

THE ADJECTIVE CHECK LIST AS AN INDICATOR  
OF TEACHERS' STEREOTYPES OF STUDENTS

A Dissertation for the Degree of Ed. D.

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Bruce James Kremer

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This is to certify that the

thesis entitled

THE ADJECTIVE CHECK LIST AS AN INDICATOR  
OF TEACHERS' STEREOTYPES  
OF STUDENTS

presented by

Bruce James Kremer

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## ABSTRACT

### THE ADJECTIVE CHECK LIST AS AN INDICATOR OF TEACHERS' STEREOTYPES OF STUDENTS

by Bruce James Kremer

This study investigated the nature and content of stereotypes held by junior high school teachers regarding four types of students: good, poor, female and male. More specifically, the research investigated the degree to which the stereotypes of female and male students were alike or different, and the degree to which they correspond to the stereotypes developed to describe good and poor students.

Basic theoretical assumptions were drawn from the works of Gordon, and Krech and Krutchfield. In essence, these theorists hold that one's beliefs are the crucial factor which relate his perceptions of the world to his actions and behavior. It was therefore assumed that the beliefs teachers hold regarding their students would be worthy of study and might prove to be an important step in the attempt to locate the cause of the differential assignment of marks to boys and to girls. Past research had shown that boys consistently receive poorer marks than girls even though there is no reason evident for this difference in marks.

A sample of 105 junior high school teachers was obtained from the population of some 200 junior high school teachers in the city of Livonia, Michigan, for this investigation. The sample was shown to be representative of the population from which it was drawn with regard to several demographic variables. A total usable return of 80 per cent was obtained.



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The Adjective Check List, by H. G. Gough, was employed as the research instrument and a total of 336 ACL protocols were produced, four each from each of the 84 teachers in the final sample. These data were analyzed with the help of the IBM 1410 Computer using an item analysis program. Observed trends in the data were further analyzed by use of the Fisher Exact Probability Test.

The major findings of the research investigation, based on the analysis of the data, are as follows:

1. Stereotypes were established in each of the four categories: good students, poor students, female students and male students.
2. The stereotypes established were shown to differ according to the sex of the respondent with female and male teachers selecting somewhat different terminology to describe female and male students.
3. No significant correspondence was found to exist between the good or the poor student stereotypes and the stereotypes developed to describe female and male students. However, additional analysis revealed a significant trend in the hypothesized directions. This trend indicated a tendency toward greater correspondence between good and female than between good and male adjectives and a tendency toward greater correspondence between poor and male than between poor and female adjectives. It appeared that the characteristics of good students were seen as being more like those of females than those of males although the stereotypes of good and female and of poor and male do not significantly correspond.

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From the results of this study, it was concluded that no support had been found for the belief that teachers are prejudiced against boys. Speculation concerning the cause of the results revolved around limitations inherent first in the research design and second in the AQ1, the data gathering instrument used in the study.



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OF TEACHERS' STEREOTYPES  
OF STUDENTS

By

Bruce James Kremer

A DISSERTATION

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An acknowledgement of thanks is extended to the administration of the Livonia Public Schools, Livonia, Michigan, for permission granted to conduct this study and to those Livonia teachers who gave of their time and energy to complete the experimental task.

A statement of sincere appreciation is given to the staff of the Computer Center, University of Detroit, for the assistance provided regarding the data programming, processing and statistical analysis of this research investigation.

A special acknowledgement is made to my wife whose understanding and encouragement have been most appreciated.

Finally, an expression of gratitude and appreciation is extended to the faculty of the Department of Guidance and Personnel Services at Michigan State University for each opportunity and courtesy extended to the student during this period of academic pursuit.



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## CHAPTER I

### THE PROBLEM: NATURE AND SCOPE

Evaluation is an integral part of our everyday activities. The merchant periodically inventories his stock to see whether he has realized a profit or loss on his transactions, in order to evaluate the merits of his present merchandising practices. The golfer carefully tabulates the strokes needed to play eighteen holes of golf, then checks the results against the listed par or perhaps his total of last Saturday, and on this basis he appraises his game. The surgeon examines his patient for postoperative developments so that he may better assess the success of the operation he performed and, hence, the well-being of his patient.<sup>1</sup>

Evaluation is also an integral part of education. It has been defined as the process in which a teacher uses information derived from many sources in order to arrive at a value judgment.

During the past several years, there has been an increasing national effort to encourage the greatest possible development of human talent. Because of this pressure, a number of the practices of the schools of the nation have come under closer scrutiny with one of these being school marking practices. Parents and students alike have become increasingly concerned over marks, in part, because of the implications they have for admission to college.

Concern over marking practices, however, is not new among

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<sup>1</sup> J. Stanley Ahmann, and Marvin D. Glock, Evaluating Pupil Growth, Allyn and Bacon, Inc., Boston, 1959, p 1.



educators. Roughly as early as 1911 studies began to appear which demonstrated widespread discrepancies in standards of marking and research has continued to appear on this subject each year since then.

Among the findings of the body of research on marking practices over the years is the demonstrated fact that boys receive poorer marks than girls. It is this fact that the present study takes as its chief concern.

A great deal of research attention has been devoted to the establishment of this fact of differential marking of boys and girls, however; to date, no studies have been conducted to gain insight into the cause of this fact. Speculation about the cause is abundant, as for example: "Some studies have shown a greater incidence of failure among boys than among girls. It is probable that differences in personality and classroom behavior also have a marked effect on promotion, even if the nonpromotion has been justified as lack of achievement."<sup>1</sup>

From the large number of studies conducted to date, it seems obvious that educators are concerned about this problem. It seems equally obvious that an attempt can be made to locate the possible cause of this difference in the assignment of marks to students.

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<sup>1</sup>Edward W. Smith, Stanley W. Krouse, Jr., and Mark M. Atkinson, The Educator's Encyclopedia, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1961, p 439.



### Statement of the Problem

The very nature of the occupation of the teacher demands that he constantly evaluate the work and the performance of his pupils. Such evaluation eventually results in the assignment of marks to the pupil. It is this mark which is intended to let the student and his parents know how well he has achieved the goals of the course involved.

In theory, at least, all teachers should treat each student equally, assigning marks according to how well each has achieved the goals of the course. If teachers tend to treat the sexes differently, assigning better marks to one and poorer marks to the other, then an unwarranted injustice will be committed against at least some of the students. Clearly, then, it is important for teachers to assign marks on the basis of standards or goals set up for the course involved and not on some sort of dual marking standard, different for girls than boys which is related more to personality or classroom behavior than to the attainment of the goals of the course.

### The Problem of this Study

It is a demonstrated fact that one's beliefs influence his behavior, and, because this is true, it is possible that teachers hold different beliefs regarding girls and boys as students. Since this study is intended to attempt to locate a possible cause for the difference in the assignment of marks to boys and to girls, it was decided to investigate the beliefs that teachers held regarding them. It is assumed that if it should be found that

teacher held beliefs about good students are similar to the beliefs they hold about female students and that teacher held beliefs about poor students are similar to the beliefs they hold about male students, that an important step would have been taken toward locating the possible cause of this difference.

This investigation, therefore, examined teacher held beliefs or stereotypes and examined specifically the stereotypes of students held by junior high school teachers regarding "good" students, "poor" students, female students, and male students.

More specifically, this research investigated the degree to which teacher held stereotypes of female and male students were alike or different, and the degree to which the stereotypes of female and male students correspond to those of "good" and "poor" students.

The research also investigated whether there were any differences between male and female teachers in their beliefs about students.

#### The Importance of the Problem

Professional educators are often fond of reminding each other that no two pupils are exactly alike and that provisions must be made to satisfy these individual differences. Educators have devoted considerable effort to the planning and execution of procedures to meet the special needs of the gifted, the slow learner, the retarded, the emotionally disturbed, the physically handicapped and all of the others who have recently been grouped together and called "exceptional".

These same educators are constantly considering and reconsidering proposals to take into account differences in pupil's abilities, interests, emotional maturity, vocational goals, and a number of other variables. But, by and large, educators have tended to overlook the one difference which underlies all of the rest--that of the pupil's sex, according to Kolesnik.

Time and again we have been advised that education is the development of the whole man. Almost always, however, the term man is used in its generic or philosophic sense, and educators seem to have lost sight of the biological and psychological differences between the two species. In this preoccupation with the education of man, we seem to have forgotten that the purpose of education is to develop men--and women. The very use of the words pupils and students, instead of boys and girls, indicates that educators are inclined to disregard such sex-related differences as their interests, values, goals, temperaments, problems, aspirations and needs.

Public schools tend to ignore sex-related differences seemingly almost as a matter of policy. Except for physical education and a few special classes such as shop and home economics, they act as if boys and girls are very much alike, and attempt to educate them accordingly. Boys and girls are given the same educational experiences in the same way from kindergarten through the graduate school, Kolesnik states.

It seems probable that most school administrators would accept the idea that one of the basic developmental tasks of

life is that of learning an appropriate sex role. These same administrators, however, seem unwilling or unable to accept or to perceive that there are two different roles to be learned and that they have to be learned in different ways.<sup>1</sup>

On the surface, this disregard for sex-differences also extends to the practice of assigning marks to students. The same process is used for boys as for girls, the same kinds of marks are assigned, no differentiation between the sexes is made.

Teachers agree that one of their most uncherished responsibilities is giving and reporting marks. Some teachers lack confidence in the marks they assign; others believe their marks are fair but find them difficult to defend. The reason behind these negative attitudes is that the basis for assigning marks is often unclear.<sup>2</sup>

Teachers would, it seems, be willing to agree that there are many differences between boys and girls and that they perceive these differences on a conscious level. It is also possible that these same teachers may perceive still other differences between boys and girls but at a level below that of conscious awareness, and that these "subconscious" perceptions or beliefs about

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<sup>1</sup> Walter Kolesnik, "Sex Differences and Education," America, vol. 108, April 20, 1963, pp 552-555.

<sup>2</sup> Ahmann and Glick, op. cit., p. 531.



students may have an effect on the overt behavior of the teachers. Teachers must assign marks to boys and girls as if there were no basic differences between them, but it is at the same time quite possible that the beliefs both conscious and subconscious, constituting a stereotype that the teacher holds of these students may enter into the practice of assigning marks in such a way as to skew the results in favor of girls.

With the current emphasis being placed on marks, it is believed to be of real importance to attempt to locate the causative factors which may account for the difference in the assignment of marks to boys and to girls. The subject of the assignment of marks to students by their teachers is deemed to be important and worthy of study because it is a critical teacher activity, one about which all teachers are concerned.

The study of stereotypes and the effect they have on overt behavior of the holder is a broad and complex area of study. It is hoped that one outcome of this research will be to draw attention to the degree to which teacher held stereotypes of students may effect teacher behavior.

#### Limitations and Scope of the Study

The following limitations are acknowledged as inherent in this research, and the scope of its findings is restricted accordingly.

1. The population of junior high school teachers was limited to those teachers employed during the 1963-64 school year in the

Livonia, Michigan, Public Schools. The population consisted of all junior high school teachers, some 200 in number, while the sample used in the research consisted of 105 of these teachers who agreed to complete the experimental task. The sample represents an adequate cross-section of the total population and evidence to this effect is presented in Chapter III in the section on the selection and procurement of the sample, however, a larger sample of wider geographic distribution would have allowed for greater breadth of application and generalization of the research results.

2. A review of the research literature in the area of stereotype research revealed that a commonly used technique was that of an adjective check list. It was therefore decided to use such a standardized list and The Adjective Check List by Harrison G. Gough was selected. One of the disadvantages of any adjective list is that it restricts the choice of the subject's responses. He is provided with only a certain number of adjectives and this might seriously affect the completeness and accuracy with which he can describe his own particular concepts. Furthermore, it can be said that the presentation of any particular sample of adjectives may act as a suggestion, the subject choosing from among the list some distinguishing traits that he would not have thought of spontaneously.

Against these criticisms, however, it may be argued that The Adjective Check List is purely objective, easily scorable and relatively immune to the influence of personal and subjective interpretations on the part of the experimenter.

3. The time required for subjects to complete the entire experimental task was without question a limiting factor and tended to reduce the number of volunteers.

#### Definitions of Terms

Good Students. Those students to whom the teachers involved in the sample would assign "A" or "B" marks on the five letter marking standard of A, B, C, D, and E (failing).

Poor Students. Those students to whom the teachers involved in the sample would assign "D" or "E" marks on the five letter marking standard of A, B, C, D, and E (failing).

Female Students. Junior high school age girls, in general.

Male Students. Junior high school age boys, in general.

Stereotype. A stable and lasting cognitive pattern, internally consistent and logical in the sense that it is constructed from a set of perceived "facts". These beliefs present important social problems because they may differ so widely from reality and thus may lead to behavior harmful to society.

#### Statement of Research Hypotheses

The research hypotheses of this investigation are as follows:

Hypothesis I. When confronted with the experimental task, selecting words from the adjective check list to describe students, the teachers in the sample will be unable to agree sufficiently in their selection of adjectives to establish stereotypes.

Hypothesis II. If stereotypes are established, they will not differ according to the sex of the respondent, with male and female teachers selecting different adjectives.

Hypothesis III. If stereotypes are established, there will be no greater correspondence between the stereotype for good students and that for female students than there is between the stereotype for male students and that for good students.

Hypothesis IV. If stereotypes are established, there will be no greater correspondence between the stereotype for peer students and that for male students than there is between the stereotype for peer students and that for female students.

### The Plan of the Thesis

Chapter I has introduced the nature and scope of the problem, a statement of the problem, the problem of this study and its importance, limitations of the study, a definition of terms, and the research hypotheses.

The plan of the thesis follows:

Chapter II. Review of the literature and related research.

Chapter III. Theoretical assumptions, research questions, the research instrument, methodology and procedures, selection and procurement of the sample, treatment of the data and techniques of analysis.

Chapter IV. Presentation, analysis, and discussion of results.

Chapter V. Summary, findings, conclusions and implications for further research.

## CHAPTER II

### REVIEW OF THE LITERATURE AND RELATED RESEARCH

Concern over methods of evaluation of pupil progress could be thought of as extending as far back in history as there has been such a thing as a teacher-pupil relationship. Concern as evidenced by educational research, however, is much more recent beginning only with the dawn of the twentieth century.

