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THE UNIVERSITY OF ALBERTA

THE EFFECTS OF A TUTORING PROGRAM ON THE SELF-ESTEEM AND ACADEMIC ACHIEVEMENT OF ELEMENTARY STUDENTS

BY

© JAMES BATTLE

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "The Effects of a Tutoring Program on the Self-Esteem and Academic Achievement of Elementary Students" submitted by James Battle in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

This investigation was designed to study the effects of selection and tutoring on growth in self-esteem and academic achievement of underachieving upper elementary students who functioned as tutors of younger children, and on randomly selected lower elementary children who received the instruction.

Fifty-two underachieving grade five and six students and fifty-two randomly selected grade two and three students from the Edmonton Public School System participated in the study.

It was hypothesized that the grade five and six underachieving students who participated as tutors in the study would make greater gain than would the control groups in self-esteem, reading, spelling and arithmetic achievement and teachers' ratings of behavior. It was also hypothesized that the selected grade two and three students who received tutoring from the grade five and six tutors would also show greater gains in the above variables than would counterparts assigned to control groups.

Significant results were not discovered when the experimental group was compared with the three control groups. However significant differences favoring the tutors were found in spelling when the group was compared with the combined control group. Significant differences were also found for the grade two and three tutees when they were compared to the combined control group in arithmetic achievement.

ACKNOWLEDGEMENTS

I would like to thank the following individuals, without whose assistance this study would not have been completed. I would like to thank my Chairman, Dr. Harvey Zingle, whose guidance and assistance were of utmost importance and benefit to me during this study. I would like to thank my Resource Committee, Drs. Biggs, Hersom, Mitchell, and Brady, whose support made such a study possible.

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Finally, I would like to thank Dr. Mansfield and the Edmonton Public School Board, whose assistance enabled this study to be undertaken.

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CHAPTER I

INTRODUCTION

There have been many investigators who have studied the self; Ames (1952), Anderson (1959), Deber (1960), Bledroe (1964), Baldwin (1962). This investigator did not discover any research studies which were primarily concerned with investigating the effects of selection and student tutoring on self-esteem and achievement.

The purpose of this study was to investigate the effects which may occur as a result of being a tutor of younger children, and also the effects which the younger children may experience as a result of receiving tutoring.

The assumption underlying the study was that students who functioned as tutors would, as a result of their teaching others, become more aware of and understand more thoroughly the concepts that they were teaching. As a result of this greater awareness and understanding of reading, arithmetic and spelling, greater gains in these areas for subjects who functioned as tutors should occur. This position is consistent with Skemp (1971) who suggested that learning is enhanced in children who teach other children as a result of reflective awareness. That is, with reflective thinking or awareness one is able to proceed steps beyond simply being able to arrive at the correct answer or solution; with reflective thinking the individual is able to understand the processes involved in reaching the correct answer or solution.

It was also postulated that esteemed role-playing (tutoring) would enhance self-esteem growth. As a result, it was hypothesized that students who functioned as tutors would become more self-confident, self-reliant, and would evaluate their worth as individuals more positively.

Because of these two factors, reflective awareness and esteemed role playing, subjects who functioned as tutors should experience greater gains in self-esteem and achievement, than subjects who do not function as tutors.

It was also hypothesized that tutees (subjects who receive tutoring instruction from older subjects), as a result of the individual attention and instruction which they received from their tutors, would experience greater gains in self-esteem and achievement than would children who do not receive tutoring.

Although the use of students as teachers is an age old procedure it has rarely, until recently, been employed in a scientific manner. Most studies using student teachers have employed achieving students to function as tutors for younger students. This study, in contrast, used underachieving tutors who functioned as teachers for randomly selected younger children.

Frager and Stern (1970) suggest that the achievement level of the tutor seems to make little difference in the amount of learning attained by the tutee. That is, tutees tended to benefit as much when they were taught by low achievers as they did when taught by achieving tutors. Frager and Stern, however, appeared to be mostly concerned with the effects that the tutoring experience had on tutees; this study, on the other hand, is concerned with the effects that tutoring has on

the underachieving tutor and the randomly selected tutee as well, in self-esteem growth and academic achievement in reading, spelling and arithmetic.

Purpose of the Study

The purpose of this study was to investigate the effects of selection and tutoring on self-esteem growth and academic achievement in reading, spelling and arithmetic of underachieving upper elementary students (grades five and six) who tutor randomly selected lower elementary students (grades two and three). A subsidiary purpose of the study was to observe the effects of the tutoring on the second and third graders who were tutored.

Hypothesis for Grade Five and Six Subjects

This study was concerned with testing the following hypothesis for grade five and six subjects.

Tutors will experience greater gains than will subjects in the control groups in:

(1) self-esteem scores as measured by Coopersmith's Self-Esteem Inventory (1959).

(2) reading achievement scores as measured by the Comprehensive Tests of Basic Skills (1969).

(3) arithmetic achievement scores as measured by the Comprehensive Tests of Basic Skills (1969).

(4) Spelling achievement scores as measured by the Comprehensive Tests of Basic Skills (1969).

(5) Teachers' ratings scores as measured by Coopersmith's Behavior Rating Form C (1959).

Hypothesis for Grade Two and Three Subjects

This study was concerned with testing the following hypothesis for grade two and three subjects.

Tutees will experience greater gains than will subjects in the control groups in:

(1) self-esteem scores as measured by Coopersmith's Self-Esteem Inventory (1959).

(2) reading achievement scores as measured by the Comprehensive Tests of Basic Skills (1969).

(3) arithmetic achievement scores as measured by the Comprehensive Tests of Basic Skills (1969).

(4) spelling achievement scores as measured by the Comprehensive Tests of Basic Skills (1969).

(5) teachers' ratings scores as measured by Coopersmith's Behavior Rating Form (1959).

Operational Definitions

For the purpose of this study the terms listed below will be operationally defined as follows:

Academic Underachiever: a subject is defined as being an underachiever if the T score derived from his aggregate achievement (report card) is five or more points below the T score derived from his score

on the Canadian Lorge Thorndike Intelligence Tests.

Aggregate Achievement: defined as the score derived from summing the twelve marks assigned to students by their classroom teachers.

Current Achievement: final marks assigned to students by teachers on their last report card.

Self-Concept: the totality of perceptions a person has about himself which are most vital to the individual himself and that seem to that individual to be "me" at all times and places.

Self-Esteem: the evaluation which the individual makes and customarily maintains with regard to himself. It expresses an attitude of approval or disapproval and indicates the extent to which the individual believes himself to be capable, significant, successful and worthy as measured by Coopersmith's Self-Esteem Inventory (1959).

Tutors: subjects who provide academic instruction for students younger than themselves.

Tutees: subjects who receive academic instructions from subjects designated as tutors.

Tutoring: the instruction that tutors administer to tutees.

T-Score: a derived standard score with a mean of 50 and a standard deviation of 10.

CHAPTER II

REVIEW OF RELATED LITERATURE

The use of student tutors has been traditionally a desirable and highly successful practice in the educational environment. No one seems to be quite certain of the exact instance when student tutoring was first employed in the school setting; however, Will G. Moore (1968) suggest that the tutoring system was probably developed by Socrates.

A historian of Oxford states that the beginning of the tutorial system is to be found in Oxford's history. The view that senior members of a college had some responsibility for the conduct and instruction of their younger colleagues was a natural development of the collegiate ideal (Mallet, 1957).

The earliest tutors were not primarily teachers. They were chosen to be personal guardians and their main duty was to superintend the conduct and expenditures of the student. They were creditors as well as tutors. For example, the Guardian Statues of 1634 stated that all scholars must have tutors, graduates of character, learning and religion whom the heads approve.

These early tutors were expected not only to inculcate the doctrines and disciplines of the church but to attend to the dress and behavior of their pupils (Mallet, 1957).

The use of student tutors then is an old technique employed by teachers. However, the use of student tutors in a systematic manner is a recent development. Individual teachers have traditionally used bright students to assist or tutor slower students, but formal,

school-wide, system-wide tutoring programs have rarely been initiated.

Underachievers

Most tutoring programs have employed bright achieving students as tutors of their less capable peers. Teachers apparently felt that achieving students would function best as tutors of younger children, consequently the use of underachievers to instruct younger students is a recent approach to tutoring.

A recent study by Frager and Stern, 1970, employing both achieving and underachieving tutors and evaluating two completely different procedures for counselling tutors of younger children was made by the U.C.L.A. Center for the Study of Evaluation and Research. The purpose of this study was to determine which type of tutoring instruction would provide most significant growth in tutors as well as tutees. Using the McNeil A.B.C. learning activities as a pre- and post-measure, this study found that kindergarten children who received tutoring were superior to children who did not receive tutoring. Not only did the first group show gains in learning, they also looked forward to the tutoring sessions and absenteeism from school became virtually non-existent. It was also found that tutors exhibited high morale, good attendance and general satisfactory adjustment to the school setting. It was concluded that the underachiever received the greatest impact from the tutoring experience. The low achieving students in the experimental group experienced significantly more positive change in regard to school morale, attitudes, attendance and feelings about themselves.

Often when a tutoring program is initiated, teachers assume that only the most capable students should be employed as tutors. This study demonstrated that achievement level of the tutor seems to make little difference in the amount of learning attained by the tutee; but there are significant differences in the gains made by low-achieving tutors (Frager and Stern, 1970).

Definitions of Underachievement

There are many ways of defining underachievement; most investigators define underachievement as a discrepancy between potentiality and actual accomplishments of achievement.

Gardner (1961) suggests that underachievement refers to those persons who demonstrate well above average on intellectual or academic tests but fail to develop their potential. For the purpose of this study an underachiever is defined as a subject whose T score on his aggregate achievement (report card) is five points or more below his T score derived from his full scaled IQ score on the Canadian Lorge Thorndike Intelligence Test.

Percentage of Underachievers

Studies suggest that patterns of underachievement commence during the elementary years and the incidence increases throughout high school.

The number of underachievers in school systems appear to be high. Alter (1953) in a study of 1,162 students living in high socio-economic areas, found a total of 74 (seven percent) of a suburban junior-senior high school with IQ scores of 130 or above on the California Test of Mental Maturity (CTMM). Of the 74 bright students

identified, he selected forty-five to study. He found that nineteen of these 45 (42 percent) were underachievers, and that of these three (6 percent) were severe underachievers.

Other theorists, Wedemeyer (1953), Ritter and Thorn (1954), Coleman (1965), and Wolple (1954) suggest that between 20 and 50 percent of students work below their potential and as a result may be considered as being underachievers. The reader, however, should be cautioned at this point, for these percentages will vary according to techniques used in identifying underachievers. For example, if an individual is classified as being an underachiever because his aggregate achievement is one point less than the T score derived from his IQ score, the investigator will discover a greater percentage of underachievers than he would when an underachiever's aggregate achievement is five points less than the T score derived from his IQ score.

Underachievers appear to comprise a significant portion of the school environment; they apparently exist as a result of the school system's failure to tap the students' potential.

Sex and Underachievement

Most literature suggests that males make up the major portion of underachievers in elementary and high school. Dowd (1952) suggests that the underachiever is more likely to be a boy than a girl and have poorer work habits and study skills than achieving peers. He is also likely to be somewhat impulsive, to lack independence and initiative with respect to school work, to have more negative attitudes toward himself and others, and to resist assuming responsibility for his own behavior.

Fisher and Waetjen (1966) suggest that boys receive lower grades, constitute a higher percentage of discipline cases, drop out of school earlier, perceive themselves more negatively and progress less well in school than girls. However, both sexes appear to have comparable or similar mental abilities.

Pierce and Bowman (1960) found that high school boys have a greater unconscious need for achievement as measured by projective devices than girls.

Studies (Flanagen, 1964; Ford, 1957) suggest that girls usually give estimates of their own intellectual and academic capabilities lower than do boys. Relative to their own past academic performance the boys are overoptimistic while girls are at first slightly hopeful but become more pessimistic as their college careers progress.

Males outnumber female underachievers two to one. Flanagen (1964), Ford (1957), Miller (1962), New York Board of Education (1959) state that approximately half of all males who are above average in ability may be considered underachievers, whereas only twenty-five percent of females are underachievers. Furthermore, underachievement tends to appear earlier in boys than girls.

Shaw and McEwen (1960) suggest that chronic underachievement in males starts in the earliest grades, whereas in females underachievement usually begins in late elementary or junior high school.

Male underachievers also appear to exhibit more hostility than girls. Shaw, Edson and Bill (1960) and Shaw and Cnubb (1958) employing the Sorbin adjective check list as a measure of self-concept while studying underachieving male and female high school students, with a comparable group of achieving students. These investigators found differences

in self-concept which distinguished high achievers from low achievers. They found that male underachievers seemed to possess more negative feelings about themselves than did equally bright achieving boys. Findings by Shaw, Edson and Bill (1960), and Shaw and Cnubb (1958) suggest that as a group, underachievers, especially boys, were more hostile than bright, high-achievers and that the hostility did not have its genesis in the educational framework, but was brought by the child to school. Their findings suggest that academic underachievement, particularly in boys, begins early in the life of children, and tends to become more apparent when the child starts school.

