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THE EFFECT OF FAMILIARITY WITH THE EXAMINER ON WISC-R
VERBAL, PERFORMANCE, AND FULL SCALE SCORES

by

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CHAPTER I

INTRODUCTION

Purpose of Study and Rationale

Educators have long been concerned with the problem of obtaining accurate results in individual educational testing (Sattler & Theye, 1967). In recent years, these results have come to be of major importance due to their many possible effects on a child's life. Educational programming, evaluation of progress, parent counseling, and placement in special intervention programs have been influenced by these scores (Stoneman & Gibson, 1978).

The problem of familiarity with the examiner as it influences test scores of school children was the subject of this study. Past evidence was inconclusive on the topic and left many questions unanswered (Rosenthal, 1963). A review of the literature indicated that information on the effect of familiarity with the examiner with a widely-used testing instrument, the Wechsler Intelligence Scale for Children-Revised (WISC-R), and a school-aged population would contribute significantly to the state of knowledge in the area of individual educational testing.

The outcome of this study seemed best served by the use of three treatment groups, distinguished by degree of

familiarity established, for each of two age levels in determining the effect of familiarity with the examiner on the WISC-R verbal, performance, and full scale scores. It was predicted that the results obtained not only would add to knowledge in the area but also would respond to several practical issues in assessment:

1. In order to spend valuable diagnostic time most efficiently, examiners need to know whether young children are more affected by lack of familiarity with the examiner than older children.

2. Too often, examiners are pressured to test as many children in as little time possible. Conscientious examiners wonder if they should demand more time in assessing children.

3. The situation, in which federal funding to states depends on identifying through assessment students with handicaps or language differences or from impoverished homes has lead to widespread testing across the nation. The need to examine critically testing procedures in general is urgent.

4. Knowledge of the effect of familiarity with the examiner on test scores is needed by administrators in deciding whether to place a diagnostic person in each school or employ them on an itinerant or contractual basis. The school-based examiner would certainly have a

greater opportunity to establish rapport than would an outside examiner, but the cost of providing such a service would be higher.

More specifically, procedures used in this study--using time as the measure of familiarity, using upper and lower elementary ages, and administering the WISC-R--were based on the following rationales:

1. Information concerning time spent with a prospective subject could be objectively measured and easily duplicated by practicing examiners.

2. Testing 6-year-old students and 10-year-old students gave an indication of whether or not the need for familiarity lessened as the child advanced in school. There would be no need for an examiner to spend valuable time establishing familiarity with younger students if it did not affect test scores. Also, using 6-year-old subjects and 10-year-old subjects appeared most beneficial because these ages marked the lower and upper ends of the elementary ages. Children above age 10 might have been in a middle school program, and thus many confounding variables (personnel, building location, etc.) may have been added to the study.

3. Use of the WISC-R as the testing instrument was indicated as it was so frequently used in individual educational testing and due to its reliability and validity.

Osborne (1972) aptly described the value of the WISC, from which the WISC-R was derived with minor modifications:

Despite the efforts of some well intentioned but misinformed school administrators, guidance counselors, and legislators to restrict the use of psychological tests in general and of intelligence tests in particular, the WISC has become of age and remains the individual intelligence test of choice for use with children in the 6 to 13 age range. For the WISC just to have survived the last six years in an atmosphere of test burnings, congressional investigations, restrictive legislation, and claims that the IQ is an instrument of subtle torture is no small accomplishment. (p. 802)

In general, it was hoped that in using the above procedures, information of most practical utility for the examiner in practice would be obtained and that school children would be better served by diagnostic personnel.

Review of Previous Research

Extratest Variables

Many important decisions for children have often been made as a result of individual educational testing. Frequently, such tests have been used to determine educational programming, to evaluate student progress, and to counsel the student and his parents concerning realistic future expectations. Assessment results often have been crucial elements in determining whether children were placed in a special intervention program. Previous literature has attempted to aid examiners in obtaining the most

accurate assessment of children's abilities possible.

Terman and Merrill (1960) stated that eliciting the subject's best efforts, and maintaining both high motivation and optimal performance level were essentials of good testing. In order to obtain the children's best performances and get the most accurate information, then, the examiner was to adhere to the standardized testing procedures as described in most test manuals (Bayley, 1969; Cattell, 1960; Kuhlman, 1947; Terman & Merrill, 1960; Wechsler, 1974). A problem arose when the conscientious examiner realized that there were some variables other than the testing device operating within the testing situation which could affect a child's score, but which were difficult to control even when standardized procedures were followed. Sattler and Theye (1967) conceptualized these factors as falling into three categories--situational variables, subject variables, and examiner variables. These have been called extratest, non-test, and non-intellective factors as they affect a score, but are not the factors intended to be measured. Much unsupported opinion appeared in the literature on dealing with these problems. A large portion of the research that had been done seemed characterized by inadequate research designs and was often of little practical utility to the school examiner (Sattler & Theye, 1967).

Briefly, situational variables were described as

factors involving the temporal or physical testing environment (Sattler & Theye, 1967). Cronbach (1970) cautioned the examiner to consider factors such as lighting, ventilation, and space for materials. Review of the literature revealed that many situational variables do not conform to common sense expectations in their effect on test scores. Studies of this variable have included areas such as the effect of desk type (Traxler & Hilkert, 1942), the effect of plastic versus wooden manipulatives (Primmer & Tipton, 1971), and many similar areas (Kratochwill & Brody, 1976; Strang, Bridgeman, & Carrico, 1974).

Subject extratest variables have received much the same quality of attention as situational variables. Nervousness, general health, and interest level have been some of the types of characteristics listed (Cronbach, 1970; Freeman, 1962). Especially in the last three decades, a great deal has been written about the use of tests with culturally, racially, and socioeconomically different children (Adler, 1973; Anastasi, 1964; Canady, 1936; Dershowitz & Frankel, 1975; Eisenberg, Berlin, Dill, & Frank, 1968; Eisenman & McBride, 1964; Estes, 1953, 1955; Galdieri, Barcikowski, & Witmer, 1972; Mercer, 1973; Miller, 1974; Sattler, 1966, 1970; Tiber & Kennedy, 1964).

Examiner extratest variables were defined as those characteristics of the examiner or his behavior which might

have an unintentional effect on a subject's score (Sattler & Theye, 1967). Rosenthal (1976) discussed this variable thoroughly, suggesting that sex, race, age, religion, anxiety, hostility, authoritarianism, need for approval, status relevant to subject status, warmth of the examiner-subject relationship, acquaintance with subject, experience, and past success or failure as an examiner were possible examiner extratest variables. Sattler and Theye (1967) reviewed the literature in this area and concluded:

1. Departures from standard procedures in testing were likely to affect an exceptional individual more than a normal one.
 2. The examiner's experience was not as important as one might think.
 3. Evidence concerning the deleterious effect of white examiners on the scores of black children was inconclusive.
 4. Many studies on examiner extratest variables had been characterized by inadequate research designs.
- Littell (1960) expressed the casual nature of concern over examiner extratest variables:

The possible effects of differences in the examiner's technique of administration is another problem area which has not received the attention it merits, as is the whole field of possibilities arising from the relation between the examiner and the child and the circumstances of the examination. This is surprising, as the importance of these variables appears to be generally assumed. (p. 146)

Thus, the research on extratest variables which may affect the day-to-day individual educational testing of school children appears to be lacking in many respects. The research designs have often been faulty (Sattler & Theye, 1967). Adult populations have often been studied (Masling, 1959; Mishra, 1971; Wickes, 1956). At the other extreme, preschool children have also often been studied (Kinnie & Sternlof, 1971; Marine, 1929; Sacks, 1952). The tests utilized in past research have seldom been those used frequently in actual school settings (Primmer & Tipton, 1971; Stoneman & Gibson, 1978). Finally, the variables tested, even if found to make a significant difference, were often not ones over which the examiner in the school had any control, practically speaking (Donahue & Sattler, 1971; Mishra, 1971; Tiber & Kennedy, 1964); for example, a school district that could afford to hire only one diagnostic person could not have examiners of different races, ages, or sex--no matter how often studies showed the variable as making a difference.

