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#### ABSTRACT

## A STUDY OF THE RELATIONSHIPS AMONG ACADEMIC MOTIVATION, LEVEL OF ASPIRATION, LEVEL OF EXPECTATION, AND GAIN OR LOSS IN ACHIEVEMENT IN A COLLEGE READING IMPROVEMENT SITUATION

by Jack O. Anderson

The study was concerned with relationships between (1) degree of academic motivation as measured by the M-Scales,<sup>1</sup> (2) setting of levels of aspiration and expectation, and (3) gain in reading rate and comprehension. The population was divided by sex and then by the independent variable, academic motivation. Male N was 99 and female N was 34. Three major null hypotheses were advanced.

- There are no significant relationships between academic need-achievement scores and gain or loss in achievement.
- 2. There are no significant relationships between academic need-achievement scores and the discrepancy between final levels of aspiration and final levels of expectation.

<sup>1</sup>Developed by William W. Farquhar and associates, <u>A Comprehensive Study of Motivational Factors Underlying</u> <u>Achievement of Eleventh Grade High School Students</u> (Research Project No. 846 (8458); Supported by the U. S. Office of Education, in cooperation with Michigan State University, 1959). 3. There are no significant relationships among academic need-achievement scores, final levels of aspiration, final levels of expectation, and gain or loss in achievement.

Two analysis procedures were employed: (1) the significance of the difference between High Need-Achievement means and Low Need-Achievement means, using Student's tdistribution; and (2) product-moment zero order, first order, and second order partial correlation coefficients.

Students completed the M-Scale during the first class and wrote the <u>Iowa Test of Silent Reading</u>, A<sub>m</sub> during the second class. During the fourth class they set initial levels of aspiration and expectation for their performance on the final Iowa Test, as (1) words per minute, and (2) comprehension score (number correct of a possible 35). Final levels of aspiration and expectation were set during the tenth class; these were used in the study, in the effort to achieve realism. Iowa Test form C<sub>m</sub> was the post test and the differences between  $A_m$  and C<sub>m</sub> scores furnished the gain in achievement variables.

M-Scale scores served as significant negative predictors for male gain in comprehension. Levels of aspiration were significant predictors of female gain in rate, and were highly significant negative predictors for male and female gain in comprehension. Levels of expectation served as highly significant positive predictors of male gain in rate and female gain in comprehension, and as highly significant negative predictors of male gain in comprehension.

For males, all three major null hypotheses were rejected; for females, only major null hypothesis three was rejected.

# A STUDY OF THE RELATIONSHIPS AMONG ACADEMIC MOTIVATION, LEVEL OF ASPIRATION, LEVEL OF EXPECTATION, AND GAIN

## OR LOSS IN ACHIEVEMENT IN A COLLEGE READING

## IMPROVEMENT SITUATION

By

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## A THESIS

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#### CHAPTER I

#### FORMULATION AND DEFINITION OF THE PROBLEM

#### Need for the Study

Variance in learning as reflected in tests of achievement remains an enigma. Why, for instance, will some pupils who are able, according to tests of aptitude and ability, fail to achieve at the anticipated level? Obviously, each individual is the product of his unique experiences, and some experiences may be intensive, even traumatic, to the extent of preventing adequate learning. Since, however, average and below average achievement is the rule rather than the exception, there must be other common reasons. Among those reasons individual academic motivation is certainly one of the most important.

Academic motivation has been considered only relatively recently. In 1958, Allport<sup>1</sup> summarized the existing motivational research and simultaneously offered guidance and encouragement for future research.

The search for the units that comprise motivation and compose personality is very ancient. Not until the past generation or two has appreciable progress been made. During recent years, however, we have

<sup>&</sup>lt;sup>1</sup>Gordon Allport, "What Units Shall We Employ?" Gardner Lindzey, <u>The Assessment of Human Motives</u> (New York: Rinehart & Co., Inc., 1958), pp. 239-60.

followed a bewildering array of approaches, many of them fresh and imaginative, and resulting in more measured aspects than anyone can conveniently compute. . .

We have to accept the fact that up to now relatively little agreement has been achieved. It seems that each assessor has his own pet units and uses a pet battery of diagnostic devices. But it is too early to despair. Instead of discouragement, I hope that our present disagreement will lead to continuous and wholesome experimentation. Essential to continued progress is a firm belief in the "outer reality" of personal and motivational systems. The fact that the units we seek are invisible should not deter us. Nor should we yield to the destructive skepticism of extreme methodologists who hold that search is chimerical. Finally, while we must admit the variabilities of the structure we seek, which are caused by changing situations without and continual growth and change within, we should take this fact into our design and theory, not surrendering our belief that reasonably stable personal and motivational structures exist.

## Background of the Study

The concerns of this study are the possible relationships of (1) degree of academic motivation (high or low academic need-achievement), (2) setting of levels of aspiration and expectation (goal-setting), and (3) gain (or loss) in reading rate and comprehension. Reviewers of motivational study, specifically Allport<sup>2, 3</sup> and Lindzey, <sup>4</sup> encourage

<sup>2</sup>Allport, <u>op. cit</u>., pp. 239-59.

<sup>3</sup>Gordon Allport, "The Trend in Motivational Theory," <u>Understanding Human Motivation</u>, Stacey & DeMartino, eds. (Cleveland: Howard Allen, Inc., 1958), p. 64.

<sup>4</sup>Gardner Lindzey, <u>The Assessment of Human Motives</u> (New York: Rinehart & Co., Inc., 1958), p. 15.

experimentation which does not depend wholly upon projective techniques but assumes that in a healthy personality, motivation can be taken at its expressed value. The use of levels of aspiration and expectation reflects the basic philosophy that expressed aims are acceptable criteria of motivation.

Farquhar<sup>5</sup> and associates have developed a motivational task theory. It is an extension and modification of McClelland's<sup>6</sup> theory and the research reported by Atkinson<sup>7</sup> on the achievement motive. A summary of the Farquhar <u>et al</u>. theory is given in Table 1-1. The chief modification included in this theory is a trend away from the use of projective devices and techniques.

On the basis of this theory, the Farquhar team developed four instruments which comprise the <u>Michigan State Motivational</u> Scales (M-Scales).<sup>8</sup> Scores derived from the M-Scales are

<sup>5</sup>William W. Farquhar, <u>A Comprehensive Study of</u> <u>Motivational Factors Underlying Achievement of Eleventh Grade</u> <u>High School Students</u> (Research Project No. 846 (8458); Supported by the U.S. Office of Education, in cooperation with Michigan State University, 1959).

<sup>6</sup>D. McClelland and J. Atkinson, <u>et al</u>. <u>The Achievement</u> <u>Motive</u> (New York: Appleton-Century-Crofts, 1953).

<sup>7</sup>John Atkinson (ed.), <u>Motives in Fantasy, Action and</u> <u>Society</u> (Princeton, N.J.: D. Van Nostrand Co., 1958).

<sup>8</sup>M-Scales consist of four instruments: (1) Generalized Situational Choice Inventory, (2) Preferred Job Characteristics Scale, (3) Word Rating List, and (4) Human Trait Inventory.

used as the independent variable in the present study.

Table 1-1. Bipolar theory of high and low academic need achievement motivation.

Motivational Situation:

Hig	h Academic Need-Achievement	Low	Academic Need-Achievement
1.	Long Term Involvement	1.	Short Term Involvement
2.	Unique Accomplishment	2.	Common Accomplishment
3.	Competition with a Maximal Standard of Excellence	3.	Competition with a Minimal Standard

Every published study of the results of college level reading improvement programs shows gain made by the class. No study has yet reported reading improvement data and related it to academic motivation. Results of this study of academic motivation in a reading improvement situation may provide help for an instructor to predict individual success and to plan further for the expected failures and low-degree successes.