In this chapter, the voluminous amount of literature that refers to the broad area of marks and marking practices will be first briefly reviewed. More attention and space will be devoted to that research which is germane to this investigation, and lastly, the literature related to stereotype research will be briefly reviewed including those studies which seemed to have bearing in terms of research design for the present study.

#### Literature on Marks and Marking Practices

One of the first educators to research the problems involved in the assignment of marks to students was Franklin W. Johnson.<sup>1</sup> In 1911 he published a work in which he demonstrated a diversity of marking standards within a school.

Later, and as a result of the research done to 1915, Harold O. Rugg in an article "Teachers' Marks and Marking Systems",

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<sup>1</sup>Franklin W. Johnson, "A Study of High School Grades", School Review, vol. 19, (1911) pp. 13-24.

was led to generalize that individual teachers set their own standards with the result of variability, unreliability, and inconsistency in the distribution of marks to students.<sup>1</sup> He also commented that teachers intend to use actual achievement in school subjects as the basis of their marks but that many other factors enter into their evaluations. Rugg also reported that teachers seemed to favor the adoption of some sort of standard marking system in the schools since there was at that time no consistent marking practice from school to school.

At about the same time that Rugg suggested that teachers desired a standard practice, Jaggard demonstrated that when teachers agreed upon general principles which should govern their marking, the marks of these teachers tended to form distributions much more similar than those for marks given without such a common standard.<sup>2</sup>

The value of setting up common standards to govern marking was further emphasized in 1910 when the College Entrance Examination board, which had been organized ten years earlier, set up a Committee on Examination Rating to establish standards and to train readers to follow these standards.<sup>3</sup>

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<sup>1</sup> Harold O. Rugg, "Teachers' Marks and Marking Systems", Educational Administration and Supervision, vol 1, (1915) pp 117-142.

<sup>2</sup> Guy H. Jaggard, "Improving the Marking Systems", Educational Administration and Supervision, vol. 5, (1919) pp 25-35.

<sup>3</sup> Claude M. Fuess, College Board: Its First Fifty Years, Columbia University, 1950.

The other major event of the early 1900's which was to have an effect on marks and marking systems was World War I and the widespread use of the Army Alpha and Army Beta Tests.<sup>1</sup> The use of these tests emphasized the idea of measurable differences in capacity to learn and tended to destroy the former notion that any child could learn as well as any other if only he tried hard enough. Emphasis was also placed on the need to individualize instruction.

By 1933, Billett was able to report that the old "percentage" system of marking had been replaced by the use of letters in 80% of the schools he studied.<sup>2</sup>

John S. Herren in an article "How Teachers Rate Their Pupils", reported on studies which demonstrated that many teachers consciously consider effort, attitude and other factors when assigning marks and that some other teachers are unconsciously affected by similar factors.<sup>3</sup>

A number of other studies, too numerous to review in this chapter, were conducted during the 1920's and 1930's and continued to add evidence of the unreliability and variability of marks.

Research attention was next directed toward methods for more clearly defining the marking base and a number of rating scales,

<sup>1</sup> Ahmann and Glock, op. cit., pp 18-19.

<sup>2</sup> Roy O. Billett, Provisions for Individual Differences, Marking and Promotion, U. S. Office of Education Bulletin, No. 17, 1932.

<sup>3</sup> John S. Herren, "How Teachers Rate Their Pupils", Department of Elementary School Principles Bulletin, No. 8, 1929, pp 235-239.

check lists, and the like were developed. It was at this point that Thorndike and Bregman proposed the use of the normal distribution curve as a result of their study of intelligence at the ninth-grade level.<sup>1</sup>

With the increased use of standardized intelligence tests, more attention was given to the individualization of instruction and to grouping of students according to ability. Although teacher opinion during the 1930's seemed to favor the use of achievement alone as the basis of marks with other behaviors being rated separately, Creeks concluded, as Rugg had done earlier, that many other factors seemed to enter in.<sup>2</sup>

Near the end of the 1930's, Heck identified the principal difficulties involved in the improvement of marking as the multiplicity of factors in the situation, the subjective nature of evaluative methods, and the variability of teacher's standards.<sup>3</sup>

Since 1940, research in the area of marks and marking practices has turned away from concern with mechanical aspects and toward concern with the purposes of marking and their relation to learning. Efforts have been directed toward increasing the

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<sup>1</sup> E. L. Thorndike and E. O. Bregman, "On the Form of the Distribution of Intellect in the Ninth Grade", Journal of Educational Research, vol 10, (1924) pp 271-278.

<sup>2</sup> A. Buryee Creeks, "Marks and Marking Systems: A Digest", Journal of Educational Research, vol. 27, (1933) pp 259-272.

<sup>3</sup> Arch O. Heck, "Contributions of Research to the Classification, Promotion, Marking and Certification of Pupils," in The Science Movement in Education, 37th Yearbook, Part II, N.N.S.E., (1938) pp 187-199.



areas of student development being marked, a greater specificity in what is being marked and a broader involvement of all of those concerned with marks. An excellent example of this change in emphasis is found in William L. Wrinkle's book.<sup>1</sup>

At present, according to Smith, Kreuse and Atkinson, there are two opposite schools of thought regarding marking.<sup>2</sup> They write as follows:

"Some educators believe that pupils should be graded or ranked in comparison with other pupils; other educators believe that pupils should be graded according to their own individual achievement, without regard for the accomplishments of others. Between these two opposite viewpoints, there are variations that sometimes reflect both theories.

When pupils are awarded a grade based on a comparison with other pupils within a class or grade, it is assumed that a certain standard for all the pupils has been established. Those who proceed beyond the standard receive above-average marks, and those who do not reach the standard receive below-average marks. Normally, those who meet the minimum standard receive average marks.

When pupils are graded on the basis of their own achievement, the mark is an indication of the individual pupil's progress, without regard for a standard set up for a class or grade. The pupil who progresses in a manner that indicates he is proceeding at his maximum capacity would receive an above-average mark. The pupil who is progressing in a manner below that of which he is capable would receive below-average marks. The pupil proceeding in a normal manner within the confines of his capacity would receive an average mark."

Now, in theory, at least, any teacher ought to treat each student equally, assigning marks to each on the basis of how well

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<sup>1</sup> William L. Wrinkle, Improving Marking and Reporting Practices in Elementary and Secondary Schools, Minehart, 1947, 120p.

<sup>2</sup> Smith, Kreuse, and Atkinson, op. cit., pp 429-430.

that particular student has attained the goals of the course involved. Running through the vast number of studies in the field of marks and marking practices since the early 1900's, however, are a disturbing number which indicate that such is not the case.

C. E. Garner in 1935 was the first researcher to become especially concerned with the problem of the differential assignment of marks to boys and girls.<sup>1</sup> He attempted to compare marks assigned by men and women teachers. His data were obtained by investigating 5,153 marks assigned to boys and 5,132 marks assigned to girls with no attempt made to differentiate school subjects. He concluded that both men and women teachers give high marks to girls rather than to boys, that women especially assign low marks to boys. His study concluded that there is a need for refining marks to make them more meaningful.

Swenson investigated the membership of the National Honor Society at Lindsberg, Kansas, High School for the years 1932 to 1941.<sup>2</sup> In his investigation he found that even though boys outnumbered girls in class attendance for the ten-year period, girls outnumbered boys in the Honor Society by 2.75 to 1. He did not find substantial differences in the intelligence of boys and girls, but decided that membership was gained by inequalities in teachers' marks. He concluded that teachers were prejudiced against boys.

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<sup>1</sup>C. E. Garner, "Survey of Teachers' Marks", School and Community, vol. 21, (1935) pp 116-117.

<sup>2</sup>Clifford Swenson, "Packing the Honor Society", Clearing House, vol. 16, (1942) pp 521-524.

Three writers, Day, Douglas and Shinnerer, in three separate studies, for the years 1937, 1938 and 1944, concluded that boys had more failures at the secondary-school level, and girls had a consistent and generally substantial advantage over boys in obtaining honor ranks.<sup>1, 2, 3</sup> In the light of these investigations, however, it seems probable that marks are determined by factors other than achievement, especially marks assigned by women teachers, and that these influences result in slight overrating of girls generally and the particular underrating of boys by women teachers.

Newton, in a study in 1942, reported that women gave higher grades than did men teachers in Central High School, Indianapolis, Indiana.<sup>4</sup> He inspected the grades on two hundred forty-six permanent record cards which had been assigned by twelve women teachers and twenty-six men teachers. The total number of grades inspected was 4,255. He made no effort to account for the differences, nor did he state whether the differences were significant.

Edmisten added more evidence of sex differences in marks assigned by teachers.<sup>5</sup> In the situation which he studied, the

<sup>1</sup>L. C. Day, "Boys and Girls and Honor Ranks", School Review, vol. 46, (1938) pp 288-299.

<sup>2</sup>H. R. Douglas, "Relation of High School Marks to Sex in Four Minnesota Senior High Schools", School Review, vol 45, (1937) pp 282-288.

<sup>3</sup>M. C. Schinnerer, "Failure Ratio: Two Boys to One Girl", Clearing House, vol. 15, (1944) pp 264-270.

<sup>4</sup>R. F. Newton, "Do Men Teachers Grade Higher Than Women Teachers?", School and Society, vol. 56, (1942) p 72.

<sup>5</sup>R. W. Edmisten, "Do Teachers Show Partiality Toward Boys or Girls?", Peabody Journal of Education, vol. 20, (1943) pp 234-238.

average grade for girls was 84.4 and for boys, 80.0. He further pointed out that women teachers gave the girls grades that averaged 5.4 points above those given to boys, while men teachers were less partial to the girls, giving them an average of only 3.4 points above those given to the boys.

Lebeough, investigating the relationship of achievement and marks assigned by teachers, found that girls had a grade point average of 2.19 while the boys had a grade point average of only 1.97.<sup>1</sup> When he compared the scores made on the Myers-Ruch High School Progress Test, the boys' median score was 46 while the median score for girls was 36. This ten-point differential was characteristic of all achievement tests administered during the period from 1940 to 1945. Further, in 1940, the valedictorian, a girl, could do no better than rank number 36 on the achievement test, while it was necessary to go down to number 105 to find the salutaterian. In 1941, the valedictorian ranked number 19 in achievement on the test while the salutaterian ranked number 41. On the 1940 test, the boy who ranked number 1 in achievement failed to graduate and had to return to school for the fifth year in order to do so. The results in 1940 showed that the top fourteen scores were made by boys. In 1941 and 1942 the results indicated that only three girls could be found among the top fifteen scores. Lebeough accounted for the difference between achievement and marks

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<sup>1</sup> Dean Lebeough, "Girls, Grades and IQ's", Nations Schools, vol. 30, (1942) p 42.

on the basis of evidence that girls were more meticulous, more punctual, and neater about their work. He also recognized greater maturity among the girls and a tendency for the boys to compensate for their immaturity.

In 1952, Robert Carter did a study designed to demonstrate whether or not teachers tend to favor one sex and whether the sex favored tends to be determined by the sex of the teacher.<sup>1</sup> Specifically, the study sought an answer to the problem: With intelligence held constant, what is the relationship between the sex of the student and the sex of the teacher in the assignment of marks in beginning algebra? The study was based on 235 pupils in nine classes in a city in western Pennsylvania. Carter found no significant differences among the various groups with respect to either intelligence or algebra achievement. When teachers' marks in beginning algebra were investigated, however, significant differences were found. Girls made significantly higher marks than did the boys and women teachers tended to give higher marks than did the men teachers. Specifically, when marks were assigned, boys were given lower marks than were the girls, regardless of whether the teacher was a man or a woman; but, marks assigned by men teachers were lower than marks assigned by women teachers. Carter also partialled out intelligence and found that when this was done, thereby holding the effects of intelligence constant, the relationship between teachers' marks and achievement declined greatly.

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<sup>1</sup>Robert S. Carter, "How Invalid are Marks Assigned by Teachers?", Journal of Educational Psychology, vol 43, (1952) pp 218-228.

Carter concluded that this indicated that teachers' marks not only reflected achievement but also intelligence and that since the relationship was far from perfect, some other factors entered into the assignment of marks by teachers in beginning algebra.

Northby in 1956 studied "Sex Differences in High School Scholarship in Connecticut" and found that the top ten per cent of the class was composed of 71.8 per cent girls and 28.2 per cent boys; while the bottom ten per cent of the class was composed of 35.8 per cent girls and 64.2 per cent boys.<sup>1</sup>

Bowman, also in 1956, studied "Pupil Marking Practices in Los Angeles City Senior High Schools."<sup>2</sup> He compared end-of-semester marks with intelligence and achievement scores earned by 10th grade pupils. The data were obtained from seven of the thirty-three schools in the district selected so as to be representative of the total range. Among the many findings of this large study of importance to the present research was the fact that girls were found to out-rank boys even though there was no reason evident in measures of intelligence or amount learned why the girls should receive higher marks than boys. It was also noted that girls tended to receive more A's and B's than did the boys while the boys tended to receive more D's and F's than did the girls.

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<sup>1</sup>Harwood S. Northby, "Sex Differences in High School Scholarship, A Study of Connecticut High Schools in 1956", School and Society, vol 70, (1956)

<sup>2</sup>Howard A. Bowman, "Pupil Marking Practices in Los Angeles City Senior High Schools", Bulletin No. 3, the Committee on Research, Los Angeles Schools, July, 1956.

It was concluded that other factors believed to be beyond the scope of the study were probably responsible for these differences in marks.

Hansen in 1959 wrote on the question "Do Boys Get a Square Deal in School?" and reported having compared three biology teachers' marks with standard test scores.<sup>1</sup> He found that the teachers gave 29 per cent of the boys A and B marks while the standard test placed 48 per cent of the boys in that mark category. Teachers gave 9 per cent of the boys F's (failure) while the standard test would only have assigned 4 per cent F's to boys. For girls, he found that teachers gave 38 per cent of them A or B marks while the standard test would have given only 19 per cent of the girls A's or B's. Teachers assigned no failing marks to girls whatsoever (0 per cent) while the standard test would have assigned 4 per cent of the girls failing marks. Hansen said that the conclusions were clear. The advantage of girls over the boys was clear and "astounding". In no instance, not even in their own "bailiwick", mathematics, do boys receive better marks than girls, he wrote.