As it appeared the examiner had little control over most situational or subject variables, an examiner variable of high practical applicability and generalizability to the public school setting was chosen for study. The examiner extratest variable of rapport through familiarity with the examiner appeared to be one such variable.

Rapport Through Familiarity with the Examiner

Somewhere near the beginning of almost any book, article, or monograph concerned with intelligence measurement, there often has appeared a general statement concerning the importance of the examiner's establishing good rapport (Sacks, 1952). Most test manuals, however, fail to provide the examiner with instructions on how to establish rapport. The complexity and difficulty of this problem is demonstrated in a statement by Terman and Merrill (1937):

Unless rapport has first been established, the results of the first tests are likely to be misleading. The time and effort necessary for accomplishing this are variable factors, depending upon the personality of both examiner and the subject. It is impossible to give specific rules for the guidance of the examiner in establishing rapport. (p. 56)

Still, many research efforts have been directed toward establishing the very rules that Terman and Merrill spoke of so doubtfully. Especially in the area of establishment of familiarity with the examiner, some progress has been made.

An early study in the area of rapport establishment through familiarity with the examiner did not give very promising results. Kindergarten and first grade children were studied. The experimenter spent a 20-minute period for four consecutive days with children in the experimental

group. The control group received no special attention prior to testing with the Stanford-Binet. The results indicated no significant difference in test scores between groups. It was suggested that children more familiar with the examiner were less likely to attend to the task at hand or that the one examiner used obtained adequate rapport in the control condition to account for the lack of significant differences between groups (Marine, 1929).

In a review of research on examiner attributes and their influence on subject response, Rosenthal (1963) reviewed three studies. One showed familiarity not to be a factor; another revealed familiarity to be important, but conditions of familiarity to be unimportant. The third of these three studies (Sacks, 1952) used the 1937 Stanford-Binet and 3-year-old subjects. Three groups of previously tested children were studied. In group A, the examiner spent ten consecutive school days establishing a good relationship prior to testing; in group B, the examiner spent ten days establishing a poor relationship; and in group C, control conditions were maintained. In the good relationship condition, the examiner spent time in the classroom showing interest in the children and in their activities. Establishment of a poor relationship consisted of the examiner being present in the classroom, but discouraging interaction from the children. In the control

situation, the examiner simply tested and then retested a group of children. Sacks concluded not only that familiarity with the examiner made a difference, but that the quality of previous contact was a variable affecting performance as well.

In their extensive review of research on individual intelligence testing, Sattler and Theye (1967) evaluated two studies on the rapport variable. One (Marine, 1929) concluded that it is not a significant factor for normal children aged 3 to 8. The other (Tsudzuki, Hata, & Kuze, 1956) concluded that mentally retarded subjects obtain higher scores with familiar examiners. Sattler & Theye (1967) indicated that research showed rapport to influence especially the functioning of memory.

In a study of non-intellective factors on the Wechsler Preschool and Primary Scale of Intelligence (WPPSI), Kinnie and Sternlof (1971) found that increased scores were obtained by familiarizing preschool children with middle-class adults similar to the test administrators prior to testing. Here, they defined white middle-class female volunteers as "similar to test administrators". Research by Feldman and Sullivan (1971) added some interesting dimensions to the question of rapport effect. Their research with bright children found significantly higher IQ's on the Wechsler Intelligence Scale for Children (WISC) under

enhanced rapport conditions. Also, they noted that the teachers were generally able to predict the influence of rapport conditions on individual children. In an approach to the question of rapport, as related to examiner instead of child response, Masling (1959) used two female accomplices (one acted a warm role and one a cold role) to assess the effect on the results on specific subtests of the Wechsler-Bellevue II due to the examiner's perceived inability to establish rapport. The cold accomplice acted bored and even put on sunglasses during testing. The warm accomplice acted interested in the test and the examiner. She attempted to express respect and liking for the examiner. The results indicated the examiners to be more lenient in the scoring of warm subjects, to give more reinforcing comments, and to give more chances to clarify responses.

Exner (1966) found a method whereby inadequate rapport might be detected in WISC scale score patterns. School children were given the WISC following a pretest interview marked by examiner aloofness. A control group was handled in the standardized manner. The data supported the hypothesis that differences in pretest rapport can cause significant differences in test results. Also, a pattern of subtest performance was found to be dependent on the two approaches to pretest rapport. The conclusion drawn was:

These findings support the hypothesis that inadequate rapport in WISC testing might be detectable when the scale score pattern demonstrates the first test or (possibly) the first two subtests to be significantly lower than the full-scale mean score, especially when accompanied by lowered scores on the arithmetic, digit span, and picture completion subtests. (p. 305)

Thus, the state of knowledge concerning the examiner extratest variable of rapport through familiarity with the examiner as it relates to the individual educational testing situation appeared inconclusive. The situation was aptly stated by Feldman and Sullivan (1971):

In both the theoretical and practical realms, we accept the apparent truism that individuals will achieve a higher score on an intelligence test under some type of maximal rapport condition. However, the empirical data bearing on the "nonintellectual" facets of test performance is sparse and not unequivocal. (p. 302)

Definition of Terms

A thorough comprehension of the relationship among the terms extratest variables, rapport, and familiarity with the examiner, as used in this study, is essential. A hierarchical system of definition is used. Extratest variables are any variables which influence a test score, and which are not the actual factors being measured. Rapport is one of many extratest variables. It concerns the total means of relationship establishment used in eliciting a subject's

best performance. Familiarity with the examiner is one of many means of establishing rapport. For the purposes of this study, it is operationally defined as the amount of time spent by the examiner with the subject prior to the beginning of testing.

CHAPTER II

METHODS AND PROCEDURES

Questions

This study sought to answer the following questions:

1. Would time spent in establishment of familiarity with the examiner affect the WISC-R verbal, performance, and full scale scores?
2. Would there be a difference between the performance of 6-year-old elementary school children and that of 10-year-old elementary school children (as evidenced by WISC-R verbal, performance, and full scale scores) as a result of familiarity with the examiner?
3. Would age and time spent in the establishment of familiarity interact in affecting WISC-R performance?

Hypotheses

The following hypotheses were tested:

1. Increased time spent in establishment of familiarity with the examiner, as determined by one of three treatment conditions, would have no significant effects on WISC-R verbal, performance, and full scale scores.
2. There would be no significant differences between 6-year-old and 10-year-old children under the various treatment conditions of familiarity establishment on WISC-R verbal, performance, and full scale scores.

3. There would be no significant differences on WISC-R verbal, performance, and full scale scores as a result of the interaction of age and familiarity conditions.