## Purpose of the Study

Essentially, the study describes the individuals' academic motivation as reflected in the M-Scales, records their levels of aspiration and expectation, and reports their gain (or loss) in achievement. These data are studied to determine the interrelationships among them.

#### The Hypotheses

To investigate possible relationships this study was designed to provide answers to three major null hypotheses:

- There are no significant relationships between academic need-achievement scores and gain or loss in achievement.
- 2. There are no significant relationships between academic need-achievement scores and the discrepancy between final levels of aspiration and final levels of expectation.
- 3. There are no significant relationships among academic need-achievement scores, final levels of aspiration, final levels of expectation, and gain or loss in achievement.

#### CHAPTER II

### REVIEW OF THE LITERATURE

This chapter presents a review of the pertinent studies and then relates their application to the present study.

## Pertinent Studies

Intention, as a psychological concept, passed into disuse when reflex theory and its derivatives became the foundation for scientific theories of behavior. At least two prominent psychology scholars refused, however, to abandon intent as a variable. Lewis,<sup>1</sup> in 1946, said, "All acts have in common the character of being intended or willed. . . . There is no obvious way in which we can say what act it is which is thought of or done except by specifying this intent of it."

Lewin<sup>2</sup> had, in 1938, used the concept of intent to combat the overly simple associationistic theory that

<sup>1</sup>Clarence I. Lewis, <u>An Analysis of Knowledge and</u> <u>Valuation</u> (LaSalle, Illinois: Open Court, 1946), p. 367.

<sup>2</sup>Kurt Lewin, "Intention, Will, and Need," Ch. 5, <u>Organization and Pathology of Thought</u>, David Rappaport, (New York: Columbia University Press, 1951).

actions are strengthened whenever they are successful. Miller et al.<sup>3</sup> have provided a useful bridge between these early theories of intent and today's developing motivational theories. They ask, "What does it mean when an ordinary man has an ordinary intention?" and answer, "He has begun the execution of a Plan [their construct] and this intended action is a part of it." They believe that the expression of an intent refers to the uncompleted parts of either a conscious or "unconscious" Plan, modeled after Tolman's cognitive learning theory. Conscious and "unconscious" Plans are nearly always extensions of or alterations of previous Plans--seldom is a new Plan originated. Thus, in short, we have Miller's Plans or Tolman's sign-significate relations, or a choice of several other constructs; they all involve goals. If we admit goals we must admit the inherent setting of goals; goal-setting in the present study consists of setting levels of aspiration and expectation.

Numerous unique variables affect each action since each action is unique. This is the principal reason that

<sup>3</sup>George A. Miller, Eugene Galanter, and Karl Pribram, <u>Plans and the Structure of Behavior</u>, (New York: Henry Holt & Company, 1960), pp. 59-71.

<sup>4</sup>E. C. Tolman, "Psychology Versus Immediate Experience," Philosophy of Science, Vol. 2 (1935), pp. 356-80.

the reported studies on aspiration and on expectation are concerned always with a single type of action. A study of reading improvement, for example, cannot produce results inferable to other actions because reading background, intelligence, initial reading rate, mental health, physical health, and emotional state are just some of the variables which are unique to each person for a particular action. At the same time, this is why results of aspiration studies of subjects in a gambling situation, for instance, are noninferable to reading situations. Sutliffe<sup>5</sup> expressed this point in detail in 1955. The few studies which have been reported are reviewed here, mainly to show the need for such studies in specific academic areas. Most use only the level of aspiration.

Atkinson<sup>6, 7</sup> has twice reported on gambling situations. In 1957 he concluded that people with a strong motive to achieve prefer immediate risk whereas those with a strong

<sup>5</sup>J. P. Sutliffe, "Task Variability and the Level of Aspiration," <u>Australian Journal of Psychology, Monograph</u> Supplement, No. 2 (1955), 85 pages.

<sup>6</sup>John Atkinson, Jarvis Bastian, Robert Earl, and George Litiven, "The Achievement Motive, Goal Setting, and Probability Preferences," <u>Journal of Abnormal Social Psychology</u>, Jan., 1960, 60:27-36.

<sup>7</sup>John Atkinson, "Motivational Determinants of Risktaking Behavior," <u>Psychological Review</u>, 1957, 64:359-72.

motive to avoid failure prefer either easy tasks or extremely difficult and risky tasks. The Farquhar <u>et al</u>. theory of academic motivation includes strong motivation to avoid failure with strong motive to achieve, illustrating once again that motivation studies, to be meaningful, need to be specific. Atkinson's 1960 study produced results similar to his 1957 study, with the extension of that part of the theory to include not only games of chance but also games of skill.

DeSoto <u>et al</u>.<sup>8</sup> asked 96 college students to predict their success on a many-valued achievement scale. The task consisted of word association, and the actual sequence of successes and failures had been already programmed by the experimenters. They found (1) that the subjects predicted their successes proportionately to their previous successes and (2) that the subjects persisted in predicting more successes than they actually attained. Even though the study was set in an academic situation, the first two results have little or nothing to add to a theory of academic motivation. Their final finding, however, carried an implication extremely helpful in designing the present study: "since the subjects were admonished to be realistic in their

<sup>8</sup>Clinton DeSoto, Edmund Coleman, and Peter Putnam, "Predictions of Sequences of Successes and Failures," <u>Journal</u> of Experimental Psychology, Jan., 1960, 59:41-46.

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predictions, it was concluded that realism in predictions of personal successes and failures is not as easily obtained as realism in the setting of levels of aspiration on a more finely differentiated scale."

Predictions by individuals of their probable success for a fixed goal were studied by Diggory <u>et al</u>.<sup>9</sup> The goal was to sort 40 of 70 cards into 10 sets within 25 seconds. They found that individual prediction varied with individual rate of progress, proximity to the goal, and distance from the deadline (number of trials allowed) when this information was supplied preceding each trial. The results of the Diggory study substantiate empirically, long-standing educational principles included in teaching people as individuals. The subjects for the Diggory experiment were called High Motivated because they volunteered; however, they were excused from producing a term-paper, so the appellation of High Motivated appears questionable.

Kausler<sup>10, 11</sup> has contributed two studies involving

<sup>9</sup>James Diggory, Eugene Riley and Ruth Blumenfeld, "Estimated Probability of Success for a Fixed Goal," <u>American</u> Journal of Psychology, March, 1960, 73:41-55.

<sup>10</sup>Donald Kausler, "The Effects of a Qualitative Frame of Reference on Level of Aspiration," <u>Journal of Social</u> <u>Psychology</u>, Nov., 1958, 48:217-21.

<sup>11</sup>Donald Kausler, "Aspiration Level as a Determinant of Performance," <u>Journal of Personality</u>, Sept., 1959, 27:346-51.

level of aspiration in the area of academic motivation. In the 1958 study three groups were administered a perceptual learning scale which was called an intelligence test. One group was told that the test was very easy, a second group that it was very difficult, and the third group was told nothing regarding difficulty. The qualitative information on difficulty did not significantly affect the levels of aspiration but did increase the variabilities of the performance scores.

In 1959, Kausler studied the motivational properties inherent in setting a level of aspiration. Three groups performed on a simple arithmetic test. Group A was instructed to express an aspiration level, group B did not express an aspiration level, and group C was informed of the performance scores of group B and then instructed to express levels of aspiration. Performance scores of groups A and C were significantly higher than for group B

For group A, Kausler partialled out the differences in task aptitude and found no correlation between magnitude of aspiration level and magnitude of performance score. Group C, which set levels of aspiration after being informed of the performance of group B, set higher levels of aspiration than did group A but its mean performance score was not significantly different from that of group A. However, in

group C the partial correlation between aspiration level and performance level was significant at .01 level. Kausler concluded that expression of a level of aspiration evokes a set for optimal performance. This set, in turn, is increased by inclusion of a frame of reference.

