investigate the predictive power of given traits as they were perceived by the teacher in the everyday classroom situation.

Statement of the Problem and Hypotheses

The objective of this study was to determine the predictive efficacy of teacher assessments of behavioral and

academic traits thought highly associated with reading difficulty, and to single out from teacher assessments those most effective for prediction. The hypotheses tested were as follows:

Hypothesis I. It was hypothesized that, of the nine observational items utilized in this study, the occurrence of one or more would be positively related to discrepancy between actual and anticipated reading achievement levels three years later.

Hypothesis II. It was hypothesized that the overall multiple relationship between manifestation of observation items and achievement discrepancy would be positive.

Hypothesis III. It was hypothesized that the predictive power of teacher observations would prove greater for girls than for boys.

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CHAPTER II

PROCEDURES

Chapter Two presents, as a basis for the study, definitions of terms. It also includes procedures for collection of data and description of the sample.

Definition of Terms

Teacher Observation Sheet-This term refers to an observational rating sheet distributed to all third grade teachers in the school system. Nine behavioral traits, as abstracted from literature concerned with reading disability, were listed. Teachers were asked to write the names of children exhibiting, to a marked degree, those characteristics included on the observation sheet.

The behavioral and academic variables, as reported on the observation sheet, are as follows:

1. Notably inattentive.

2. Very poor in writing; work is "messy;" seems to struggle to form the letters: frequently reverses letters and words.

3. Less well coordinated than other children in my section; somewhat clumsy, awkward; prone to drop things, bump into furniture and other children.

4. Very poor oral readers.

5. Very poor listeners; special difficulty in listening to group instruction.

6. Great difficulty staying in seats; always up and around the room; needs to go to various parts of the room frequently; asks to go to the restroom frequently; crumples paper and goes to the wastebasket quite often.

7. Great difficulty with speech.

8. Very ill at ease in the reading circle.

9. Very poor spellers.

California Achievement Tests-This test includes a series of group instruments utilized to assess achievement in major academic areas. The California Achievement Tests (CAT) consist of a unit of comprehensive tests designed for the three-fold purpose of facilitating evaluation, educational measurement, and diagnosis. This study utilized the elementary form of the CAT, designed for use in the fourth, fifth, and sixth grades. The total instrument is composed of three tests: Reading, Arithmetic, and Language. These three tests are further divided into two parts each. The

reading section consists of "Reading Vocabulary" and "Reading Comprehension," which average to yield a "Total Reading" index. The arithmetic section consists of "Arithmetic Reasoning" and "Arithmetic Fundamentals," which average to yield a "Total Arithmetic" achievement level. The language section includes "Mechanics of English" and "Spelling," which average to yield a "Total Language" achievement rating (2). For the purposes of this study, the "Reading Vocabulary," "Reading Comprehension," and "Total Reading" achievement scores were utilized and will be explained in more detail.

Reading Vocabulary-This refers to one section of the CAT reading achievement test. It consists of a test of word recognition and a test of the meaning of opposites. The test is designed to tap the pupil's ability to distinguish between identical and different initial, middle, and final sounds and to recognize words that are completely unrelated to sound. The test also measures basic vocabulary grasp through recognition of opposites (2).

Reading Comprehension-This refers to the section of the CAT reading achievement test designed to sample functional elements of reading comprehension. It is divided into three activity clusters, "Following Directions," "Reference Skills," and "Interpretation of Material." Seventy forced choice items are included in the "Reading

Comprehension" section, each "so constructed that all data necessary to determine the correct responses are given in the items themselves." (2, p. 5).

California Test of Mental Maturity-This is a group instrument, administered in the classroom, which is designed to provide information concerning the student's functional capacities in areas of learning, problem-solving, and responding to new situations. The instrument purports to index seven major aspects of mental ability, which contribute to an evaluative pattern of derived scores; derived scores include mental ages, intelligence quotients, standard scores, stanines, and percentile ranks. These are "interpreted within a framework of inter- and intra- individual differences." (1, p. 5). Mental development is indexed on the basis of four basic factors, superordinate to the seven sub-tests mentioned; these factors include "Logical Reasoning," "Numerical Reasoning," "Verbal Concepts," and "Memory." These factors are then grouped into language and non-language units that differentiate between responses to stimuli that are verbal in nature and responses to stimuli that are non-verbal or pictorial (10). For purposes of this study, levels I (for use in grades one, two, and three) and 2H (for use in grades six and seven) were utilized.