Subjects

The subjects were 6-year-old and 10-year-old students, whose parents had given permission for project participation. (See Appendix A for parental permission form.) The subjects attended school in a west Texas town of approximately 16,000 population. Students in the 6-year-old group ranged in age from 6 years, 1 month, 22 days to age 6 years, 10 months, 14 days on the day of testing. Students in the 10-year-old group ranged in age from 10 years, 0 months, 25 days to age 10 years, 9 months, 27 days on the day of testing. Further, only students in the first grade were eligible for selection in the 6-year-old group, and only students in the fifth grade were eligible for selection in the 10-year-old group. No students receiving special education help in academic areas were included. Only Anglo-American and Spanish surnamed children were utilized in the study. These ethnic groups were selected in equal proportion to the total population of the participating elementary school-- 75% Anglo-American, 25% Spanish surnamed. Within each ethnic group and age level, the children were randomly assigned to one of the three experimental conditions.

Twelve children of each age level were assigned to each

treatment condition. Exact ages of each child on the date of testing are displayed in Appendices B and C. Table 1 shows the mean age for each group. An ANOVA procedure showed no significant difference in age for either the 6-year-old group (F , $2df$ = .05, p = .94) or the 10-year-old group (F , $2df$ = .05, p = .95).

Table 2 shows the sex distribution in each treatment group. The Chi Square statistic was calculated to determine equivalence of the groups in terms of sex. For 6-year-old students, the calculated value of Chi Square was 0.241, $2df$, $.80 < p < .90$. For 10-year-old students, the calculated value of Chi Square was 1.567, $2df$, $.30 < p < .50$. It can be seen that there was no significant difference in terms of sex for either 6-year-old or 10-year-old students.

Treatments

A 2 X 3 experimental research design was used. Since the variable of examiner extratest rapport had been identified in past research efforts, the existing problem was to find a way to control for it. The experimental design appeared to be the preferred method for testing practical solutions to such a problem.

Three treatment groups were used in each of two age levels. The first group was tested with only slight variation from the WISC-R manual (Wechsler, 1974):

Table 1
Mean Age of Subjects

Subjects	Mean Age (Months)
Group 1 (6-Year-Old Students)	
Treatment 1	78.0
Treatment 2	78.3
Treatment 3	78.0
Group 2 (10-Year-Old Students)	
Treatment 1	125.1
Treatment 2	125.2
Treatment 3	124.9

Table 2
Sex Distribution of Subjects

Subjects	Number	
	Male	Female
Group 1 (6-Year-Old Students)		
Treatment 1	8	4
Treatment 2	7	5
Treatment 3	8	4
Group 2 (10-Year-Old Students)		
Treatment 1	7	5
Treatment 2	8	4
Treatment 3	5	7

Establishing and Maintaining Rapport

In addition to a competent examiner and a comfortable testing room, the administrator of the WISC-R requires a friendly relationship between examiner and child, properly organized materials, and sufficient time to give the test in an easy manner. All of these are intimately related to the establishment of rapport. (p. 54)

Wechsler suggested a 5- to 10-minute introductory period for rapport establishment, with the examiner spending this time talking to the child about the child's hobbies or interests or about something concrete in the environment (a book, a toy, or a wall picture in the examining room). For Treatment Group 1, this recommended introductory period was shortened to under 5 minutes. The time involved only the amount of time necessary for the child to be seated for testing with minimum interaction beyond cursory introductory remarks. For a more complete description of examiner behavior, see Appendix D. Treatment Group 2 received a full 15 minutes of familiarity establishment immediately preceding testing. The examiner saw that the child was comfortably seated and then presented worksheets (coloring sheets, crosswords, etc.). The child was allowed to work on the task of his choice until 15 minutes passed. The examiner talked with the child about the task while it was being completed. At the end of the 15-minute time limit, the child was told he could take his worksheets with him

to finish at home because it was time to begin some other work. Administration of the WISC-R began at that point. For a more complete description of examiner behavior, see Appendix D. Treatment Group 3 received 5 minutes per day of familiarity establishment on two of the five school days preceding the testing and 5 minutes immediately preceding the testing. At the start of each session the child was seated comfortably and given a choice of the same worksheets as Treatment Group 2. The child was allowed to work on the task of his choice until 5 minutes passed. The examiner talked with the child about the task while it was being completed. At the end of the 5-minute time limit, the child was told he could take his worksheets with him and was dismissed on the first and second days. On the third day he was told he could take his worksheets with him to finish at home because it was time to begin some other work. Administration of the WISC-R began at that point. For a more complete description of examiner behavior, see Appendix D.

Instrument

The WISC-R was used for the following reasons:

1. The WISC-R has been used extensively in individual educational testing (Osborne, 1972).
2. The WISC-R norms were derived from a stratified sampling plan, thus insuring that the normative sample would

include representative proportions of various classes of children. The stratification was arranged in accordance with reports of the 1970 United States census. Variables considered were: age, sex, race (white/non-white), geographic region, occupation of head of household, and urban-rural residence (Wechsler, 1974).

3. Reliability: Wechsler (1974) reported full scale reliability coefficients of .95 for both 6½-year-olds and 10½-year-olds. Verbal IQ score coefficients of .91 and .93 were reported for 6½-year-olds and 10½-year-olds, respectively. Performance coefficients were .91 and .89, respectively. Individual subtest reliability coefficients reported were split-half correlations corrected by the Spearman-Brown formula except for those of Digit Span and Coding. In these two subtests, test-retest correlations were presented. Wechsler (1974, p. 28) further stated, "The coefficients of the IQ Scales were obtained from the formula for the reliability of a composite group of tests (Guilford, 1954, p. 393); the values for the supplementary tests, Digit Span and Mazes, were not included in these computations".

4. Validity: WISC-R verbal, performance, and full scale scores have been correlated with Wechsler Preschool and Primary Scale of Intelligence (WPPSI), Wechsler Adult Intelligence Scale (WAIS), and Stanford-Binet (S-B) scores (Wechsler, 1974): (a) The correlations between the WISC-R

and WPPSI on the verbal, performance, and full scale scores respectively were .80, .80, and .82. (b) The correlations between the WISC-R and WAIS on the verbal, performance, and full scale scores respectively, were .96, .83, and .95. (c) The average coefficients of correlation of the WISC-R verbal, performance, and full scale scores and the S-B were .71, .60, and .73 respectively.

Procedures

Permission was obtained from the Texas Tech Human Subjects Committee to begin the project. Permission was obtained from the participating elementary school to select randomly the desired number of students. After selection, parental permission was obtained. A randomized replacement procedure was used to replace chosen students unable to participate. The students in the various groups were tested on a random basis, in order to prevent maturation from differentially affecting the results. Approximately five children were tested daily during September and October of 1979. The author, who had received Texas State Certification as an educational diagnostician in 1975, tested all students in all groups. She had administered over 500 WISC-Rs while employed as an educational diagnostician. A second person, who directed the children to the testing room, had responsibility for any contact with the classroom teacher during hours when the children

were in the room. This procedure precluded the possibility that the examiner might become familiar to children outside the experimental condition.

CHAPTER III

RESULTS

Data

The Wechsler Intelligence Scale for Children-Revised (WISC-R) was administered to three groups of elementary school children at each of two age levels. The three groups received differing amounts of time spent in establishing familiarity with the examiner prior to testing. Individual scores for children participating in the study are displayed in Appendices E and F. Table 3 reports means and standard deviations for each treatment group. F-ratios were calculated to determine whether to reject the three hypotheses.

