

71-12,008

WROBLEWSKI, Michael Dennis, 1942-
THE RISK TAKING OF STUDENTS IN THE FIRST
COURSE OF THE TEACHER TRAINING SEQUENCE AT
MICHIGAN STATE UNIVERSITY AS MEASURED BY
TWO INSTRUMENTS.

Michigan State University, Ph.D., 1970
Education, administration

University Microfilms, A XEROX Company, Ann Arbor, Michigan

THE RISK TAKING OF STUDENTS IN THE FIRST COURSE OF
THE TEACHER TRAINING SEQUENCE AT MICHIGAN STATE
UNIVERSITY AS MEASURED BY TWO INSTRUMENTS

By

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Administration and Higher Education

1970

ABSTRACT

THE RISK TAKING OF STUDENTS IN THE FIRST COURSE OF THE TEACHER TRAINING SEQUENCE AT MICHIGAN STATE UNIVERSITY AS MEASURED BY TWO INSTRUMENTS

By

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Summary

Purposes of the Study

1. The basic purpose of this study was to develop an instrument to measure risk taking in educational situations and to compare it to a general test of risk taking (Kogan and Wallach's Choice-Dilemmas) to see in what ways the two instruments differed.

2. Closely allied with this purpose was the desire to ascertain if prospective teachers scored differently on the two instruments.

3. The study additionally sought to determine if there existed significant differences between:

- a. The first and second administrations of the instruments.
- b. Special classes concentrating on value decisions in education and regular educational psychology classes.
- c. Male and female subjects.

- d. Interactions of the instruments with the three other basic factors of the study (administration, class, sex).

In order to explore these related purposes, eight hypotheses were developed. These will be discussed later in this abstract under Conclusions.

Limitations of the Study

1. Only students in the first course of the teacher training sequence at Michigan State University were subjects.
2. The study does not consider many situational or personality variables which might affect risk taking.
3. The developmental period (Education 200) is not the only input which could affect the risk-taking propensities of the subjects.

Review of the Literature

A review of the literature for this study consisted of an analysis of the research done on risk taking in terms of environmental or situational factors, individual or organismic factors, and social or group factors.

The review indicated that further study of risk taking should include a consideration of the unique situational factors and value alternatives inherent in specific decision-making tasks. Before anything of importance can be said about the risk taking of professional educators, the unique aspects of educational decision making need to begin to be investigated.

Design of the Study

The Sample.--Students enrolled in Education 200 at Michigan State University, spring term, 1969-1970, were the subjects of this study.

Instrumentation.--The Kogan and Wallach Choice-Dilemmas and an experimental instrument patterned after that instrument, but with educational dilemmas, were the two instruments of the study. The Kogan and Wallach general test of risk taking had a Hoyt reliability coefficient of $r_{tt} = .71$. The experimental instrument's reliability was computed at $r_{tt} = .77$.

Procedure.--The subjects were randomly assigned into different fourths of the total Education 200 population. No subject took more than one instrument, one time. Besides instrument and administration, two other factors were considered--sex and class. Subjects were nested in all levels of all factors.

Analysis.--The eight statistical hypotheses were tested by analysis of variance and appropriate Scheffé comparisons.

Conclusions

The following conclusions have been drawn from the findings:

1. Large (295,279), randomly chosen groups of the same population (Education 200) score riskier on the experimental instrument than the Kogan and Wallach instrument ($P < .0001$) regardless of administration.

2. No significant differences were found between administrations on either instrument.

3. At the first administration, special classes scored significantly riskier ($P < .05$) than regular classes on the experimental instrument.

4. No significant differences were found between classes at the first administration on the Kogan and Wallach instrument.

5. At the first administration there is more of a difference ($P < .05$) in scores between classes with the experimental instrument than the Kogan and Wallach instrument.

6. No significant differences were found between gain scores from the first administration to the second administration in the special classes when the Kogan and Wallach and the experimental instruments were compared.

7. Special classes score riskier than regular classes ($P < .03$).

8. Males score riskier than females ($P < .01$).

9. Males score riskier than females on the experimental instrument ($P < .05$).

10. No differences exist between males and females on the Kogan and Wallach instrument ($B = .035$, with a non-centrality parameter of 1.0).

11. No significant differences were found between the difference scores of males and females when both instruments were compared.

ACKNOWLEDGMENTS

The writer wishes to express gratitude to Dr. Louis Romano, the chairman of his committee, for encouragement and helpfulness. The other members of the committee, Dr. Dale Alam and Dr. Clyde Campbell, were also very helpful.

Special gratitude is due to C. S. Mott and the Mott Foundation for financing the first year of study.

But, most of all, the writer wishes to thank his wife, Karen, whose patience, understanding and emotional support rescued this thesis many times from oblivion.

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It is not the critic who counts, not the man who points out how the strong man stumbled, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena; whose face is marred by dust and sweat and blood; who strives valiantly; who errs and comes short again and again; who knows the great enthusiasms, the great devotions, and spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement; and who at the worst, if he fails, at least fails while daring greatly; so that his place shall never be with those cold and timid souls who know neither victory nor defeat.