In 1963, Waetjen, speaking before the ASCD, reported on two studies.<sup>2</sup> In one, it was found that when the grades of three thousand pupils were examined over a two-year period, only 31 per cent of all the boys made "A" or "B" marks while 43 per cent

<sup>1</sup>E. H. Hansen, "Do Boys Get a Square Deal in School?", Education, vol. 79, (1959) pp 597-598.

<sup>2</sup>Walter B. Waetjen, "Sex Roles", Scholastic Teacher, vol. 6, No 10, April 3, 1963, pp 3-T, 4-T.

of the girls made "A's" or "B's". In contrast, 26 per cent of the boys made a "D" or "F" while only 15 per cent of the girls made similar grades. In the other study, the relationship between a pupil's IQ and his report card marks was examined in a school system which had adopted an individualized method of reporting pupil progress. Children were assigned "U" (unsatisfactory) or "S" (satisfactory). Regardless of the intelligence quotient categories, 41 per cent of all the boys received "U's" and 24 per cent of all of the girls received "U's". Jaetjen proposed that the major cause of this imbalance of marks is that boys and girls learn differently and that "Schools function as unsexed institutions in a society that expects some differentiation according to sex."

#### Review of Related Research

The remainder of this chapter is devoted to a review of stereotype research.

The term "stereotype" was coined originally in 1798 by a Frenchman named Didot. Didot, together with a German named Herman, announced to the world that year a new discovery in printing which they named "stereotype".

It was not until 1929, however, that the term was first introduced into the language of psychology. In that year, Lippmann described the stereotype as "an ordered, more or less consistent picture of the world to which our habits, our capacities, our comforts and our hopes have adjusted themselves . . . ; it is a form of perception which imposes a certain character on the data





of our senses before the data reach intelligence."<sup>1</sup>

The concept of stereotype refers to the tendency for a given belief to be widespread in society, according to Krech and Crutchfield. They write: "People are almost never perceived as isolated individuals. We perceive them as being members of this or that aggregate, as Baptists or Catholics, as Republicans or Democrats, as Egyptians or Englishmen. And when we see a person as a member of a group, the personality we perceive is influenced by what we believe about his group. In other words, our perception of a person is not only determined by the person's own traits, but by the larger context within which we perceive him . . . These perceptual principles help us to understand why our judgments of people are so frequently couched in stereotyped terms, and unjust."<sup>2</sup>

Early studies often involved the description of derogatory images which man held of his fellow man. The usual procedure used in the study of stereotypes, according to Charters, has been to elicit from a group of subjects descriptive phrases or adjectives which they associate with the subject under study.<sup>3</sup>

<sup>1</sup>Rosemary Gerdon, Stereotypy of Imagery and Belief as an Ego Defense, Cambridge University Press, Cambridge, England, 1962, p. 5.

<sup>2</sup>David Krech, and Richard S. Crutchfield, Elements of Psychology, Alfred A. Knopf, New York, 1962, pp 668-669.

<sup>3</sup>J. W. Charters, Jr., "The Social Background of Teaching", in The Handbook of Research on Teaching, Rand McNally and Co., Chicago, Illinois, 1963, pp 715-814.



Krech and Crutchfield indicate that stereotypes "are stable, enduring cognitive organizations, internally consistent and logical in the sense that they are constructed from a set of perceived "facts" . . . . These beliefs present specially important social problems because they do differ so widely from the realities of the situation and thus may eventuate in behavior inimical to the rest of society."<sup>1</sup>

A number of stereotype studies have been conducted over the years with regard to the beliefs students and others held about teachers. In one such study conducted by Kenneth McGill, students were presented with ten photographs of approximately equal size mounted on a large cardboard.<sup>2</sup> Half were of men and half of women. Only three of the ten pictures were of teachers and these were women. Two of these were selected because they were believed to conform to the "schoolteacher stereotype"--they looked like teachers to the people conducting the experiment. The pictures were presented to a group of students who were asked to identify them as to occupation and to give reasons for each identification.

It was found that the teachers who were believed to conform to the stereotype were identified as teachers more frequently than would be expected by chance. The reasons given most frequently for identification as teachers involved combinations of stern,

<sup>1</sup>David Krech and Richard S. Crutchfield, Theory and Problems of Social Psychology, McGraw-Hill Book Company, Inc., New York, 1948, p 172.

<sup>2</sup>Kenneth McGill, "The Schoolteacher Stereotype", Journal of Educational Sociology, vol. 9, 1931, pp 642-651.

dignified, firm, reserved, determined, set, and stony facial expressions.

In a study by Katz and Braly, 100 Princeton students were asked to give five traits that they considered most characteristic of each of the following ten groups: Germans, Italians, Negroes, Irish, English, Jews, Americans, Chinese, Japanese, and Turks.<sup>1</sup>

The traits were to be selected from a list of 84 adjectives. The results of the study were presented in the form of a series of lists indicating the percentage of students assigning each particular trait to one of the ten groups. For example, 84 per cent of the students rated Negroes "superstitious", 75 per cent rated them "lazy" and etc.

The Katz and Braly study was later repeated by Schoenfeld at Columbia.<sup>2</sup> Schoenfeld also conducted an interesting experiment designed to demonstrate that at least one form of stereotype does not require the often mentioned "kernel of truth" which many authors believe to be an essential part of any stereotype. He used male and female students from the College of the City of New York and Hunter College and presented these students with a list of eight common male first names and eight common female first names. Together with each list of names, a list of eight human traits

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<sup>1</sup>D. Katz and K. Braly, "Racial Stereotypes of One Hundred College Students", Journal of Abnormal and Social Psychology, vol 28, (1933) pp 280-290.

<sup>2</sup>Nathan Schoenfeld, "An Experimental Study of Some Problems Relating to Stereotypes", Archives of Psychology, No. 270, 1942, p 55.

was also presented. The instructions directed each subject to link one trait in the list which he felt belonged to each name. The results were treated as an 8 X 8 contingency table. From a statistical analysis of the data using the chi-square procedure, it was clear that there was little probability that the deviations of the obtained distributions from the theoretical chance distributions could have occurred by chance. He concluded that in personal name stereotypy, there is at least one example of social stereotyping not based on the so-called "kernel of truth".

In still another experiment relating to stereotypes of nationalities, Gordon employed an adjective test which consisted of a list of adjectives from which the subjects had to select those which appeared to them particularly appropriate for a description of the character of certain nations.<sup>1</sup> She selected the adjectives test because it seemed to her to be a well established method for assessing the type and nature of the concepts adopted. Data were obtained from two different groups of subjects and the differences between these groups were then assessed statistically. As is the usual case in experiments of this type, Gordon decided that where 50 per cent or more of the subjects from a group had marked an adjective as appropriate to describe a given nationality, this was regarded as a sufficiently high percentage to infer agreement on that particular point. Although no significant differences were found between the groups with

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<sup>1</sup>Gordon, op. cit., pp 67-71.



regard to the number of adjectives selected to describe the four national groups, further evidence was obtained to support the previously held belief that the nearer the subject is to the group being rated, that is, the more the subject knows about the object, the more comprehensive is the concept formed about it.

Gough states that one of the special research uses to which an adjective check list may be put is a study of social stereotypes.<sup>1</sup> Persons may be asked, he writes, to fill in a check list for any defined individual, or class. He reports a study conducted in California in which graduate school faculty members rated graduate students for their "research originality". The research instrument used in the study was Gough's The Adjective Check List. Researchers first gathered data from faculty members by having them check the adjective list as if they were describing an "ideally original graduate student" and in that way they established the stereotype.

Next, actual graduate students were located who were assessed to have highest and lowest departmental ratings on research originality and staff adjective reports on these students were obtained and systematically analyzed to discover if descriptions of real students differed from the stereotype commonly held by the same staff members. Results of the study indicated that the stereotypic cluster of adjectives exemplified by "enthusiastic", "spontaneous",

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<sup>1</sup>Harrison G. Gough, "The Adjective Check List as a Personality Assessment Research Technique", Psychological Reports, vol. 6, (1960) pp 107-122.



and "versatile", was altogether lacking in the empirical list. And, on the other hand, the empirical cluster of "fair-minded", "rational", and "reliable" was overlooked in the stereotype.

Still more recently, MacKinnon did a study to test the hypothesis that creativeness with which a person performs in his professional role is a function of his image of himself.<sup>1</sup> To test his hypothesis, he studied three groups of architects and used the Gough Adjective Check List as the research instrument. He found that the architect who is creative thinks of himself as creative, imaginative, aesthetically sensitive, spontaneous, and self-accepting. The uncreative architect, it was found, sees himself as being most importantly conscientious, responsible and sincere.

#### Summary of Review of Literature

A review of the literature on marks and marking practices in general was first presented, but since this research is only indirectly related to the present study, that review was brief. Next, a thorough review of the literature pertaining directly to the subject of the differential assignment of marks to boys and girls was presented. It seems clear from this review that boys do, in fact, receive poorer marks than girls even though objective measures may indicate that they have equal or greater potential for learning and have in fact learned as much or more than their female counterparts in school.

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<sup>1</sup>Donald W. MacKinnon, "Creativity and Images of the Self", in The Study of Lives, edited by Robert W. White, Atherton Press, New York, 1963, pp 250-278.

It also seems feasible to conclude from this review of the literature that the research done to date has yielded little more than speculation with regard to the cause of this difference in marking practice. It was seen that some of the authors attributed the cause to "out-and-out prejudice" on the part of teachers in favor of female students. Some authors offered no guesses whatsoever as to the possible cause, while still others stated that the cause lies in what was called a series of "other factors".

The research revealed that both male and female teachers assign higher marks to girls and when these two groups were compared against each other, it was found that male teachers are only slightly "less biased" against male students than are the female teachers. Again, it was found that subject matter was not a factor of importance with regard to the differential assignment of marks. It was pointed out that even in the area of mathematics where boys are "supposed" to be traditionally "better" than girls, the girls received higher marks.

Lastly, and because it had been decided that the present investigation should be a piece of stereotype research, a very brief review of some of the past stereotype research was presented. It was noted that following the introduction of the term "stereotype" into the language of psychology in 1929, many studies were completed which sought to reveal what man thought of his fellow man.

The usual method of stereotype research was sought out to serve as a guide for the present study. It was learned that the typical method involved the elicitation from subjects of descriptive phrases

or adjectives which they associate with the subject under study. Traits selected in this way have been found not to be easily amenable to statistical analysis and have been frequently presented simply in list form together with the per cent of subjects selecting each trait.

In general, the authors agree that at least a "kernel of truth" lies at the base of each stereotype held, although one experiment cited revealed that it is possible for people to hold a stereotype which has no basis in truth whatsoever. Use of an adjective list has become a well established method for the study of stereotypes and the general rule has been that when 50 per cent or more of the subjects selected any given adjective as appropriate to describe any given category, this was regarded as sufficiently high to infer agreement on that particular point.

It was also found that the comprehensiveness of the concept formed through the use of an adjective list is affected by the degree of familiarity the subjects have with the object under study. The more familiar the subjects are with the object, the more complete is the concept formed.

It would seem that research intended to locate the cause of this differential assignment of marks to students is worthwhile since it appears that students currently may be the victims of marking practices which are based on factors not related to the purpose of the course in which they are being marked.

## CHAPTER III

### THEORETICAL ASSUMPTIONS AND RESEARCH DESIGN

The first section of this chapter is devoted to a discussion of the theory and basic theoretical assumptions of the research investigation. The research questions are stated and are followed by a description of the research instrument used in this study.

This section concludes with a description of the research design, selection and procurement of the sample, treatment of the data and techniques of analysis.

#### The Theory

The prefix "stereo" was taken from the Greek and means "solid, hard, or firm". A stereotype, in psychological terms, then, is a hardened or stable and lasting pattern of beliefs.

Belief may be defined as an attitude of assent that any particular proposition which the mind entertains is true, in other words that there is a correspondence between an idea and reality, the degree of assent remaining unspecified so that the term could cover both knowledge and belief. It is these cognitive patterns or beliefs which serve as the pivot which relates the incoming impressions and their subsequent organization to the outgoing reactions of the organism. Beliefs can therefore be regarded as the focal point in the stimulus-response pattern.

It should be made clear at this point that this attitude of assent to the idea that there is a correspondence between an idea and something in the real world does not imply the actual existence of such a correspondence. This belief is a purely psychological

phenomenon and has no relation to the question of what is true or false, real or unreal.

Defined in this way, belief is seen as an active mental process determining the relationship between the thinker and his thoughts. In this way also, belief can be seen to represent the psychological equivalent of all of these relationships to reality which have been called "knowledge", "faith", "opinion", "prejudice", and the like. It is one's beliefs, above all else, which fill his mental constructs with action since, in the majority of cases, belief and action are closely associated.<sup>1</sup>

This mental phenomenon called a belief is produced by multiple and complex factors; the most important of which are the objective factors in the real world which lay the basis for the content of the belief, while the subjective factors, operating through the mechanisms of attention and memory, select out and distort the data of the external world.

Beliefs are seen, then, as the pivot or major point which relate perceptions and ideas to actions and behavior. It is beliefs which form the bridge between thought and action.

Beliefs have been shown to tend to preserve themselves relatively unchanged. A number of experiments have been conducted which demonstrated that people remember better those items which are in accord with their beliefs than those which contradict them. Memory is seen, therefore, as a selective process. Perception, too, is selective and because beliefs play a role in determining the

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<sup>1</sup>  
Gordon, op. cit., p 49.

nature of this selectivity, new data physically available to an individual but contradictory to his beliefs may not even be perceived. Not only are beliefs self-preservative, but they are also self-reinforcing. An "anti-male student" belief, for example, which holds that male students are "mischievous", tends to reinforce itself in the individual holding such a belief since that individual will perceive only the "mischievousness" of male students, thus providing ever fresh data that all male students are mischievous.<sup>1</sup>

It remains at this point only to restate that a stereotype is a form of belief and that therefore all of the foregoing applies equally to the term stereotype as to the term belief.