Analysis

Hypothesis I

The first hypothesis was: Increased time spent in establishment of familiarity with the examiner, as determined by one of three treatment conditions, would have no significant effects on WISC-R verbal, performance, and full scale scores.

ANOVA results relating to Hypothesis I are displayed as "Treatment" in Tables 4, 5, and 6. From inspection of these tables it can be seen that there were no significant

Table 3
Means and Standard Deviations of WISC-R Scores

	Treatment I		Treatment II		Treatment III	
	Mean	<u>SD</u>	Mean	<u>SD</u>	Mean	<u>SD</u>
6-Year-Old Students (n = 36) ^a						
Verbal	92.33	13.60	92.25	15.05	85.75	22.61
Performance	90.91	15.68	88.16	12.53	89.58	13.46
Full Scale	91.00	15.02	89.50	12.91	86.66	18.55
10-Year-Old Students (n = 36) ^b						
Verbal	88.41	9.03	91.41	13.52	87.83	9.48
Performance	93.50	12.48	99.08	16.98	95.91	13.37
Full Scale	89.58	8.52	94.33	13.93	90.83	10.75

^an = 12 for each treatment group

^bn = 12 for each treatment group

Table 4
Analysis of Variance for Verbal Scores

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Group	1	14.22	14.22	0.07	.796 (N.S.)
Treatment	2	323.08	161.54	0.76	.472 (N.S.)
Group X Treatment	2	108.02	54.01	0.25	.776 (N.S.)
Within	66	14058.66	213.01		
Total	71	14504.00			

Table 5
Analysis of Variance for Performance Scores

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Group	1	786.72	786.72	3.91	.052 (N.S.)
Treatment	2	24.52	12.26	0.06	.941 (N.S.)
Group X Treatment	2	209.02	104.51	0.52	.597 (N.S.)
Within	66	13288.33	201.33		
Total	71	14308.61			

Table 6
Analysis of Variance for Full Scale Scores

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Group	1	115.01	115.01	0.62	.435 (N.S.)
Treatment	2	120.36	60.18	0.32	.725 (N.S.)
Group X Treatment	2	141.36	70.68	0.38	.686 (N.S.)
Within	66	12312.91	186.55		
Total	71	12689.65			

differences among the three treatments on verbal, performance, or full scale scores; therefore, Hypothesis I was not rejected. For the sample under study, the three conditions of familiarity establishment did not significantly affect WISC-R scores.

Hypothesis II

The second hypothesis was: There would be no significant differences between 6-year-old and 10-year-old students under the various treatment conditions of familiarity establishment on WISC-R verbal, performance, and full scale scores.

ANOVA results relating to Hypothesis II are displayed as "Group" in Tables 4, 5, and 6. From inspection of these tables it can be seen that there were no significant differences between the two groups on verbal, performance, or full scale scores; therefore, Hypothesis II was not rejected. For the sample studied there were no significant differences between the WISC-R scores of 6-year-old students and 10-year-old students under the various treatment conditions.

Hypothesis III

The third hypothesis was: There would be no significant differences on WISC-R verbal, performance, and full scale scores as a result of the interaction of age and

familiarity conditions.

ANOVA results relating to Hypothesis III are displayed as "Group X Treatment" in Tables 4, 5, and 6. From inspection of these tables it can be seen that there were no significant differences as a result of the interaction of age and familiarity conditions; therefore, Hypothesis III was not rejected. Inspection of the six cell means for each of the verbal, performance, and full scale scores showed no consistent pattern of scoring by age and treatment for the sample studied.

CHAPTER IV

SUMMARY AND DISCUSSION

Summary

In an effort to avoid errors in educational placement of children, educators have become increasingly concerned with fairness in testing. A major area of interest has been that of the effect of extratest variables. The particular examiner extratest variable of time spent in establishing pretest rapport has received little systematic attention in experimental research.

The purpose of the present investigation was to compare three methods of pretest rapport establishment for each of two age groups. The Wechsler Intelligence Scale for Children-Revised (WISC-R) was chosen as the preferred testing instrument because of its wide use by examiners in practice (Osborne, 1972). Hypotheses were as follows:

Hypothesis I: Increased time spent in establishment of familiarity with the examiner, as determined by one of three treatment conditions, would have no significant effects on WISC-R verbal, performance, and full scale scores.

Hypothesis II: There would be no significant differences between 6-year-old and 10-year-old children under the various treatment conditions of familiarity establishment on WISC-R verbal, performance, and full scale scores.

Hypothesis III: There would be no significant differences on WISC-R verbal, performance, and full scale scores as a result of the interaction of age and familiarity conditions.

The subjects of the study were 72 elementary school children (36 first grade students and 36 fifth grade students). Children receiving special education services for academic instruction were not included.

The students were randomly selected and randomly assigned to three treatment groups within each age level. Treatment Group 1 received less than 5 minutes of pretest rapport establishment immediately preceding testing. Treatment Group 2 received 15 minutes of rapport establishment immediately preceding testing. Treatment Group 3 received 5 minutes of rapport establishment on two of the five school days prior to testing and 5 minutes immediately preceding testing.

WISC-R results were analyzed with regard to each hypothesis. Hypothesis I was not rejected. Time spent in establishment of familiarity with the examiner as determined by the three treatment conditions was shown to have no significant effects on WISC-R verbal, performance, or full scale scores for the sample under study. Hypothesis II was not rejected. There was no significant difference found between 6-year-old and 10-year-old students under the

various treatment conditions in this sample. Hypothesis III was not rejected. For the sample studied, no significant differences on WISC-R verbal, performance, or full scale scores were found as a result of the interaction of age and familiarity conditions.

Discussion

Many questions remain unanswered in the area of extra-test variables involved in the individual educational testing situation (Littell, 1960). One issue--the importance of the examiner extratest variable of rapport establishment through familiarity with the examiner--was the topic of the present investigation. Although not conclusively resolving the issue of whether familiarity affects test scores, the results of the present study added to the body of research already collected on the subject.

Sacks (1952) reported that somewhere near the beginning of almost any book, article, or monograph concerned with intelligence testing, there often appears a general statement about the importance of the examiner's establishing good rapport with the subject. The present study indicated that, perhaps, the case is overstated. Possibly, little or no rapport establishment beyond perfunctory introductory remarks (as with Treatment Group 1) is necessary. As the 5- to 10- minute introductory period suggested by Wechsler (1974) was shortened in Treatment Group 1, test manuals

should possibly be amended to reflect the adequacy of shorter introductory periods. Any saving of diagnostic time is valuable to practicing examiners, often burdened with backlogs of children to be tested. For public school systems, any consistent saving of personnel time leads to a saving of dollars--an important administrative consideration.

Present results had implications for those administrators involved in hiring and placement of diagnostic personnel. If familiarity does not significantly improve performance, then there is no need to place diagnostic personnel in one school consistently. All but familiarity being equal, itinerant or contractual personnel should not obtain different results from full-time personnel.

The results of the present study were consistent with the findings of Marine (1929). She found that increased familiarity with the examiner did not significantly influence the Stanford-Binet scores of kindergarten and first grade children. Present results indicated that first and fifth grade children were likewise unaffected when given the WISC-R under various familiarity conditions.