Characteristics of Underachievers

Most investigators concerned with studying underachievement have employed comparative studies, i.e. underachievers have been compared to achieving and overachieving peers. As a result of numerous investigations, a list of characteristics which are specific to underachievers have been recorded in the literature. Most studies characterize underachievers as being somewhat less effective than achievers and overachievers in the area of academic achievement within the school.

Bruner and Caron (1959) developed, through empirical analysis, a dynamic and cognitive picture of academic overachievement and underachievement in sixth grade boys and girls in a middle class environment. They administered the Wechsler Intelligence Scale for Children to 64 subjects. They also converted school grades into standard scores and computed the discrepancy between the two scores. The seven boys with the greatest discrepancy between IQ score and school achievement

score, and whose school performance exceeded the IQ score level, were designated as overachievers, the seven boys who had the greatest discrepancy between IQ score and school score, and whose school performance was below the IQ score level were designated as underachievers. Bruner and Caron (1959) employed several measures including McClelland's TAT, Sarason's anxiety test and some memory procedures which were intended to measure the efficiency of retention for achievement - related material in contrast to neutral materials. It was found that the overachieving boys had a higher TAT need achievement score than the underachieving boys. Overachievers tended to recall achievement-related words sooner, had less memory interference for achievement-related words, and expended more effort to solve problems in competitive situations.

Burgess (1956) found underachievers to be less intellectually adaptive, to overgeneralize and overextend the self; Burgess also discovered that underachievers tended to show less intellectual control and repression of emotional reactivity. They tend to overreact to environmental circumstances and in general to show little affectivity. Underachievers, however, were able to establish rapport in social situations easier, but more dependent in their attitudes toward others. Motivation for academic achievement was weak.

Ralph (1966) states that underachievers reported that they saw themselves less able or willing to compete for high grades. They were less active in school governing affairs and appeared to be less dependent on the socialization function of the school. Underachievers tended to see school authority and power vested in the adults rather than the students, and at the same time turned to their friends rather

than to teachers and counselors for advice and guidance.

Underachievers also tend to possess more negative attitudes toward school and receive poorer ratings from teachers.

Many studies including Wilson (1962), Granzow (1954), Burgress (1956), Chabassal (1959), Corlis (1963), McKenzie (1964), Miller (1962), and Molvets (1962) have found underachievers to possess more negative attitudes toward school and teachers, to adjust poorly to school rules and procedures and to possess more hostility than their achieving peers.

Bresee (1957) compared forty-four achievers and thirty-three high school underachievers on a variety of personality measures. All subjects had IQ's greater than one standard deviation above the mean. Subjects whose grades averaged B+ or better were designated achievers, and subjects whose grades averaged D or worse were designated underachievers. Findings indicated that underachievers were more hostile toward self and more extra punitive than achievers. Achievers aimed toward more remote goals requiring higher levels of training and also identified more closely with friends, family and community, and rated higher on altruism.

Many investigators (Blackman (1955), Bishton (1957), Kisch (1968), Merrill and Murphy (1959), Cough (1949), suggest that underachievers tend to be extroverts, whereas, overachievers tend to be introverts. Underachievers, however, tend to engage in more social activities than do overachievers.

Ralph (1966) stated that underachievers tend to be socially oriented to such an extent that this interest takes precedence over academic pursuits, and conversely high and overachievers function

more comfortably in the scholastic realm than they do in the social area.

Holland (1959) used the California Psychological Inventory and the Scholastic Aptitude Test for prediction of college grades in his study of usefulness. He studied students from 291 colleges and universities. Findings suggest that high achievers were unsociable, lacked poise and self-confidence, were self-deprecating and inflexible, and tended to minimize worries and complaints, but were conscientious and responsible. He found low achievers to be poised and socially skillful, flexible, admitted worries and complaints, were impulsive, and possessed less motivation for academic achievement.

Gebhart (1958) studied the relationship of the Edwards Personality Perference Schedule scores to over and underachievement in college freshmen. He found that overachievers showed greater drive to complete tasks (achievement) and to organize (plan) while underachievers showed greater need for variety (change) and higher social motivation (affiliation).

PERSONALITY CHARACTERISTICS OF UNDERACHIEVERS

Most investigators have identified personality components which distinguish underachievers from achieving and overachieving groups. Research concerned with the study of personality characteristics of elementary students will be presented first, junior and senior high school studies will be presented secondly; finally, studies of college students will be presented.

Elementary Studies

Leibman (1954) administered the Winnetha Scale of Rating School Behavior and Attitudes, the California Test of Personality (CPI), the Rogers Test of Personality Adjustment and the Rorschach, to all fifth grade students in a large elementary school. General findings suggest that children who were rated higher in personal and social adjustment tended to achieve better than those who were rated lower in personal and social adjustment.

Rogers (1947) administered the California Test of Personality to 205 sixth grade students in North Eastern Pennsylvania. All subjects studied were of similar socio-economic status, educational level and age. Of this sample he designated two groups. Those who scored in the upper fifty percentile on the CPI formed one group (better adjusted group). Those who scored in the lower fifty percentile formed the other group (poorer adjusted group). Both groups were asked to check 20 somewhat derogatory statements that they felt were true of themselves. Rogers discovered that the better adjusted group checked significantly more items than the more poorly adjusted group. Rogers concluded that the better adjusted group was able to accept more damaging statements about themselves than the poorer adjusted children.

High School Studies

Pierce (1961) while studying tenth and twelth grade students, selected the top thirty percent in intellectual ability. Employing the California Psychological Inventory (CPI), Pierce

found significantly better adjustment for high achieving boys and girls than for low achieving boys and girls.

Stagner (1957), while studying two hundred and seventy-five eleventh grade students with IQ's above 120 in a Mateo California high school selected the thirty-five highest and the thirty-five lowest performers in percentile scores on the Iowa high school content examination. Then he matched by intelligence nineteen representatives of each group. He concluded that even with intelligence held constant, the high and low achievers differed significantly on five of seventeen scales of the California Psychological Inventory (CPI). High and low achieving groups differed on dominance, socialization, intellectual efficiency, psychological interests and flexibility scales.

College Studies

Burgress (1956) studied engineering students at Penn State College. He selected one hundred and twenty-eight subjects using grade point average as a measure of achievement. His first sample consisted of forty subjects; twenty in the overachieving group and twenty in the underachieving group.

Subjects whose grade-point average deviated most above their predicted grades were designated overachievers. Subjects who had the greatest negative discrepancy between their actual grades and their predicted grade point average were designated as underachievers for the study. He found that overachievers had personality components that distinguished them as a group from underachievers. Burgress found that overachievers were less labile in their

affective reactions, more constricted, and more inhibited in the emotional response to pleasurable aspects of the environment. Their intellectual adaptivity was greater, their approach to problems was more cautious and they had more intellectual control of emotional reaction when confronted with strong external stimulation. Their need for achievement and improvement of the self, and personal status was greater, they were motivated for college study, enjoyed it more and expected to get more from it. They showed more aggressive behavior and less social skill. On the other hand, underachievers appeared to be less intellectually adaptive, they tended to overgeneralize and overextend the self; underachievers showed less intellectual control and repression and emotional reactivity. Underachievers also tended to overreact to environmental circumstances, and in general to show labile affectivity. They were able to establish rapport in social situations easier, but were more dependent in their attitude toward others. Their motivation for academic achievement was weak.

Berger (1956) administered the Rotter Incomplete Sentence Blank, the Yale Educational Aptitude Test Battery and the ACE to freshmen entering a mid-western university and studied their academic performance for four years. He concluded that students with high intellectual ability and adequate personality adjustment achieved higher academically than did those who showed signs of emotional maladjustment.

Morgen (1952) studied forty achievers and thirty underachievers selected from one hundred thirty-two college sophmores who were at or above the 90 percentile on the ACE. Those who had

achieved honors were designated achievers; those who had fallen below the mean average were placed in the nonachieving group. Findings indicate that achievers scored higher on the Minnesota Multiphasic Personality Inventory (MMPI) scales designated to measure dominance, social responsibility and intellectual efficiency, whereas the nonachieving group scored higher on scales designed to measure psychopathic characteristics, and scored low profile points on paranoid tests.

Howall (1957) studied high and low achieving college freshmen whose scores on the ACE were at or above the 94th percentile. He administered several projective tests which included the TAT and Rorschach. He concluded that deep-seated personality problems were strongly associated with academic underachievement among gifted students.

Though most college studies tend to identify distinct personality differences between overachieving and underachieving groups there are some studies which have not identified these distinguishing features.

Morgen (1952) employed the Minnesota Multiphasic Personality Inventory (MMPI) while comparing achieving and nonachieving college students with high ability, concluded that profile patterns in both groups were heterogeneous and that there were no clear relationship between scholastic achievement and MMPI profiles.

Dorund (1952) studied eighty students who scored in the highest decile of their class in scholastic aptitude as measured by the ACE. He identified in this sample a group of achievers and a group of nonachievers and administered the Minnesota Multiphasic Personality

Inventory, Bernreuter Personality Inventory and Bell Adjustment Inventory to each subject. He found no relationship between scholastic achievement and personality profiles.

In summary, most investigators concerned with studying personality characteristics of students suggest that there are particular characteristics which distinguish achieving students from their underachieving peers. For example, underachievers tend to be extroverts, whereas overachievers tend to be introverts.

CONTRIBUTING FACTORS OF UNDERACHIEVEMENT

There are apparently numerous factors which may contribute to, or impede, underachievement. Four factors will be discussed briefly: early experiences, socio-economic environment, parents and peers.

Early Experiences

Many theorists, including Birhler, Erickson, Freud, and Piaget support the position that early experiences have a tremendous impact on later development. Early experiences may effect, inhibit or facilitate achievement during later years.

Piaget (1936) states that achievement movtivated behavior appears in early childhood. This behavior includes certain repetitions, which the child finds enjoyable.

Heck Larsen (1962) states that the most impressive type of achievement behavior during the first three years of life is expressed in the persistence in sensori-motor activities involving objects.

Heck Larsen and Collaborators (1962, 1965) suggest that concentration and persistance in the pursuit of achievement goals increase

with age, clearly from four and a half on; failures are tolerated better and more frequent attempts are made to overcome them.

Chance (1961) while studying first grade children found that when achievement was related to early independence training, children whose mothers favored earlier demands for independence made poorer school progress relative to their intellectual level than did children whose mothers favored later independence demands. Chance also found that differences were greater for girls than boys and greater in reading than in arithmetic. He concluded that early independence training may in actuality be a form of greater pressure upon the child as well as a need for the mother to maintain a greater interpersonal relationship between herself and the child.

Investigators Larsen (1962, 1965), and Piaget (1936), conclude that early experiences affect achievement motivation and that this motivation tends to increase with age. Accordingly, self-concept and achievement patterns commence early in the child's life and increases gradually. As a result, the child's self-concept and achievement pattern is brought with him to the school environment.

Socio-Economic Environment

Most research concerned with the environment of the underachieving student suggests that underachievers tend to come from lower socio-economic home environments.

Helm (1967), Kornuich (1965), and Tyrzkowa (1968) state that underachievers tend to come from culturally disadvantaged homes, are characterized by low income, poor housing, large numbers of children and working mothers.

Douban (1956), Biston (1957), Frankel (1960), Dearborn (1949), and Cough (1946) suggest that high achievers tend to come from upper and middle socio-economic backgrounds, whereas underachievers tend to come from lower socio-economic environments.

Achievement also appears to be related to family size. Rosen (1961) found that the influence of family size on the achievement motivation of boys varies with social class. He suggests that upper class medium-size families produce boys with the highest achievement motivation, whereas in the middle class, the smaller the family the greater the achievement motivation.

Some research findings which support the view that the school environment itself may contribute to achievement. Wilson (1959) suggests that the particular school environment may be a significant force in steering the maturation of high ability students. His findings indicate that there are differences in achievement and aspirations of gifted high school students which are related to the social class makeup of the school. He found that students with comparable IQ and similar family backgrounds performed quite differently in schools which were predominately middle class than in schools predominantely lower class in environment. In the lower class school climate the bright youngster from a typical middle class family tended to achieve less adequately and to show a lower level of educational aspiration than did comparably able students in predominately middle class schools.

Investigators Helm (1967), Kornvich (1965) and Tyrzkowa (1968), suggest that underachievers tend to come from lower socio-economic environments, and researchers Pierce (1961) and Morgan

(1962) furthermore suggest that low achievers tend not to be as well adjusted as achievers. Underachievers also tend to have a lower or a more inadequate self concept in comparison to their achieving peers.