#### Basic Theoretical Assumptions

The basic theoretical assumptions of this research design are as follows:

1. Teachers possess beliefs about students.
2. These teacher held beliefs, or stereotypes, about students may be instrumental in producing behavioral actions toward students, for example in the assignment of marks.
3. To the extent that teacher held stereotypes of male and female students differ, it can be expected that differences in teacher behavior toward these groups of students will result, again, for example, in the assignment of marks.
4. It is possible to determine what the teacher held beliefs about students are and also to determine whether there are differences between the beliefs held regarding male and female

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<sup>1</sup>

Krech and Crutchfield, Theory and Problems, op. cit., p 194.

students.

5. The differences between teacher held beliefs regarding male and female students, if any, may be described and analyzed.

### Research Questions

The research questions of this investigation are stated here. They are as follows:

Question I. When confronted with the experimental task, selecting words from the adjective check list to describe male and female students separately as well as good and poor students, are the teachers in the sample able to agree sufficiently in their selection of adjectives to establish stereotypes?

Question II. If stereotypes are established, do they differ according to the sex of the respondent, with male and female teachers selecting different adjectives?

Question III. If stereotypes are established, is there a greater correspondence between the stereotype for good students and that for female students than there is between the stereotype for good students and that for male students?

Question IV. If stereotypes are established, is there a greater correspondence between the stereotype for poor students and that for male students than there is between the stereotype for poor students and for female students?

### Design of the Research Instrument

For purposes of this investigation, it was decided to use The Adjective Check List (ACL) , by Harrison G. Gough of California, as the research instrument. In writing about this instrument,

anastasi lists it as a "self-concept" test.<sup>1</sup> She reports that the subject is presented with a list of 300 common adjectives arranged alphabetically from "absent minded" to "zany", and is instructed to check all those he would consider to be self-descriptive. When used as a measure of self-concept, the subject's responses are analyzed on the assumption that any systematic tendencies observed in the analysis would reveal important aspects of self-perception, whether or not the descriptions could be accepted as objectively true. She also notes that the ACL is suitable for obtaining ratings of the subjects by other persons.

In writing about his own instrument, Gough contends that the ACL is the most useful descriptive system available.<sup>2</sup> He continues in this article to review the history of word lists which preceded the development of his own ACL and indicates that one of the earliest attempts to use the adjective check list technique was by Harthaerne and May in 1930. Their list was used to obtain reputation scores for students by having their teachers complete the checking of 160 words consisting of 80 pairs of antonyms. Their words were all related to four types of conduct, honesty, service, persistence, and inhibition.

Gough lists the study by Allport and Odbert in 1936 as the second important step in the development of the adjective check list technique. Allport and Odbert made a survey of the English

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<sup>1</sup> Anne Anastasi, Psychological Testing, The MacMillan Company, New York, 1959, p 656.

<sup>2</sup> Harrison G. Gough, op. cit., p 107-122.



language for all trait names and other words referring to personal behavior. Their list contained some 17,953 words, many of which were synonyms.

The next major development, according to Gough, was the work of Cattell who undertook to reduce the list of Allport and Odbert to manageable size. Cattell developed a list of 171 words which he believed to comprise a kind of "basic English" for the complete description of personality.

Gough reports that the immediate background to the development of his ACL is found in the work of Berdin, Hathaway and Meehl in 1945 and that of Hathaway and Meehl in 1951 who used adjective check list methods to study descriptions given by friends and acquaintances of persons attaining high and low scores on the clinical scales of the Minnesota Multiphasic Personality Inventory.

Gough, in the development of his ACL, turned to the language of everyday life to compile a list of words to be used as an instrument for recording impressions and observations. The words themselves, he contends, since they have been taken from everyday life usage, are immediately meaningful. He also assures the reader that the range and scope of any description obtained will be adequate because his word list was made "long enough" to guarantee range and scope.

The goal of the ACL has been to provide a "library of descriptive terms", according to Gough, covering the widest possible range of behavior, self-conceptions, and personal values. The list is organized in such a way that it can be completed by the

subject himself or by an observer who records his reactions to the subject.

Adjectives themselves are the natural language of description, and are responded to easily and with approval by most persons. Furthermore, the use of a checking technique, as opposed to Q-sorting, graphic rating, etc., simplifies their use. Some analytical and statistical precision is lost in this way, but the gain in providing the respondent with a method of reporting his reactions much as he would in ordinary discourse, or in an interview, seems to justify the check list procedure.

One might say that, as a general principle in ratings, it would appear sound to use techniques which minimize the concern of the rater with the means and paraphernalia of rating, and which allow him to concentrate maximally on the descriptive and evaluative task. A trained respondent, such as a psychologist, can usually adapt to almost any procedure of response recording, but for an instrument to have wide applicability, and validity, response mechanics should be de-emphasized.

Parenthetically, other response forms such as Q-sorts, descriptive ratings, etc., have been tried with adjective check lists in the assessment programs at the Institute of Personality Assessment and Research. No superiorities sufficient to outweigh the virtues of the simple check list method have yet been discovered.<sup>1</sup>

Later in the same article, Gough reports that the reliability of adjective check list reports tends to be somewhat lower than that obtained by the use of other psychological instruments. He states that the reliability of observer's reports has been estimated from the phi coefficients of pairs of judges and that the typical inter-observer phi coefficient obtained has been about .60. He also states that the estimated reliability of a composite list for 10 or more observers would be higher than .60.

One of the reliability problems in the use of the adjective check list technique is occasioned by stylistic variations in

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<sup>1</sup> Gough, op. cit., p 109.

response. That is, subjects tend to employ different descriptive elements in arriving at similar descriptive outcomes. Reliability, in the sense of logical coherence and dependability of the estimates made, would appear to be adequate, but this fact will tend to be concealed by conventional methods of calculating reliability from units of test behavior.<sup>1</sup>

Gough reports that the ACL has already been used in well over 500 studies as a research instrument. The fact that the adjective check list procedure has become a well established technique in the study of stereotypes, together with the relative ease of administration of the check list, led to the decision to use the ACL as the research instrument of this investigation.

Appropriateness of the research instrument.

The ACL was selected as the research instrument not only because it is a well established research tool and not only because of ease of administration, but also and most importantly because it appeared to be an appropriate instrument to use.

The primary task facing the investigator was to determine what beliefs or stereotypes teachers held regarding students--good and peer, female and male. As was shown earlier, the best established technique for the assessment of stereotypes is the adjective check list technique. Although other adjective check lists are available for use, Gough's ACL has a number of advantages over the others. It is longer than most and can therefore be expected to yield a more complete description. The language used in the ACL is non-technical and is therefore easily understood. Because the device is easy to

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<sup>1</sup>Gough, op. cit., p 121.

understand, no special training is needed by subjects before using it and instructions for its use may be kept simple and short. Lastly, the ACL has become a well established research tool used for the purpose of determining what one person thinks about another, or what groups of people think about other groups of people.

The most central theoretical assumption of this study holds that beliefs influence behavior. More specifically, it is assumed that differences in marks assigned to boys and to girls, marking constituting a form of teacher behavior, may be traceable to differences in teacher held beliefs or stereotypes regarding the two sexes. It has been pointed out that even though they may be objectively false, one's beliefs color his relationships through the mechanisms of selective perception and memory and thereby not only influence his behavior but also tend to preserve and to reinforce existing patterns.

The Gough ACL was designed and constructed especially to assess just such beliefs as these, and it is for this primary reason that it was selected as the data-gathering instrument to be used in this study.

#### Methodology and Procedures

A detailed discussion of the methodology and procedures used in any research investigation is mandatory to allow evidence of soundness in approach and design and to allow for replication of the study.

This chapter therefore includes material with regard to the selection and procurement of the sample, the treatment of the data

and the techniques of analysis.

### Selection and Procurement of the Sample

The population selected for the research study of secondary school teachers.

The sample drawn from this population was restricted to the geographic area of Livonia, Michigan, a city of about 75,000 population suburban to the city of Detroit, Michigan. The selection of this location for the study was based on two factors:

1. The number of secondary schools located in the city of Livonia was large enough to provide an adequate sample of secondary school teachers.

2. The city of Livonia was the area in which the investigator was then located.

The total population for this study was restricted to some 200 junior high school teachers employed by the Livonia, Michigan, Public Schools during the 1963-64 school year. The total sample consisted of 105 of these 200 teachers who completed the experimental task. Of this 105, some 21 had to be eliminated from the final sample for a variety of reasons. Some were eliminated because of the failure of the teacher to complete the task in its entirety, while a few stated that they found it impossible to carry out the experimental task. One such teacher stated, "I cannot generalize properly due to my scruples about treating kids as individuals."

The final sample, then, consisted of 84 junior high school teachers and of this number 49 were male and 35 were female teachers. The fact that more male than female teachers are included in the

sample is a direct reflection of the fact that there were many more male than female teachers on the faculties of the various junior high schools in the Livonia Public Schools during the 1963-64 school year.

The 84 teachers included in the final sample were deemed to be representative of the total population from which they were drawn. The sample included 29 teachers of English and/or social studies, 22 teachers of mathematics and/or science, and the remaining 33 teachers were distributed among the "special areas" including such subjects as physical education, home making, industrial arts, art, music and etc.

In order to further substantiate the fact that the final sample is representative of the total population from which it was drawn, the following information is provided. The average age of teachers in the total population was 33.9 years, while the average age of the teachers in the sample was 33.5 years. The average number of years of education held by the teachers in the total population was 16.5 while the average education held by the teachers in the sample was 16.3 years.

Teachers in the total population consisted of 62 per cent male teachers and 38 per cent female teachers, while the sample drawn from this population consisted of 59 per cent male teachers and 41 per cent female teachers. The total population included 44 per cent teachers of special area subjects, 29 per cent teachers of English and/or social studies, and 27 per cent teachers of mathematics and/or science. The sample consisted of 40 per cent

teachers of special area subjects, 34 per cent teachers of English and/or social studies, and 26 per cent teachers of mathematics and/or science.

The first step in the procurement of the sample was obtaining permission from the superintendent of schools to conduct the research. Permission was readily granted and the cooperation of the various junior high school principals was also obtained. Next, a letter was addressed to teachers and distributed to them requesting their cooperation in the research project. This letter was distributed together with the research instrument and instructions for its completion. (See appendix II for illustrations of this material.)

The data were gathered during the month of May, 1964, so that no teacher in the sample had had less than one year of teaching experience. Actual years of teaching experience of the teachers in the sample ranged from one to more than fifteen years and all teachers were state certified.

Part I of the research instrument was distributed to all teachers in the sample on a Monday and they were given the remainder of that week to complete it. Part II was then distributed the following week to all teachers in the sample and they were again given a week to complete the task involved. Thus, each teacher in the sample completed four ACL protocols, one each for good, peer, female and male students.

### Treatment of the Data and Techniques of Analysis

The data were treated at times jointly and at times separately for the female and male teachers when recorded for analysis from the subject's responses on the research instrument, the ACL.

Instructions for completion of the research task requested the subjects to circle those words which they believed to be descriptive of "good", "peer", male and female students. In tabulating the data, it was decided that when at least 50 per cent of the subjects had selected any given adjective as descriptive of any of the four categories, that that was sufficient to infer agreement on that point. Any word that was selected by less than 50 per cent of the teachers in the sample was identified as a word which is probably not generally used by these teachers to describe good, peer, male and/or female junior high school students.

The data were analyzed with the help of the IBM 1410 Computer, using an item analysis program patterned after a similar program in use at the University of California, Berkley, California, to analyze data obtained from ACL protocols.

The item analysis of the data consisted of the following three procedures:

1. A computation showing the percentage of teachers in the total sample selecting each of the adjectives for each of the four categories of students--good, peer, female, and male.
2. A computation according to the sex of the respondent showing first the percentage of female teachers selecting each of the adjectives in each of the four categories, and second, the



percentage of male teachers selecting each of the adjectives in each of the four categories.

3. The third and final procedure in the item analysis was the use of a statistical procedure to check on the significance of differences in the selection of adjectives from the ACL comparing first the "good student" adjectives with those selected for description of female and male students, and second, comparing the "poor student" adjectives with those selected for description of female and male students.

To test for significance of differences, the statistical procedure to test for significance of difference between proportions was employed. The formula for this procedure is presented in Appendix I together with an example of its execution.

#### Summary of Theoretical Assumptions and Research Design

The theory underlying the research design is based largely on the works of Gerdner and of Krech and Crutchfield. In essence, these theorists hold that beliefs are active mental processes which determine the relationship between the thinker and his thoughts and which fill his mental constructs with action. Beliefs are seen as the bridge between thought and behavior and are said to tend to preserve themselves relatively unchanged and to be self-reinforcing. Stereotypes are held to be nothing more than a particular kind of belief.

The theoretical assumptions of this research design grew out of the above theories with regard to beliefs and their effects on behavior and from the review of the literature on marks and marking

practices.

The theoretical assumptions provided the basis for the research questions of the study and these were stated.

A description of the ACL, including the history of its development, is provided since this device was selected as the research instrument to be used in this study. An attempt was made to demonstrate that the ACL is an appropriate data gathering device for this study in light of the theory presented.

A discussion of the research methodology and procedures began with a report on the selection and procurement of the sample. A sample of 84 junior high school teachers, thirty-five female and forty-nine male teachers, was drawn for this investigation from the population of junior high school teachers in the schools of the city of Livonia, Michigan.

Procurement of the sample was accomplished by correspondence and a total usable return of 80 per cent was obtained from those who participated as subjects in the study.

The data consisted of a total of 336 ACL protocols, four each from each of the 84 teachers in the sample. These data were treated both for the total sample and also for female and male teachers in the sample separately. The data were analyzed with the help of the IBM 1410 Computer using an item analysis program which was described.

## CHAPTER IV

### PRESENTATION, ANALYSIS, AND DISCUSSION OF RESULTS

This chapter presents the treatment and analysis of the research data, followed by a discussion of the results of the research study.

Treatment and analysis of the data for each of the research questions of the study are presented first. Included in this section are lists of words that the subjects selected to describe each of the four types of students.

A discussion of the research results comprises the final section of the chapter.