Present results appeared to be in conflict with those of Sacks (1952), who concluded that familiarity with the examiner made a difference as did the quality of previous contact. A possible explanation for this discrepancy might

be that Sacks studied 3-year-old children. In conjunction with the results of the present study, one could conclude that perhaps only very young children are influenced by familiarity with the examiner. Further indication that this might be the case existed in the results of Kinnie and Sternlof (1971). They found increased scores were obtained on the Wechsler Preschool and Primary Scale of Intelligence by familiarizing preschool children with middle-class adults similar to test administrators prior to testing. Additional research is needed to clarify whether only very young children are influenced by familiarity.

Although the results of the present study appeared to contradict those of Exner (1966), the two studies do not actually report incompatible results. Exner concluded that differences in pretest rapport could cause significant differences in test results. His two treatment groups consisted of a group receiving poor pretest rapport and a control group. The poor pretest rapport condition consisted of examiner aloofness. It is suggested that the aloof condition might be perceived as aversive to a subject; all conditions of the present study could be described as pleasant or at least neutral. Perhaps, then, only aversive rapport conditions can significantly affect test scores. This area of investigation appears to be appropriate for future research.

Finally, the results of the present study could be interpreted as further argument for the use of the WISC-R as an individual intelligence testing instrument. Results indicated the WISC-R to be sufficiently vigorous to withstand the administration fluctuations tested in the present study.

Implications arise for those involved in research efforts concerning individual educational testing. It appears that many further questions require answers: (a) Does familiarity with the examiner affect test scores for other age levels of school children? (b) Is familiarity a factor in testing infant to 3-year-old children? (c) Are test results for adults affected by time spent in rapport establishment? (d) Are other testing instruments vigorous enough to withstand fluctuations in familiarity establishment? (e) Is it possible that mentally retarded or other exceptional children will respond differently? (f) Can different results be obtained by adding a fourth treatment group involving an even longer period of rapport establishment?

The present study provided insight into a small portion of the individual educational testing situation. For the sample under study, the three treatment conditions did not significantly affect WISC-R verbal, performance, or full scale scores. Age was not a significant factor for the two

age groups tested, and there was no significant interaction of treatment condition and age. Many questions remain to be answered concerning the extratest variables involved in the individual educational testing situation. In a continuing effort to make individual educational assessment as exact as possible, perhaps many of these questions will be answered in future research.

REFERENCES

- Adler, S. Data gathering: the reliability and validity of test data from culturally different children. Journal of Learning Disabilities, 1973, 6, 429-434.
- Anastasia A. Culture fair testing. Educational Horizons, 1964, 43, 26-30.
- Bayley, N. Bayley Scales of Infant Development. New York: The Psychological Corporation, 1969.
- Canady, H. G. The effect of "rapport" on the I.Q.: A new approach to the problem of racial psychology. Journal of Negro Education, 1936, 5, 209-219.
- Cattell, P. The measurement of intelligence of infants and young children. New York: The Psychological Corporation, 1960.
- Cronbach, L. J. Essentials of psychological testing. New York: Harper & Row, 1970.
- Dershowitz, Z., & Frankel, Y. Jewish culture and the WISC and WAIS test patterns. Journal of Consulting and Clinical Psychology, 1975, 43, 126-134.
- Donahue, D., & Sattler, J. M. Personality variables affecting WAIS scores. Journal of Consulting and Clinical Psychology, 1971, 36, 441.
- Eisenberg, L., Berlin, C. I., Dill, A., & Frank, S. Class and race effects on the intelligibility of monosyllables. Child Development, 1968, 39, 1077-1089.
- Eisenman, R., & McBride, J. W., Jr. "Balls" on the WISC. Psychological Reports, 1964, 14, 266.
- Estes, B. W. Influence of socioeconomic status on Wechsler Intelligence Scale for Children: An exploratory study. Journal of Consulting Psychology, 1953, 17, 58-62.
- Estes, B. W. Influence of socioeconomic status on Wechsler Intelligence Scale for Children: addendum. Journal of Consulting Psychology, 1955, 19, 225-226.

- Exner, J. E., Jr. Variations in WISC performance as influenced by differences in pretest rapport. Journal of General Psychology, 1966, 74, 299-306.
- Feldman, S. E., & Sullivan, D. S. Factors mediating the effects of enhanced rapport on children's performance. Journal of Consulting and Clinical Psychology, 1971, 36, 302.
- Freeman, F. S. Theory and practice of psychological testing (3rd ed.). New York: Holt, Rinehart, & Winston, 1962.
- Galdieri, A. A., Barcikowski, R. S., & Witmer, J. M. The effect of verbal approval upon the performance of middle- and lower-class third-grade children on the WISC. Psychology in the Schools, 1972, 9, 404-408.
- Guilford, J. P. Psychometric methods (2nd ed.). New York: McGraw-Hill, 1954.
- Kinnie, E. J. & Sternlof, R. E. The influence of nonintellective factors on the IQ scores of middle- and lower-class children. Child Development, 1971, 42, 1989-1995.
- Kratochwill, T. R., & Brody, G. H. Effects of verbal and self-monitoring feedback on Wechsler Adult Intelligence Scale performance in normal adults. Journal of Consulting and Clinical Psychology, 1976, 44, 879-880.
- Kuhlman, F. Tests of Mental Development. Minneapolis: Educational Publishers, 1947.
- Littell, W. M. The Wechsler Intelligence Scale for Children: Review of a decade of research. Psychological Bulletin, 1960, 57, 132-156.
- Marine, E. L. The effect of familiarity with the examiner upon Stanford-Binet test performance. New York: Bureau of Publications, Teacher's College, Columbia University, 1929.
- Masling, J. The effects of warm and cold interaction on the administration and scoring of an intelligence test. Journal of Consulting Psychology, 1959, 23, 336-341.
- Mercer, J. R. Labeling the mentally retarded. Berkeley, California: University of California Press, 1973.

- Miller, L. P. (Ed.). The testing of black students. Englewood Cliffs, New Jersey: Prentice-Hall, 1974.
- Mishra, S. P. Wechsler Adult Intelligence Scale: examiner vs machine administration. Psychological Reports, 1971, 29, 759-762.
- Osborne, R. T. Review of the Wechsler Intelligence Scale for Children. In K. Buros (Ed.) Seventh Mental Measurements Yearbook. Highland Park, N. J.: Gryphon Press, 1972, 1, item 432, 802-803.
- Primmer, R. D., & Tipton, R. M. Effects on test performance of test apparatus boards made of different material. Perceptual and Motor Skills, 1971, 32, 916-918.
- Rosenthal, R. Experimenter attributes as determinants of subjects' responses. Journal of Projective Techniques, 1963, 27, 324-331.
- Rosenthal, R. Experimenter effects in behavioral research. New York: Irvington Publishers, Inc., 1976.
- Sacks, E. L. Intelligence scores as a function of experimentally established social relationships between child and examiner. Journal of Abnormal and Social Psychology, 1952, 47, 354-358.
- Sattler, J. M. Statistical reanalysis of Canady's "the effect of 'rapport' on the I. Q.: A new approach to the problem of racial psychology". Psychological Reports, 1966, 19, 1203-1206.
- Sattler, J. M. Racial "experimenter effects" in experimentation, testing, interviewing, and psychotherapy. Psychological Bulletin, 1970, 73, 137-160.
- Sattler, J. M., & Theye, F. Procedural, situational, and interpersonal variables in individual intelligence testing, Psychological Bulletin, 1967, 68, 347-360.
- Stoneman, Z. & Gibson, S. Situational influences on assessment performance. Exceptional Children, 1978, 45, 166-169.