— THEODORE ROOSEVELT

CHAPTER I

INTRODUCTION

The Problem

The need for evaluating the effectiveness of training programs for teachers and administrators is a continuing problem. It is difficult enough to assert that training programs have resulted in increased cognitions for the trainees, but evaluation in the affective domain is noticeably absent. There are at least two interrelated problems in evaluating in the social-emotional domain. The first is confusion about what are the intended changes that result from training programs; the second is the crude state of development of instruments to measure attitudinal, value, and behavioral changes.

Educators and non-educators alike have attacked the schools for being too conservative.¹ Protesting students throughout the world demand brave, new approaches. The critics say that educators are reacting and not prone to innovate: "We are at the threshold of a revolution in education, a revolution which will alter drastically every

¹R. J. Havighurst, "Requirement For a Valid New Criticism," Phi Delta Kappan, 40 (1968).

important aspect of education as a social institution and as a profession."¹

The ferment demands more than ever that educational personnel be prepared to take more risks in such areas as instruction, curriculum revision, budget allocations, and interpersonal relations. Therefore, the promotion of risk taking has become more and more an explicit or implicit objective for the training of school personnel.

If an instrument could be devised to measure the risk taking of educators, then teacher and administrator preparation programs would have some index to evaluate whether or not the training program fosters increased risk taking. Likewise, in-service training of teachers on a building- or system-wide basis might be enhanced. The risk-taking instrument might help in the school administrator's diagnosis of where to concentrate his efforts in bringing about changes. Despite the benefit to education which research into the area of risk-taking behavior in educators might be, work in this area has not been forthcoming. Many researchers have investigated risk taking in general, but inquiry into risk decisions in the realm of education has been absent.

Purpose of the Study

The purpose of this study is to compare the changes in risk taking that occur in a developmental period (Education 200) to undergraduate teacher trainees at Michigan State

¹M. Lieberman, The Future of Public Education (Chicago: Pheonix Books, The University of Chicago Press, 1965), 1.

University, as measured by a standard, general test of risk taking (Kogan and Wallach's "Dilemmas-of-Choice"--Appendix A) and an experimental instrument which is specific to educational situations.

Two groups of students taking Education 200 at Michigan State University will be compared with both instruments. Most of the students take the regular sections of Education 200; they comprise the first group. The second group of students take special classes of Education 200. These special classes have more of an emphasis on value systems and value decision in education.

Definition of Terms

Risk Taking.--Degree to which an individual chooses an option which has a high reward but a low probability of payoff.

Situational.--That component of risk taking which is determined by the circumstances within which risky alternatives are present.

Sensitivity of the Instrument.--The capability of the instrument to pick up differences between groups.

Experimental Instrument.--The risk-taking test which is modeled after Kogan's Choice-Dilemmas procedure, but has teaching situations dilemmas instead.

Developmental Period.--The ten weeks during which students at Michigan State University are enrolled in the first course in the education sequence (Education 200).

Special Classes of Education 200.--Those sections of Education 200 which are explicitly concerned throughout the term with value decisions in education.

Regular Classes of Education 200.--Those sections which have as their procedure the more traditional Educational Psychology approach; that is, cognitive rather than affective emphasis.

Assumptions of the Study

The following assumptions are inherent in the study:

1. The Kogan and Wallach Choice-Dilemmas test does, in fact, measure risk taking.
2. The instruments are of a semiprojective nature, the subject being asked how he would advise others in the situations described. It is assumed that an individual's advice to others reflects his own regard for the desirability of success relative to the disutility of failure.
3. Education 200 cannot be credited or blamed as the sole or prime cause of the change in risk taking, but for evaluation purposes that period of time in which the students take the course is a developmental period for them in which Education 200 is an important part.
4. Subjects in special and regular classes of Education 200 had no systematic differences at the beginning of the course.

Limitations of the Study

This study is the first step in the development of an instrument to assess the risk taking of teachers. It is an attempt to investigate risk taking in the educational sphere. Although the literature indicates that the situational elements of risk taking need to be considered, this study is by no means definitive in that regard. The experimental instrument is patterned after the Choice-Dilemmas of Kogan and Wallach and attempts to tap some of the more value-salient decisions made by teachers. But it does not consider other situational factors known to affect risk taking, such as chance and skill aspects, or effects of prior gains and losses. While the study is a consideration of one area of the known environmental effects on risk taking, it does not investigate at all the personality dimension. No attempt has been made to pursue the interaction effect of educational decision making and personality type or trait.

Another limitation of the study is its narrowness of scope. The sample is composed of college students who will become teachers. There is some question about whether or not more familiarity with teaching risk decisions is a confounding variable in the study. If the sample also included practitioners, the generalizability of the findings and certitude about the role of familiarity would be increased.

The study is also limited by circumstances which confront most social science researchers. The developmental period (Education 200) is not the only input which could affect the risk-taking propensities of the subjects. It is assumed

that this course, because it is mainly concerned with value decisions in education and because it purports to increase risk taking, is an important part of that developmental period. The relatively large sample and the random assignment of subjects to the first and second administration of the tests should equalize the differential effects on risk taking of inputs other than Education 200.