Parents

The most powerful influence on the pre-school and pre-adolescent child is the parent. Parental effect on achievement has been studied by many investigators. Research concerned with the effects of parental dominance at home and achievement at school has resulted in two divergent points of view. On one hand, authoritarianism has been seen as fostering submissiveness and/or conformity to parents' and teachers' achievement values, such that school achievement is enhanced (Biston, 1957). On the other hand, undue pressure and demands on the young individual to achieve and exert power through intellectual pursuits are thought to have adverse effects, contributing to rebellion, repressed hostility and reduced achievement drive.

Kimball (1963), Pierce (1961), Strodbeck (1958), Morrow and Wilson (1961) employing questionnaires and attitude scales, compared the reported family relations of forty-eight bright boys making high grades with a comparable group making mediocre or poor grades. The two groups were equated for school grade, socio-economic status and intelligence. Findings suggest that parents of high achieving students reportedly engaged in more sharing of ideas, activities and confidences; they were more affectionate, more trusting, more approving and more encouraging with respect to achievement.

Gilmore (1952) administered a sentence-completion technique to thirty-five high achieving and thirty-five low achieving students

attending the Massachusetts Institute of Technology. He found that the achieving students had happier relationships with their fathers and closer identification with their mothers than did the low achieving students.

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Gilmore (1952) administered a sentence-completion technique to thirty-five high achieving and thirty-five low achieving students attending the Massachusetts Institute of Technology. He found that the achieving students had happier relationships with their fathers and closer identification with their mothers than did the low achieving students.

Drews and Teaham (1957) adapted three subscales, a dominating, a possessive, and an ignoring scale from Sholren's Parent Attitude Survey Instrument, and administered them to mothers of high and low achieving gifted students and to a group of moderately able junior high school students. They employed a successful group and an unsuccessful group. Findings suggest that the mothers of the high achievers were more authoritarian in treatment of their children; this was especially true concerning high achievers among the gifted group.

The academically successful child was characterized as one who has a rigidly designed place at home, which he is expected to keep with docile acceptance. High achievers' parents convey the impression that they know what is best for their child and these standards are rarely questioned.

Haggard (1957),while studying third grade achieving subjects discovered that these children felt parents to be overprotective, pressing for achievement, and lacking in emotional warmth. Investigating these same students at grade seven he found that they possessed antagonistic attitudes towards adults, although they were able to get along better with adults and peers than the low achieving students.

Positive influence on achievement of the more supportive and democratic families was supported by Weigard (1957),who compared 17 successful students and 17 unsuccessful students with comparable ability. He found that the successful group reported less stringent parental supervision of leisure time activities, greater encouragement by parents toward success in work and play and a generally more permissive atmosphere at home.

Pierce (1961),while studying the top 30 percent in intellectual ability of grades ten and twelve achieving boys found that mothers of high achieving boys received lower scores on the authoritarian control factor, and on the structure scale, although these mothers showed evidence of holding stronger opinions regarding equality than did mothers of low achieving girls. Pierce concluded that boys performed better academically under democratic attitudes, whereas girls performed better under authoritarian attitudes.

Williams (1957), Ratchick (1953), Brown and Dubois (1964),

Mackler and Giddings (1965), Sewell and Shaw (1968) state that levels of parental education and occupation seemed to be associated with their children's achievement in school; i.e. achieving student's parents tend to have more education and higher level occupations.

Conflicting information has been recorded in the literature concerning the effects of broken homes on academic achievement. Veroff, et al. (1960) and Sutcliffe (1958) state that high achievers more frequently lived with both parents and have feelings of happiness in regard to home, parental attitudes and friends, whereas underachievers tend to come from broken homes or from homes where there are weak ties between the parents.

On the other end of the continuum, Clark (1962) studied personal data cards of 94 underachievers in the Independence Missouri Junior high schools and found that 81 percent of the underachievers lived with both parents.

Most research reviewed by this investigator suggests that parents play a major role in the development of a positive self-concept in their children. The positive self-concept in turn, facilitates high achievement. However, some investigators (Biston, 1957) suggest that authoritarian parents who insist that their children conform to their standards enhance school achievement in these children. On the other hand, undue pressure on the child to achieve in intellectual pursuits are thought to have adverse effects, which may reduce achievement motivation.

Peers

Peer relationships though important to all pre-adolescents and adolescents appear to be of particular importance to underachievers. Morrow (1961) compared bright high achieving high school boys with bright underachieving boys and found that underachievers tend to be socially anchored in a peer-clique society, underachievers described themselves as belonging to cliques which possessed negative attitudes to social achievement.

Coleman (1961) studied public high schools of varying size which included rural and urban composite schools. He found that in general the peer culture in these schools was not particularly interested in outstanding academic attainment. When requirements for membership in leading crowds was studied, good grades or being smart in school ranked sixth of an eight criteria instrument, and only 12 percent of the boys and girls viewed school success as important.

Some research has supported the position that underachievers tend to have poor relationships with peers. Cranzow (1954) obtained teacher ratings of under normal and overachieving elementary students in reading, and discovered that underachieving children were poorly adjusted to school rules and procedures and were not well accepted by peers.

Kurtz and Swenson (1951) employing reports, ratings and observations concluded that underachievers in grades four to seven in a large population, had fewer friends and the friends which they did have, had attitudes which were less favourable than those of the more plentiful friends of the overachievers.

Aspirations

Research concerning goal setting trends of underachievers suggests that underachievers tend to set unrealistic goals which are either too high or too low. Robinson (1962) found that successful eleven and twelve year old pupils set in comparison to their last performance slightly increased but not unrealistic goals, whereas the unsuccessful pupils leaned toward either overly high or overly low levels of aspirations.

Mahone (1960) found that failure-motivated adolescents make more unrealistic career choices than do success-motivated adolescents. Their career choices are either above or below their ability to achieve them.

The Portland public school report (1959) compared forty-nine high achieving boys with forty-nine underachieving boys. All subjects were equated on the basis of grade in school, socio-economic status and intelligence; furthermore, they were comparable as far as career outlook was concerned. Findings in the Portland study were:

1. All the high achievers planned to enter college after completing high school.
2. Despite their poor or mediocre grades, thirty-four of forty-nine underachievers planned to enter college after completing high school.
3. Significantly more high achievers than low achievers indicated that they would like to be, and furthermore expected to be, in professional, scientific or engineering occupations.
4. Significantly more underachievers than high achievers indicated that they would like to be in occupations involving adventure

or excitement; for example, pilots, professional athletes, bar owners, etc. The two groups also differed on the amount of income they hoped for and expected to be receiving ten years hence: the high achievers hoped to be and expected to be earning more than the underachievers.

The Portland study (1959) though not supporting conclusively findings by other investigators, Robinson (1962), Atkinson (1968) and MacKenzie (1964), did however find that underachievers tended to set somewhat more unrealistic goals than did their achieving counterparts.

Self-Concept

A considerable body of research supports the position that positive self-concept is more related to school mastery than intelligence. Self-concept apparently is a major factor contributing to achievement or lack of academic achievement.

Rogers (1959) defines self as being that organized consistent conceptional Gestalt composed of perceptions of the characteristics "I" or "me," and the perceptions of the relationships of the "I" or "me" to others and to various aspects of life, together with the values attached to these perceptions (p. 200).

Super (1962) states that self-percepts are observed facts, the impression of the raw materials of the self which the individual receives via his senses. Self-concepts are self-percepts which have

acquired meanings and which have been related to other self-percepts. Bills (1951) states that the self-concept is composed of the traits and values which the individual has accepted as definitions of himself (p. 257).

Wylie (1961) suggests that the self-concept is composed of the following metadimensions: self-esteem, clarity, abstraction, refinement, certainty, stability and realism. These metadimensions enable an individual to study one particular dimension of the self-concept instead of the entire self-concept. For example, the study is concerned with investigating the Self-Esteem dimension of the Self-Concept.

Matine (1956) and Brookover and associates (1962) support the position that there is a definite relationship between the self-concept and achievement.

Research suggests that the self-concept develops throughout the early years and generally remains stable throughout life.

Moustakas (1956) suggests that the real self is the central inner core within each child which is the deep source of growth, and is the most stable and consistent value in life.

Brookover and associates (1962) suggest that the self-concept is relatively stable even in the face of contradictory evaluations by teachers.

Lecky (1945) using pre- and post-measures investigated the stability of the self-concept of 172 middle class adolescents over a two year period and concluded the following.

1. Relative stability of the self-concept was demonstrated by an overall item-by-item correlation of .53 between Q sorts obtained

in 1954 and 1956, with an instrument of which the test-retest reliability is .68.

2. Subjects whose self-concept were negative at the first testing were significantly less stable in self-concept than were subjects whose self-concept were positive.
3. Subjects who persisted in a negative self-concept over the two year period provided evidence of significantly more maladjustment than subjects who persisted in a positive self-concept as measured by high scores on sales pd and D on MMPI.
4. Subjects who showed less regard for themselves on the Q sort on retest also shifted toward significantly more maladjustment on scales pd and D of the Minnesota Multiphasic Personality Inventory.
5. Subjects who showed more regard for themselves in the Q sort on retest, shifted toward significantly more adjustment on peer ratings.
6. The positive self-concept scores increased significantly between the two testings for the tenth and twelfth grade subjects, an increase which could not be attributed entirely to the effect of regression.

SELF-ESTEEM

Coopersmith (1959) states that self-esteem is the evaluation which the individual makes and customarily maintains with regard to himself. It expresses an attitude of approval or disapproval and indicates the extent to which the individual believes himself to be capable, significant, successful and worthy.

Stotland, Thorley, Thomas, Cohen and Zuder (1957) state that self-esteem is a function of the degrees of coincidence between the individual's ideal and actual concepts of himself.

Bergen (1968) suggests that self-esteem is not a unidimensional variable, and that when we speak of self-esteem we are talking of a construct which consists of a number of relatively independent dimensions. He advises that a single total self-esteem score may be quite misleading when this single score is used to classify subjects as possessing either high or low self-esteem.

In the course of analyzing subjective experience and the significance of the self, James (1890) concluded that human aspirations and values have an essential role in determining whether we regard ourselves favorably. He further suggested that our self feelings in this world depend entirely on what we think of ourselves to be and do. They are determined by the ratio of our supposed potentialities; a fraction of which our pretensions are the denominator and the numerator our success.

$$\text{Thus, self-esteem} = \frac{\text{success}}{\text{pretensions}}$$

G.H. Mead (1934) suggests that the guage of self-evaluation is a mirror image of the criteria employed by the important persons of the individual's social world. Regardless of how isolated and independent the individual may believe himself to be, he carries within himself the reflecting mirror of his social group. The views of the generalized significant others as expressed in their manner of treatment are Mead's key to the formation of self-esteem.

Sullivan and Horney (1945) like Mead, suggest that the individual is continually guarding himself against loss of self-

esteem, for it is this loss that produces feelings of distress and anxiety. Sullivan further suggests that early familial experiences play an important role in the development of self-esteem.

Horney (1945, 1950) also focuses on the inter-personal processes as well as on eliminating self-demeaning feelings. She suggests that feelings of helplessness and isolation (basic anxiety) are major sources of unhappiness and reduced personal effectiveness. She proposes that the conditions that produce anxiety include; domination, lack of worth, isolation and discrimination. Horney states that one method of coping with anxiety is the formation of an idealized image of one's capacities and goals.

Adler (1927, 1956) places greater stress on the importance of actual weakness and infirmities in producing low self-esteem than other theorists. He suggests that feelings of inferiority are an inevitable occurrence in the childhood experiences of every individual. Adler lists the following as antecedent conditions that may have unfortunate consequences on the development of self-esteem.

1. Organ inferiorities and differences in size and strength; whether or not the first conditions has favorable or unfavorable outcomes depends on the second antecedent.
2. Experiences of acceptance, support and encouragement by parents and friends.
3. Overindulgence may be destructive. Pampered children have unrealistically inflated values of their worth.

Following along the same lines of significant others, Fromm (1941-1947) emphasizes the possible debilitating effects of social isolation. He postulates that if the child (or adult) gains freedom from others, he has the opportunity to pursue his own paths. He suggests that when an individual joins and conforms to a group, he

enjoys the shelter and privileges the group provides, but also as a result obligates himself to its authority. He further states that the characteristics of creativity and individual expression, which theoretically have been related to self-esteem are formed by the social conditions ranked by acceptance, respect, concern, freedom of expression and independence.

Feelings toward the self and their importance on achievement and adjustment is further emphasized by Rogers (1951) who postulates that all persons develop a self-image of themselves which serves to guide and maintain their adjustment to the external world. This image develops out of the individual's interaction with his environment and as a result, it reflects the judgments, preferences and shortcomings of the particular familial and social settings.

Rogers further suggests that a permissive atmosphere which permits free expression of ideas and affect and does not resort to harsh or frequent evaluative comparisons enables the individual to know and accept himself. Furthermore, according to Rogers, conflicts can be averted if parents and significant others accept the views and values of the child, although they need not necessarily agree with him. In this way, the child can come to respect himself, gain assurance in deriving his own values and learn to trust himself as a locus of experience.