- Strang, H. R., Bridgeman, B., & Carrico, M. F. Effects of "game" versus "test" task definition for third grade children on three subtests of the Wechsler Intelligence Scale for Children. Journal of Educational Measurement, 1974, 11, 125-128.
- Terman, L. M., & Merrill, M. A. Measuring intelligence. Boston: Houghton Mifflin, 1937.
- Terman, L. M., & Merrill, M. A. Stanford-Binet Intelligence Scale. Boston: Houghton Mifflin, 1960.
- Tiber, N., & Kennedy, W. A. The effects of incentives on the intelligence test performance of different social groups. Journal of Consulting Psychology, 1964, 28, 187.
- Traxler, A. E., & Hilkert, R. N. Effect of type of desk on results of machine-scored tests. School and Society, 1942, 56, 277-279.
- Tsudzuki, A., Hata, Y., & Kuze, T. A study of rapport between examiner and subject. Japanese Journal of Psychology, 1956, 27, 22-28.
- Wechsler, D. Wechsler Intelligence Scale for Children-Revised. New York: The Psychological Corporation, 1974.
- Wickes, T. A., Jr. Examiner influence in a testing situation. Journal of Consulting Psychology, 1956, 20, 23-26.

APPENDIX

- A. Parent Permission Form
- B. Age of Children by Treatment Group--6-Year-Old Students
- C. Age of Children by Treatment Group--10-Year-Old Students
- D. Details of Rapport Establishment
- E. Verbal, Performance, and Full Scale Scores by Treatment Group--6-Year-Old Students
- F. Verbal, Performance, and Full Scale Scores by Treatment Group--10-Year-Old Students

APPENDIX A: PARENT PERMISSION FORM

Dear Parent: Texas Tech University requires that the following letter be sent to you to obtain your permission for your child to participate in the study explained below. Please note that full cooperation has been promised from (Mr. Principal) at (School) in asking your permission.

I give my permission for my child, (first name, last name) to participate in the project titled "Effect of Familiarity with the Examiner on WISC-R Verbal, Performance, and Full Scale Scores." I understand that the persons responsible for this project are Dr. Gary Blackburn, Texas Tech College of Education, and his student, Mrs. Donna Irons.

It has been explained to me what the project is about and what is being tested. I am aware that no risk to my child is involved--that he will only be taking a paper and pencil test.

Dr. Blackburn or Mrs. Irons have agreed to answer any questions I might have. Questions may also be directed to the Texas Tech University Institutional Review Board by writing them in care of the Office of Research Services, Texas Tech University, Lubbock, Texas, 79409, (742-3884).

I understand that the project does not involve any educational therapy for my child and that no educational treatment or insurance is involved. Further information about these matters may be obtained from Dr. J. Knox Jones, Jr., Vice President for Research and Graduate Studies, telephone 742-2152, Room 118 Administration Building, Texas Tech University, Lubbock, Texas 79409.

I understand that the school may wish to use the information gathered in helping to plan for my child's education. I understand that this information is held in strict confidentiality as a part of my child's school records.

(Signature of Parent) (Date)

(Signature of Faculty Member) (Date)

(Signature of University Student) (Date)

APPENDIX B: AGE OF CHILDREN BY TREATMENT GROUP
6-YEAR-OLD STUDENTS

Group	I.D. Number	C.A. Years-Months-Days
I	1	06-06-13
	2	06-02-28
	3	06-09-20
	4	06-03-00
	5	06-05-23
	6	06-10-08
	7	06-02-29
	8	06-10-11
	9	06-02-23
	10	06-04-10
	11	06-09-22
	12	06-03-17
II	13	06-01-22
	14	06-03-00
	15	06-08-11
	16	06-08-09
	17	06-04-14
	18	06-02-10
	19	06-06-24
	20	06-06-26
	21	06-08-07
	22	06-07-25
	23	06-08-18
	24	06-10-03
III	25	06-10-14
	26	06-05-05
	27	06-06-02
	28	06-09-10
	29	06-05-00
	30	06-06-10
	31	06-08-16
	32	06-02-00
	33	06-03-09
	34	06-09-26
	35	06-03-21
	36	06-02-15

APPENDIX C: AGE OF CHILDREN BY TREATMENT GROUP
10-YEAR-OLD STUDENTS

Group	I.D. Number	C.A. Years-Months-Days
I	1	10-07-22
	2	10-09-27
	3	10-05-10
	4	10-04-24
	5	10-04-00
	6	10-03-06
	7	10-02-04
	8	10-08-03
	9	10-04-11
	10	10-03-26
	11	10-04-13
	12	10-05-14
II	13	10-04-12
	14	10-07-12
	15	10-01-13
	16	10-05-29
	17	10-01-08
	18	10-05-20
	19	10-09-01
	20	10-08-26
	21	10-09-10
	22	10-00-26
	23	10-06-27
	24	10-02-16
III	25	10-04-01
	26	10-06-22
	27	10-09-06
	28	10-02-24
	29	10-04-06
	30	10-06-27
	31	10-01-10
	32	10-06-10
	33	10-00-25
	34	10-05-16
	35	10-09-11
	36	10-02-02

APPENDIX D: DETAILS OF RAPPORT ESTABLISHMENT

Examiner Appearance and Setting for All Three Groups

The examiner did not wear any unusual uniforms during the study. The general purpose of chosen dress and hair style was to appear as much like the general school personnel as possible. All sessions for all groups were held in rooms of the child's home school building.

Examiner Behavior for Treatment Group 1

For each child in the first treatment group, the following steps were taken:

1. The child was brought from his room by an assistant.
2. As the child entered the room, the examiner greeted the child by saying, "Hello, (first name). How are you today?"
3. While gesturing toward the child's chair, the examiner said, "Please sit here; we have some work to do."
4. The examiner said, "Let me be sure I have your name and birthdate right. You're (first name) (last name), and your birthdate is (month), (day), (year)--right?"
5. The examiner began with the Information subtest of the WISC-R immediately. Throughout testing the words "okay" or "all right" were used independent of response correctness to promote continued effort. No elaborate

praise or pats on the back were given. Eye contact was made only briefly, as presentation of test materials and recording of responses left little time for such behavior.

6. The above examiner behavior was implemented for both the 6-year-old and 10-year-old students in this treatment group.

Examiner Behavior for Treatment Group 2

For each 6-year-old child in the second treatment group, the following steps were taken:

1. The child was brought from his room by an assistant.
2. As the child entered the room, the examiner greeted the child by saying, "Hello, (first name). How are you today?" The examiner started a stopwatch for timing the 15-minute rapport period.
3. While gesturing toward the child's chair, the examiner said, "Please sit here; we have some work to do."
4. The examiner said, "Let me be sure I have your name and birthdate right. You're (first name) (last name), and your birthdate is (month), (day), (year)--right?"
5. The examiner said, "First, we are going to do some practice work so that I can get to know you better."
6. The examiner presented four colorbook pictures and a box of eight primary crayons saying, "Which of these

would you like to color?"

7. After the child had chosen a picture and begun work, the examiner talked quietly with the child about: (a) the color chosen for a picture part, (b) the activity or objects in the picture, (c) the child's personal experience with activities or objects like the ones in the picture, (d) the examiner's thoughts about the picture (in case the child was reluctant to speak first), (e) whether the child enjoyed coloring, had done it before, etc. The examiner refrained from value judgments on the quality of the coloring unless directly asked by the child. When this occurred, the examiner said, "You're doing fine."