#### Treatment and analysis of the Data Pertaining to Research Question I.

Statement of Research Question I. When confronted with the experimental task, (illustrations for the completion of this task are presented in appendix II) selecting words from the adjective check list to describe students, are teachers in the sample able to agree sufficiently in their selections to establish stereotypes?

Data were obtained from an analysis of all 336 of the protocols obtained from the 84 teachers in the sample. The responses of both male and female teachers were combined so that data from the total sample was used in the attempt to answer Research Question I.

It will be recalled that it had been decided in advance that any adjective selected by 50 per cent or more of the teachers in the sample would, for purposes of this study, be considered sufficient to infer agreement on that point and thus would be eligible for inclusion in the stereotype of the category involved. Lists of adjectives showing those words selected by 50 per cent or more of



the teachers in the sample to describe each of the four categories are therefore presented in Tables 1, 2, 3, and 4. In each of these tables, the digits following each adjective indicate the per cent of teachers in the total sample who selected the adjective to describe the category indicated.

TABLE 1. List of adjectives selected by 50 per cent or more of the sample subjects to describe "good" students.

---

active	63 <sup>1</sup> *
adaptable	70
adventurous	51
alert	79
ambitious	75
appreciative	50
capable	77
clear-thinking	73
cooperative	70
curious	60
dependable	75
determined	52
efficient	63
energetic	64
enterprising	51
enthusiastic	67
fair-minded	52
friendly	52
helpful	50
honest	54
imaginative	64
individualistic	50
industrious	50
initiative	53
intelligent	65
logical	52
organized	55
reliable	72
resourceful	65
responsible	68
self-confident	57
self-controlled	58
sincere	54
thorough	60

---

\*Indicates the per cent of teachers in the total sample selecting the given adjective to describe "good" students.

TABLE II. List of adjectives selected by 50 per cent or more of the sample subjects to describe "poor" students.

---

absent-minded	57½*
apathetic	61
careless	67
confused	59
disorderly	63
forgetful	52
immature	52
indifferent	51
irresponsible	57
lazy	50
loud	52
unambitious	52
undependable	60

---

\*Indicates the per cent of teachers in the total sample selecting the given adjective to describe "poor" students.

TABLE III. List of adjectives selected by 50 per cent or more of the sample subjects to describe female students.

---

attractive	59½*
changeable	65
cheerful	55
cooperative	60
dependable	52
emotional	68
excitable	52
feminine	80
flirtatious	52
friendly	72
honest	52
imaginative	50
pleasant	55
sensitive	65
sociable	54
talkative	60

---

\*Indicates the per cent of teachers in the total sample selecting the given adjective to describe female students.

TABLE IV. List of adjectives selected by 50 per cent or more of the sample subjects to describe male students.

---

active	85%*
adventurous	74
aggressive	54
awkward	52
curious	53
energetic	53
friendly	67
healthy	54
imaginative	64
impatient	51
masculine	53
mischievous	70
noisy	54
talkative	68

---

\*Indicates the per cent of teachers in the total sample selecting the given adjective to describe male students.

From a review of these first four tables, it seems clear that Research Question I may be answered in the affirmative. The teachers in the sample apparently had little or no difficulty in selecting adjectives from the 300 word ACL with sufficient agreement among them so as to develop a stereotype of some size in each of the four student categories.

Even a casual inspection of these tables reveals that the four stereotypes differ from each other in length and also in content. The stereotype for good students consists of 34 words while the stereotype for peer students is shorter in length, consisting of only 13 words. The stereotypes for female and male students are about equal to each other in length, but somewhat shorter than that for good students, the female stereotype consisting of 16 adjectives and the male stereotype consisting of 14 adjectives.

Treatment and analysis of the Data Pertaining to Research Question II.

Statement of Research Question II. If stereotypes are established, do they differ according to the sex of the respondent, with male and female teachers selecting different adjectives?

Previous research cited in the review of the literature indicates that there are differences, even though slight, in the assignment of marks to boys and girls according to the sex of the teacher assigning the marks. Male teachers, it appears, tend to assign slightly better marks to boys than do female teachers. Therefore, on the basis of this previous research, three predictions concerning the outcomes of Research Question II seem to recommend themselves. They are:

1. It is predicted that there will be differences between the stereotypes male and female teachers developed with regard to male and female students.

2. It is predicted that these differences will be relatively minor, with both male and female teachers tending to select mostly the same terminology to describe male and female students.

3. It is predicted that if differences are found, male teachers might be expected to tend to reflect slightly more positive feelings toward male students in their selection of adjectives than would the female teachers.

In an attempt to analyze data with reference to Research Question II, the AGL protocols of male and female teachers were treated separately. Lists of adjectives showing those words selected by 50 per cent or more of the female teachers in the



sample to describe female and male students are presented in tables 5 and 6. Lists of adjectives showing those words selected by 50 per cent or more of the male teachers in the sample to describe female and male students are presented in tables 7 and 8.

**TABLE V. List of adjectives selected by 50 per cent or more of the female teachers in the sample to describe female students.**

---

adaptable	51%*
affectionate	51
attractive	71
capable	54
changeable	74
cheerful	57
cooperative	60
dependable	60
emotional	69
excitable	60
feminine	77
flirtatious	63
friendly	74
healthy	53
helpful	50
honest	50
imaginative	68
pleasant	63
reliable	58
sensitive	76
sentimental	52
sociable	64
talkative	67

---

\*Indicates the per cent of female teachers in the sample selecting the given adjective to describe female students.

It was predicted, first of all, that there would be differences between the stereotypes male and female teachers developed to describe female and male students. An analysis of the data presented in tables 5, 6, 7, and 8 reveals that this prediction has been borne out. Perhaps the most striking difference between the stereotypes is that of length with the female teachers selecting many more adjectives to describe both female and male students than did the

**TABLE VI. List of adjectives selected by 50 per cent or more of the female teachers in the sample to describe male students.**

---

active	86%*
adventurous	83
aggressive	69
awkward	51
curious	65
disorderly	53
energetic	65
friendly	71
healthy	62
helpful	50
humorous	50
imaginative	66
impatient	62
masculine	56
mischievous	67
noisy	61
show-off	59
sociable	50
spontaneous	53
talkative	81
wholesome	52

---

\*Indicates the per cent of female teachers in the sample selecting the given adjective to describe male students.

**TABLE VII. List of adjectives selected by 50 per cent or more of the male teachers in the sample to describe female students.**

---

changeable	58%*
cheerful	53
cooperative	60
emotional	67
feminine	81
friendly	71
honest	54
sensitive	57
talkative	54

---

\*Indicates the per cent of male teachers in the sample selecting the given adjective to describe female students.

TABLE VIII. List of adjectives selected by 50 per cent or more of the male teachers in the sample to describe male students.

---

active	85%*
adventurous	68
awkward	53
friendly	64
good natured	51
imaginative	65
masculine	51
mischievous	72
noisy	50
talkative	59

---

\*Indicates the per cent of male teachers in the sample selecting the given adjective to describe male students.

male teachers.

Inspection of these tables also reveals the fact that different percentages of female teachers selected certain adjectives to describe female and male students than did the male teachers when the same adjectives were selected by both for the given student category. Lastly, it will be noted that female teachers especially and male teachers also but to a far less degree, selected words not selected by the other to describe students in each of the two categories.

It may, therefore, be concluded that there are differences between the stereotypes male and female teachers developed to describe female and male students.

Second, it was predicted that the differences between the stereotypes would be relatively minor and that both male and female teachers would tend to use the same terminology to describe female and male students. In the case of the female student stereotype, female teachers selected 14 adjectives not picked by their male

teacher counterparts, while the male teachers did not select any adjectives not selected by the female teachers. A total of 23 adjectives were selected by teachers of both sexes to describe female students.

In the case of the male student stereotype, female teachers selected 12 adjectives not picked by their male counterparts while the male teachers selected only one adjective not selected by the female teachers to describe male students. A total of 22 adjectives were selected by teachers of both sexes to describe male students.

An analysis of the protocols obtained from the female teachers in the sample reveals that the median number of adjectives selected by them to describe each of the categories of students was 71 while the median number of adjectives selected by the male teachers in the sample was only 55. The female teachers, then, selected a greater number of adjectives than did the male teachers. It appears, therefore, that some consideration should be given to the fact that this facet of the study tends to substantiate earlier research which has shown that girls and women become more verbal than men and boys. Research has shown that women develop this verbal superiority over men at a very early age and that they maintain this superiority throughout their lives. It appears, then, that the area of agreement between teachers of both sexes can be seen as being greater than the area of disagreement with regard to the selection of adjectives to describe female and male students.

It also seems that the degree of agreement between the sexes on

this issue is somewhat clouded by the fact that the female teachers are far more verbal than their male teacher counterparts. In general, however, it appears as if the second prediction may be upheld even though with somewhat less definition.

Thirdly, it was predicted that male teachers might be expected to reflect slightly more positive feelings toward male students in their selection of adjectives than would the female teachers. The reverse of the prediction might also be expected. If this prediction proves to be true, it should be revealed by an examination of the adjectives used. It would be expected, for example, that a higher per cent of the male teachers might tend to select adjectives with a positive affective tone (good student adjectives) to describe male students than would the female teachers and that a lesser per cent of the male teachers would be expected to select adjectives with a negative tone than would the female teachers. The reverse would be expected in the selection of adjectives to describe female students.

Because this information is not easily seen from an inspection of tables 5, 6, 7, and 8, additional tables are presented (tables 9 and 10) in which data are offered comparing the selections of male and female teachers of adjectives to describe female and male students.

An examination of these two tables provides the reader with two kinds of information. The fact which is seen first is that of the difference in the number of negative affect tone adjectives used to describe female and male students. Out of the total of 23



TABLE IX. List of adjectives selected by both male and female teachers to describe female students, showing affective tone of the adjective and per cent of selection for each sex.

ADJECTIVE	AFFECTIVE TONE	% OF F TEACHERS	% OF M TEACHERS
adaptable	P	51	31
affectionate	P	51	42
attractive	P	71	49
capable	P	54	36
changeable	N	74	58
cheerful	P	57	53
cooperative	P	60	60
dependable	P	60	46
emotional	N	69	67
excitable	N	60	46
feminine	P	77	81
flirtatious	N	63	44
friendly	P	74	71
healthy	P	53	47
helpful	P	50	42
honest	P	50	54
imaginative	P	68	37
pleasant	P	63	49
reliable	P	58	43
sensitive	P	76	57
sentimental	P	52	34
sociable	P	64	47
talkative	N	67	54

P indicates positive affective tone, N indicates negative affective tone.

adjectives selected by teachers of both sexes to describe female students, only 5 or 22 per cent had a negative affect tone while the remaining 18 or 78 per cent had a positive affect tone.

Of the total of 22 adjectives selected by both male and female teachers to describe male students, 8 or 37 per cent had a negative affect tone while the remaining 14 or 63 per cent had a positive affect tone.

Past research had indicated that both male and female teachers assigned better marks to girls than to boys. This fact would lead

TABLE A. List of adjectives selected by both male and female teachers to describe male students, showing affective tone or the adjective and per cent of selection for each sex.

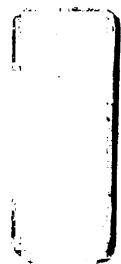
ADJECTIVE	AFFECTIVE TONE	% OF F TEACHERS	% OF M TEACHERS
active	P	86	85
adventurous	P	83	68
aggressive	N	69	43
awkward	N	51	53
curious	P	65	45
disorderly	N	53	34
energetic	P	65	45
friendly	P	71	64
healthy	P	62	49
helpful	P	50	21
humorous	P	50	47
imaginative	P	66	65
impatient	N	62	43
masculine	P	56	51
mischievous	N	67	72
noisy	N	61	50
show-off	N	59	33
sociable	P	50	38
spontaneous	P	53	29
talkative	N	81	59
wholesome	P	52	34

P indicates positive affective tone, N indicates negative affective tone.

to the expectation that teachers of both sexes would tend to perceive boys as students in a more "negative" way than girls as students. The results of past research, therefore, seem to have been supported.

Secondly, it was expected that female teachers might tend to reflect more positive feelings toward girls as students and that male teachers might tend to reflect more positive feelings toward boys as students. It was expected that these differences in feeling tone would be slight and that they would be especially so with regard to the feelings of male teachers regarding boys as students. Past





research had revealed, it will be recalled, that both sexes of teachers favor girls and that male teachers assign only slightly better marks to boys than do the female teachers.

It was believed that if such differences in feeling existed that they would be reflected as differences in the selection of adjectives. An analysis of tables 9 and 10 would yield this kind of information but would place undue emphasis on the perceptions of the female teachers. Therefore, earlier tables are examined to test this prediction. An inspection of table 5 regarding female students as perceived by female teachers reveals that 16 of the 23 words selected, or 93 per cent of them, had a positive tone, while only 5 or 7 per cent had a negative tone. From table 7 regarding the perceptions of female students by male teachers, it may be seen that six of the 9 adjectives or 67 per cent had a positive tone and the remaining 3 or 33 per cent had a negative tone.

Table 6 regarding the perceptions of male students held by female teachers indicates that 13 of the 21 adjectives or 62 per cent had a positive tone, while 8 adjectives or 38 per cent had a negative tone. From table 8 which records the perceptions of male teachers regarding male students, it may be seen that 6 of the 10 adjectives selected or 60 per cent of them had a positive tone while the remaining 4 or 40 per cent had a negative tone.

It appears, then, that female teachers do in fact have somewhat more positive feelings toward female students than do the male teachers but that the feelings of both sexes of teachers were



nearly identical with regard to male students.

It may be concluded, then, that research question II may be answered, in general, in the affirmative. The stereotypes developed by the teachers in the sample for male and for female students do differ according to the sex of the respondent with male and female teachers selecting somewhat different adjectives to describe the two sexes of students. In addition, the differences found were, in general, in the expected directions.

#### Treatment and Analysis of the Data Pertaining to Research

##### Question III.

Statement of Research Question III. If stereotypes are established, is there a greater correspondence between the stereotype for good students and that for female students than there is between the stereotype for good students and for male students?