Of McClelland's<sup>12</sup> considerable contributions to the field of motivation study, the following quotation has had the utmost significance to the design of the present study. He states that the level of aspiration, alone, is likely to reflect unrealistic goal choices. "The trick seems to be to get the subject to make a realistic aspiration statement in a performance context without allowing it to be too much influenced by the actual performance in that context. If it is too much influenced, then the level of aspiration becomes not a goal statement but something of an expectation statement or perhaps an ego defense against failure."

Sivertson<sup>13</sup> published a qualitative study of goalsetting, level of aspiration, and social norms in 1957. He found that success tended to be associated with low goalsetting and failure with high goal-setting. Because his

<sup>&</sup>lt;sup>12</sup>David McClelland, <u>Personality</u> (New York: Holt, Rinehart & Winston, 1951).

<sup>&</sup>lt;sup>13</sup>Dagfinn Sivertson, "Goal-Setting, the Level of Aspiration, and Social Norms," <u>Acta Psychologica</u>, 1957, 13:54-60.

study was concerned with 11 and 12-year old boys, his findings reflect only the norms of a sub-culture, but the sociological findings may have significance for other groups. He found that high goal categories were associated to a high degree with various expressions of parental pressure and that parental attitudes were more important to the subjects than were material rewards.

Robaye<sup>14</sup> arrived at similar qualitative conclusions the same year. Her significant findings were that (1) level of aspiration involves hope of success and issues from the internalization of parental love, and (2) level of expectation involves confidence in the result and emerges from a feeling of acceptance anchored in secure family relationships.

Studying the discrepancy between level of aspiration and achievement, Schultz and Ricciuti<sup>15</sup> attempted to relate the discrepancies to previous college achievement. They found the correlation to be low and not significant. In a negative manner their study supports Robaye's.

<sup>14</sup>Francine Robaye, <u>Nivaux d'Aspiration et c'Expec-</u> <u>tation</u> (Levels of Aspiration and Expectation), (Paris: Presses Universitaires de France, 1957).

<sup>15</sup>Douglas Schultz and Henry Ricciuti, "Level of Aspiration Measures and College Achievement," Journal of General Psychology, 1954, 51-267-75.

Finally, Robaye's<sup>16</sup> 1954 study provided the basis for definition of levels of aspiration and expectation. She stated that the level of aspiration is the goal that the subject desires to attain and the level of expectation is the goal which he expects to attain. Using 50 eleven and 12-year-old girls she found the correlation between performance and level of expectation not statistically significant. According to Robaye, the subjects did not show objective judgment regarding their capacities.

Application of the Literature to this Study

Prominent in the literature is the conclusion that realism in setting goals is elusive and difficult to obtain. Realism in setting goals is attempted in the present study by having the students set their goals twice but using only the final expressions of aspiration and expectation. The initial expressions of aspiration and expectation combined with ten class hours of practice achievement are intended to furnish a realistic frame of reference for the students'

<sup>&</sup>lt;sup>16</sup>Francine Robaye, "Sur La Distinction Entre Niveau d'Aspiration et d'Expectation et sur la Valeur Diagnostique de la Comparaison dans l'etude de la Personalité d'un Groupe d'Adolescents." (Concerning the Difference between Level of Aspiration and of Expectation and the Diagnostic Value of Their Comparison in the Study of Personality in a Group of Adolescents). <u>Cahiers de Pedagogie de l'Université de</u> Liege, 1954, 13:78-86.

setting of final levels of aspiration and expectation. Kausler's<sup>17</sup> conclusion that a set for optimal performance is evoked by the expression of an aspiration level is a principal reason for eliminating a control group; his findings are qualitatively and quantitatively significant.

McClelland's<sup>18</sup> advice is taken into account by including both level of aspiration and level of expectation in the study, thus eliminating the aspiration statement reflecting expectation. Despite Schultz and Ricciuti's<sup>19</sup> finding of low correlation between aspiration and past academic achievement, the students are asked to report their grade point average in the present study. Krumboltz<sup>20</sup> has shown that MSU students will reliably report their grade point averages and these averages are inspected for possible relationships in the present study because this study is more elaborate than was Schultz and Ricciuti's. Finally, Robay<sup>21</sup> has provided the definitions of aspiration and expectation.

<sup>17</sup>Kausler, <u>op. cit</u>., p. 15.

<sup>18</sup>McClelland, <u>op. cit</u>., p. 18.

<sup>19</sup>Schultz and Ricciuti, <u>op. cit</u>., p. 20.

<sup>20</sup>John D. Krumboltz, "A Note on the Accuracy of Self-Reported Grade Point Averages," <u>MSU College of Education</u> <u>Quarterly</u>, Winter, 1960, p. 26.

<sup>21</sup>Robaye, <u>op. cit</u>., p. 21.

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#### Summary

The review of literature pertinent to the present investigation has pointed up the diversity of specific interests of the investigations. Goal-setting, under a myriad of names, has replaced intention as a psychological concept.

Research in motivation is plentiful but general. Few studies of academic motivation in a truly academic setting were found and none of these were concerned with the area of reading improvement.

Of those academic motivation studies found, definitions of levels of aspiration and expectation have the widest applicability. Most studies deplore the lack of realism in setting levels of aspiration and expectation. Attempts to overcome this problem have been included in the design of the present study through two devices: (1) the setting of initial and final levels of aspiration and expectation, using only the final levels, and (2) the furnishing of a further frame of reference, achievement of previous reading improvement classes.

#### CHAPTER III

#### DESIGN AND METHODOLOGY

### Operational Definitions

#### High academic need-achievement and low academic

<u>need-achievement</u> are defined in Table 1-1. These definitions are scores derived from the M-Scales responses, placed along two continua, one contimuum for each sex. Arbitrary division of each continuum into three parts obtains high, medium, and low academic need-achievement. For the male population scores 120 to 133 inclusive became <u>high N-ach</u>., scores 108 to 119 inclusive became <u>medium N-ach</u>., and 71 to 107 inclusive became <u>low N-ach</u>. For the female population scores 111 to 127 inclusive were designated <u>high N-ach</u>., 104 to 110 inclusive were designated <u>medium N-ach</u>., and 82 to 103 inclusive were designated low N-ach.

Level of aspiration is the quantitative indication which an individual publicly makes (by recording it on a sheet of paper for the instructor to keep) concerning his desired future performance in an activity. Levels of aspiration were recorded as words read per minute (wpm) and total number of comprehension questions correctly answered

of a possible 35.

Level of expectation is the quantitative indication which an individual publicly makes (by recording it on a sheet of paper for the instructor to keep) concerning his expected future performance in an activity. Levels of expectation were recorded as words read per minute (wpm) and total number of comprehension questions correctly answered of a possible 35.

<u>Initial level of aspiration</u> and <u>initial level of</u> <u>expectation</u> were recorded by the subjects when they had just learned their performance scores (wpm and total correct answers) on the <u>Iowa Test of Silent Reading</u>, <u>Form Am</u>, and before they had become involved in actual reading improvement procedures.

Final level of aspiration and final level of expectation were recorded by the subjects during the tenth class hour, when they had become involved in reading improvement procedures, and after seeing again their initial performance scores (Iowa Test, Am) and their initial levels of aspiration and expectation.