Rosenberg (1965) investigating conditions associated with self-esteem studied five thousand high school students, while attempting to discover social conditions associated with enhanced and diminished self-esteem. He suggested the following formulations as a result of his findings:

1. Social class is only weakly related to self-esteem and ethnic group affiliation is not related to self-esteem.
2. The amount of paternal attention and concern, which differs with social class, religion and ethnic group, is significantly related to self-esteem.

Continuing with the position that it is our view of our selves that leads us toward failure or achievement, Combs (1959) suggests that learning is related to the self-concept in the following ways:

1. Learning is a product of the individual's search for personal adequacy.
2. Once established the self-concept has an effect on subsequent learning.

Characteristics of Individuals with High Self-Esteem

Investigators have identified several distinguishing features which characterize individuals with either low or high self-esteem.

Cohen (1957) states that individuals with high self-esteem as compared to those with low self-esteem, are characterized by tendencies to protect themselves from negative self-evaluation. He suggests that individuals with high self-esteem would be able to evaluate an objective failure as a small failure and an objective success as a large success.

Coopersmith (1959) lists the following as being general characteristics of individuals possessing high self-esteem:

1. Individuals with high self-esteem tend to be more effective in meeting environmental demands than those with low self-esteem.

2. Persons with high self-esteem tend to adopt an active and assertive position in meeting environmental demands.

3. High self-esteem is associated with such terms as self-respect, superiority, pride, self-acceptance and self-love.

4. Persons with high self-esteem tend to be more independent in conformity inducing situations and to manifest great confidence that they will succeed.

5. High self-esteem individuals tend to be popular with their peers.

6. An individual with high self-esteem is apt to attend to others only to the extent that he esteems them.

7. High self-esteem individuals tend to participate in more exploratory and independent activities than do individuals with low self-esteem.

8. High self-esteemed individuals tend to defend themselves well against threats to their adequacy.

9. High self-esteemed individuals tend to possess greater confidence in their ability to deal with events; anxiety is less likely to be aroused in them and they tend to have a greater ability to resist the negative implications of social judgments.

Characteristics of Individuals with Low Self-Esteem

Cohen (1957) states that individuals with low self-esteem, because they do not protect themselves from negative evaluation, are more likely to evaluate an objective failure as a very poor performance and a success as a small success.

Coopersmith (1959) lists the following characteristics of individuals possessing low self-esteem.

1. Individuals with low self-esteem tend to withdraw from others and have consistent feelings of distress.

2. Individuals with low self-esteem tend to be more intropunitive and passive in adapting to environmental demands and pressures than individuals with high self-esteem.

3. Low self-esteem tends to be equated with inferiority, timidity, self-hatred, lack of personal acceptance and submissiveness.

4. Individuals low in self-esteem tend to exhibit higher levels of anxiety and are more likely to exhibit more frequent psychosomatic symptoms and feelings of depression than individuals with high self-esteem.

5. Individuals with low self-esteem tend to be isolates who select one another. They tend to feel that they have greater difficulties forming friendships. However, there is no relationship between self-esteem and group membership. Persons of all levels of confidence and assurance are equally likely to join social groups but the roles they play are different.

6. Low self-esteemed individuals tend not to resist social pressures.

7. Individuals with low self-esteem are more likely to remain quiet if they feel dissent will evoke personal attack. They are often unwilling to express contrary opinions even when they know they are correct. They tend to react strongly to criticism.

8. Low self-esteemed individuals tend to be invisible members of a group; they rarely serve as leaders.

9. Low self-esteemed individuals tend to lack the confidence to respect the critical appraisal of others and thus remain defeated and exposed in their real or imagined deficiences.

10. Individuals with low self-esteem tend to be more self-conscious when talking to others. They tend to be more conscious of their inadequacies (real or imagined).

11. Low self-esteemed individuals when distracted by personal concerns will more likely turn inward and dwell upon themselves than individuals with high self-esteem.

Summary

Research suggests that underachievers tend to differ from achieving students in many ways. Underachievers tend not to work up to their intellectual and/or academic potentialities. For whatever reasons, underachievers fail to develop their potentialities maximally.

The number of underachievers in our society appear to be high. Studies suggest that between twenty to fifty percent and occasionally even higher, of many school populations are underachievers. Furthermore, twice as many males than females tend to be underachievers. Research suggests that approximately half of all males who are above average in ability may be considered underachievers whereas only twenty-five percent of females are underachievers. Underachievers tend to compete less successfully for high grades, they tend to be less intellectually adaptive, tend to overgeneralize, and overextend the self; they also tend to show less intellectual control and repression of emotional reactivity.

Low achieving students tend to be motivated by pleasure seeking extraversion, denial of normal social shortcomings and by pre-occupation with power.

Most research supports the position that a positive self-concept appears to be related to school success. For example, students possessing good self-concepts tend to achieve higher than those with poor self-concepts. Underachievers tend to possess self-concepts that are less adequate than the self-concepts of achieving students. The self-concept develops throughout the early years and generally remains stable throughout life and tends to resist external pressures.

Self-esteem is a dimension of self-concept; it is the evaluation which the individual makes and customarily maintains with regard to himself. Research indicates that underachieving students tend to have less favorable attitudes toward themselves than achieving students. They also evaluate their worth lower than their

achieving peers. High self-esteemed individuals protect themselves from negative self-evaluation, whereas individuals with low self-esteem do not protect themselves nearly as effectively from negative self-evaluation.

CHAPTER III

THE DESIGN OF THE STUDY

In this chapter the design of the study is described including selection of the sample, description of (and rationale for) the population, instruments employed, collection and analysis of data.

The Sample

The subjects in this study consisted of 104 students in grades two, three, five and six of the Edmonton Public School System. The 52 boys and girls in grades five and six were chosen from nine grade five and six classrooms. The 52 boys and girls in grades two and three were chosen from three grade two and three classrooms. Table 1 shows the composition of the four groups employed in the study.

TABLE I

GROUP, ACTIVITY, GRADE AND NUMBER OF SUBJECTS EMPLOYED IN THIS STUDY

Group	Activity	Grades 5 & 6	Grades 2 & 3
1. Experimental	Tutoring	13	13
2. Control I	Music	13	13
3. Control II	Selected	13	13
4. Control III	Not selected	13	13
		52	52

Grade Five and Six Subjects

All students in grades five and six were administered the Canadian Lorge Thorndike Intelligence Tests in order to identify underachievers as defined for the purposes of this study. Students whose T score on aggregate achievement (report card) was five or more points below the T score derived from the Canadian Lorge Thorndike Intelligence test score were designated "underachievers." Two hundred and forty-five students in the nine grade five and six classrooms were administered the Canadian Lorge Thorndike Intelligence Tests and 63 were designated as being underachievers as determined by this design. The discrepancy between the T score derived from aggregate (report card) marks and T score derived from the Canadian Lorge Thorndike Intelligence Tests results were computed for each of the nine classrooms. These scores were computed separately for each classroom to account for teacher variability in marking between different schools and between individual teachers. Table 2 illustrates the number of students tested and the percentage of subjects designated as underachievers.

TABLE 2

NUMBER OF STUDENTS ADMINISTERED THE CANADIAN LORGE THORNDIKE INTELLIGENCE TESTS AND NUMBER OF SUBJECTS DESIGNATED AS UNDERACHIEVERS

Grade	Number of students tested	Number of underachievers	Percentage of underachievers
5	87	20	22.9
6	158	43	27.2
	245	63	25.7

Table 3 presents the number of male and female underachievers who participated in the study.

TABLE 3

NUMBER OF MALE AND FEMALE UNDERACHIEVERS PARTICIPATING[1] IN THIS STUDY

Male			Female		
Grade	Number of Students	Percentage of Sample	Grade	Number of Students	Percentage of Sample
5	11	21.1	5	5	9.7
6	23	44.2	6	13	25.0
	34	65.3		18	34.7

The ages of underachievers employed in this study ranged from 10.1 to 13.0 years. The mean age for grade five and six students was 11.3 years.

Intelligence quotients of grade five and six students employed in this study ranged from 83 to 135 with a mean of 106.9 and a standard deviation of 13.68

Grade Two and Three Subjects

The 52 grade two and three students employed in this study were randomly selected. The ages of these subjects ranged from 7.2 to 9.8. The mean age was 8.3.

[1]There were sixty-three students designated (Table II, p. 40) and fifty-two (Table III, p. 41) of these completed the study. Three of the students were eliminated in order to maintain an equal number of fifteen subjects per group. The remaining decrease in number was due to subjects leaving the school district which necessitated an adjustment to maintain a one to one ratio between tutors-tutees.

Table 4 presents the number of male and female grade two and three subjects employed in this study.

TABLE 4

GRADE TWO AND THREE STUDENTS EMPLOYED IN THIS STUDY

Grade	Boys	Girls
2	6	7
3	19	20
	25	27

GROUPS OF GRADE FIVE AND SIX SUBJECTS

Experimental Group (Tutors)

The experimental group for grade five and six subjects was comprised of thirteen underachieving students. Each subject in this group tutored a grade two or three subject on reading and arithmetic during two 30 minute weekly sessions for 17 weeks. No tutoring was done in the area of spelling in order to assess the carry over effect of tutoring in reading and arithmetic.

Control Group I (Music)

The control I group for grade five and six subjects was comprised of thirteen underachieving students. The subjects in this group participated in a music program with thirteen grade two and three subjects during two 30 minute weekly music sessions for 17 weeks.

Control Group II (Selected)

The control II group for grade five and six subjects was comprised of thirteen underachieving students. The subjects in this group were told that they would be given the opportunity to teach grade two and three subjects.

Control Group III (Not Selected)

The control group III for grade five and six subjects was comprised of thirteen underachieving students. These subjects were not told that they had been selected to teach grade two and three subjects.

GROUPS OF GRADE TWO AND THREE SUBJECTS

Experimental Group (Tutees)

The experimental group for grades two and three subjects was comprised of thirteen randomly selected students who received tutoring instruction from thirteen underachieving grades five and six students, during two, thirty minute weekly tutoring sessions for seventeen weeks.

Control Group I (Music Group)

The control group I for grades two and three subjects was comprised of thirteen randomly selected students who participated in a music program with thirteen underachieving grade five and six students during two, thirty minute weekly music sessions for seventeen weeks. This group of grade two and three students were told that they would be taught by grade five and six students. They were not tutored by grade five and six students, but they participated with grade five and six students in music sessions. Each grade two and three student sat beside a grade five or six student during the music session.

Control Group II (Selected)

The control II group for grade two and three subjects was comprised of thirteen randomly selected students. The subjects in this groups were told that they would be tutored by grade five and six students but were not assigned to tutors.

Control Group III (Not Selected)

The control group III for grades two and three subjects was comprised of thirteen randomly selected students. These subjects were not told that they had been selected to be tutored by grade five or six subjects.

Rationale for the Study

This study was based on the premise that there is a relationship between the self-concept and achievement. This study was concerned with improving the academic achievement levels of the tutors and tutees. It was postulated that as a result of greater academic successes or more positive self-concept should follow. Conversely, one may argue that as a result of improving the self-concept, academic achievement should follow. Whether having a good self-concept leads to better academic achievement, or whether success in achievement leads to a better self-concept is not clear. Combs (1965) and a number of other writers argue that having a positive self-concept facilitates academic achievement. There in fact may be a looping or circular effect; that is, improvement in one area may facilitate growth in the other area and visa vera. Nevertheless, it was postulated that if one should improve significantly (self-concept or academic achievement) that the other should also follow similar trends.

It is reasonable to assume that as being selected to be a tutor is prestiguous, the youngster's self-concept should improve. Furthermore, the underachievers who functioned as tutors should experience improved peer relationships because of the prestige that they receive as a result of their functioning as tutors. Because of the tutoring experience tutors should become more accepting of self, more self-confident and should experience a more positive self-concept in general.

The achievement level of students who function as tutors improve as a result of their active involvement with subject matter when they tutor students. So, the treatment used in this study, can be expected to get at both the self-concept and the academic achievement. Assuming the circular effect also comes into play it seems reasonable to suppose that significant gain should occur in both the self-concept and achievement.

It was also postulated that tutees as a result of being selected and the individual instruction they receive from their tutors, should experience gains in academic achievement and in self-concept.

Rationale for the Population

Barnett (1957) found underachievement patterns present by grade five in his intensive study of gifted underachievers. Because this pattern of underachievement has been observed by Barnett (1957) and others as early as grade five, it seemed reasonable to do a study of this nature with this age group.

The following six statements represent the investigator's rationale for choosing to study the population in the study.