Data were obtained from an analysis of all 336 of the protocols obtained from the teachers in the total sample. Data are presented in the form of tables showing the adjectives selected to describe good students, the per cent of teachers in the total sample also selecting the given adjective to describe female and male students and whether or not the difference between these selections was significant at the .05 level or beyond.

An analysis of table 11 reveals that only 5 of the good student adjectives, or 15 per cent of the total list, were also selected by 50 per cent or more of the total sample subjects to describe female students and that only 6 of these adjectives, or 18 per cent of the total, were also selected by 50 per cent or more of the total sample

subjects to describe male students. The difference between these two percentages is not significant at the .05 level.

A somewhat closer examination of table 11, however, reveals that there appears to be a trend in the expected direction since 22

TABLE A1. Good Student adjectives compared with female and male student adjectives showing significance of difference in selection.

ADJECTIVE	FEMALE STUDENT PER CENT	MALE STUDENT PER CENT		SIGNIFICANCE
active	46	85	M	.01
adaptable	40	32	no	
adventurous	13	74	M	.01
alert	40	28	no	
ambitious	29	26	no	
appreciative	44	17	F	.01
capable	44	34	no	
clear-thinking	16	13	no	
cooperative	60	32	F	.01
curious	30	53	M	.01
dependable	52	35	F	.05
determined	11	24	M	.05
efficient	16	9	F	.05
energetic	31	53	M	.01
enterprising	16	28	M	.05
enthusiastic	40	40	no	
fair-minded	19	30	no	
friendly	72	67	no	
helpful	45	33	no	
honest	52	37	no	
imaginative	50	64	no	
individualistic	21	21	no	
industrious	3	11	M	.05
initiative	7	4	no	
intelligent	25	16	no	
logical	8	15	no	
organized	16	8	no	
reliable	49	26	F	.01
resourceful	26	30	no	
responsible	29	17	no	
self-confident	13	22	no	
self-controlled	13	7	no	
sincere	39	33	no	
thorough	13	3	F	.05

of the good student adjectives were selected by the teachers in the

sample as corresponding equally or to a greater degree to female students than male students, while some 14 adjectives from this list were used to describe male students to an equal or greater degree than female students.

It appears, then, that if the examination of the data regarding Research Question III is confined to the stereotypes presented in tables 1, 3, and 4, that there is no significant difference in correspondence between the stereotypes for good students and those developed for female and for male students. However, if the analysis of the data includes all of the good student adjectives, then the presence of a trend is revealed indicating a greater correspondence between the teacher perception of good students and that of female students. Before attempting to examine the possible significance of this trend, data pertaining to Research Question IV will be presented.

#### Treatment and Analysis of the Data Pertaining to Research Question IV.

Statement of Research Question IV. If stereotypes are established, is there a greater correspondence between the stereotype for poor students and that for male students than there is between the stereotype for poor students and for female students?

Data were obtained from an analysis of all 336 ACL protocols obtained from the teachers in the total sample. Data are presented in the form of tables showing the adjectives selected to describe poor students, the per cent of teachers in the total sample also selecting the given adjective to describe female and male students and whether or not the difference between these selections was



significant at the .05 level or beyond.

TABLE XII. Poor student adjectives compared with female and male student adjectives showing the significance of differences in selection.

ADJECTIVE	FEMALE STUDENT PER CENT	MALE STUDENT PER CENT	SIGNIFICANCE	
absent minded	5	24	M	.01
apathetic	4	13	M	.05
careless	13	37	M	.01
confused	25	31	no	
disorderly	10	42	M	.01
forgetful	27	47	M	.01
immature	24	35	no	
indifferent	13	26	M	.05
irresponsible	5	6	no	
lazy	8	25	M	.01
loud	20	43	M	.01
unambitious	3	10	no	
undependable	4	14	M	.05

An analysis of table 12 reveals that none of the poor student adjectives were also selected by 50 per cent or more of the total sample subjects to describe either female or male students, indicating that there is no correspondence established between these stereotypes. A further examination of table 12, however, reveals the presence of a definite trend in the expected direction. This examination reveals that each of the 13 adjectives selected to describe poor students has also been selected to a greater degree to describe male students than to describe female students.

Are the observed trends significant, that is, the trend of greater correspondence between the teacher perceptions of good students and that of female students, and that of perceptions of poor students and of male students?

In order to test for significance of the observed trends, the



data were considered to constitute a 2 X 2 contingency table in which any adjective was assigned to the column headed "female" if it had been selected by a per cent of the sample subjects greater than the per cent which had selected the same adjective to describe male students. The adjective was assigned to the "male" column if the per cent of selection was greater than that for female students. Two tie adjectives from the good student list were eliminated. Data for the table were obtained from an inspection of tables 11 and 12 and the following is the table which resulted from this inspection.

TABLE XIII. Contingency table to determine the significance of the observed trends of correspondence between good and female adjectives and between poor and male adjectives.

	FEMALE	MALE	TOTALS
GOOD	A 20	B 12	A + B 32
POOR	C 0	D 13	C + D 13
TOTALS	A + C 20	B + D 25	N 45

The Fisher Exact probability Test as set forth in Nonparametric Statistics by Siegel, was used to test for significance of the observed trends. In this test:

$$P = \frac{(A+B)! (C+D)! (A+C)! (B+D)!}{N! A! B! C! D!}$$

$$P = \frac{32! 13! 20! 25!}{45! 20! 12! 0! 13!} = .00007$$

an examination of the specific adjectives selected more often to describe female students and those to describe male students proves also to be revealing. These adjectives were obtained from an inspection of tables 3, 4, 11, and 12 and are shown below in

table 14 showing also the affective tone, positive or negative, of each adjective selected.

TABLE XIV. Adjectives selected more often to describe female and male students showing the affective tone of each.

FEMALE STUDENT ADJECTIVES		MALE STUDENT ADJECTIVES	
POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
adaptable	changeable	active	absent minded
alert	emotional	adventurous	aggressive
ambitious	excitable	curious	awkward
appreciative	flirtatious	determined	careless
attractive		energetic	confused
capable		enterprising	disorderly
cheerful		enthusiastic	forgetful
clear thinking		fair minded	immature
cooperative		healthy	impatient
dependable		imaginative	indifferent
efficient		individualistic	irresponsible
enthusiastic		industrious	lazy
feminine		logical	loud
friendly		masculine	mischievous
helpful		resourceful	noisy
honest		self-confident	talkative
individualistic			unambitious
initiative			undependable
intelligent			
organized			
pleasant			
reliable			
responsible			
self-controlled			
sensitive			
sincere			
sociable			
thorough			

It may be seen from these columns of words that a very different mental picture is conjured-up by their simple recitation. The picture presented of females as students is one of hard-working, agreeable individuals, whereas, males as students are pictured as being more aggressive and disorderly but less ambitious and cooperative than their female counterparts. An inspection of this

table reveals that many of the adjectives applied to males as students are indicative of behaviors which would tend to disrupt the conduct of a class. Such adjectives as disorderly, irresponsible, lazy and loud would fit into this category. Most important, it is the expressed belief of the teachers in the sample that these adjectives are more associated with male students than with female students.

The presentation of this table also raises the question of correspondence between female student adjectives and those selected to describe good and poor students and the correspondence between male student adjectives and those selected to describe good and poor students. An examination of table 3 which records teacher perceptions of females as students reveals that, out of the 16 words selected, some 11 of them, or 69 per cent, have a positive affective tone while the remaining 5, or 31 per cent, have a negative tone. A similar inspection of table 4 regarding teacher perceptions of males as students reveals that of the 14 adjectives selected, 8 of them, or 57 per cent had a positive affective tone while 6, or 43 per cent have a negative tone.

Tables 15 and 16, presented below, show the percentage of total sample subjects which selected female and male student adjectives also to describe good and poor students.

These data are considered to constitute further evidence tending to support the evidence presented earlier regarding the observed trend toward correspondence between good and female adjectives and between poor and male adjectives.

TABLE XV. Female student adjectives showing the per cent of sample subjects also selecting the given adjective as descriptive of good and poor students.

ADJECTIVE	GOOD	POOR
attractive	16	2
changeable	16	27
cheerful	51	6
cooperative	84	2
dependable	92	1
emotional	10	27
excitable	17	23
feminine	4	2
flirtatious	2	15
friendly	63	12
honest	65	1
imaginative	77	0
pleasant	38	3
sensitive	44	15
sociable	52	8
talkative	23	40

TABLE XVI. Male student adjectives showing the per cent of sample subjects also selecting the given adjective as descriptive of good and poor students.

ADJECTIVE	GOOD	POOR
active	76	15
adventurous	62	4
aggressive	39	27
awkward	1	35
curious	73	2
energetic	78	4
friendly	63	12
healthy	46	4
imaginative	77	0
impatient	6	45
masculine	37	1
mischievous	20	41
noisy	5	44
talkative	23	40

The data presented in tables 15 and 16 above may also be considered to constitute a contingency table and this table follows.

TABLE XVII. Contingency table to determine the significance of correspondence between female and good adjectives and between male and poor adjectives.

	GOOD	POOR	TOTALS
FEMALE	A 11	B 5	A + B 16
MALE	C 9	D 5	C + D 14
TOTALS	A + C 20	B + D 10	N 30

Again the Fisher Exact Probability Test was employed to test for significance, where:

$$P = \frac{(A+B)! (C+D)! (A+C)! (B+D)!}{N! A! B! C! D!}$$

$$P = \frac{16! 14! 20! 10!}{30! 11! 5! 9! 5!} = .29105$$

From the analysis of the data presented regarding Research Questions III and IV, it must be concluded that they have been answered negatively since no significant correspondence between the stereotypes for good students or for poor students and those for female and for male students was established. It may also be concluded, however, that when the stereotypes for good and poor students were examined, that trends were established in the data presented and that these trends were in the expected directions indicating a somewhat greater correspondence between good student adjectives and those for female students and a somewhat greater correspondence between poor student adjectives and those for male students. The significance of this observed trend was tested and found to be beyond the .001 level. It appears, therefore, that for the teachers in this sample, the characteristics of good

students tend to be more like those of females than males while the characteristics of poor students tend to be more like those of males than females.

When the stereotypes for females and males as students were examined, however, no significant correspondence was found to exist between these and the stereotypes for good and poor students. It appears, therefore, that the teachers in this sample tend not to be biased in favor or prejudiced against either sex.

#### Discussion of Results

The major task of this research study was to determine for a given sample of teachers what beliefs they held with regard to good students, poor students, female students and male students. Data have been presented to show that this has been done and that the sample subjects held differing beliefs about different types of students.

The data presented has shown that stereotypes were established, that they did differ according to the sex of the respondent and that there was no greater correspondence between the stereotype of good students and that for female students than there was between the good student stereotype and that for male students. It was also found that the adjectives which constituted the poor student stereotype were not used as a part of either male or female student stereotypes. It was also shown that a trend had been located toward correspondence between good and female adjectives and between poor and male adjectives. How may these data be interpreted?

The writer believes that two key facts from the results recommend themselves for discussion. These are that stereotypes were formed and that they differed one from the other and that no significant correspondence was found to exist between the stereotypes of good or poor students and those of either female or male students although a trend in this direction was located.

The fact that no significant correspondence was found to exist between the stereotypes, but only a trend in the expected direction, seems to the writer to indicate that the speculations made by earlier researchers that the cause of the difference in assignment of marks to girls and to boys was the result of prejudice on the part of teachers in favor of girls may now be discounted. If teachers were truly biased, it is assumed that this bias would have been revealed in their selection of adjectives. If these teachers were prejudiced in favor of girls, as many previous authors had guessed, the results of this study should have indicated a clear and significant correspondence between the stereotypes for good students and that for female students. The converse should also have occurred if teachers are biased as was assumed, that is, that a clear and significant correspondence should have been found between the stereotype for poor students and that for male students.

In fact, however, no such correspondence was found to exist and it seems, therefore, as if speculation regarding teacher prejudice should be at an end. Should it be concluded, therefore, that the results of this study shed no light on the cause of the

differential assignment of marks, other than tending to eliminate prejudice as the cause?

The writer believes that the fact that the stereotypes of female and male students differed greatly, and more especially the way in which they differed does seem to shed further light on a possible cause of the difference in assignment of marks to boys and to girls. It appears to the writer that the fact of the difference in cultural expectations of behavior for the two sexes has been demonstrated or reflected, perhaps more than any other, in the data. The data seem to lend support to the notion that what could be defined as "masculine" behavior tends not to be tolerated or approved by the typical teacher in the secondary school classroom. A wealth of evidence has been accumulated to demonstrate that our society's definitions of acceptable male and female behavior are divergent, for example with respect to aggression.

An example of such research is that of Radke who found that fathers in her sample felt that aggressive, assertive behavior on the part of boys was less undesirable than the identical behavior in girls, and in many cases fathers deemed such behavior highly desirable for boys.<sup>1</sup> It may be inferred from the data presented that the social or behavioral tendencies of typical male youngsters tend to be in contrast to the behaviors which the teachers who

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<sup>1</sup> M. J. Radke, "The Relation of Parental Authority to Children's Behavior and Attitudes", Child Welfare Monograph, No 22, Minneapolis, University of Minnesota Press, 1946.



constituted sample subjects for this research list as characteristics of good students.

Previous research lends support to this inference. Perhaps this fact can best be illustrated by an examination of the study of Meyer and Thompson.<sup>1</sup> They began with the premise that approval by the teacher results in better learning and better over-all adjustment among pupils. Their hypothesis was that "masculine" behavior (described as aggressive and generally more "unmanageable" than girls' behavior), will result in male pupils receiving a larger number of dominative, or punitive, contacts than girls, from their teachers. The general findings of the study supported the hypothesis and showed that male pupils received reliably more blame from their teachers than female pupils. It was also found that the boys recognized the fact that they are the recipients of a higher incidence of teacher disapproval.

They suggest that teacher initiation of punishment for "masculine" behavior only serves to reinforce already existing dislikes for school and further that it leads to peer group reinforcement. They also point out that the behavioral expectations of our society with regard to boys and girls differ and they conclude: "If our interpretation of the teacher and male pupil relationship is accurate, then the fact that boys dislike school more than girls is understandable. The daily punishment received

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<sup>1</sup>William J. Meyer and George G. Thompson, "Sex Differences in the Distribution of Teacher Approval and Disapproval Among Sixth-Grade Children", Journal of Educational Psychology, vol. 47, 1956, pp 385-396.

by the boy for behavior he really does not consider "bad" must certainly be anxiety producing. If anxiety created in the school situation becomes sufficiently intense, it seems reasonable that tension reduction can be achieved by means of avoiding school. It is known that more boys leave school at an earlier age than girls."