8. When the child finished a picture before the end of the 15-minute time limit, the child was asked to select another of the remaining three. This process was repeated as often as necessary, with white paper being made available for drawing if all sheets were done.

9. When the 15-minute time limit expired, the child was told, "Our time for coloring is up; you can take the picture(s) you've done with you to finish later."

10. The examiner said, "Now we have some work to do."

11. The examiner began with the Information subtest of the WISC-R immediately. The words "okay" or "all right" were used throughout testing to promote continued effort independent of response correctness. No elaborate praise

or pats on the back were given. Eye contact was made only briefly, as presentation of test materials and recording of responses left little time for such behavior.

For each 10-year-old child in the second treatment group, the following steps were taken:

1. The child was brought from his room by an assistant.

2. As the child entered the room, the examiner greeted the child by saying, "Hello, (first name). How are you today?" The examiner started a stopwatch for timing the 15-minute rapport period.

3. While gesturing toward the child's chair, the examiner said, "Please sit here; we have some work to do."

4. The examiner said, "Let me be sure I have your name and birthdate right. You're (first name) (last name), and your birthdate is (month), (day), (year)--right?"

5. The examiner said, "First, we are going to do some practice work so that I can get to know you better."

6. The examiner presented four activity pages (cross-word, cut out, color by number, etc.), school scissors, and a box of colored pencils, saying, "Which of these would you like to work?"

7. After the child had chosen a picture and begun work, the examiner talked quietly with the child about:
(a) how to work the sheet, (b) the activity or objects on

the sheet, (c) the child's personal experience with activities or objects like the ones in the picture, (d) the examiner's thoughts about the activity (in case the child was reluctant to speak first), (e) whether the child enjoyed activities of this nature, had done them before, etc. The examiner refrained from making value judgments on the quality of the child's work unless directly asked by the child. When this occurred, the examiner said, "You're doing fine."

8. When the child finished an activity before the 15-minute time limit, the child was asked to select another of the remaining three. This process was repeated as often as necessary, with white paper being made available for drawing if all sheets were done.

9. When the 15-minute time limit expired, the child was told, "Our time for practice work is up; you can take your work with you to finish later."

10. The examiner said, "Now we have some work to do."

11. The examiner began with the Information subtest of the WISC-R immediately. Throughout testing the words "okay" or "all right" were used independent of response correctness to promote continued effort. No elaborate praise or pats on the back were given. Eye contact was made only briefly, as presentation of test materials and recording of responses left little time for such behavior.

Examiner Behavior for Treatment Group 3

For each 6-year-old child in the third treatment group, the following steps were taken:

First Day

1. The child was brought from his room by an assistant.
2. As the child entered the room, the examiner greeted the child by saying, "Hello, (first name). How are you today?" The examiner started a stopwatch for timing the 5-minute rapport period.
3. While gesturing toward the child's chair, the examiner said, "Please sit here; we have some work to do."
4. The examiner said, "Let me be sure I have your name and birthdate right. You're (first name) (last name), and your birthdate is (month), (day), (year)--right?"
5. The examiner said, "We have some work to do. We'll do some of it today and some of it on two other days. We are going to do some practice work today so that I can get to know you better."
6. The examiner presented four colorbook pictures and a box of eight primary crayons saying, "Which of these would you like to color?"
7. After the child had chosen a picture and begun work, the examiner talked quietly with the child about:
(a) the color chosen for a picture part, (b) the activity

or objects in the picture, (c) the child's personal experience with activities or objects like the ones in the picture, (d) the examiner's thoughts about the picture (in case the child was reluctant to speak first), (d) whether the child enjoyed coloring, had done it before, etc. The examiner refrained from value judgments on the quality of the coloring unless directly asked by the child. When this occurred, the examiner said, "You're doing fine."

8. When the child finished a picture before the end of the 5-minute time limit, the child was asked to select another of the remaining three. This process was repeated as often as necessary, with white paper being made available for drawing if all sheets were done.

9. When the 5-minute time limit expired, the child was told, "Our time for coloring is up. You can take your picture with you to finish or leave it here to finish next time."

10. While opening the door to see the child out, the examiner said, "I'll see you next time."

Second Day

1. The child was brought from his room by an assistant.

2. As the child entered the room, the examiner greeted the child by saying, "Hello, (first name). How are you today?" The examiner started a stopwatch for timing the

5-minute rapport period.

3. While gesturing toward the child's chair, the examiner said, "Please sit here; we have some work to do."

4. The examiner said, "You're (first name)--isn't that right?"

5. The examiner said, "We have our practice work to do again today. I'll see you one more day, and we'll do our real work then. Today we'll just get to know each other better again."

6. The examiner presented the remaining of the same pictures as presented to the student on the first day and a box of eight primary crayons saying, "Which of these would you like to color today?" The child was allowed to finish a picture he had started or begin a new one.

7. After the child had chosen a picture and begun work, the examiner talked quietly with the child about: (a) the color chosen for a picture part, (b) the activity or objects in the picture, (c) the child's personal experience with activities or objects like the ones in the picture, (d) the examiner's thoughts about the picture (in case the child was reluctant to speak first), (e) whether the child enjoyed coloring, had done it before, etc. The examiner refrained from value judgments on the quality of the coloring unless directly asked by the child. When this occurred, the examiner said, "You're doing fine."

8. When a child finished a picture before the end of the 5-minute time limit, the child was asked to select another of the remaining pictures. This process was repeated as many times as necessary with white paper being offered for drawing if all four sheets were done.

9. When the 5-minute time limit expired, the child was told, "Our time for coloring is up. You can take your picture with you to finish or leave it here to finish next time."

10. While opening the door to see the child out, the examiner said, "I'll see you next time."

Third Day

1. The child was brought from his room by an assistant.

2. As the child entered the room, the examiner greeted the child by saying, "Hello, (first name). How are you today?" The examiner started a stopwatch for timing the 5-minute rapport period.

3. While gesturing toward the child's chair, the examiner said, "Please sit here; we have some work to do."

4. The examiner said, "You're (first name)--isn't that right?"

5. The examiner said, "First we'll do our practice work, and then we'll do our real work."

6. The examiner presented the remaining of the same

pictures as presented to the student on the first and second days and a box of eight primary crayons saying, "Which of these would you like to color today?" The child was allowed to finish a picture he had started or begin a new one.

7. After the child had chosen a picture and begun work, the examiner talked quietly with the child about: (a) the color chosen for a picture part, (b) the activity or objects in the picture, (c) the child's personal experience with activities or objects like the ones in the picture, (d) the examiner's thoughts about the picture (in case the child was reluctant to speak first), (e) whether the child enjoyed coloring, had done it before, etc. The examiner refrained from value judgments on the quality of the coloring unless directly asked by the child. When this occurred, the examiner said, "You're doing fine."

8. When a child finished a picture before the end of the 5-minute time limit, the child was asked to select another of the remaining pictures. This process was repeated as many times as necessary with white paper being offered for drawing if all four sheets were done.

9. When the 5-minute time limit expired, the child was told, "Our time for coloring is up. You can take your picture with you to finish later."

10. The examiner said, "Now we have some work to do."

11. The examiner began with the Information subtest of

the WISC-R immediately. Throughout testing the words "okay" or "all right" were used independent of response correctness to promote continued effort. No elaborate praise or pats on the back were given. Eye contact was made only briefly, as presentation of test materials and recording of responses left little time for such behavior.