Deviation I.Q.-This term refers to intelligence quotients obtained via the CTMM. Deviation I.Q.'s are provided in language and non-language areas; a third deviation I.Q., reflecting overall functional abilities, is derived on the basis of a youngster's combined language and non-language raw scores. This measure is abstracted from normative age tables included in the CTMM manual (20).

Intellectual Status Index (ISI)-This term refers to an indes of a pupil's CTMM performance relative to that presented as typical, on the basis of normative data, for pupils at his actual grade placement. This is in contrast to the deviation I.Q., based on performance relative to others in his chronological age group. Thus, under-age pupils obtain ISI's lower than their I.Q.'s, as their grade chronological age is an increase over actual chronological age. Over-age students obtain ISI's higher than their I.Q.'s, as the norm age for their grade placement is below their actual age. The ISI might be thought of as a grade I.Q. This measure provides the basis for computation of Anticipated Achievement Grade Placements, as discussed in the following section (1).

Anticipated Achievement Grade Placements (AAGP)-This term refers to those levels of CAT performance which might, on the basis of a student's ISI, be realistically expected.

It is applicable to children of all intellectual levels, and represents those levels of achievement normally attained by children of a given ability rating at a given grade placement. AAGP's are abstracted from normative tables presented in the CAT manual (2). This index is particularly valuable, as it allows "over-achievement" and "under-achievement" to be gauged according to the individual's capacity, rather than according to grade placement alone. For example, a child with an ISI of 85 might be achieving at realistic levels, even though achievement is below actual grade placement; conversely, a child with an ISI of 120 is expected to achieve considerably beyond actual grade placement.

Reading Difficulty-This term refers to failure to read at levels commensurate with Anticipated Achievement Grade Placements. For the purposes of this study, degree of reading difficulty was quantitatively indexed according to differences between actual and anticipated achievement scores.

Procedures for Collection of Data

Teacher observation sheets were distributed to all third grade language arts teachers in a large Southwestern school system. Teachers were instructed to list students exhibiting, to a marked degree, those behavioral and academic

difficulties enumerated on the observation sheet. Teacher instruction read as follows: "On the basis of your day-to-day observation of the children in your class(es) and without special effort to 'make sure you are right,' list in the spaces provided the name of a child or children in each of your language arts sections who are: . . . " A student might have been listed on the basis of one characteristic or on the basis of several. Those pupils listed on the observation sheets comprised the initial population.

Third grade CTMM ratings were then obtained for all subjects. Those students with a CTMM I.Q. indexing under one standard deviation below the mean of 100 were excluded from the study. Three years later, when the majority of subjects were enrolled in the sixth grade, CTMM and CAT data were collected on those remaining within the school system. On the basis of sixth grade CTMM results, ISI's and Anticipated Achievement levels were computed for each subject. Actual reading achievement was read from CAT performance records. Disparities existent between actual and anticipated reading achievement levels were determined and utilized as the three achievement criteria.

Actual achievement might have been either above or below anticipated levels. When actual achievement was above anticipated achievement, disparity scores were assigned

positive values. In reverse cases, disparity scores were assigned negative values. Appropriate adjustments were executed in statistical analysis.

Sample Description

After selection procedures were effected, the population consisted of 179 children enrolled in a large Southwestern school system. Subjects, initially enrolled in the third grade, were chosen on the basis of teacher observation; all were enrolled in the sixth grade at the study's conclusion. All subjects had a third grade CTMM I.Q. of 86 or above. Subjects were divided on the basis of sex. The two groups consisted of 119 males and 60 females. No provisions were made for race or socio-economic levels, as subjects were drawn from all sections of the school district. Cursory examination revealed no disproportionate contribution of subjects from any one of various socio-economic areas within the city.

Range of third grade I.Q.'s for the male group was 86-142, with a mean of 97 and standard deviation of 12.48. Range of third grade I.Q.'s for the female group was 86-130, with a mean of 96 and standard deviation of 10.98. The CTMM is designed to provide a constant mean of 100 and a standard deviation of 16 I.Q. points for all age levels. (1)

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CHAPTER III

RESULTS

Chapter Three presents the statistical treatment utilized in this study. It has also been designed to include statistical description, relationships between each predictor item and criterion measures, and multiple correlations between predictor items and criterion measures.