<u>Gain or loss in achievement</u> consists of two differences: (1) initial words read per minute (Iowa Test, Am) and final words read per minute (Iowa Test, Cm), and (2) total number of comprehension questions answered correctly of a possible

35 on the initial test and total number of comprehension questions answered correctly of a possible 35 on the final test.

## The Population

The population consisted of all students (107 males, 38 females) enrolled in Reading Improvement (092) in the University College, Michigan State University, during Winter term, 1962.<sup>1</sup> Although Reading Improvement is offered primarily for freshmen and sophomores in the University College, anyone who has graduated from high school may enroll in the course, upon payment of a \$15.00 fee. Past records indicate that approximately 70% of the enrollees have been freshmen, and that upperclassmen, graduate students, faculty members, and visitors have made up the remaining 30%. Five instructors taught the nine sections.

## The Sample

All members of the population completed the M-Scales during the first class period. Dividing the group into sexes was necessary since the M-Scales have proved to be more discriminating for males than for females. These groups were then divided into high academic need-achievement,

<sup>1</sup>Seven foreign students excluded.

medium academic need-achievement, and low academic needachievement, according to arbitrary division of the range of scores into approximate thirds. Five males and two females were excluded from the population because they were foreign students and their lack of familiarity with American English language and idiom resulted in spurious M-Scales scores. Of the 107 males in the population, eight dropped the course, and of the 38 females, four dropped it. Population and samples are depicted in Table 3-1. The entire population participated in all experimental procedures.

	Population	Dropped Cour <b>s</b> e	Final Sample
Males, High	36	2	34
Males, Med.	35	4	31
Male <b>s</b> , Low	36	2	34
		Total	99
Female <b>s</b> , High	14	1	13
Females, Med.	10	2	8
Females, Low	14	1	13
		Total	34

Table 3-1. Population, sample, and sample losses.

Chronology of Experimental Procedures

The first class period was devoted to completion of the M-Scales. This class period was chosen for this activity to avoid possible student-instructor identification being reflected in the M-Scales answers.

During the second class meeting the students wrote the <u>Iowa Test of Silent Reading</u>, <u>Form Am</u>. For all forms of the Iowa Test, test 1A measures rate and comprehension on physical science material and test 1B measures rate and comprehension on social science material. The rate was computed in words read per minute (wpm) and is the average of the students' rates for the two sub-tests. There are 35 possible correct answers to these sub-tests (10 physical science and 25 social science). The comprehension score was the total number of these 35 questions which were correctly answered.

Their Iowa Test results were shown to the students during the fourth class meeting. After they had seen their scores, as explained above, in order to furnish them a frame of reference, the following paragraph was read to them:

In this course we will be concerned with improving (1) rate of reading (wpm), (2) comprehension, and (3) vocabulary. Past records indicate that the average reading rate of a Reading Improvement <u>class</u> doubles and the average comprehension improves slightly. Individual improvement has not yet been thoroughly studied; what you are going to be asked

to do is part of an attempt to study improvement by individuals in a scientifically measurable manner. When you are asked these questions, please make your answers an accurate reflection of your own feelings.

Then the students were asked to record, at the side of their Iowa Test Answer Sheets, their answers to these four questions:

- What do you <u>hope</u> to read in wpm on another form of the Iowa Test (similar material) at the end of the term?
- What do you <u>expect</u> to read in wpm on another form of the Iowa Test (similar material) at the end of the term?
- 3. Of the 35 possible (10 science, 25 social studies) on another form of the Iowa Test at the end of the term, what is the <u>total</u> number of comprehension questions you <u>hope</u> to answer correctly?
- 4. Of the 35 possible (10 science, 25 social studies) on another form of the Iowa Test at the end of the term, what is the <u>total</u> number you <u>expect</u> to answer correctly?

The fifth, sixth, seventh, eighth, and ninth class meetings were devoted to explanation and application of SQ3R,<sup>2</sup> recognition and use of transitional words and phrases, timed readings with comprehension checks, vocabulary study, and numerous other procedures for developing rapidity and

<sup>&</sup>lt;sup>2</sup>This method of reading and study developed by F. P. Robinson in <u>Effective Study</u> (New York: Harper & Brothers, 1946), p. 28.

efficiency of reading. By this time the students had seen tangible evidence of reading improvement in their daily work, and they were asked, during the tenth class meeting, to record again their levels of aspiration and expectation. They were shown again their first Iowa Test results and their initial levels of aspiration and expectation, and then asked to record their answers to the same four questions which they were asked during the fourth class meeting. These answers were labeled final levels of aspiration and expectation.

The <u>Iowa Test of Silent Reading</u>, <u>Form Cm</u>, was administered during the eighteenth class hour (to allow for test correction time) and the results were shown the students on the last day of the class. The average rate in words per minute and the total number of correct comprehension answers comprise the final achievement data.

The Null Hypotheses and Analysis Procedure

The basic null hypotheses of the investigation were stated in Chapter I. Specific formulation of these hypotheses for the independent variable, high or low academic need-achievement are:

 There are no significant differences in mean gain in achievement.

- There are no significant differences in the mean discrepancy between final level of aspiration and final level of expectation.
- 3. There are no significant differences among mean final level of aspiration, mean final level of expectation, and mean gain in achievement.

It was decided to use the upper and lower thirds of each sex continuum of M-Scales scores to define high and low academic need-achievement in order to optimally discriminate on the independent variable. When further investigation of the major null hypotheses necessitated the computation of correlation coefficients, the entire population data was included.

## Statistical Treatment

To test all three null hypotheses the significance of the difference between High N-ach. means and Low N-ach. means was determined by entering the table of Students' t-distribution. For the purpose of testing two groups in which nl = n2, the difference in the variance of the groups may be ignored provided the t-table is entered with n-l degrees of freedom.<sup>3</sup> The level of significance for rejecting or failing to reject

<sup>&</sup>lt;sup>3</sup>George W. Snedecor, <u>Statistical Methods</u> (Ames, Iowa: Iowa State College Press, 1946), p. 83.
the null hypotheses was set at the five per cent level of confidence.

Product-moment correlation coefficients were computed for the variables in null hypothesis three. Partial correlation between each pair of variables was then computed, to reflect the relationship of each pair after removing the influence of the others.

#### Summary

The population was divided by sex and the independent variable (high, medium, or low academic need-achievement) was assigned to each approximate third of each sex, according to M-Scale score; thus these people comprised the sample. Operational definitions of high and low academic need-achievement, level of aspiration, level of expectation, and gain or loss in achievement were presented.

The sample gain or loss in achievement was derived from two forms of the <u>lowa Test of Silent Reading</u>. The students were asked to record levels of aspiration and expectation.

These data were compared statistically by entering Students' table of t-distribution and by correlation.

### CHAPTER IV

#### ANALYSIS OF THE DATA

In this chapter the analysis of the data is presented in two main sections: the first deals with tests of significance of differences between means and the second investigates relationships among the variables through the productmoment, first-order partial, and second-order partial correlation coefficients. For the first section the high and low academic need-achievement (M-Scale) scores determine the N: male N = 68 and female N = 26. Because of statistical procedure inherent in the definition of the product-moment correlation coefficient, for the second section male N = 99 and female N = 34.

Males and females are considered separately throughout the study because the M-Scale has been more discriminating for males than for females. The analysis of data is further subdivided to consider the variables in their ... relations to gain in words per minute (rate) and gain in comprehension.

### Major Null Hypotheses

Three major null hypotheses were advanced to investigate relationships in the study:

- There are no significant relationships between academic need-achievement scores and gain in achievement.
- 2. There are no significant relationships between academic need-achievement scores and the discrepancy between final levels of aspiration and final levels of expectation.
- 3. There are no significant relationships among academic need-achievement scores, final levels of aspiration, final levels of expectation, and gain in achievement.