For each 10-year-old child in the third treatment group, the following steps were taken:

First Day

1. The child was brought from his room by an assistant.
2. As the child entered the room, the examiner greeted the child by saying, "Hello, (first name). How are you today?" The examiner started a stopwatch for timing the 5-minute rapport period.
3. While gesturing toward the child's chair, the examiner said, "Please sit here; we have some work to do."
4. The examiner said, "Let me be sure I have your name and birthdate right. You're (first name) (last name), and your birthdate is (month), (day), (year)--right?"
5. The examiner said, "We have some work to do. We'll do some of it today and some of it on two other days. We are going to do some practice work today so that I can get to know you better."
6. The examiner presented four activity pages (cross-

word, cut out, color by number, etc.), school scissors, and a box of colored pencils, saying, "Which of these would you like to work?"

7. The examiner said, "We'll do some of these today and some on two other days, so that I can get to know you better."

8. After the child had chosen a picture and begun work, the examiner talked quietly with the child about: (a) how to work the sheet, (b) the activity or objects on the sheet, (c) the child's personal experience with activities or objects like the ones in the picture, (d) the examiner's thoughts about the activity (in case the child was reluctant to speak first), (e) whether the child enjoyed activities of this nature, had done them before, etc. The examiner refrained from making value judgments on the quality of the work done unless asked directly by the child. When this occurred, the examiner said, "You're doing fine."

9. When the child finished a picture before the end of the 5-minute time limit, the child was asked to select another of the remaining three. This process was repeated as often as necessary, with white paper being made available for drawing if all sheets were done.

10. When the 5-minute time limit expired, the child was told, "Our time for practice work is up. You can take

your work with you to finish or leave it here to finish next time."

11. While opening the door to see the child out, the examiner said, "I'll see you next time."

Second Day

1. The child was brought from his room by an assistant.

2. As the child entered the room, the examiner greeted the child by saying, "Hello, (first name). How are you today?" The examiner started a stopwatch for timing the 5-minute rapport period.

3. While gesturing toward the child's chair, the examiner said, "Please sit here; we have some work to do."

4. The examiner said, "You're (first name)--isn't that right?"

5. The examiner said, "We have our practice work to do again today. I'll see you one more day, and we'll do our real work then. Today we'll just get to know each other better again."

6. The examiner presented the remaining of the same worksheets as presented on the first day, the school scissors, and colored pencils, saying, "Which of these would you like to work on today?" The child was allowed to finish a picture he had started or begin a new one.

7. After the child had chosen a picture and begun work, the examiner talked quietly with the child about:

(a) how to work the sheet, (b) the activity or objects on the sheet, (c) the child's personal experience with activities or objects like the ones in the picture, (d) the examiner's thoughts about the activity (in case the child was reluctant to speak first), (e) whether the child enjoyed activities of this nature, had done them before, etc. The examiner refrained from making value judgments on the quality of the work done unless directly asked by the child. When this occurred, the examiner said, "You're doing fine."

8. When the child finished an activity before the 5-minute time limit expired, he was asked to select another of the remaining pictures. This process was repeated as often as necessary, with white paper being made available for drawing if all sheets were done.

9. When the 5-minute time limit expired, the child was told, "Our time for practice work is up. You can take your work with you to finish or leave it here to finish next time."

10. While opening the door to see the child out, the examiner said, "I'll see you next time."

Third Day

1. The child was brought from his room by an assistant.

2. As the child entered the room, the examiner greeted the child by saying, "Hello, (first name). How are you

today?" The examiner started a stopwatch for timing the 5-minute rapport period.

3. While gesturing toward the child's chair, the examiner said, "Please sit here; we have some work to do."

4. The examiner said, "You're (first name)--isn't that right?"

5. The examiner said, "First we'll do our practice work, and then we'll do our real work."

6. The examiner presented the remaining of the same pictures as presented to the student on the first and second days, the school scissors, and the box of colored pencils, saying, "Which of these would you like to work on today?" The child was allowed to finish a worksheet he had started or choose a new one.

7. After the child had chosen a picture and begun work, the examiner talked quietly with the child about: (a) how to work the sheet, (b) the activity or objects on the sheet, (c) the child's personal experience with activities or objects like the ones in the picture, (d) the examiner's thoughts about the activity (in case the child was reluctant to speak first), (e) whether the child enjoyed activities of this nature, had done them before, etc. The examiner refrained from making value judgments on the quality of the work done unless directly asked by the child. When this occurred, the examiner said, "You're doing fine."

8. When the child finished an activity before the end of the 5-minute time limit, the child was asked to select another of the remaining pictures. This process was repeated as many times as necessary with white paper being offered for drawing if all four sheets were done.

9. When the 5-minute time limit expired, the child was told, "Our time for practice work is up. You can take your picture with you to finish later."

10. The examiner said, "Now we have some work to do."

11. The examiner began with the Information subtest of the WISC-R immediately. Throughout testing the words "okay" or "all right" were used independent of response correctness to promote continued effort. No elaborate praise or pats on the back were given. Eye contact was made only briefly, as presentation of test materials and recording of responses left little time for such behavior.

It should be stressed that the above dialogues were adhered to as strictly as possible. Exceptions were due to student questions about unanticipated topics or to student actions requiring comment on the part of the examiner. These were kept to a minimum, but a few did occur. The examiner dealt with these by responding briefly and by not encouraging further comment.

APPENDIX E: VERBAL, PERFORMANCE, AND FULL SCALE SCORES
BY TREATMENT GROUP--6-YEAR-OLD STUDENTS

Group	I.D. Number	VIQ	PIQ	FSIQ
I	1	88	98	92
	2	106	87	96
	3	82	78	79
	4	113	106	111
	5	96	98	96
	6	96	91	92
	7	101	101	101
	8	108	123	117
	9	92	88	89
	10	68	64	64
	11	78	75	75
	12	80	82	80
II	13	105	81	92
	14	114	121	120
	15	109	81	95
	16	70	69	68
	17	97	82	89
	18	91	84	86
	19	106	96	101
	20	80	85	81
	21	87	95	90
	22	91	86	87
	23	66	90	76
	24	91	88	89
III	25	79	100	87
	26	108	93	101
	27	70	82	74
	28	58	64	57
	29	105	91	98
	30	120	101	112
	31	115	106	112
	32	95	108	101
	33	90	90	89
	34	60	71	64
	35	64	88	74
	36	65	81	71

APPENDIX F: VERBAL, PERFORMANCE, AND FULL SCALE SCORES
BY TREATMENT GROUP--10-YEAR-OLD STUDENTS

Group	I.D. Number	VIQ	PIQ	FSIQ
I	1	94	98	95
	2	105	81	92
	3	91	106	98
	4	87	84	84
	5	84	106	93
	6	88	84	85
	7	90	98	92
	8	103	98	101
	9	78	71	72
	10	75	82	77
	11	84	108	94
	12	82	106	92
II	13	107	88	98
	14	82	88	84
	15	96	120	107
	16	85	114	98
	17	107	117	112
	18	107	118	113
	19	95	81	87
	20	100	111	105
	21	96	85	89
	22	81	102	90
	23	75	96	84
	24	66	69	65
III	25	91	106	98
	26	77	82	78
	27	103	114	109
	28	98	91	94
	29	86	77	80
	30	96	86	90
	31	86	105	94
	32	98	118	108
	33	85	96	89
	34	75	90	81
	35	84	104	92
	36	75	82	77