Statistical Treatment

Teacher observations and achievement ratings were subjected to a multiple regression analysis designed to test hypotheses presented in Chapter I. The criterion or dependent variable for R was the measure of disparity between actual and anticipated "Total Reading" levels; the independent variables were observational ratings of 1 or 0 on each predictor item. Point-biserial coefficients between each predictor variable and amount of disparity in each of the three achievement areas ("Reading Vocabulary," "Reading Comprehension," and "Total Reading") were obtained as part of statistical analysis, as were means and standard deviations of all achievement criterion.

Statistical Description

Presented in Table I are the frequencies with which male subjects were ranked according to predictor variables.

TABLE I

FREQUENCY OF BEHAVIORAL RATINGS ON PREDICTOR ITEMS FOR THE MALE GROUP (N=119)

Observation Item	Positive	Negative
1	36 (.30)	83 (.70)
2	33 (.28)	86 (.72)
3	15 (.13)	104 (.87)
4	30 (.25)	89 (.75)
5	34 (.41)	85 (.59)
6	32 (.35)	87 (.65)
7	18 (.15)	101 (.85)
8	16 (.14)	103 (.86)
9	16 (.14)	103 (.86)

Included in the "positive" column of Table I are the frequencies with which subjects were seen as evidencing given observational traits. By nature of the measure, all subjects not included in the "positive" column fell into the "negative" column. Percentages of total population falling into each catagory are presented parenthetically.

Presented in Table II are the frequencies with which female subjects were ranked according to predictor variables.

TABLE II

FREQUENCY OF BEHAVIORAL RATINGS ON PREDICTOR ITEMS FOR THE FEMALE GROUP (N=60)

Observation Item	Positive	Negative
1	12 (.20)	48 (.80)
2	6 (.10)	54 (.90)
3	3 (.05)	57 (.95)
4	21 (.35)	39 (.65)
5	19 (.32)	41 (.68)
6	26 (.43)	34 (.57)
7	7 (.12)	53 (.88)
8	7 (.12)	53 (.88)
9	5 (.08)	55 (.92)

Once again, the "positive" column includes subjects evidencing given traits, while the "negative" column includes those who, by virtue of omission on the item, do not. Cursory examination of the percentage splits show a higher percentage of boys evidencing all traits, with the exception of numbers 4 ("very poor oral readers") and 6 ("difficulty staying in seats; always moving about the room").

Toward further description, Table III presents the means and standard deviations of disparity scores for the male group.

TABLE III

ACHIEVEMENT DISPARITY MEANS AND STANDARD DEVIATIONS FOR THE MALE GROUP (N=119)

	Reading Vocabulary	Reading Comprehension	Total Reading
Mean	- .5	- .4	- .4
SD	.937	.862	.829

Inspection of Table III shows mean disparities of -.5, -.4, -.4, respectively. This indicates that, on the average, the group of boys were achieving .4 to .5 grade placements below anticipated levels. Standard deviations may be, on initial inspection, somewhat misleading. Their largeness in relation to means is due to the inclusion of both positive and negative values in computations.

Presented in Table IV are identical data for the female group.

TABLE IV

ACHIEVEMENT DISPARITY MEANS AND STANDARD DEVIATIONS FOR THE FEMALE GROUP (N=60)

	Reading Vocabulary	Reading Comprehension	Total Reading
Mean	- .2	- .1	- .2
SD	.954	.921	.829

It is evident from data presented in Tables III and IV that disparity scores for girls were typically less than disparity scores for boys. Although no hypotheses were formulated concerning these differences, significance tests were computed. Differences between means in "Reading Vocabulary" and "Reading Comprehension" proved significant at the five per cent level; difference between means of "Total Reading" disparities approached the five per cent level of significance.

Relationships Between the Predictor Tests and the Criterion Tests

The first hypothesis was that, of the nine observational items, the presence of one or more would prove positively related to actual-anticipated disparity. Table V presents point biserial coefficients between each predictor and criterion variable for the male group.

TABLE V

POINT-BISERIAL CORRELATIONS BETWEEN PREDICTOR VARIABLES AND ACHIEVEMENT CRITERION FOR THE MALE GROUP (N=119)

Observational Items	RV	RC	TR
1	-.08556	-.04391	-.04291
2	.04089	.02439	.07502
3	-.13558	.10416	.14071
4	* .18723	** .24498	** .23975
5	-.09926	.03145	.01633
6	-.01451	-.05974	-.07302
7	-.09226	-.15246	-.14720
8	.11676	.07979	.07130
9	.15619	.13124	.16631

*Significant at 5% level.
**Significant at 1% level.