Major null hypothesis two was concerned with the possibility that the expression of a level of aspiration does not differ significantly from the expression of a level of expectation. All three major null hypotheses were tested using Students' t-distribution.

Complete investigation of major null hypothesis three required the compilation of product-moment and partial correlation coefficients.

#### Subsidiary Null Hypothesis

A subsidiary null hypothesis was investigated. The students' reported MSU grade point averages were inspected for relation to academic need-achievement scores. In the  $\underline{t}$ -test analysis, male N = 57 and female N = 20 and in the correlational analysis male N = 85 and female N = 27. The difference in N's for this hypothesis and the N's in the major null hypotheses was due to those students who were firstterm freshmen without MSU grade point averages. The subsidiary null hypothesis was:

> There are no significant relationships between academic need-achievement scores and studentreported grade point averages.

Analysis of Differences of Means, Male

#### Rate Gain

There were no significant differences between means for any of the dependent variables considered in the major null hypotheses and all three major null hypotheses were accepted.

## Comprehension Gain

There were no significant differences between the means for any variables considered in the major null hypotheses

Variables	N	t	
Level of Aspiration	68	.946	Accept
Level of Expectation	68	1.540	Accept
Discrepancy between Aspiration and	69	543	Becont
Expectation	68	543	Accept
Gain in Rate	68	.067	Accept

Table 4.1. Tests of significance of difference between means: male, rate gain.

 $M_1 = M_2$  reject if t >  $\pm 2.00$  (.05, 66 d.f.).

Table 4.2. Tests of significance of difference between means: male, comprehension gain.

Variables	N	t	
Level of Aspiration	68	.049	Accept
Level of Expectation	68	1.453	Accept
Discrepancy between Aspiration and			
Expectation	68	1.642	Accept
Gain in Comprehen <b>s</b> ion	68	.390	Accept

 $M_1 = M_2$  reject if t >  $\pm 2.00$  (.05, 66 d.f.).

Grade Point Average

For the subsidiary null hypothesis the difference between the means was significant and this null hypothesis was rejected.

Table 4.3. Tests of significance of difference between means: male GPA and M-Scale.

Variables	N	t	
Grade Point Average	57	10.80 <sup>a,b</sup>	Reject
M-Scale Score	68	19.093 <sup>a</sup>	Reject

 $M_1 = M_2$  reject if t >  $\pm 2.00$  (.05, 66 d.f.).

<sup>a</sup>Significant at .0005 level.

<sup>b</sup>Reject if  $t > \pm 2.02$ , (.05, 55 d.f.).

Analysis of Differences of Means, Female

Rate Gain

There were no significant differences between means for any of the dependent variables considered in the major null hypotheses and all three major null hypotheses were accepted.

Table 4.4. Tests of significance of difference between means: female, rate gain.

Variables	N	t	
Level of Aspiration	26	615	Accept
Level of Expectation	26	.988	Accept
Discrepancy between Aspiration and		105	
Expectation	26	.485	Accept
Gain in Rate	26	.745	Accept

 $M_1 = M_2$  reject if t >  $\pm 2.06$  (.95, 24 d.f.).

Comprehension Gain

There were no significant differences between the means for any variables considered in the major null hypotheses and all three major null hypotheses were accepted.

Table 4.5. Tests of significance of difference between means: female, comprehension gain.

Variables	N	t	
Level of Aspiration	26	847	Accept
Level of Expectation	26	.671	Accept
Discrepancy between Aspiration and			
Expectation	26	-1.800a	Accept
Gain in Comprehension	26	2.047 <sup>a</sup>	Accept

 $M_1 = M_2$  reject if t >  $\pm$  2.06 (.05, 24 d.f.). <sup>a</sup>Significant at .10 level.

Grade Point Average

For the subsidiary null hypothesis the difference between the means was not significant and this null hypothesis was accepted.

Table 4.6. Tests of significance of difference between means: female, GPA and M-Scale.

Variables	N	t	
Grade Point Average	20	.318 <sup>a</sup>	Accept
M-Scale	26	2.760 <sup>b, c</sup>	Reject

 $M_1 = M_2$  <sup>a</sup>Reject if t >  $\pm 2.10$  (.05, 18 d.f.).

<sup>b</sup>Reject if  $t > \pm 2.06$  (405, 24 d.f.).

<sup>C</sup>Significant at .02 level.

Correlation Coefficients: Male, Rate Gain

None of the product-moment correlation coefficients between the independent variable and the dependent variables in the major null hypotheses were significant at the .05 level. Consideration of the discrepancy between level of aspiration and level of expectation as a variable was discontinued at this point because the partialling out of the various variables' influences accomplished the desired information.<sup>1</sup>

Academic motivation as measured by the M-Scale, as seen in Table 4.7, appeared to exert little influence on the gain in rate, while the level of aspiration and level of

<sup>&</sup>lt;sup>1</sup>Discrepancy between level of aspiration and level of expectation as a variable was discontinued at this point of the analysis also for male, comprehension; female, rate; and female, comprehension, because all the r's were highly significant.

expectation were highly significant variables affecting the gain in rate. Levels of aspiration and expectation were closely related.

Table 4.7. Product-moment correlation coefficients: male, rate gain.

	Lev. Asp.	Lev. Exp.	Gain Ach.	Disc. Asp. Exp.
M-Scale	.119	.002	.019	.034
Lev. Asp.		.893 <sup>a,b</sup>	.409 <sup>a,b</sup>	
Lev. Exp.			.491 <sup>a,b</sup>	
a Signi	ficant at .0	5 level.	b Significar	nt at .01 level.

Table 4.8. First order partial correlation coefficients: male, rate gain.

Subscripts: 1 = M-Scale, 2 = Lev. Aspiration, 3 = Lev. Expectation, 4 = Gain in Achievement.

r 12.3 =	.259 <sup>a</sup>	r 14.3 = .021
r 12.4 =	.122	$r 23.4 = .869^{a,b}$
r 13.2 =	233 <sup>a</sup>	r 24.3 =074
r 13.4 =	008	$r 34.2 = .307^{a,b}$
r 14.2 =	033	

<sup>a</sup>Significant at .05 level. <sup>b</sup> Significant at .01 level.

The correlation between academic motivation as measured by the M-Scale and level of aspiration was significant after the influence of the level of expectation variable was removed; however, the level of aspiration correlation with gain in achievement was negative, small, and not significant (Table 4.8). The correlation between academic motivation and level of expectation was negatively significant after the influence of level of aspiration was removed, and yet the correlation between level of expectation and gain in achievement was positive and highly significant.

At this point, then, the M-Scale appeared to measure positively male level of aspiration for rate of reading and measure negatively male level of expectation for rate of reading. The only variable which predicted gain in rate of reading was the level of expectation.

Table 4.9. Second order partial correlation coefficients: male, rate gain.

Subscripts:	1 = 4 =	M-Sca Gain	le, $2 = Lev.$ in Ach.	of <b>As</b> p.,	3 =	Lev. of Exp.,
r 12 r 13	.34 .24	= .: =:	261 <sup>a</sup> 232 <sup>a</sup>	r 24.13 r 34.12	=	082 .308 <sup>a,b</sup>
r 14.	.23	= .(	042			

<sup>a</sup>Significant at .05 level <sup>b</sup>Significant at .01 level.

After partialling out the effects of the other variables, the resulting second-order partial correlation coefficients showed little relation between academic motivation as measured on the M-Scale and gain in reading rate for males (Table 4.9). The effect of level of aspiration on gain in male reading rate was also insignificant.