1. It was assumed that testing and treatment in a school setting would tend to enhance the academic performance and prevailing orientation toward achievement.
2. By ages ten and twelve, the individual appears to have sufficient experience and ability to think abstractly, so that he can make general assessments of his peers.
3. Children at this stage of development are sufficiently advanced in their academic activities to have an idea of their relative competence and usually are able to rate themselves consistently.
4. These children have had sufficient exposure to competitive standards and achievement so that academic performance would probably be reflected in their self-esteem.
5. Parental values and controls remain major influences upon the childrens' behavior, and if desired, may themselves be subjected to observation and study.
6. School environments for this age group make it generally possible to obtain raters (teachers) who often have observed the child over an extended time in a relatively constant environment. These raters are in a position to appraise the child's customary assurance, reactions to stress and other behavioral manifestations of self-esteem. Teachers rated each of their students who participated in the study.

INSTRUMENTATION

The following instruments were employed in the study:

Coopersmith's Self-Esteem Inventory (1959)

The instrument used for measuring subjective self-esteem in this study was Coopersmith's Self-Esteem Inventory Form A (1959). (See Appendix B).

Form A consists of fifty items and five sub scales.

1. General self-items 1, 2, 3, 8, 9, 10, 15, 16, 17.
2. Social self-peers-items 4, 11, 18, 25, 32 39, 45, 53.
3. Home-parents-items 5, 12, 19, 26, 33, 40, 47, 54.
4. Lie scale-items 6, 13, 20, 27, 34, 41, 48, 55.
5. School-academic-items 7, 14, 21, 28, 35, 42, 49, 56.

The instrument, without the lie scale, consists of fifty items concerned with perception in four areas: peers, parents, school and self. These items were selected from Rogers' and Dymond's Scale, plus items designed by Coopersmith. Items were divided into two groups by agreement among five psychologists that they indicate high or low self-esteem. The subject checks each item as "like me" or "unlike me." Twice the sum of high self-esteem items marked "like me" and low self-esteem items marked "unlike me" gives the self-esteem score (Wylie, 1961).

The scores are reported as: the total number correct of all scales excluding lie (a maximum of 50). A separate score total number of responses indicative of defensive, lie reaction (a maximum of eight).

For the sake of convenience, the total self-esteem Inventory

score is multiplied by two so that the maximum score is 100, thus: SEQ=50 x 2 = 100, Lie Score 8 = 8.

The final form of the Inventory was initially administered to two fifth and sixth grade classes of boys and girls. The scores ranged from 40 to 100, with a mean of 82.3 and a standard deviation of 11.6. The mean score for the 44 boys was 81.3 and the standard deviation was 12.2; the mean score for the 43 girls was 83.3 with a standard deviation of 16.7. The difference between the mean scores for the boys and girls was not significant ($F = .80$; $p. = 50$).

Five weeks later, the Inventory was re-administered to one of the fifth grade classes with a sample of thirty fifth grade children. Test-re-test reliability after a five week interval was .88 for the Inventory.

This Inventory was subsequently administered to a total of 1,748 children attending the Public Schools of Central Connecticut. In this more diverse population, the mean for males was 70.1 with a standard deviation of 13.8. This was not significantly different from the girls whose mean was 72.2 and standard deviation 12.8. The distribution of scores obtained for this sample, as in the initial sample, was also skewed in the direction of high self-esteem. Test-re-test reliability after a three year interval with a sample of 56 children from this population was .70 (Coopersmith, 1959).

Behavior Rating Form

Coopersmith's Behavior Rating Form (1959) was used by teachers to rate subjects in the study.

There are two parts to the thirteen items of the Self-Esteem

Behavior Rating Form (BRF). The first ten items provide an appraisal of behaviors that have been associated with poise, assurance and self-trust. These ten items include reactions to new situation, failure reactions to criticism, failure, self-depreciation and hesitation to express opinions publicly. The second part, consisting of three items, provides an index of behaviors that are frequently defensive in nature. These include bragging, domination or bullying and attention seeking.

Each behavior is rated on a five point scale. The rating indicative of high self-esteem behavior has been varied imposition from right to left, always to never, to minimize superficial response basis. The scores are obtained in the following manner:

Part I (Items 1 - 10) Behavior Rating Form

Part I of Coopersmith's Behavior Rating Form (1959) consists of 10 items. Five is the maximum score for each item.

Total of scores is obtained on items according to the key (Appendix C). Since the maximum score on each item is 5, maximum total (10 x 5) is 50. This total is multiplied by two to provide the convenient conventional base of 100.

Part II (Items 11 - 13) Defensive Behavior

Total score of items in accord with enclosed key (Appendix C). Total of scores reported per se, to maximum of 15. Higher scores indicate defensiveness with scores of 10 or greater particularly worthy of note. Score indicates defensive behavior (Def. Beh.).

One teacher rated each student in this study on the 13 item, five-point scale on behaviors presumed to be related to self-esteem

(BRF). Coopersmith (1959) in developing this form stated that the behaviors to be rated were selected after a series of observations of child behavior in and out of the classroom, repeated interviews with teachers, principals and a clinical psychologist as well as evaluations and discussions with a research committee. On theoretical and empirical grounds, the behaviors were assumed to be an external manifestation of the person's prevailing self-appraisal.

Two raters, the principal and a teacher, participated in the initial rating. The teacher and the principal rated the children independently and did not collaborate or consult one another in their ratings. The correlation between the ratings of the teacher and the principal was .73.

The teachers' rating for the sample in Coopersmith's study (1959) ranged between 23 - 100, with a mean of 68.4 and a standard deviation of 15.4. The mean of the ratings for the boys was 65.0 with a standard deviation of 16.2; the mean rating for the girls was 71.3 with a standard deviation of 13.6. The mean for the girls was significantly higher than for the boys ($F = 4.2$; $p. = .001$). The test re-test reliability by one teacher after an eight week interval was .96.

Summary of Discrepancies Between Self-Rating and Behavioral Rating

Coopersmith (1959) found that the instances of marked discrepancy between subjective and behavioral evaluation were relatively rare. He found that in his initial sample of 87 subjects and subsequent samples of 74 and 102, extreme divergence is likely to occur in less than 10 percent of the cases.

Coopersmith (1959) defined substantial disagreement as a difference of more than 20 points in either direction between the reported self-esteem and the observer's rating of behavior. He found that in only 8 of the original 87 cases there was a difference of this magnitude. He also found that distributions for other samples showed similar results.

Comprehensive Tests of Basic Skills

The CTBS achievement test was administered to all experimental and control subjects in this study. Because these are commonly available tests copies were not placed in the Appendix. The CTBS consists of 10 tests:

1. reading vocabulary
2. reading comprehension
3. language mechanics
4. language expression
5. language spelling
6. arithmetic computation
7. arithmetic concepts
8. arithmetic applications
9. study skills, using reference materials
10. study skills, using graphic materials

The following tests were administered to the subjects in the experimental and control groups:

1. reading vocabulary
2. reading comprehension

3. arithmetic computation
4. arithmetic concepts
5. arithmetic applications
6. language spelling

There are four levels of the CTBS:

Level 1 - grades 2.5, 3 and 4

Level 2 - grades 4, 5 and 6

Level 3 - grades 6, 7 and 8

Level 4 - grades 8, 9, 10, 11 and 12

Subjects in this study in grades 5 and 6 were administered Level 2. Subjects in grade 2 and 3 were administered Level 1.

The objectives of the tests in the CTBS are classified under four broad intellectual processes:

1. recognition and/or application
2. translation
3. interpretation
4. analysis

The items on the CTBS in the four skill areas measure generally the following abilities:

1. The ability to recognize and/or apply techniques, including performing fundamental operations.
2. The ability to translate or convert concepts from one kind of language (verbal or symbolic) to another.
3. The ability to comprehend concepts and interrelationships.
4. The ability to extend interpretation beyond stated information.

The National sample for the first experimental tryout included about 8,000 students and the second tryout about 10,000 students

from all parts of the United States. The final version of the test battery reflects the performance of some 18,000 students from grades 2 through to 10.

Students in the standardization of the CTBS were randomly selected from all regions of the United States. The sample included public and private schools students proportionate in number to actual enrollments. California Test Bureau (1969).

Canadian Lorge Thorndike Intelligence Test

Each grade 5 or 6 subject in the experimental and control groups was administered the Canadian Lorge Thorndike Intelligence Tests. Grade 2 subjects were not administered this test.

This group test of intelligence consists of a series of tests of abstract intelligence.

Level C was administered to grades 5 and 6 subjects in the control and experimental groups in this study.

This test have verbal and nonverbal batteries and time limits for each battery.

(1) Reliability

Two hundred twenty-nine students in grades three through nine, in English speaking Canadian schools throughout Canada participated in the standardization of the Canadian Lorge Thorndike Intelligence Tests. The total sample in the standardization process was 31,739. Reliability for level C, grades fives and six, as derived from a study involving 550 students yielded a mean of 49.76 and a standard deviation of 13.85 on the verbal battery. The mean for the non-verbal battery was 41.38 with a standard deviation of 12.70

(2) Validity

The Canadian version of the Lorge Thorndike Intelligence Tests, at the time of this writing, has not been correlated with established intelligence measures such as the Stanford-Binet, or the WISC. However, correlations made in the United States indicate that these tests correlate quite highly with other well-known measures of intelligence.

Correlations of the verbal battery with the Stanford-Binet and with the WISC verbal scales have been reported in the high 70's and 80's. The nonverbal battery correlated somewhat lower with these same tests: in the high 60's and low 70's (N. Wright, 1967).

Aggregate Achievement

Aggregate achievement was derived from teacher letter grades as follows:

H - 4 points

A - 3 points

B - 2 points

C - 1 point

D - 0 point

F - 0 point

Data Collection

The Self-Esteem Inventory (SEI), Behavior Rating Form (BRF) and the Comprehensive Tests of Basic Skills (CTBS) were administered to all subjects as pre- and post-measures. The Inventories were read orally to grades 2 and 3 subjects but not for grade 5 and 6 subjects.

The Canadian Lorge Thorndike Intelligence Tests were used as a pre-test measure only, for subjects in grades 5 and 6.

Reading (vocabulary and comprehension), language (spelling), arithmetic (computation, concepts and applications, Comprehensive Tests of Basic Skills Form Q were administered as pre- and post-test measures to all subjects.

Form A of Coopersmith's Behavior Rating Form was used as pre- and post-measures for all subjects.

A teachers' survey was administered to all classroom teachers of grade 5 and 6 subjects in this study. Teachers were asked to list the number of students identified as underachievers in this study, who they felt were achieving or underachieving before the study commenced and after the research concluded.

All pre-tests were administered during January 1971. All post-tests were administered during May 1971. The self-esteem inventory was re-administered thirty days after post-testing, to all subjects in the study. Teachers' ratings were also obtained at this time for all subjects.

Tapes were made of six tutoring and six music sessions. Video tapes were made of three tutoring and three music sessions. Recordings were produced to illustrate activities engaged in by the experimental (tutors and tutees) and control I (music) groups.

Analysis of Data

An analysis of covariance with adjusted means was computed in order to compensate for variation in group means during pre-testing. The design assumed that results would be significant at the .05 level of confidence.

Summary

This study employed 52 underachieving grades 5 and 6 boys and girls and 52 randomly selected grades 2 and 3 boys and girls. This investigator employed four groups: one experimental and three controls, while investigating the effects of selection and tutoring on growth in self-esteem and achievement in reading and arithmetic on upper elementary students (grades 5 and 6) who tutor younger students and on lower elementary (grades 2 and 3) who receive tutoring.

Tutoring and music sessions were held twice weekly for a seventeen week period.

CHAPTER IV

FINDINGS

This chapter represents the findings of the study. Data are presented first for the grade five and six subjects and secondly for the grade two and three subjects.

FINDINGS FOR GRADE FIVE AND SIX SUBJECTS

Hypothesis I

The following hypothesis was tested in this study for grade five and six subjects:

Tutors will experience greater gains than subjects in the control groups in:

1. self-esteem scores as measured by Coopersmith's Self-Esteem Inventory (1959).
2. reading Achievement scores as measured by the Comprehensive Tests of Basic Skills (1969).
3. arithmetic achievement scores as measured by the Comprehensive Tests of Basic Skills (1969).
4. spelling achievement scores as measured by the Comprehensive Tests of Basic Skills (1969).
5. teachers' ratings of behavior as measured by Coopersmith's Behavior Rating Form (1959).

Means and Adjusted Means for the six variables included in Hypothesis I for the four groups employed in the study are shown in Tables 5-9.