From the data of this study together with the Meyer and Thompson study, it seems that it may be concluded that the perceptions teachers hold of their pupils, conscious or otherwise, are different for boys and girls and that teachers approve, to a greater degree, the behavior of girls. What is, perhaps, even more important is the fact that this difference in teacher reaction to students is felt and is perceived by the students who experience it. One may only speculate on the effects of this "felt difference" in treatment on learning and on behavior.

It may be that there are other reasons behind the fact that teachers tend to disapprove of behaviors which our society has defined as typically male or as expected male behavior. At least one other motivating factor seems of importance to the writer, and this factor is reflected in the work of Beilen.<sup>1</sup> He reviewed the research on the differences between teachers' and clinicians' attitudes toward the behavior problems of children.

Among other important facts, Beilen reports that teachers were most aware of overt and aggressive behaviors, inattention to school

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<sup>1</sup> Harry Beilen, "Teachers' and Clinicians' Attitudes Toward the Behavior Problems of Children: A Reappraisal", Child Development, vol. 30, 1959, pp 9-25.

tasks, and behaviors which violated the standards of morality. He found that boys were reported more frequently than girls for behavior problems and that teachers preferred the less active, more compliant behavior of girls to the more aggressive behavior of boys. Desirable conduct as far as teachers were concerned, he reports, took on the distinguishing characteristics of girl behavior.

He states that whatever the reasons, whether biological or social, he feels that these differences result from different expectations, differences, that is, in the nature of adjustment of boys and girls in school. The reason, he contends, that girls are considered better adjusted by teachers is that teachers have certain expectations of what good adjustment in school should be and the prescription for girls' adjustment is more consistent with these expectations than the prescription for boys' good adjustment. The most important point that Beilen makes is that the major job of the teacher is to teach, to get across the material that he is teaching, and that he is most likely, therefore, to value those behaviors which facilitate his teaching job, not those which interfere with it. And it just happens that the behavior of girls corresponds much more closely than does that of boys to facilitating the job of teaching.

It is this emphasis on the work of the teacher and the fact that the behavior of boys is seen as inhibiting that work which, to the writer, explains the fact that both female and male teachers tend to approve more highly of the behavior of girls than that of boys.

Although it appears to the writer that the foregoing is the most likely explanation of the results of this study, some of the authors mentioned in the section on the review of the literature who have studied the differences in marks assigned to boys and to girls have attributed these differences to known differences between the sexes in areas other than behavior.

The literature on the differences between the sexes is extremely large and somewhat outside the scope of this paper and therefore only a very brief summary of some of the important findings will be presented here. These studies have shown with a high degree of consistency that differences between boys and girls which affect learning are numerous and significant. Most of the differences which have been studied favor the girls.

From infancy onward, for example, girls have been found to exceed boys in verbal ability and in almost every aspect of linguistic development. They have larger vocabularies than boys, speak with longer and more complex sentences, are ready to learn reading earlier and continue to read better than boys.

Girls attain physical maturity at an earlier age than boys and throughout childhood are physically more advanced than boys of the same chronological age. They tend to exceed boys in the control of the finger and wrist movements which are so important in such school subjects as handwriting and art, and which affect neatness of work in any subject. Girls have also been found to be more advanced than boys in their ability to perceive details quickly and accurately and to pay closer and longer attention to matters at hand.

Some of the reported differences do favor boys, however. They exceed girls in physical strength and stamina; they usually surpass girls in spatial orientation; and they do somewhat better than girls in numerical reasoning and problem solving. But even in the area of arithmetic, girls have been found to surpass boys in the mechanics of computation, surpassing them in both speed and accuracy.

Research has also shown, if there was ever any doubt, that girls differ from boys in their play activities, their vocational goals, their reading and entertainment interests, their attitudes toward a wide variety of things, the problems they consider pressing and the values they hold to be important. Differences have been found between the sexes in their social relations and maturity, in the kinds of emotional difficulties they have, in their classroom participation, in the kind of leadership to which they respond, and in the manner in which they learn their appropriate sex role.

Although this body of research on the differences between the sexes is large, imposing and conclusive, it does not appear to this writer to offer an explanation for the data gathered in this study. This is not to say that these data are without value for the present study, however. This body of data seems to have a different implication, it seems to this writer to raise the question of whether or not coeducational schools are desirable.

Educators the country over have long been aware of what is called "individual differences" among students in such diverse areas as mental ability, vocational goals, interests, and the like. However, these same educators have apparently overlooked the most

obvious and the single most important difference among their students--that of the student's sex. This factor has simply been overlooked and as a consequence, boys and girls have been placed together in the same classrooms from kindergarten onward and teachers have acted as if differences did not exist, using the same instructional materials and procedures with both.

From the discussion thus far presented, it appears to the writer that educators might well wonder whether the practice of coeducation is psychologically healthy for boys. If we accept the position of Rogers,<sup>1</sup> Snygg and Combs<sup>2</sup>, and others, that one's self-concept is a major factor influencing his behavior, then this question becomes all the more important.

A child's self-concept arises and develops as a result of the relationships he has with significant other people in his life. The child's feelings about himself are learned early in life and are modified by his encounters with new experiences. The child's feelings about himself with regard to such things as whether or not he is likeable, acceptable, able, and important, are determined primarily by the way his parents and his teachers react to him.

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Studies by Jersild<sup>3</sup> and Reeder<sup>4</sup> together with the work of

<sup>1</sup> C. R. Rogers, Client Centered Therapy, Houghton Mifflin, Boston, 1951.

<sup>2</sup> D. Snygg and A. W. Combs, Individual Behavior, Harper and Brothers, New York, 1949.

<sup>3</sup> A. T. Jersild, In Search of Self, Bureau of Publications, Teachers College, Columbia University, New York, 1952.

<sup>4</sup> T. A. Reeder, "A Study of Some Relationships Between Level of Self Concept, Academic Achievement and Classroom Adjustment", Dissertation Abstracts, vol 4V (1955) 2472.

Stevens<sup>1</sup>, have demonstrated that positive feelings about one's self are associated with good academic achievement and etc. In other words, it might be stated that a psychological atmosphere which builds a positive self-concept would be healthier and would lead to better academic achievement than would one which tends to build a negative self concept. From the evidence presented, it seems safe to conclude that the psychological atmosphere of the coeducational school tends to be healthier for girls than it is for boys. The data of this study, however, does no more than to raise this question. It does not in any way provide or suggest possible answers.

It will be recalled that at the outset it was stated that the purpose of this research was to attempt to locate a cause for the difference in the assignment of marks to boys and to girls. It was further stated that if teacher held stereotypes regarding students could be shown to vary in a manner similar to that found in the assignment of marks, that this would be considered an important step toward locating the possible cause of differences in the assignment of marks to students.

Even though no correspondence was found to exist between the stereotypes developed by teachers in this sample, it may be concluded that teacher perceptions of students do tend to vary in the same way that variations in the assignments of marks occur. Girls receive better marks than boys and teachers tend to hold more positive stereotypes of girls as students than they do of boys as students. Because the results of this study are such that

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<sup>1</sup> P. H. Stevens, "An Investigation of the Relationship Between Certain Aspects of Self-Concept Behavior and Student's Academic Achievement", Dissertation Abstracts, vol XVI, (1956) 2531-2532.

a direct cause and effect relationship cannot be established, the actual cause of the difference in the assignment of marks to boys and to girls must remain in doubt.

Whatever the cause may be, however, it appears as if teachers in their role as members of society in general would be supportive of the differences in cultural expectations for boys and for girls, the kind of behavior that is brought to mind when one thinks of the saying "Boys will be boys!" But it also appears that when these individuals are performing their occupational task, that is, when they are teaching, their expectations of student behavior do not vary according to sex. Teachers appear to place great positive value on compliant, non-disruptive forms of behavior because these behaviors facilitate the accomplishment of their work. As has been stated, this kind of behavior is mostly characteristic of girls.

#### Summary of Presentation, Analysis and Discussion of Results

The presentation and analysis of the data was accomplished separately for each of the four research questions and it was found that stereotypes were established, that they did differ according to the sex of the respondent and in the expected directions, but that no significant correspondence was found between the stereotypes for good and female students or for good and male students, or for poor and male or for poor and female students. A trend in the expected direction was located and tested for significance.

Discussion of the research results revolved around the differences in general cultural expectations and the expectations of teachers in particular for male and female behavior. It was



concluded that the results of this study may best be understood if one considers the fact that teachers in general, both male and female teachers, value that kind of student behavior positively which facilitates their work as a teacher, namely the job of teaching, and that they negatively value that kind of student behavior which interferes with the accomplishment of their work. It was pointed out that the behavior of boys is seen by teachers more often as being interfering than is that of girls.

A discussion of the results of this study also led to a raising of a question concerning the desirability of coeducational schools for boys.

It was concluded that the results of this study first tended to refute the notion that teacher prejudice against boys is the cause of the differential assignment of marks and second that support had been added to the belief that the expectations of society with regard to approved male behavior tend to be in conflict with the expectations of teachers with regard to approved student behavior.

## CHAPTER V

### SUMMARY, FINDINGS, CONCLUSIONS AND IMPLICATIONS

#### FOR FURTHER RESEARCH

This chapter presents a summary of the entire study including a review of the findings and the conclusions which were drawn from the findings. The chapter concludes with a statement of implications for further research.

#### Summary of the Research Investigation

This study took as its research problem an investigation of the degree to which teacher held stereotypes of female and male students were alike or different, and the degree to which the stereotypes of female and male students correspond to those of "good and poor" students. The research also investigated whether there were any differences between male and female teachers in their beliefs about students.

Interest in this problem grew out of a review of the literature regarding the assignment of marks to students which revealed that boys consistently receive poorer marks than girls regardless of the fact that objective measures indicate that they have learned as much or more than the girls and are every bit as intelligent. None of the authors who had researched the question of the differential assignment of marks to boys and to girls had attempted to determine the cause of this difference. Instead, these writers had confined themselves to speculation regarding the cause of their findings. This speculation, in general, took one or the other of two forms, many of the investigators attributed the cause to bias on the part



of teachers in favor of girls, while others stated that they believed the cause to be generated by the fact that girls were different from boys in certain respects, that is, they were neater in their work, and the like. These studies were thoroughly reviewed. Most of the writers seemed to agree on at least one point, that is, that some factor or factors other than achievement and intelligence enter into the assignment of marks by teachers and whatever these factors may be, that they seem to operate in such a way that boys are the recipients of poorer marks than girls.

It is a known fact that one's beliefs influence his behavior and therefore it was decided that this study should investigate the beliefs or stereotypes which teachers hold regarding their students. Methods of stereotype research were therefore reviewed in order to obtain a model for the present study. It was learned that the most common and best established procedure for determining the nature and content of stereotypes is to submit an adjective check list to the subjects of the study and therefore this procedure was selected for the present investigation.

The theory which underlies this study holds that one's beliefs are the pivot or crucial factor which relate his perceptions of the real world around him to his actions and his behavior. It was therefore assumed that the beliefs which teachers hold regarding their students would be worthy of study and that such a study might prove to be an important step in the attempt to locate the cause of the difference in marks assigned to boys and to girls.



The guiding research hypotheses of this investigation were stated.

In order to test these research hypotheses, a series of four research questions were developed, these questions are reviewed in the section on findings later in this chapter.

The Adjective Check List by H. G. Gough was selected as the data gathering instrument of this study and its design and construction were reviewed. The final sample for this investigation consisted of 84 junior high school teachers who were representative of the total population of junior high school teachers employed by the Livonia, Michigan, Public Schools during the 1963-64 school year. Each teacher in the sample was asked to complete the experimental task which involved the development of four separate ACL protocols, one for the description of "good" students, one for "poor" students, one for female students and one for male students.

The data gathered were treated collectively for analysis of some of the research questions but were separated according to the sex of the respondent for an analysis of one of those questions. The data were analyzed with the help of the IBM 1410 Computer using an item analysis program which was explained.

### Findings

The findings of this investigation were presented for each of the four research questions.

Research Question I asked whether the teachers in the sample would be able to agree sufficiently in their selections of adjectives from the ACL to establish stereotypes in each of the four student

categories. Data were obtained from an analysis of all 336 ACL protocols and revealed that Research Question I had been answered in the affirmative. Stereotypes of some length were developed in each of the four categories.

Research Question II asked whether stereotypes differed according to the sex of the respondent, male and female teachers selecting different adjectives to describe students. In this case, the ACL protocols obtained from male and female teachers were analyzed separately. It was concluded that Research Question II had also been answered in the affirmative and moreover that the differences found were, in general, in the direction that was expected.

Research Question III asked if there was a greater correspondence between the stereotype for good students and that for female students than there was between the stereotype for good students and that for male students. Again, data from all 336 ACL protocols were analyzed and it was found that this question had been answered negatively. No significant difference was found to exist, that is, the good student adjectives were not a part of the female student stereotype to any greater extent than they were a part of the male student stereotype.

Research Question IV asked if there was a greater correspondence between the stereotype for poor students and that for male students than there was between the stereotype for poor students and that for female students. Data from all 336 ACL

protocols were analyzed and it was found that this question also had been answered negatively. The poor student adjectives had not been included by the sample subjects as a part of either the male or the female student stereotypes.

In the analysis of the data regarding Research Questions III and IV, a trend in the expected direction was found to exist. This trend seemed to indicate a greater correspondence between the good and the female adjectives and between the poor and the male adjectives. To determine the importance of this observed trend, the data were considered to constitute a 2 X 2 contingency table and the Fisher Exact Probability Test was employed to determine whether the actual data differed significantly from what would be expected to occur by chance. This analysis indicated that the observed trend was significant beyond the .001 level.

### Conclusions

From the analysis of the results of this study, one conclusion seems paramount. No support was found for the former belief that teachers are prejudiced against boys, since no significant correspondence was found to exist between the good and poor student adjectives and those for female and male students.