Academic motivation was significantly related to level of aspiration (positive) and to level of expectation (negative). The level of expectation was related to male gain in reading rate positively and was highly significant.

On the basis of correlational analysis, major null hypothesis one was accepted and major null hypotheses two and three were rejected.

## Correlation Coefficients: Male, Comprehension Gain

None of the product-moment correlation coefficients between the independent variable and the dependent variables in the major null hypotheses were significant at the .05 level.

Table 4.10 Product-moment correlation coefficients: male, comprehension gain.

	Lev. Asp.	Lev. Exp.	Gain Ach.	Disc., Asp. Exp.
M-Scale	.113	.155	127	.059
Lev. Asp.		.644 <sup>a,b</sup>	018	
Lev. Exp.			409 <sup>a,b</sup>	

<sup>a</sup>Significant at .05 level.

<sup>b</sup>Significant at .01 level.

Level of aspiration and level of expectation were significantly related, but only the level of expectation was significantly related to gain in comprehension and it was negative (Table 4.10).

Table 4.11. First order partial correlation coefficients: male, comprehension gain.

Subscripts:	L = 1 3 = 1	M-Scale, 2 = Lev. Lev. Expectation,	<b>As</b> piration, 4 = Gain in	Comprehension.
r 12. r 12. r 13.	3 = 4 = 2 =	.017 .112 .108	r 14.3 = - r 23.4 = r 24.3 = -	.211 <sup>a</sup> .698 <sup>a, b</sup> .403 <sup>a, b</sup>
r 13. r 14.	4 = 2 =	.114 130	r 34.2 = -	550 <sup>a, b</sup>

<sup>a</sup>Significant at .05 level. <sup>b</sup>Significant at .01 level.

As seen in Table 4.11, when the influence of the level of expectation variable was removed there was a significant negative correlation between M-Scale score and gain in comprehension. Both level of aspiration and level of expectation were highly significantly related to gain in comprehension but, as shown in Table 4.11 the correlation between level of aspiration and gain in comprehension correlation was positive and the correlation between level of expectation and gain in comprehension correlation and gain in comprehension correlation was negative.

Table 4.12. Second order partial correlation coefficients: male, comprehension gain.

Subscripts:	1 = 3 =	M-Sc Lev.	ale, 2 = Lev. Expectation,	<b>As</b> piration 4 = Gain in	n, n Comprehe <b>nsion.</b>
r 12.	.34	=	.045	r 24.13 =	408 <sup>a,b</sup>
r 13.	24	=	.051	r 34.12 =	544a,b
r 14.	23	= -	.223a		

<sup>a</sup>Significant at .05 level. <sup>b</sup>Significant at .01 level.

As seen in Table 4.12 there was virtually no correlation between M-Scale score and either level of aspiration or level of expectation. The correlation between M-Scale score and gain in comprehension was negative and significant when the influence of the other two variables were removed. The correlations between level of aspiration and gain in comprehension and level of expectation and gain in comprehension were also both negative but they were also highly significant, after the other variables' influences had been removed. All three major null hypotheses were rejected.

## Correlation Coefficients for Subsidiary Null Hypothesis

The product-moment correlation coefficient between M-Scale score and grade point average for males was .013 and for females it was .077, neither of which was significant. The subsidiary null hypothesis was accepted.

Correlation Coefficients, Female, Rate Gain

As was true with males, for females none of the product-moment correlation coefficients between M-Scale scores, the independent variable, and the dependent variables in the major null hypotheses were significant at the .05 level (Talbe 4.13). Female level of aspiration correlated positively with gain in rate and was highly significant; level of expectation was positively correlated with gain in rate but was significant only at .05 level.

Table 4.13. Product-moment correlation coefficients: female, rate gain.

	Lev. Asp.	Lev. Exp.	Gain, Ach.	Disc. Asp. Exp.		
M-Scale047		059	.135	.239		
Lev. Asp		.929 <sup>a,b</sup>	.481 <sup>a,b</sup>			
Lev. Exp.			.391 <sup>a</sup>			

<sup>a</sup>Significant at .05 level. <sup>b</sup>Significant at .01 level.

Females were apparently realistic in expressing a level of aspiration, because the correlation coefficient between level of aspiration and level of expectation, for rate, was .929 and highly significant (Table 4.13).

Table 4.14. First order partial correlation coefficients: female, rate gain.

Sub <b>s</b> cript <b>s:</b>	1 •	= M	-Scale,	2 = Lev. Aspiration,
	3 =	= L	ev. Expe	ectation, 4 = Gain in Ach.
r 12	.3	=	276	r 14.3 = .172
r 12	.4		129	r 23.4 = .918 <sup>a, b</sup>
r 13	.2		.041	r 24.3 = .347 <sup>a</sup>
r 13	.4		123	r 34.2 = $173$
r 14	.2	=	.180	

<sup>a</sup>Significant at .05 level. <sup>b</sup>Significant at .01 level.

When first order partial correlation coefficients were computed only two coefficients were significant (Table 4.14). Level of aspiration continued to correlate at the .01 level with level of expectation. Level of aspiration correlated at the .05 level with gain in rate, after the influence of expectation was removed, but when the aspiration variable was partialed out, level of expectation did not correlate significantly with gain in rate.

Table 4.15. Second order partial correlation coefficients: female, rate gain.

Sub <b>s</b> cript <b>s:</b>	1 = 3 =	M-Sca Lev.	ale, 2 = Lev, Expectation,	. <b>As</b> pirat 4 = Gai	ion, n in	Ach.
r 12.	34	= -,	.041	r 24.13	=	.348 <sup>a</sup>
r 13.	24	=	.013	r 34.12	=	.183
r 14.	23	=	175			

<sup>a</sup>Significant at .05 level.

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As seen in Table 4.15, after second order correlation coefficients were computed, only one variable, level of aspiration, was significantly related to gain in rate for females. Major null hypotheses one and two were accepted and major null hypothesis three was rejected.

# Correlation Coefficients, Female Comprehension Gain

None of the product-moment correlation coefficients between the independent variable, M-Scale scores, and the dependent variables in the major null hypotheses were significant at the .05 level (Table 4.16).

Table 4.16. Product-moment correlation coefficients: female, comprehension gain.

	Lev. Asp.	Lev. Exp.	Gain, Ach.	Disc. Asp. Exp.
M-Scale	144	.216	.232	201
Lev. Asp.		.726 <sup>a,b</sup>	923a,b	
Lev. Exp.			493 <sup>a,b</sup>	

<sup>a</sup>Significant at .05 level. <sup>b</sup>Significant at .01 level.

Three highly significant coefficients are shown in Table 4.17: aspiration and expectation were positively related; both level of aspiration and level of expectation correlated negatively with gain in comprehension.

Table 4.17. First order partial correlation coefficients: female, comprehension gain.

Subscripts: 1 3	= M = L	-Scale, ev. Expec	2 = Lev. Aspiration, tation, 4 = Gain in Comprehension
r 12.3	=	449 <sup>a</sup>	$r 14.3 = .398^{a}$
r 12.4	_	.187	$r 23.4 = .809^{a,b}$
r 13.2	=	.524 <sup>a,b</sup>	$r 24.3 =943^{a,b}$
r 13.4	=	.120	$r 34.2 = .668^{a,b}$
r 14.2	=	.289	

<sup>a</sup>Significant at .05 level.

<sup>b</sup>Significant at .01 level.

As shown in Table 4.18, there was a negative correlation between M-Scale and level of aspiration, significant at the .05 level, after the expectation influence had been removed. After removing the influence of aspiration the M-Scale scores correlated positively with level of expectation significant at the .01 level. M-Scale correlated significantly with gain in comprehension after removing the influence of expectation, but did not correlate significantly when only aspiration was removed. The two most important variables affecting gain in comprehension for females were the level of aspiration (negative and highly significant) and level of expectation (positive and highly significant).