As can be seen from Table V, there were significant positive relationships between predictor item Four and disparities extant in all reading areas. Correlations obtained between other predictors and achievement disparities did not reach significance. However, by virtue of those significant r's which were obtained, Hypothesis I was substantiated for the male group.

Table VI presents point-biserial correlations obtained for the female group. Data presented in Table VI show that, for the girls, no behavior-based item proved significantly related to all three disparity measures. However, item

TABLE VI

POINT-BISERIAL CORRELATIONS BETWEEN PREDICTOR VARIABLES AND ACHIEVEMENT CRITERION FOR THE FEMALE GROUP (N=60)

Observational Items	RV	RC	TR
1	.09172	.15109	.13879
2	.17470	.22739	.19981
3	.05210	.02366	.03322
4	.06043	.01157	.01602
5	-.16963	.14152	.03517
6	-.15982	-.16298	-.15777
7	-.09342	-.23683	-.19884
8	*-.33288	-.18046	-.21764
9	.23493	** .34971	* .32266

*Significant at 5% level.
**Significant at 1% level.

nine related at the .01 significance level to "Reading Comprehension" disparity and at the .05 level to "Total Reading" disparity. This is considered at least partially

at the .01 level, was obtained between item eight and "Reading Vocabulary" disparity. Girl students seeming "ill at ease in the reading circle" typically achieved beyond anticipated levels in vocabulary.

Multiple Correlations Between Predictor Items and Criterion Measures

Data presented in Table VII include, for the males, multiple correlations (R) between the predictor items and the criterion, as well as rank order of predictors obtained from multiple regression analysis. The multiple correlation indicates the degree of correlation between achievement disparities in "Total Reading" and the several predictor variables.

TABLE VII

RANK ORDER OF PREDICTORS, FOR THE MALE GROUP, WITH REGARD TO CONTRIBUTION TO THE MULTIPLE CORRELATION SHOWING F LEVEL, STANDARD ERROR, COEFFICIENT OF CORRELATION, AND MULTIPLE CORRELATION (N=119)

Observational Item	F Level	Standard Error	R^2	R
4	7.14	.833	.05748	.2398
7	2.13	.812	.07450	.2730
3	2.10	.808	.09110	.3019
9	1.16	.805	.10029	.3165
1	.71	.806	.10589	.3253
2	.69	.806	.11135	.3337
6	.14	.809	.11250	.3354
5	.11	.813	.11345	.3360
8	.10	.816	.11425	.3380

As can be determined by Table VII, Hypothesis II, that a positive multiple relationship would exist between behavior and achievement variables, was confirmed for the male group. The multiple linear regression analysis ranked the various items in order of their relative contributions to R, taking into account the overlapping effect among the predictors. The analysis also yielded an F level toward determination of the point beyond which addition of another observational item would not significantly improve R. The F level was set at one per cent; this level of significance was reached by one of the predictor variables, item four. Addition of other variables did not significantly increase the value of R. Therefore, item four, "Very poor oral readers," proved the only significant predictor for the male group. The overall R did not obtain significance.

Table VIII presents R, rank order of predictors, and related information for the female group.

Again, Hypothesis II was verified, in that an overall positive relationship was found to obtain between behavioral observations and achievement disparity. R for the total group of predictors reached the one per cent level of significance. However, F level was not found to be significant with addition of variables beyond item nine, which was significantly related to achievement criterion at the

TABLE VIII

RANK ORDER OF PREDICTORS, FOR THE FEMALE GROUP, WITH REGARD TO CONTRIBUTION TO THE MULTIPLE CORRELATION SHOWING F LEVEL, STANDARD ERROR, COEFFICIENT OR CORRELATION, AND MULTIPLE CORRELATION (N=60)

Observational Item	F Level	Standard Error	R^2	R
9	6.74	.798	.1041	.3227
8	2.22	.789	.1377	.3711
7	2.54	.779	.1751	.4185
6	3.53	.762	.2248	.4742
3	.98	.762	.2387	.4886
4	1.18	.761	.2552	.5053
1	1.12	.760	.2710	.5206
2	.45	.764	.2773	.5267
5	.06	.771	.2783	.5275

one per cent level. Therefore, item nine, "poor spelling," proved the only significant predictor for the girls. It is interesting to note that item four, which proved significantly related to reading difficulty among boys, was a relatively weak predictor for the girls. Item nine, significant for the girl's group, can be read from Table VII as ranking fourth among predictor variables for the male group.