TABLE 5

MEANS AND ADJUSTED MEANS OF SELF-ESTEEM SCORES OF THE FOUR GROUPS EMPLOYED IN THE STUDY

Group	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	64.46	66.92	69.96
Control I	62.61	64.15	68.43
Control II	69.38	72.76	72.45
Control III	79.23	77.69	70.69

TABLE 6

MEANS AND ADJUSTED MEANS OF READING SCORES FOR THE FOUR GROUPS EMPLOYED IN THE STUDY

Group	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	61.38	67.30	66.40
Control I	48.84	54.61	62.53
Control II	61.84	62.92	61.69
Control III	68.30	69.46	63.67

TABLE 7

MEANS AND ADJUSTED MEANS OF ARITHMETIC SCORES
FOR THE FOUR GROUPS EMPLOYED IN THE STUDY

Group	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	68.84	78.84	80.24
Control I	59.92	68.53	75.35
Control II	79.07	74.46	72.65
Control III	76.76	80.76	77.35

TABLE 8

MEANS AND ADJUSTED MEANS OF SPELLING SCORES
FOR THE FOUR GROUPS IN THE STUDY

Group	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	20.23	25.15	25.65
Control I	20.00	22.84	23.50
Control II	20.76	23.69	23.83
Control III	22.92	26.00	24.69

TABLE 9

MEANS AND ADJUSTED MEANS OF BEHAVIOR SCORES FOR THE FOUR GROUPS EMPLOYED IN THE STUDY

Group	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	61.84	61.23	65.79
Control I	65.38	62.00	63.50
Control II	66.61	61.53	61.97
Control III	74.61	70.76	64.26

A summary of an analyses of covariance controlling for variation between means of the four groups during pre-testing was performed for each of these five variables. Summaries of these analyses of covariance are presented in Tables 10-14.

Inspection of Tables 10-14 reveals that the differences among the adjusted means are not significant. Therefore Hypothesis I is not confirmed.

TABLE 10

SUMMARY OF ANALYSIS OF COVARIANCE OF SELF-ESTEEM SCORES FOR GRADE FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between groups	3	35.01	.22	0.879
Within groups	47	155.95		

TABLE 11

SUMMARY OF ANALYSIS OF COVARIANCE OF READING SCORES FOR GRADE FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between groups	3	53.97	1.22	0.310
Within groups	47	43.95		

TABLE 12

SUMMARY OF ANALYSIS OF COVARIANCE OF ARITHMETIC SCORES FOR GRADE FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted Mean	Significance
Between groups	3	132.14	0.98	0.407
Within groups	47	133.73		

TABLE 13

SUMMARY OF ANALYSIS OF COVARIANCE OF SPELLING SCORES FOR GRADE FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	3	12.04	1.83	0.154
Within Groups	47	6.56		

TABLE 14

SUMMARY OF ANALYSIS OF COVARIANCE OF BEHAVIOR SCORES FOR GRADES FIVE AND SIX SUBJECTS

Source of Variation		Mean Square	Adjusted f	Significance
Between groups	3	32.73	.33	0.803
Within groups	47	98.91		

FOLLOW-UP RESULTS FOR GRADE FIVE AND SIX SUBJECTS

Coopersmith's (1959) Self-Esteem Inventory was administered to all subjects in the study thirty days after post-testing. Subjects in the study were rated by teachers at this time also. Follow-up testing was administered in an attempt to discover if there is consistency in self and teachers' ratings. There weren't any hypotheses predicted for the following follow-up results.

Mean and Adjusted Means for the two variables for the four groups employed in the study are presented in Tables 15 and 16.

TABLE 15

MEANS AND ADJUSTED MEANS OF SELF-ESTEEM SCORES FOR THE FOUR GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Follow-up Test Means	Adjusted Means
Experimental	64.46	66.92	66.61	70.46
Control I	62.61	64.15	71.07	76.88
Control II	69.38	72.76	73.30	71.68
Control III	79.23	77.69	82.92	74.88

TABLE 16

MEANS AND ADJUSTED MEANS OF BEHAVIOR SCORES FOR THE FOUR GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Follow-up Test Means	Adjusted Means
Experimental	61.84	61.23	57.84	61.70
Control I	65.38	62.00	60.30	62.04
Control II	66.61	61.53	68.92	70.26
Control III	74.61	70.76	72.00	65.06

A summary of analyses of covariance controlling for variation beteeen the means of the four groups during pre- and post-testing was performed for each of the two variables. Summaries of these analyses of covariance are presented in Tables 17 and 18.

Inspection of Table 17 reveals that the differences among the adjusted means are not significant. However, inspection of Table 18 reveals that the differences between the adjusted means are significant at the .05 level of confidence. Control Group II was rated significantly higher than other groups in the study by their teachers between pre-, post- and follow-up testing.

TABLE 17

SUMMARY OF ANALYSIS OF COVARIANCE OF SELF-ESTEEM SCORES FOR GRADE FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between groups	3	110.08	1.47	0.235
Within groups	46	74.85		

TABLE 18

SUMMARY OF ANALYSIS OF COVARIANCE OF BEHAVIOR SCORES FOR GRADES FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted Mean	Significance
Between groups	3	197.51	4.62	0.007
Within groups	46	42.67		

TEACHERS' RATINGS

Teachers were asked to complete a research questionnaire during pre- and post-treatment. This questionnaire instructed them to indicate if they felt grade five and six subjects who were in their classes were achieving or underachieving before the study began, and whether they were achieving or underachieving after the study terminated.

Tables 19 and 20 present teachers' ratings of subjects as being achievers or underachievers. As results indicate, teachers felt that more subjects were achieving after treatment than were before treatment. Furthermore teachers of subjects in treatment groups rated more subjects as being achieving at the conclusion of the study than did teachers who had subjects in non-treatment groups. Teachers felt that 80.8 percent of the subjects were underachieving before the study commenced, and that only 44.2 percent were underachieving after the study terminated.

TABLE 19

COMBINED RATINGS OF TEACHERS WHO HAD STUDENTS IN GROUP CONTROL II AND III

Before				After			
Under-Achievers	Percent	Achievers	Percent	Under-Achievers	Percent	Achievers	Percent
20	76.9	6	23.1	13	50.0	13	50.0

TABLE 20

COMBINED TEACHER'S RATINGS OF SUBJECTS AS BEING ACHIEVERS OR UNDERACHIEVERS BEFORE-AFTER TREATMENT

Before				After			
Under-Achievers	Percent	Achievers	Percent	Under-Achievers	Percent	Achievers	Percent
42	80.8	10	19.2	23	44.2	29	55.8

COMPARISON OF FINDINGS OF THE EXPERIMENTAL GROUP WHEN COMPARED TO COMBINED CONTROL GROUPS OF GRADE FIVE AND SIX SUBJECTS

It may be noted that Hypothesis I predicts that "tutors will experience greater gains than subjects in the control groups." The analysis presented above was performed in such a way that the tutor group was compared to each of the control groups separately. In that the hypothesis predicts simply greater gain on the part of the tutors than the control subjects, it was decided to combine the control groups and to perform an analysis of covariance comparing the tutor group with the combined control group.

The Means and Adjusted Means for the five variables included in Hypothesis I for the two groups employed in the study are shown in Tables 21-25.

TABLE 21

MEANS AND ADJUSTED MEANS OF SELF-ESTEEM SCORES FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	64.46	66.92	70.01
Control	70.41	71.53	70.50

TABLE 22

MEANS AND ADJUSTED MEANS OF READING SCORES
FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	61.38	67.30	66.38
Control	59.66	62.33	62.63

TABLE 23

MEANS AND ADJUSTED MEANS OF ARITHMETIC SCORES
FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	68.84	78.84	80.22
Control	71.92	75.58	75.12

TABLE 24

MEANS AND ADJUSTED MEANS OF SPELLING SCORES
FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	20.23	25.15	25.67
Control	21.23	24.17	24.00

TABLE 25

MEANS AND ADJUSTED MEANS OF BEHAVIOR SCORES
FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	61.85	61.23	65.88
Control	68.87	64.26	63.21

A summary of an analyses of covariance controlling for variation between means of the two groups during pre-testing was performed for each of the five variables. Summaries of these analyses of covariance are presented in Tables 26-30.

Inspection of these tables reveals that the differences among the adjusted means are not significant for four of the five variables. However, the differences among the adjusted means in spelling achievement scores are significant. The experimental group scores significantly higher between pre- and post-testing than did the control groups employed in the study.

TABLE 26

SUMMARY OF ANALYSIS OF COVARIANCE OF SELF-ESTEEM SCORES FOR GRADE FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	2.38	1.57	0.90
Within Groups	49	151.68		

TABLE 27

SUMMARY OF ANALYSIS OF COVARIANCE OF READING SCORES FOR GRADE FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	136.89	3.29	0.97
Within Groups	49	42.67		

TABLE 28

SUMMARY OF ANALYSIS OF COVARIANCE OF ARITHMETIC SCORES FOR GRADE FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	252.23	1.92	0.17
Within Groups	49	131.21		

TABLE 29

SUMMARY OF ANALYSIS OF COVARIANCE OF SPELLING SCORES FOR GRADE FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	27.04	4.16	0.04
Within Groups	49	6.48		

TABLE 30

SUMMARY OF ANALYSIS OF COVARIANCE OF BEHAVIOR SCORES FOR GRADE FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	64.42	0.67	0.41
Within Groups	49	95.56		

FOLLOW-UP RESULTS FOR GRADE FIVE AND SIX SUBJECTS

Coopersmith's (1959) Self-Esteem Inventory was administered to all subjects thirty days after post-testing. Subjects in the study were rated by their teachers at this time also. Follow-up tests were administered as an attempt to discover if there is consistency in self and teachers' ratings. There weren't any hypotheses predicted for follow-up results.

The Means and Adjusted Means for the two groups employed in the study are shown in Tables 31 and 32.

TABLE 31

MEANS AND ADJUSTED MEANS OF SELF-ESTEEM SCORES FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Follow-Up Means	Adjusted Means
Experimental	64.61	66.92	66.61	70.43
Control	70.92	71.53	75.76	74.49

TABLE 32

MEANS AND ADJUSTED MEANS OF BEHAVIOR SCORES FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Experimental	61.84	61.23	57.84	61.73
Control	68.87	64.76	67.07	65.78

A summary of an analyses of covariance controlling for variation between means of the two groups during pre-, post- and follow-up testing was performed for the two variables. Summaries of these analyses of covariance are presented in Tables 33 and 34.

Inspection of these tables reveals that the differences among the adjusted means are not significant.

TABLE 33

SUMMARY OF ANALYSIS OF COVARIANCE OF SELF-ESTEEM SCORES FOR GRADE FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	156.36	2.07	0.15
Within Groups	48	75.35		

TABLE 34

SUMMARY OF ANALYSIS OF COVARIANCE OF BEHAVIOR SCORES FOR GRADE FIVE AND SIX SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	145.65	2.90	0.095
Within Groups	48	50.20		

FINDINGS FOR GRADE TWO AND THREE SUBJECTS

Hypothesis II

The following Hypothesis was tested in this study for grade two and three subjects:

Tutees will experience greater gains than subjects in the control groups in:

1. self-esteem scores as measured by Coopersmith's Self-Esteem Inventory (1959).
2. reading achievement scores as measured by the Comprehensive Tests of Basic Skills (1969).
3. arithmetic achievement scores as measured by the Comprehensive Tests of Basic Skills (1969).
4. spelling achievement scores as measured by the Comprehensive Tests of Basic Skills (1969).
5. teachers' ratings of behavior as measured by Coopersmith's Behavior Rating Form (1959).

Means and Adjusted Means for the five variables included in Hypothesis II for the four groups employed in the study are presented in Tables 35-39

TABLE 35

MEANS AND ADJUSTED MEANS OF SELF-ESTEEM SCORES FOR THE FOUR GROUPS EMPLOYED IN THE STUDY

Group	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	62.15	62.46	60.34
Control I	61.07	55.84	54.25
Control II	56.61	64.00	64.55
Control III	51.23	58.46	61.61

TABLE 36

MEANS AND ADJUSTED MEANS OF READING SCORES FOR THE FOUR GROUPS EMPLOYED IN THE STUDY

Group	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	31.61	48.46	52.70
Control I	35.07	47.84	50.38
Control II	55.00	60.07	52.80
Control III	39.23	63.07	63.56

TABLE 37

MEANS AND ADJUSTED MEANS OF ARITHMETIC SCORES
FOR THE FOUR GROUPS EMPLOYED IN THE STUDY

Group	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	33.30	58.84	64.64
Control I	32.38	51.84	58.56
Control II	45.76	59.46	52.85
Control III	45.07	56.69	50.77

TABLE 38

MEANS AND ADJUSTED MEANS OF SPELLING SCORES
FOR THE FOUR GROUPS IN THE STUDY

Group	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	12.92	20.53	20.49
Control I	12.61	25.61	25.56
Control II	16.30	22.46	22.48
Control III	19.15	22.46	22.54

TABLE 39

MEANS AND ADJUSTED MEANS OF BEHAVIOR SCORES FOR THE FOUR GROUPS EMPLOYED IN THE STUDY

Group	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	74.46	78.76	77.26
Control I	69.53	69.38	70.84
Control II	69.84	72.92	74.19
Control III	74.00	79.84	78.62

A summary of the analyses of covariance controlling for variation between the means of the four groups during pre-testing was performed for each of the five variables. Summaries of these analyses of covariance are presented in Tables 40-44.

Inspection of these tables reveals that the differences among the adjusted means are not significant. As a result Hypothesis II is not confirmed.