Table 4.18. Second order partial correlation coefficients: female, comprehension gain.

Subscripts:	1 = 3 =	M-Sca Lev.	ale, 2 = Lev Expectation,	7. Aspi 4 = G	rati ain	on, in Comprehen <b>s</b> ion
r 12.	. 34	=	.154	r 24.1	3 =	932 <sup>a,b</sup>
r 13.	.24	= -	.054	r 34.1	2 =	.635 <sup>a,b</sup>
r 14.	.23	= -	.084			

<sup>a</sup>Significant at .05 level. <sup>b</sup>Significant at .01 level.

As shown in Table 4.19, after partialling out the effects of the other variables, there was little correlation between M-Scale scores and any of the three dependent variables for comprehension. An almost perfect negative correlation existed between level of aspiration and gain in comprehension and a highly significant positive correlation existed between level of expectation and gain in comprehension. Major null hypotheses one and two were accepted and major null hypothesis three was rejected.

### Summary

The analysis of data was presented in two main sections according to the statistical procedures used for the investigation. The first section dealt with tests of significance of differences between means, using only the high academic need achievement data and the low academic need achievement data. The second section investigated relationships among the variables through product-moment, first order, and second order correlation coefficients. Each of these main divisions was subdivided to treat the data according to sex and these subdivisions dealt with (1) reading rate gain and (2) comprehension gain. No significant differences between means for the major null hypotheses were found. For the subsidiary null hypothesis the resulting difference between means for male M-Scale score and grade point average was significant at the .0005 level. The difference between means under the same subsidiary null hypothesis for females was not significant. When the larger N's were used for calculation of the product-moment correlation coefficients for the subsidiary null hypotheses, no significant correlations were found.

For further investigation of the major null hypotheses, 28 product-moment correlation coefficients, 36 first order correlation coefficients, and 20 second order partial correlation coefficients were calculated. On the basis of these coefficients, major null hypotheses 1, 2, and 3 were rejected for males and only major null hypothesis 3 was rejected for females. Discussion of these results will be presented in the next chapter.

#### CHAPTER V

### DISCUSSION OF THE RESULTS

In Chapter V the results derived from the analysis of data are interpreted and discussed. There are three principal dimensions of the discussion: (1) M-Scale and its use in a college reading improvement situation, (2) level of aspiration and its use in a college reading improvement situation, (3) level of expectation and its use in a college reading improvement situation. Each of these principal divisions deals separately with sex and achievement variable.

# M-Scale and Its Use in a College Reading Improvement Situation

The frequency distributions of M-Scale scores are depicted in Table 5.1. Although the female N is small, the distribution appears more normal than does the distribution of male scores, which appear to be negatively skewed.

Male, Rate Gain

When the influence of the other variables had been partialled out, the M-Scales scores correlated significantly

Table 5.1. Frequency distribution--M-Scale, female.



N = 99

with both level of aspiration (.261) and level of expectation (-.232). But the correlation between M-Scales scores and gain in rate for males (.042) was low; decidedly the M-Scales did not predict gain in rate for males.

Male, Comprehension Gain

The second order partial correlation between M-Scale scores and gain in comprehension for males was (-.223) and significant at the .05 level. This indicates that a highmotivated male would or could gain little in comprehension and a low-motivated male would gain much in comprehension,<sup>1</sup> because of regression toward the mode occurring whenever the total possible is limited.

Female, Rate Gain

No significant relation was found between M-Scales and female rate gain (.175).

Female, Comprehension Gain

No significant relation was found between M-Scales scores and female comprehension gain (-.084).

<sup>&</sup>lt;sup>1</sup>It should be noted, however, that Aspiration and Expectation r's were even higher negatives and significant at the .01 level.

Level of Aspiration and Its Use in a College Reading Improvement Situation

Level of Aspiration correlated negatively, generally, with gain in achievement for males. This would indicate that the male student is prone to overestimate his ability to improve and this is consistent with previous findings.<sup>2</sup> For females both correlations were significant.

Male, Rate Gain

No significant relation was found between Level of Aspiration and gain in rate for males (-.082).

Male, Comprehension Gain

The relation between level of aspiration and gain in comprehension for males was significant but negative (-.408). A lack of realism in setting the level of aspiration is indicated, as was true for M-Scale scores and level of expectation for males.

Female, Rate Gain

Level of aspiration was the only one of the three variables investigated which showed any significant relation to female gain in rate (.384). It would appear that many

<sup>2</sup>DeSoto <u>et al</u>., Diggory <u>et al</u>., Kausler and McClelland, <u>op. cit</u>.

females realistically state their hopes for rate gain and then proceed to gain that for which they hoped.

Female, Comprehension Gain

Generally, females expressed either high levels of aspiration and then gained little in comprehension or low levels of aspiration and then gained much in comprehension. The correlation (-.932) was significant at the .01 level. An extreme lack of realism was operating in female expression of level of aspiration, but it serves as a useful predictor.

# Level of Expectation and Its Use in a College Reading Improvement Situation

Expression of a level of expectation literally separated the men from the women. Wherever the level of expectation served as a positive predictor of gain in achievement for males it did not for women.

Male, Rate Gain

The correlation here was .308 and was significant at the .01 level. Where the level of aspiration had shown extremely little correlation with male rate gain, the level of expectation was the only significant predictor of gain in rate for males. Male, Comprehension Gain

All three variables investigated for their predictive ability were significant and negative for this variable; however, level of expectation showed the highest correlation (-.544). Low achieving males apparently expected a high gain in comprehension and high achieving males expected little gain.

Female, Rate Gain

The correlation between level of expectation and gain in rate for females was low (-.183) and not significant. For female rate gain, level of aspiration was the sole predictor.

Female, Comprehension Gain

Level of expectation was the best positive predictor of female gain in comprehension (.635). Most females gained in comprehension near to what they expected. Interestingly, female level of expectation correlated almost a perfect negative with level of aspiration.

#### Summary

Interpretation and discussion of the results of the analysis of the data were presented in Chapter V. The three predictive variables were investigated to determine their

usefulness in a college reading improvement situation. Table 5.3 shows those second order partial correlations which were significant. For this sample, and by inference, for the reading improvement population at Michigan State University, the M-Scales were of little predictive value.

Table 5.3 Variables which served as significant predictors of gain in achievement.

	Ma	le	Femal	.e
	Rate	Comp	Rate	Comp
M-Scale		223 <sup>a</sup>		
Level of Aspiration		408a,b	.348a	932 <sup>a,b</sup>
Level of Expectation	.308 <b>a</b> ,b	544a,b		.635a,b

a Significant at .05 level. b Significant at .01 level.

Level of aspiration predicted positively for females on rate gain and negatively for both sexes on comprehension gain. Level of expectation predicted positively for male rate gain and female comprehension gain, and it predicted negatively for male comprehension gain.

#### CHAPTER VI

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

### Summary

The summary is presented in three sections: the problem, the design and procedure of the study, and the analysis. The Problem

The major concern of the study was to investigate the relationships among (1) level of academic need-achievement as measured by the M-Scales, (2) level of aspiration, (3) level of expectation, and (4) gain (or loss) in reading rate and comprehension. All students from Continental United States homes who were enrolled in Reading Improvement (092), University College, Michigan State University, during Winter term, 1962, comprised the sample.