Earlier writers, such as Garner and Swenson cited in the review of the literature, had investigated such things as actual marks assigned to students and the make up of the honor society and had found both to favor girls. Swenson had concluded, it will be recalled, that he believed his data indicated that all



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teachers, both male and female, were prejudiced against boys. It was research such as this which led the present writer to predict that in the formation of student stereotypes, teachers would select adjectives in such a way as to reveal a significant correspondence between adjectives descriptive of good students and those for female students and between adjectives descriptive of poor students and those for male students. The results of this study, however, revealed no such prejudice on the part of the sample subjects.

Why did prejudice fail to show up in the results of this study? It is interesting and important to speculate on the possible answers to this question. The writer believes that each of the following reasons and perhaps others may have caused the results of this study to fail to reveal prejudice:

1. The teachers in the sample may have developed an undetermined response set as a result of the fact that the presentations of the research task were not randomized. All teachers in the sample first marked the AQL to describe good and poor students and second to describe female and male students. It is possible that different results might have been obtained if half of the teachers had first marked the AQL to describe female and male students and then second marked it to describe good and poor students. It is possible that a response set established by marking good and poor adjectives first may have carried over in some unknown way to the marking of adjectives to describe female and male students.

2. Although all 200 teachers in the population had been invited to participate in the study, some 95 of them did not do so. It is possible that these 95 teachers might have had attitudes or beliefs very different from those held by the study participants and, therefore, that if 100 per cent participation could have been obtained, the results of the study might have been different.

3. Although sincere efforts were made to conceal the intent of the marking procedures, it is likely that the sample subjects engaged in guessing with regard to the intent. Because of this, it is possible that the subjects may have concealed their real beliefs and the writer may have obtained little more than what the subjects "guessed" that the writer "wanted".

4. The AQL itself may have been a seriously limiting factor in this study.

a. First, it has a reported reliability which is low (.60) and therefore it is impossible to say with confidence that the same results would be obtained should the study be repeated with the same subjects.

b. Second, the AQL is still an experimental instrument and because this is so, there is no evidence available to indicate its validity for the purpose for which it was used in this study. It may not be said, therefore, with any degree of confidence that there is any relationship between the way the sample subjects marked the AQL and the way in which they assign marks to real students.

5. Lastly, but not less important, the choice of 50 per cent

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as the degree of agreement needed before any given adjective could be included in the given student stereotype may have been unwise and acted in such a way as to conceal agreements among the sample subjects which may have been present in the data. The 50 per cent level as a cut-off point was a purely arbitrary decision and as such it is not supported by any statistical evidence as being the most appropriate cut-off point. It may be said that for the data gathered in this study, the 50 per cent point represented a figure about one-and-one-half standard deviations above the mean per cent of selection of the adjectives in the total list. So far as this writer has been able to determine, statistics permits no predictions to be made in advance regarding the expected distribution of selections from among the adjectives which constitute the ACL.

#### Implications for Further Research

Because of the experimental nature of the ACL, one implication for further research seems to recommend itself. It would appear worthwhile and interesting to determine whether there is any relationship between teachers marks on the ACL and actual teacher behavior, for example with regard to the assignment of marks to students. In effect, such a research would amount to an attempt to validate the ACL as a device to be used to make predictions regarding teacher behavior.

One of the problems inherent in the use of the ACL also suggests the possibility of further research. Many of the 300

words contained in the ACL have meanings which are similar to each other with the result that subjects tend to select somewhat different adjectives to arrive at similar word descriptions of the object under study. It would appear worthwhile, therefore, to cut down on the size of this word list by eliminating words with similar meanings and thereby to determine if the reliability of the instrument would be increased. It is possible, for example, that the subjects of this study were in agreement to a far greater degree than the results reveal but that this fact was concealed because the subjects selected different adjectives to arrive at similar word pictures.

## APPENDIX I

To test for significance of differences in the selection of adjectives, the statistical procedure to test for significance of differences between proportions as shown in Statistical Methods<sup>1</sup> was employed. The formula is as follows:

$$\sigma_p z = \sqrt{pq\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$$

where:  $p$  = the total percentage of occurrence

$$q = 1-p$$

$n_1$  = number in first sample

$n_2$  = number in second sample

and: 
$$\sigma^2 = \frac{p_1 q_1}{n_1} + \frac{p_2 q_2}{n_2}$$

and: 
$$t = \frac{p_1 - p_2}{\sigma}$$

values for  $t$ :  $t$  1.96 at the .05 level

$t$  2.58 at the .01 level

To illustrate the use of this formula as it was applied to the data gathered in this study, the computations used to test for significance of difference in selection of the adjective active, the first adjective appearing in table 11, is presented below.

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ACTIVE 80 out of the 84 teachers in the sample selected this adjective to describe students. 46 per cent of them selected it to describe female students and 85 per cent of them selected it to describe male students.

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<sup>1</sup> Norbert Arkin, Raymond R. Colton, Statistical Methods, Barnes and Noble, Inc., New York, 1961, pp 121-122.

let  $p_1$  = the percentage selected to describe female students, and  
 let  $p_2$  = the percentage selected to describe male students, then:

$$\begin{array}{ll} p_1 = .46 & p_2 = .85 \\ \text{and } q_1 = .54 & q_2 = .15 \\ \text{and } n_1 = 80 & n_2 = 80 \end{array}$$

$$\sigma^2 = \frac{p_1 q_1}{n_1} + \frac{p_2 q_2}{n_2}$$

$$\sigma^2 = \frac{.46 \times .54}{80} + \frac{.85 \times .15}{80}$$

$$\sigma^2 = .0046$$

$$\sigma = .068$$

$$\text{now, } t = \frac{p_1 - p_2}{\sigma} = \frac{.46 - .85}{.068} = \frac{.391}{.068} = 5.75$$

where values for  $t$  are:  $t$  1.96 at the .05 level  
 and:  $t$  2.58 at the .01 level

therefore, the difference in selection of the adjective  
active to describe female and male students has been found to  
 be significant at the .01 level.



## APPENDIX II

The following are copies of the instructions distributed to the teachers in the sample for completion of the research task together with a complete list of the adjectives which constitute the adjective Check List.

Instructions for completion of Part I of the research task were as follows:

On the pages which follow, you will find two copies of a commonly used list of adjectives.

1. Please read through the first copy of the list and circle each word you would consider to be descriptive of good students, those who would be given "A" or "B" marks on their report cards. Do not worry about duplications, contradictions, and the like on either copy of the list.

2. Next, please read through the second copy of the list and circle each word you consider to be descriptive of poor students, those who would be given "D" or "E" marks on their report cards, and that's it!

The instructions for completion of Part II of the research task were as follows:

On the pages which follow, you will find two additional copies of the same list of adjectives used in Part I of this research.

1. Please read through the first copy of the list and circle each word you would consider appropriate to complete this statement: In general, school girls (female students) may be described by the following words: (Circle those words which you would believe accurately complete this statement.)

2. Next, please read through the second copy of the list and circle each word you would consider appropriate to complete this statement: In general, school boys (male students) may be described by the following words: (Circle those words which you believe would accurately complete this statement.)

Again, do not worry about duplications, contradictions, and the like on either copy of the list.

The following is a complete listing of the 500 adjectives which constitute the Adjective Check List.

- |                    |                   |
|--------------------|-------------------|
| 1. absent-minded   | 51. cowardly      |
| 2. active          | 52. cruel         |
| 3. adaptable       | 53. curious       |
| 4. adventurous     | 54. cynical       |
| 5. affected        | 55. daring        |
| 6. affectionate    | 56. deceitful     |
| 7. aggressive      | 57. defensive     |
| 8. alert           | 58. deliberate    |
| 9. aloof           | 59. demanding     |
| 10. ambitious      | 60. dependable    |
| 11. anxious        | 61. dependent     |
| 12. apathetic      | 62. despondent    |
| 13. appreciative   | 63. determined    |
| 14. argumentative  | 64. dignified     |
| 15. arrogant       | 65. discreet      |
| 16. artistic       | 66. disorderly    |
| 17. assertive      | 67. dissatisfied  |
| 18. attractive     | 68. distractible  |
| 19. autocratic     | 69. distrustful   |
| 20. awkward        | 70. dominant      |
| 21. bitter         | 71. dreamy        |
| 22. blustery       | 72. dull          |
| 23. boastful       | 73. easy going    |
| 24. bossy          | 74. effeminate    |
| 25. calm           | 75. efficient     |
| 26. capable        | 76. egotistical   |
| 27. careless       | 77. emotional     |
| 28. cautious       | 78. energetic     |
| 29. changeable     | 79. enterprising  |
| 30. charming       | 80. enthusiastic  |
| 31. cheerful       | 81. evasive       |
| 32. civilized      | 82. excitable     |
| 33. clear-thinking | 83. fair-minded   |
| 34. clever         | 84. fault-finding |
| 35. coarse         | 85. fearful       |
| 36. cold           | 86. feminine      |
| 37. commonplace    | 87. fickle        |
| 38. complaining    | 88. flirtatious   |
| 39. complicated    | 89. foolish       |
| 40. conceited      | 90. forceful      |
| 41. confident      | 91. foresighted   |
| 42. confused       | 92. forgetful     |
| 43. conscientious  | 93. forgiving     |
| 44. conservative   | 94. formal        |
| 45. considerate    | 95. frank         |
| 46. contented      | 96. friendly      |
| 47. conventional   | 97. frivolous     |
| 48. cool           | 98. fussy         |
| 49. cooperative    | 99. generous      |
| 50. courageous     | 100. gentle       |

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|------|------------------|------|------------------|
| 101. | gloomy           | 151. | mild             |
| 102. | good looking     | 152. | mischievous      |
| 103. | good natured     | 153. | moderate         |
| 104. | greedy           | 154. | modest           |
| 105. | handsome         | 155. | moody            |
| 106. | hard-headed      | 156. | nagging          |
| 107. | hard-hearted     | 157. | natural          |
| 108. | hasty            | 158. | nervous          |
| 109. | headstrong       | 159. | noisy            |
| 110. | healthy          | 160. | obliging         |
| 111. | helpful          | 161. | obnoxious        |
| 112. | high-strung      | 162. | opinionated      |
| 113. | honest           | 163. | opportunistic    |
| 114. | hostile          | 164. | optimistic       |
| 115. | humorous         | 165. | organized        |
| 116. | hurried          | 166. | original         |
| 117. | idealistic       | 167. | outgoing         |
| 118. | imaginative      | 168. | outspoken        |
| 119. | immature         | 169. | painstaking      |
| 120. | impatient        | 170. | patient          |
| 121. | impulsive        | 171. | peaceable        |
| 122. | independent      | 172. | peculiar         |
| 123. | indifferent      | 173. | persevering      |
| 124. | individualistic  | 174. | persistent       |
| 125. | industrious      | 175. | pessimistic      |
| 126. | infantile        | 176. | planful          |
| 127. | informal         | 177. | pleasant         |
| 128. | ingenious        | 178. | pleasure-seeking |
| 129. | inhibited        | 179. | poised           |
| 130. | initiative       | 180. | polished         |
| 131. | insightful       | 181. | practical        |
| 132. | intelligent      | 182. | praising         |
| 133. | interests narrow | 183. | precise          |
| 134. | interests wide   | 184. | prejudiced       |
| 135. | intollerant      | 185. | preoccupied      |
| 136. | inventive        | 186. | progressive      |
| 137. | irresponsible    | 187. | prudish          |
| 138. | irritable        | 188. | quarrelsome      |
| 139. | jolly            | 189. | queer            |
| 140. | kind             | 190. | quick            |
| 141. | lazy             | 191. | quiet            |
| 142. | leisurely        | 192. | quitting         |
| 143. | logical          | 193. | rational         |
| 144. | loud             | 194. | rattlebrained    |
| 145. | loyal            | 195. | realistic        |
| 146. | mannerly         | 196. | reasonable       |
| 147. | masculine        | 197. | rebellious       |
| 148. | mature           | 198. | reckless         |
| 149. | meek             | 199. | reflective       |
| 150. | methodical       | 200. | relaxed          |

201. reliable  
 202. resentful  
 203. reserved  
 204. resourceful  
 205. responsible  
 206. restless  
 207. retiring  
 208. rigid  
 209. robust  
 210. rude  
 211. sarcastic  
 212. self-centered  
 213. self-confident  
 214. self-controlled  
 215. self-denying  
 216. self-pitying  
 217. self-punishing  
 218. self-seeking  
 219. selfish  
 220. sensitive  
 221. sentimental  
 222. serious  
 223. severe  
 224. sexy  
 225. shallow  
 226. sharp-witted  
 227. shiftless  
 228. show-off  
 229. shrewd  
 230. shy  
 231. silent  
 232. simple  
 233. sincere  
 234. slipshod  
 235. slow  
 236. sly  
 237. smug  
 238. snobbish  
 239. sociable  
 240. soft-hearted  
 241. sophisticated  
 242. spendthrift  
 243. spineless  
 244. spontaneous  
 245. spunky  
 246. stable  
 247. steady  
 248. stern  
 249. stingy  
 250. stolid

251. strong  
 252. stubborn  
 253. submissive  
 254. suggestible  
 255. sulky  
 256. superstitious  
 257. suspicious  
 258. sympathetic  
 259. tactful  
 260. tactless  
 261. talkative  
 262. temperamental  
 263. tense  
 264. thankless  
 265. thorough  
 266. thoughtful  
 267. thrifty  
 268. timid  
 269. tolerant  
 270. touchy  
 271. tough  
 272. trusting  
 273. unaffected  
 274. unambitious  
 275. unassuming  
 276. unconventional  
 277. undependable  
 278. understanding  
 279. unemotional  
 280. unexcitable  
 281. unfriendly  
 282. uninhibited  
 283. unintelligent  
 284. unkind  
 285. unrealistic  
 286. unscrupulous  
 287. unselfish  
 288. unstable  
 289. vindictive  
 290. versatile  
 291. warn  
 292. wary  
 293. weak  
 294. whiny  
 295. wholesome  
 296. wise  
 297. withdrawn  
 298. witty  
 299. worrying  
 300. zany

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