TABLE 40

SUMMARY OF ANALYSIS OF COVARIANCE OF SELF-ESTEEM SCORES FOR GRADE TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between groups	3	241.22	.62	0.604
Within groups	47	387.07		

TABLE 41

SUMMARY OF ANALYSIS OF COVARIANCE OF READING SCORES FOR GRADE TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between groups	3	453.94	2.35	0.084
Within groups	47	192.68		

TABLE 42

SUMMARY OF ANALYSIS OF COVARIANCE OF ARITHMETIC SCORES FOR GRADE TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between groups	3	415.95	1.80	0.159
Within groups	47	230.04		

TABLE 43

SUMMARY OF ANALYSIS OF COVARIANCE OF SPELLING SCORES FOR GRADE TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between groups	3	56.64	.42	0.734
Within groups	47	132.29		

TABLE 44

SUMMARY OF ANALYSIS OF COVARIANCE OF BEHAVIOR SCORES FOR GRADE TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between groups	3	152.98	1.3	0.258
Within groups	47	110.11		

FOLLOW-UP RESULTS FOR GRADE TWO AND THREE SUBJECTS

Coopersmith's (1959) Self-Esteem Inventory was administered to all subjects thirty days after post-testing. Subjects in the study were rated by their teachers at this time also. Follow-up testing was administered as an attempt to discover if there is consistency in self and teachers' ratings. There was not any hypothesis predicted for follow-up results.

Means and Adjusted Means for the two variables for the four groups employed in the study are presented in Tables 45 and 46.

TABLE 45

MEANS AND ADJUSTED MEANS OF SELF-ESTEEM SCORES FOR THE FOUR GROUPS EMPLOYED IN THE STUDY

Group	Pre-Test Means	Post-Test Means	Follow-Up Means	Adjusted Means
Experimental	62.15	62.46	64.92	62.98
Control I	61.07	55.84	58.46	60.45
Control II	56.61	64.00	70.76	69.67
Control III	51.23	58.07	64.30	65.34

TABLE 46

MEANS AND ADJUSTED MEANS OF BEHAVIOR SCORES FOR THE FOUR GROUPS EMPLOYED IN THE STUDY

Group	Pre-Test Means	Post-Test Means	Follow-up Means	Adjusted Means
Experimental	74.46	78.76	78.00	75.27
Control I	69.53	69.38	71.69	76.04
Control II	69.84	72.92	84.00	85.82
Control III	74.00	79.84	86.46	83.01

An analysis of covariance controlling for variation among the means of the four groups during pre-testing was performed. A summary of these analyses of covariance is presented in Table 47 and 48.

Inspection of Table 47 reveals that the differences between the adjusted means are not significant at the .05 level of confidence. However, inspection of Table 48 reveals that the results are significant at the .05 level of confidence. Control group II was rated significantly higher by teachers than were other groups between pre-, post- and follow-up testing.

TABLE 47

SUMMARY OF ANALYSIS OF COVARIANCE OF SELF-ESTEEM SCORES FOR GRADE TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between groups	3	186.12	1.60	0.201
Within groups	46	115.86		

TABLE 48

SUMMARY OF ANALYSIS OF COVARIANCE OF BEHAVIOR SCORES FOR GRADES TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between groups	3	349.15	9.42	0.000
Within groups	46	37.04		

COMPARISON OF FINDINGS OF THE EXPERIMENTAL GROUP WHEN COMPARED TO COMBINED CONTROL GROUPS OF GRADE TWO AND THREE SUBJECTS

It may be noted that Hypothesis II predicts that tutees will experience greater gains than subjects in the control groups. The analysis presented above was performed in such a way that the tutee group was compared to each of the control groups separately. In that the hypothesis predicts simply greater gains on the part of the tutees than the control subjects it was decided to combine the control groups and to perform an analysis of covariance comparing the tutee group with the combined control group.

Means and Adjusted Means for grade two and three subjects on the five variables are shown in Tables 49-53.

TABLE 49

MEANS AND ADJUSTED MEANS OF SELF-ESTEEM SCORES
FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	61.15	62.46	60.44
Control	56.30	59.43	60.10

TABLE 50

MEANS AND ADJUSTED MEANS OF READING SCORES
FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Groups	Pre-test Means	Post-Test Means	Adjusted Means
Experimental	31.61	48.46	52.51
Control	43.10	57.00	55.64

TABLE 51

MEANS AND ADJUSTED MEANS OF ARITHMETIC SCORES
FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	33.30	58.84	64.12
Control	41.07	56.00	54.23

TABLE 52

MEANS AND ADJUSTED MEANS OF SPELLING SCORES
FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	12.92	20.53	20.37
Control	16.02	23.51	23.56

TABLE 53

MEANS AND ADJUSTED MEANS OF BEHAVIOR SCORES FOR THE TWO GROUPS EMPLOYED IN THE STUDY

	Pre-Test Means	Post-Test Means	Adjusted Means
Experimental	74.46	78.76	77.21
Control	71.12	74.05	74.56

A summary of an analyses of covariance controlling for variation between means of the two groups during pre-testing was performed for each of the five variables. Summaries of these analyses of covariance are presented in Tables 54-58.

Inspection of these tables reveals that the differences among the adjusted means are not significant for four of the five variables. However, the differences among the adjusted means in arithmetic achievement scores are significant at the .05 level of confidence. The experimental group scored significantly higher between pre- and post-testing than did the control groups employed in the study.

TABLE 54

SUMMARY OF ANALYSIS OF COVARIANCE OF SELF-ESTEEM SCORES FOR GRADE TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	1.16	.003	0.95
Within Groups	49	386.01		

TABLE 55

SUMMARY OF ANALYSIS OF COVARIANCE OF READING SCORES FOR GRADE TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	87.08	0.41	0.52
Within Groups	49	21.08		

TABLE 56

SUMMARY OF ANALYSIS OF COVARIANCE OF ARITHMETIC SCORES FOR GRADE TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	891.67	3.91	0.054
Within Groups	49	227.92		

TABLE 57

SUMMARY OF ANALYSIS OF COVARIANCE OF SPELLING SCORES FOR GRADE TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	96.13	.74	0.39
Within Groups	49	128.30		

TABLE 58

SUMMARY OF ANALYSIS OF COVARIANCE OF BEHAVIOR SCORES FOR GRADE TWO AND THREE SUBJECTS

	df	Mean Square	Adjusted f	Significance
Between Groups	1	67.75	.59	0.44
Within Groups	49	113.60		

FOLLOW-UP RESULTS FOR GRADE TWO AND THREE SUBJECTS

Coopersmith's (1959) Self-Esteem Inventory was administered to all subjects thirty days after post-testing. Subjects in the study were rated by their teachers at this time also. Follow-up tests were administered as an attempt to discover if there is consistency in self and teachers' ratings. There was not any hypothesis predicted for follow-up results.

Means and Adjusted Means for the two groups employed in the study are shown in Tables 59 and 60.

TABLE 59

MEANS AND ADJUSTED MEANS OF SELF-ESTEEM SCORES FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Follow-Up Means	Adjusted Means
Experimental	62.15	62.46	64.92	63.10
Control	56.30	60.97	64.51	65.11

TABLE 60

MEANS AND ADJUSTED MEANS OF BEHAVIOR SCORES FOR THE TWO GROUPS EMPLOYED IN THE STUDY

Groups	Pre-Test Means	Post-Test Means	Follow-Up Means	Adjusted Means
Experimental	74.46	78.76	78.00	75.13
Control	71.12	74.05	80.71	81.67

A summary of analyses of covariance controlling for variation between means of the two groups during pre-, post- and follow-up testing was performed for each of the two variables. A summary of these analyses of covariance is presented in Table 61 and 62.

Inspection of Table 61 reveals that the differences between the adjusted means are not significant at the .05 level of confidence. However, inspection of Table 62 reveals that the results are significant at the .05 level of confidence. The control group was rated significantly higher by teachers than was the experimental group between pre-, post-, and follow-up testing.

TABLE 61

SUMMARY OF ANALYSIS OF COVARIANCE OF SELF-ESTEEM SCORES FOR GRADE TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	38.86	.31	0.57
Within Groups	48	121.85		

TABLE 62

SUMMARY OF ANALYSIS OF COVARIANCE OF BEHAVIOR SCORES FOR GRADE TWO AND THREE SUBJECTS

Source of Variation	df	Mean Square	Adjusted f	Significance
Between Groups	1	407.60	8.34	0.006
Within Groups	48	48.82		

Illustration of Over-all Findings of the Study

Table 63 presents a comprehensive illustration of over-all findings for grade five and six and two and three subjects who participated in the study.

TABLE 63

SUMMARY OF FINDINGS FOR ALL SUBJECTS WHO PARTICIPATED IN THE STUDY

Grades	Groups	Self-Esteem Adj. Means	Reading Adj.Means	Spelling Adj.Means	Arithmetic Adj. Means	Behavior Adj.Means
5 and 6	Experimental	69.96	66.40	25.65	80.24	65.79
	Control I	68.43	62.53	23.50	75.35	63.50
	Control II	72.45	61.59	23.83	72.65	61.97
	Control III	70.69	63.67	24.69	77.35	64.26
	Significance →	0.87	0.31	0.15	0.40	0.80
2 and 3	Experimental	60.34	52.70	20.49	64.64	77.26
	Control I	54.25	50.38	25.56	58.56	70.84
	Control II	64.55	52.80	22.48	52.85	74.19
	Control III	61.61	63.56	22.54	50.77	78.62
	Significance →	0.60	0.08	0.25	0.15	0.25

Summary

Analyses of covariance was performed to test the two hypotheses in this study.

Results of the analyses of covariance revealed that no hypotheses was confirmed at the .05 level of significance when the experimental groups were compared individually with the control groups. However, when the experimental groups were compared to the combined control groups significant results, favoring the experimental group in spelling was discovered for the grade five and six subjects. Significant results favoring the experimental group in arithmetic achievement was discovered for grade two and three subjects when the experimental group was compared with the combined control group. Findings in this study reveal that the hypotheses tested were not confirmed. Although the hypotheses were not confirmed findings tended to move in the predicted direction.

CHAPTER V

SUMMARY AND DISCUSSION

SUMMARY

The purpose of the study was to investigate the effects of selection and tutoring on self-esteem and academic achievement scores on underachieving upper elementary subjects who tutored younger students. A subsidiary purpose of the study was to investigate the effects of being tutored on self-esteem and academic achievement scores of randomly selected lower elementary students who received the tutoring instruction.

The hypotheses tested were that the experimental groups in the study would make greater gains than the control groups in self-esteem, reading, spelling and arithmetic scores and in teachers' ratings of behavior. An analysis of covariance of results revealed that the hypotheses were not supported when the experimental groups were compared with the control groups one at a time. However, significant results favoring the experimental groups were found on two variables when the experimental groups were compared with the combined control groups. Results, significant at the .05 level of confidence, were discovered for grade five and six subjects in spelling achievement. Significant results were found for grade two and three subjects in arithmetic achievement. There were no significant differences between experimental and control groups on any of the other variables for either the grade five and six or the grade two and three groups.

DISCUSSION

Although significant results favoring the experimental groups were not discovered when compared individually with the control groups some results favoring the experimental groups were discovered when compared with the combined control groups.

One may postulate many reasons why significant results were not discovered in this study when the experimental groups were compared individually with the control groups. For instance, when the combined controls of grade five and six and two and three subjects were respectively compared to the experimental groups on the criterion variables a significant difference (.05 level of confidence) on spelling and arithmetic achievement appeared. This may indicate that by combining the control groups in order to increase the "N", the variable effect of one control group is diminished which increases the possibilities of finding significant results favoring the experimental group. Also, since the experimental group constantly demonstrated improved scores on all variables except teachers' ratings of children's behavior an increase in the size of the experimental group may have resulted in significant findings on the other variables.

Since most of the variables did not demonstrate significant findings between groups some other explanations also seem justifiable. The study may not have been conducted over a long enough time period. Self-esteem tends to be a relatively stable concept (Brookover, et al., 1962) therefore it would be anticipated that a longer time period

would be necessary in order to facilitate a significant change. This has some support in that there were no significant differences in self-esteem measures for any of the groups on pre- and post-measures. In terms of achievement variables a longer period of tutoring may be indicated in order to bring about improved scores for the experimental group. One might lengthen the tutoring time to provide more contact between tutor-tutee over a longer period of time. Evidence against this explanation can be found from the significant findings when control groups were combined and compared to the experimental group. However, intuitively one might expect that longer tutoring and program time would be advantageous to bring about attitudinal and achievement scores gains.

Another possible explanation for the lack of accurate prediction may be the instrumentation employed in the study. For instance, the self-esteem measure although considered respectable (Wylie, 1961), may not have been sensitive enough to measure attitudinal changes (Berger, 1968). Another possibility could be that the achievement measures on basic skills may not reflect change since the standardized tests indicate skills developed over a long period of time. Other achievement measures may have been better indices of the changes that take place due to the treatment effects, i.e., teacher evaluation of students' work may not be very valid indices (Calhoun, 1956).