It is obvious from presented information that the overall R obtained for girls is significantly superior to

the overall R obtained for boys. However, only one predictor item proved contributory for each group; the difference between these two relevant point-biserial coefficients did not reach significance. Fisher's r to z transformation was applied as an approximate test of significance of difference between these two r's. Thus, Hypothesis III, that predictive power of teacher observations would prove greater for girls, was rejected insofar as major predictor items were concerned.

CHAPTER IV

DISCUSSION AND SUMMARY

The discussion will attempt to evaluate results as related to previous investigations, educational implications, and possible considerations for further studies of this nature.

It will be recalled that Hypothesis I predicted positive relationships between occurrence of one or more teacher observation variables and achievement disparity. This hypothesis was confirmed, but certain reservations should be pointed out. For example, only six of the total fifty-four simple correlations computed to test the hypothesis reached significance. Although sufficient basis for hypothesis confirmation, these results do not, on the whole, show that teacher rated "symptomatic" behaviors are strongly related to later reading difficulty in the third-sixth grade range.

Hypothesis II, that positive R's would obtain between predictor and criterion variables, was also verified. Once again, however, use of the total group of predictor variables proved less than convincing. Only one of the nine

predictor variables, those which yielded significant simple order correlations, proved contributory for each group R. Had other simple order correlations been significant, lack of individual item contribution to R might have been resultant of overlapping effects. While overlap was doubtless operant to some degree, particularly for the female group, it does not account for the relative uselessness of the majority of predictor items.

Hypothesis III, which predicted a higher positive relationship between observation variables and achievement criterion for girls than for boys, was rejected. The significance of the difference in the two contributory simple order correlations did not reach the five per cent level. This is in contrast to the findings of de Hirsh, et al., whose predictive battery proved more accurate for girls (1). It should be remembered, however, that these authors dealt largely with children from kindergarten to third grade, with predictive indices drawn from observed kindergarten behavior (1). The current study followed children from the third through sixth grades. Overall "Maturational lags," frequently evidenced by very young boys (5) are likely quite prominant in kindergarten age behavior. It might be suggested that, by the third grade, developmental differences between the sexes, which are rather decided at

school entrance (2), have lessened and become less susceptible to teacher observation.

It is interesting that different characteristics proved related to later reading skills in the two groups. Of those characteristics which showed positive relationship to later reading difficulties, "very poor oral readers" proved significant for the male group. This characteristic evidenced a high relationship to "Reading Vocabulary," "Reading Comprehension," and "Total Reading;" it was the only item in either group to prove significantly related to all three reading criterion. A "Failing Reading Group," studied by de Hirsh, et al., which included a majority of boys, exhibited a very limited sight vocabulary and great difficulties with expressive aspects of language. These authors state, "Failing Readers showed not only . . . numerous but also . . . severe deficits in both the receptive and expressive aspects of language." (1, p. 48). Very obviously, these difficulties would tend to effect oral reading skills and were perhaps operant among boys in the present study.

Also, the present population had completed six academic years at the conclusion of the study. Frustration associated with reading, as discussed by Natchez (4) would have seemingly

might be suggested that adverse reactions to oral reading precipitated or occurred in conjunction with overall reading withdrawal, as evidenced by poor reading achievement three years later.

Adverse reactions to oral reading tasks may well be more prevalent among boys than among girls, as boys tend to view reading as incongrous with their male roles (3); given difficulty in reading areas, they would have even stronger needs to avoid reading, as it produces feelings of failure and defeat. It might be suggested, then, that third grade males exhibiting hesitancy in situations where they are called upon to "perform," in the presence of peers, activities perceived as non-masculine and defeating, tend to withdraw from all reading-based activities. Achievement in all reading areas would then be depressed. It would be interesting to investigate these boy's sixth grade achievement in other academic areas, e.g., mathematics, science.

While there are doubtless other functional patterns which might be shown to be related to reading difficulty among males in a clinical population, their overt manifestations might not serve as differentiators in a normal population. The point is made by de Hirsh, et al., that most reading studies have been conducted with clinical populations (1). In a group of third grade boys, behavior such as that

investigated would seemingly prove quite difficult to evaluate via observation and call for study of a more thorough and technical nature.