The Design and Procedure of the Study

All students completed the M-Scales during the first class meeting. Because the M-Scales have, to date, proved more discriminating for males than for females, the entire analysis was conducted by sub-sample for each sex. There were 99 males and 34 females. Arbitrary division of these two

ranges of M-Scales scores into approximate thirds defined high academic need-achievement, medium academic need-achievement, and low academic need-achievement.

During the second class meeting the students wrote the <u>Iowa Test of Silent Reading</u> (Form Am). Subtests 1A and 1B yielded reading rates and comprehension scores. After the students had inspected their Iowa Test scores, during the fourth class meeting, they were read a paragraph of general information regarding achievement gains by past reading improvement classes. They were then asked to record their initial levels of aspiration and expectation in relation to their future achievement on another form of the Iowa Test. Both level of aspiration and level of expectation were recorded as (1) words to be read per minute, and (2) number of correct answers of a possible 35.

After five hours of actual involvement in reading improvement procedures, the students recorded final levels of aspiration and expectation. These were the measures used in the analysis because logic dictated that they should be more realistic than the initial ones. The Cm form of the Iowa Test was administered during the eighteenth class hour. The two forms of the Iowa Test produced the variables, gain in achievement, in the form of rate and comprehension differences.

The Analysis

Three major null hypotheses were advanced:

- There are no significant relationships between academic need-achievement scores and gain or loss in achievement.
- 2. There are no significant relationships between academic need-achievement scores and the discrepancy between final levels of aspiration and final levels of expectation.
- 3. There are no significant relationships among academic need-achievement scores, final levels of aspiration final levels of expectation, and gain in achievement. The level of confidence for rejection of the major null hypotheses was set at the five per cent level.

A subsidiary null hypothesis was investigated: There are no significant relationships between academic need-achievement scores and student-reported grade point averages.

Two statistical procedures were employed for the analysis: (1) the significance of the difference of means of each variable for high and low academic need-achievement scores was tested entering Students' t-table; (2) using the entire range of scores, product-moment, first order partial, and second-order partial correlation coefficients were computed.

For the three major null hypotheses (both sexes)

no significant differences between means were found. For the subsidiary null hypothesis the difference between means was significant at the .00005 level for males but was not significant for females.

The major null hypotheses, on the basis of significance at the .05 level of the second order correlation coefficients were rejected or accepted as reported in Table 6.1.

Table 6.1. Major null hypotheses decisions by sex.

jor Null Hypotheses	:					
There are no signif- icant relationships between (or among) academic need-achieve- ment scores and:		Male		Fema	ale	
		Comp	<b>D</b> eci <b>s</b> ion	Rate	Comp	Decision
gain or loss in achievement	Not Sig.	Sig.	Reject	Not Sig.	Not Sig.	Accept
the discrepancy between final levels of aspir- ation and final level of expec- tation	Sig.	Not Sig.	Reject	Not Sig.	Not Sig.	Accept
final levels of aspiration, final levels of expec- tation, and gain or loss in achievement	Sig	Sig	Reject	Sig. <sup>a</sup>	Sig. <sup>b</sup>	Reject
	jor Null Hypotheses ere are no signif- ant relationships tween (or among) ademic need-achieve- nt scores and: gain or loss in achievement the discrepancy between final levels of aspir- ation and final level of expec- tation final levels of aspiration, final levels of expec- tation, and gain or loss in achievement	jor Null Hypotheses: ere are no signif- ant relationships tween (or among) ademic need-achieve- nt scores and: Rate gain or loss in Not achievement Sig. the discrepancy between final levels of aspir- ation and final level of expec- Sig. tation final levels of aspiration, final levels of expec- tation, and gain or loss in achievement Sig.	jor Null Hypotheses: ere are no signif- ant relationships tween (or among) Male ademic need-achieve- nt scores and: Rate Comp gain or loss in Not achievement Sig. Sig. the discrepancy between final levels of aspir- ation and final Not level of expec- sig. Sig. tation final levels of aspiration, final levels of expec- tation, and gain or loss in achievement Sig. Sig.	jor Null Hypotheses: ere are no signif- ant relationships tween (or among) Male ademic need-achieve- nt scores and: Rate Comp Decision gain or loss in Not achievement Sig. Sig. Reject the discrepancy between final levels of aspir- ation and final Not level of expec- Sig. Sig. Reject tation final levels of aspiration, final levels of expec- tation, and gain or loss in achievement Sig. Sig. Reject	jor Null Hypotheses: ere are no signif- ant relationships tween (or among) Male Fema ademic need-achieve- nt scores and: Rate Comp Decision Rate gain or loss in Not Not achievement Sig. Sig. Reject Sig. the discrepancy between final levels of aspir- ation and final Not Not level of expec- Sig. Sig. Reject Sig. tation final levels of aspiration, final levels of expec- tation, and gain or loss in achievement Sig. Sig. Reject Sig. <sup>a</sup>	jor Null Hypotheses: ere are no signif- ant relationships tween (or among) Male Female ademic need-achieve- nt scores and: Rate Comp Decision Rate Comp gain or loss in Not Not Not achievement Sig. Sig. Reject Sig. Sig. the discrepancy between final levels of aspir- ation and final Not Not Not level of expec- Sig. Sig. Reject Sig. Sig. tation final levels of aspiration, final levels of expec- tation, and gain or loss in achievement Sig. Sig. Reject Sig. <sup>a</sup> Sig. <sup>b</sup>

<sup>a</sup>Only aspiration and rate gain were significant.

<sup>b</sup>Only aspiration, expectation, and comp. gain were significant.

## Conclusions

The conclusions of this study can be generalized only to the Winter term, 1962 population of Reading Improvement (092), University College, Michigan State University. Because, however, the entire population was used, randomness would have been superfluous, so the conclusions may safely be generalized to any winter term population of Reading Improvement (092) at the University College, Michigan State University.

Variables which were not taken into account during the design of the study may have confounded the results. Using the final levels of aspiration and expectation undoubtedly brought these variables closer to reality than would have occurred with the use of the initial ones, but the "set" which Kausler<sup>1</sup> proposed is evoked by the setting of aspiration levels undoubtedly was operating here without control. Secondly, inherent in the successful teaching of a reading improvement course is the motivating of students to succeed: it is possible that the entire population would have been rated high in academic need-achievement had the M-Scales been administered on the last day of the course. The assessment of the \$15.00 fee for Reading Improvement probably intervened to exclude some low motivated students from enrolling in the

Kausler, op. cit., p. 11.

course, and is likely responsible for the skewed male distribution. Finally, it remains to be proved that the M-Scales provide valid measures of academic motivation in college students. The M-Scales were originally valided on eleventh grade public school students.

The conclusion reached is that the M-Scales, alone, provided little predictive validity for males and none for females. In conjunction with the setting of levels of aspiration and expectation the M-Scales were of some value for males and of very little value for females. Consistently throughout the study, either the level of aspiration, level of expectation, or a combination of both were generally high predictors of achievement gain.

### Recommendations

A similar study with one exception is desirable: one in which the M-Scales are administered at the end of the course. Another investigation might be an expanded version of the present study but having one cell set levels of aspiration, one cell set levels of expectation, one cell write the M-Scales, and one serve as the control group.

Academic motivation in a college reading improvement situation needs to be studied in conjunction with some measure of intelligence. Another useful study would investigate the

relationships between academic motivation and growth in various aspects of reading skill such as vocabulary, ability to infer, visualize, criticize, and summarize.

Finally, based upon the conclusions of the study, it appears that experimentation with levels of aspiration and expectation might prove beneficial in almost every academic area. There lies in these goal-setting devices the evocation of the set toward a maximal effort on the part of the student. The effectiveness of the various approaches to programmed learning could be immeasurably increased by inclusion of the students' setting of levels of aspiration and expectation.

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