Many experts on curriculum and schooling (Rogers, Goodman, 1968, Postman and Weingartner, 1969), would agree that arithmetic, spelling and reading may not be viewed as relevant to the developing interests of students. Therefore, the criterion of achievement might better have measured taking into account what the student <u>wants</u> to

achieve rather than what the school personnel define as achievement. Although this is a highly contestable point it may be a very important consideration given any further research in the area of achievement: namely, what do the children themselves want to achieve.

Furthermore, some interesting combinations of reactions to the interpersonal dimension of the tutoring program seem possible when investigation of the self-esteem measures of the two groups are examined. The underachieving groups of grade five and six subjects demonstrated normal self-esteem, whereas the grade two and three tutees were considerably lower in self-esteem relative to standardization tests (Coopersmith, 1959). The grade two and three subjects were randomly distributed on measures of achievement. The difference in self-esteem of the grade two and three subjects may have been due to their being unable to adequately answer the test items, or in fact, indicate a valid measure of low self-esteem, although the Coopersmith Inventory was the best test available. Assuming that the students did have lower self-esteem they may have been resistant to learning from older children and perhaps viewed this as a depreciating gesture. They may not have wanted help. This raises many possibilities regarding some of the major assumptions of this study that need to be considered for further research. For instance, it was assumed that students would view tutoring as prestigious and that being given the attention of an individual tutor would be desirable. It is equally possible that the opposite is true. Namely, that being selected to function as a tutor or tutee is depreciating. Some support for this explanation comes from finding significant differences between the experimental group and combined control groups on spelling which the grade five

and six students did not actually tutor; the spelling variable being used to assess carry over of the role of tutoring in the reading and arithmetic. Deeper investigation of this possibility seems important if a greater understanding of the tutoring program is to be gained. This is important because students may indicate that they enjoy the program but may still hide feelings of embarrassment and reluctance which would have an effect on any anticipated behavioral or attitudinal changes.

Suggestions for Further Research

Systematic investigation of the effects of selection and tutoring using underachieving students has not at this point in time been studied extensively. As a result it is proposed that more research is needed in this area.

Possible considerations for further research are suggested.

1. Develop a long term tutoring program (ten months or more) using underachieving tutors and study its effect.

2. Study upper elementary students (grades five and six) and attempt to discover if youngsters at this stage of development view tutoring or teaching younger children as a prestigious or non-prestigious activity.

3. Develop a tutoring program using underachievers and permit them to choose topics which they feel are relevant pertaining to achievement, i.e. let the student choose the area he wants to achieve in.

4. Develop a tutoring program using underachievers and match students (tutors-tutees) according to their mutual areas of interest.

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APPENDIX A

Mill Creek School
9735 - 80 Ave.
Edmonton 63, Alberta
January 8, 1971

Dear Parent or Guardian:

Your child has been selected as a participant in a research project which is jointly supported by the University of Alberta and the Edmonton Public School Board.

The purpose of this tutoring project is to assist students in Reading and Arithmetic.

Sometime during this school year, Mr. Walter Curtis, School Counsellor of Rosslyn School, may request to interview some of the parents or guardians of the students participating in this project.

Please indicate if you would like your child to participate in this project.

I would like my child to participate in this project.

_____ Signature of Parent or Guardian

I do not want my child to participate in this project.

_____ Signature of Parent or Guardian

For further information concerning this matter please phone Jim Battle at 439-2666 or Walter Curtis at 453-1576.

Sincerely,

Jim Battle and
Walter Curtis,
School Counsellors

APPENDIX B

Appendix B

ITEMS 6, 13, 20, 27, 34, 41, 48, 55, are LIE DEFENSIVE SCALE (8 items) MAXIMUM TOTAL SCORE = 50 8 LIE ITEMS

SELF-ESTEEM INVENTORY (SEI)

Please mark each statement in the following way:
If the statement describes how you usually feel, put a check ( ) in the column "LIKE ME"
If the statement does not describe how you usually feel, put a check ( ) in the column "UNLIKE ME."
There are no right or wrong answers.

		LIKE ME	UNLIKE ME
1.	I spend a lot of time daydreaming.		✓
2.	I'm pretty sure of myself.	✓	
3.	I often wish I were someone else.		✓
4.	I'm easy to like.	✓	
5.	My parent and I have a lot of fun together.	✓	
LIE 6.	I never worry about anything.		✓
7.	I find it very hard to talk in front of the class.		✓
8.	I wish I were younger.		✓
9.	There are lots of things about myself I'd change if I could.		✓
10.	I can make up my mind without too much trouble.	✓	
11.	I'm a lot of fun to be with.	✓	
12.	I get upset easily at home.		✓

		LIKE ME	UNLIKE ME
LIE 13.	I always do the right thing.		✓
14.	I'm proud of my school work.	✓	
15.	Someone always has to tell me what to do.		✓
16.	It takes me a long time to get used to anything new.		✓
17.	I'm often sorry for the things I do.		✓
18.	I'm popular with kids my own age.	✓	
19.	My parents usually consider my feelings.	✓	
LIE 20.	I'm never unhappy.		✓
21.	I'm doing the best work that I can.	✓	
22.	I give in very easily.		✓
23.	I can usually take care of myself.	✓	
24.	I'm pretty happy.	✓	
25.	I would rather play with children younger than me.		✓
26.	My parents expect too much of me.		✓
LIE 27.	I like everyone I know.		✓
28.	I like to be called on in class.	✓	
29.	I understand myself.	✓	
30.	It's pretty tough to be me.		✓

		LIKE ME	UNLIKE ME
31.	Things are all mixed up in my life.		✓
32.	Kids usually follow my ideas.	✓	
33.	No one pays much attention to me at home.		✓
LIE 34.	I never get scolded.		✓
35.	I'm not doing as well in school as I'd like to.		✓
36.	I can make up my mind and stick to it.	✓	
37.	I really don't like being a boy - girl.		✓
38.	I have a low opinion of myself.		✓
39.	I don't like to be with other people.		✓
40.	There are many times when I'd like to leave home.		✓
LIE 41.	I'm never shy.		✓
42.	I often feel upset in school.		✓
43.	I often feel ashamed of myself.		✓
44.	I'm not as nice looking as most people.		✓
45.	If I have something to say, I usually say it.	✓	
46.	Kids pick on me very often.		✓
47.	My parents understand me.	✓	
LIE 48.	I always tell the truth.		✓
49.	My teacher makes me feel I'm not good enough.		✓
50.	I don't care what happens to me.		✓

		LIKE ME	UNLIKE ME
51.	I'm a failure.		✓
52.	I get upset easily when I'm scolded.		✓
53.	Most people are better liked than I am.		✓
54.	I usually feel as if my parents are pushing me.		✓
LIE 55.	I always know what to say to people.	✓	
56.	I often get discouraged in school.		✓
57.	Things usually don't bother me.	✓	
58.	I can't be depended on.		✓

APPENDIX C

Appendix C

Behavior Rating Form (BRF)

1. Does this child adopt easily to new situations, feel comfortable in new settings, enter easily into new activities?

   ..... always .....usually .....sometimes
   5 3

   .....seldom .....never.
   1

2. Does this child hesitate to express his opinions, as evidenced by extreme caution, failure to contribute, or a subdued manner in speaking situations?

   .....always .....usually .....sometimes .....
   1 3

   seldom .....never
   5

3. Does this child become upset by failures or other strong stresses as evidenced by such behaviors as pouting, whining, or withdrawing?

   .....always .....usually .....sometimes ...seldom
   1 3

   .....never
   5

4. How often is this child chosen for activities by his classmates? Is his companionship sought for and valued?

.....always .....usually .....sometimes ....seldom
5 3

.....never
5

5. Does this child become alarmed or frightened easily? Does he become very restless or jittery when procedures are changed, exams are scheduled or strange individuals are in the room?

.....always ....usually ....sometimes ....seldom
1 3

.....never
5

6. Does this child seek much support and reassurance from his peers or the teacher, as evidenced by seeking their nearness or frequent inquiries as to whether he is doing well?

.....always .....usually ....sometimes ....seldom
1 3

.....never
5

7. When this child is scolded or criticized, does he become either very aggressive or very sullen and submissive?

.....always ....usually .....sometimes ....seldom
1 3

.....never
5

8. Does this child deprecate his school work, grades, activities, and work products? Does he indicate he is not doing well as expected?

.....always .....usually ....sometimes ...seldom
1 3

.....never
5

9. Does this child show confidence and assurance in his actions toward his teachers and classmates?

.....always .....usually ....sometimes ...seldom
5 3

.....never
1

10. To what extent does this child show a sense of sel-esteem, self-respect, and appreciation of his own worthiness?

.....very strong .....strong .....medium ...mild
5 3

.....weak
1

11. Does this child publicly brag or boast about his exploits?

.....always ....usually ....sometimes ...seldom
5 3

.....never
1

12. Does this child attempt to dominate or bully other children?

.....always ....usually ....sometimes ....seldom
5 3

.....never
1

13. Does this child continually seek attention, as evidenced by such behaviors as speaking out of turn and making unnecessary noises?

.....always .....usually ....sometimes ...seldom
5 3

.....never
1

Two Scores: Esteem Behavior (1-10)
Defensive Behavior (11-13)
Maximum 50/15

APPENDIX D

Appendix D

Teacher's copy:

Overall objectives of this tutoring project

A. The purpose of this project is to facilitate growth in reading and arithmetic in tutors and tutees by:

   1. Providing each student with an individual teacher (tutor).
   2. Investigating whether such a program will be beneficial to students in the Edmonton Public School System.
   3. Examining methods that may be more appropriate in such a program in the individual schools and throughout the school system.

B. This investigator feels that it is very important that tutoring sessions follow a consistent pattern if this research is to be considered valid and reliable. Please adhere to the following requests during the tutoring sessions.

   1. Please terminate tutoring sessions after 30 minutes. Start timing the session when the actual tutoring begins.

2. Provide tutors with materials, but permit them to provide all instruction during the tutoring sessions. Encourage tutors to work throughout the 30 minutes sessions, but let them work at their own pace, answer questions the tutors may ask but not the ones tutees ask, suggest that the tutees ask their tutors.
3. Assign a tutor to a tutee during the first tutoring session and insist that that tutor stay with the same tutee during the tutoring sessions.
4. Please assign a spot for each tutor and tutee during the first tutoring session. Advise them to report to the same spot during each tutoring session.
5. Use conventional readers and arithmetic books.
6. Provide reading instruction on..... and arithmetic instruction on ..... Tutees should receive 50 % instruction in reading and 50 % instruction in arithmetic.
7. All tutors should be giving the same type instruction at the same time, either arithmetic or reading.

8. All tutors should use the same materials, e.g. same readers, same arithmetic books, same visual and phonic aids if they are used.
9. Please do not unduly encourage or praise tutors or tutees, no more than you would do in your regular class.
10. A tape recorder will be provided. Please tape 3 reading and 3 arithmetic instruction sessions.
11. Tutoring sessions will commence on .... and terminate on .....
12. There will be 2 thirty minute tutoring sessions each week.
13. Tutoring sessions will be held on .... and ..... from .... to .....
14. Please record all absentees and transfers of tutors and tutees.
15. If a tutor or tutee is absent, the tutor or tutee should work on his own. The tutor should work only with his tutee and conversely, the tutee should only work with his tutor.

APPENDIX E

RESEARCH SURVEY

Listed below are students from your class who were discovered as underachievers. Please indicate if it was your opinion that these students were underachievers when the research project began. Also, please indicate if you feel that they are currently achieving or underachieving.

	Student	Before Research		After Research (Currently)	
		Achieving	Underachieving	Achieving	Underachieving
1.	A				
2.	B				
3.	C				
4.	D				
5.	E				
6.	F				
7.	G				
8.	H				
9.	I				
10.	J				
11.	K				
12.	L				
13.	M				
14.	N				
15.	O				
16.	P				
17.	Q				
18.	R				
19.	S				

APPENDIX F

ACTIVITIES OF THE EXPERIMENTAL GROUPS

An illustration of activities which subjects in the experimental group participated in during the study is presented for inspection. All instructional exercises were performed on an individual tutor-tutee basis.

Arithmetic

There were seventeen, thirty-minute arithmetic instructional sessions during the study. Students participated in the following exercises during the arithmetic sessions:

1. factory games, e.g. for computation skills
2. flash cards
3. addition drills
4. subtraction exercises
5. abacus, for computational drills
6. placing value board drives for learning place values
7. object drills, e.g. coins for money drills
8. strings or rope for measurement drills

Reading

There were seventeen thirty-minute reading instructional sessions during the study. Students participated in the following exercises during the reading sessions:

1. oral drills
2. silent reading
3. phonetic drills
4. word attack drills
5. comprehension exercises

6. free reading exercises
7. discussion drills
8. flash cards for teaching sight words