The single significant predictor for the female group was "very poor spellers." It is not surprising that poor spelling proved to be the most effective predictor, as this was the only criterion which was rated according to "quantitative" data, e.g., spelling tests administered by the teacher. It follows that this item would prove less susceptible to halo-effects operant on most instruments of this nature. Little girls, by the third grade, have typically integrated "academic-appropriate" behavior as an important aspect of the feminine role (3). Seemingly, "academic-appropriate" behavior would work to the exclusion of hyperactivity, inattentiveness, "messy" handwriting. If psychomotor activity is not markedly elevated, teachers would probably not readily detect awkwardness in gross movement. Also, it would seem likely that "well-behaved" little girls who exhibit effort in oral reading would not be so readily described "very poor oral readers," even though they might not be proficient in that area.

It is interesting that, for the female group, a significant negative relationship was shown between "ill at ease in the reading circle" and tendencies to achieve

below anticipated reading levels. One wonders if perhaps anxiety precipitated by the demands of the reading circle leads to observable discomfort in that setting. It might be suggested that the same anxieties which made the females uncomfortable in the reading circle provided motivation toward intensified investment on achievement instruments. Girls might well tend to internalize anxieties at this age more readily than do boys; the latter, perhaps, would tend to overtly express anxieties through such modes as oral reading.

In light of results, this study is not considered highly supportive of the exclusive use of teacher observations toward prediction of later reading difficulty among third grade children. Results also might give rise to some doubts concerning the relatedness of functional difficulties thought to underlie observational items, insofar as the studied age group is concerned. Those functional difficulties which have been shown predictive for kindergarten age children (1), (2), might not maintain their strength among older students. This would seem a worthwhile topic for further research utilizing more careful controls and more sensitive instrumentation.

The fact that teacher observations of given traits did not prove, on the whole, highly predictive of later

reading difficulty, would seem to cast a shadow of doubt on parent's "diagnosis" of their child's reading problems. Such diagnoses, as was mentioned earlier, are often passed in conjunction with behavior widely presented as "typical" of those with severe reading difficulties. This study has shown that third grade children, seen by teachers as evidencing patterns typically thought highly related to reading difficulty, do not necessarily develop marked reading handicaps. Therefore, it would seem quite unwise for parents to draw hasty conclusions on the sole basis of their observations, which are likely to be far less objective than those made by classroom teachers.

Also, an integral part of this study was an attempt to evaluate reading abilities in relation to a child's capability level. Most parents (and, unfortunately, many teachers) assess a child's reading skills in relation to actual grade placement and/or the performance of classmates. The latter, particularly, can prove quite misleading, as mean class achievement might fall either above or below actual grade placement; in any case, such is not always commensurate with the child's own capability level. Care should be taken, then, to determine realistic academic expectations prior to diagnosing a specific learning disability.

The present study was designed primarily to study the relationship of teacher observed behavioral and academic patterns to later reading development, as assessed by a group achievement instrument. Observation items might have shown greater relationship to achievement, had the observation instrument been developed on a scaled basis. Also, there were obvious needs for establishing observer reliability. These are aspects of the current investigation which might be corrected in further studies of this nature. However, results are felt to indicate needs for further exploration of observable behaviors among older elementary school children which might prove related to reading difficulty. Such studies might well show differences in those correlates obtained among poor readers in the elementary grades.

Summary

A study was conducted to determine the relationship between observable behavior and academic variables, as judged by third grade teachers, and disparity in actual and anticipated reading achievement three years later. California Achievement Tests reading sub-tests were utilized to index actual reading achievement; the disparity between this measure and anticipated achievement levels served as

reading criterion. A multiple regression analysis was computed between reading criterion and the several observational variables, this toward determination of the predictive power of each item.

Subjects were divided according to sex. One predictor item per group proved significantly related to later reading problems. For the male group, observed difficulty with oral reading was positively related, at the one per cent level, to disparities between actual and anticipated achievement three years later. For the females, poor spelling proved predictive, at the five per cent level, of difficulty with reading vocabulary; the same variable was predictive, at the one per cent level, of difficulty with reading comprehension. Observed discomfort in the reading circle was shown negatively related, among females, to later difficulty with reading vocabulary.

It was concluded that teacher observations of the patterns in question should not provide the sole basis for diagnosis or prediction of reading difficulty in the third-sixth grade academic range.

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