Hypotheses

This study will investigate five general hypotheses. They will be stated in broad research form below and again in Chapter III in testable form. Each of the hypotheses will be preceded by a brief explanation of its theoretical base. A more extensive discussion of their relationship to the theory and research on risk taking is available in Chapter II.

Much of the research on risk taking has revealed that risk-taking propensity can be changed. Because Education 200 purports to affect risk taking, it is hypothesized that:

Hypothesis I

Some of the changes occurring in subjects during the Education 200 developmental period are changes in risk taking.

The research indicated that risk taking is highly situational. The experimental instrument, which has educational situations, as opposed to the Kogan and Wallach instrument, which has general risk decisions, should be differentially

affected by changes in risk taking in the educational sphere. Therefore:

Hypothesis II

The changes in risk taking of subjects during the Education 200 developmental period will be measured more sensitively by the experimental instrument than by the Kogan and Wallach instrument.

- Since students are assigned to special or regular classes of Education 200 on a random basis:

Hypothesis III

There will be no difference in risk taking between special and regular classes at the beginning of Education 200.

The literature on risk taking indicates that many risk decisions are, at base, value decisions. When making a decision the individual weighs the values which are associated with each alternative. Because the experimental instrument is geared to educational decisions and because special classes of Education 200 concentrate more on values and value systems:

Hypothesis IV

There will be more of a change in risk taking in the special classes of Education 200 when measured by the experimental instrument than by the Kogan and Wallach instrument.

In most of the studies done on risk taking, male and female subjects do not significantly differ. There is some indication, however, that certain risk-taking situations do

activate responses that do differentiate by sex. Perhaps, the environment of the school is one situation in which males and females are prone to respond differently in their risk-taking behavior.

Hypothesis V

The experimental instrument will register more sex difference than will the Kogan and Wallach instrument.

Overview of the Thesis

In Chapter II the review of literature on risk taking will be pursued. This will consist of a report of studies relating to situational, personality and group factors in risk taking. The author will attempt in the review to show that generalizations about risk taking are not possible without giving consideration to situational components and the values activated by alternatives in risk decision making.

The design is specified in Chapter III, including a description of the population and the sample used. This chapter will also include a discussion of the instruments used and estimates of their reliability. The procedures of the administration of the instruments will be followed by a statement of the hypotheses and the statistical methodology to be used.

Chapter IV will be devoted to an analysis of the data gathered in this study. Findings for each hypothesis will be reviewed.

The final summary of conclusions, discussion and implications will be given in Chapter V.

CHAPTER II

REVIEW OF LITERATURE

Introduction

To talk about risk taking is to refer to behavior in situations where there is a desirable goal and a lack of certainty that it can be attained. It is to expose oneself to possible failure while in pursuit of a desirable goal. Such situations can range from buying a ticket on the Irish Sweepstakes to driving a car. These situations may take the form of requiring a choice between more and less desirable goals, with the former having a lower probability of attainment than the latter.

The investigation of risk taking and its role in decision making has been highly diffused. The concept was first considered in the literature by economists in attempting to explain economic decisions. Out of this concern grew a number of mathematical model formulations. Edwards¹ describes four such models that have been developed for the purpose of providing a fully deterministic explanation of human gambling decisions. They are based on the expectation that the decision maker will choose alternatives that are of

¹W. Edwards, "The Prediction of Decisions Among Bets," Journal of Experimental Psychology, 51 (1955), 201-204.

maximum value for him. However, empirical evidence has not been consistent with the theories.¹

When psychologists joined the inquiry, the concept became highly diffused. In order to impose some organization on the domain, the author will first separate it into three broad areas of studies: those which have to do with environmental or situational elements, those which concern individual or organismic factors, and those which address social or group determinants. Under the rubric of situational factors the reviewer will consider various kinds of decision-making tasks in which risk taking can be elicited. Then, the implications of these contextual effects for risk-taking behavior will be discussed. Under the class of individual determinants, the author will summarize the various personality and cognitive variables that are associated with risk-taking behavior. Finally, the differences in risk taking of groups as opposed to individuals will be explored.

The author will be greatly aided in this attempt by the competent review of risk taking by Kogan and Wallach.²

¹W. Edwards, "Probability Preferences in Gambling," American Journal of Psychology, 66 (1953), 349-364; W. Edwards, "Variance Preferences in Gambling," American Journal of Psychology, 67 (1954), 441-452; C. H. Coombs and S. S. Komorita, "Measuring Utility of Money Through Decisions," American Journal of Psychology, 71 (1958), 383-389; and F. Mosteller and P. Nogee, "An Experimental Measurement of Utility," Journal of Political Economics, 59 (1951), 371-404.

²N. Kogan and M. A. Wallach, "Risk Taking As a Function of the Situation, the Person, and the Group," in New Directions in Psychology III (New York: Holt, Rinehart and Winston, 1967).

Situational Influences on Risk Taking

Chance and Skill Aspects

Few decisions are composed of skill or chance elements alone. An attempt at explaining the function of risk taking in the decision-making process requires a consideration of both of these components. Chance tasks can be perceived as being susceptible to the influence of skill, and vice versa. Strickland, Lewicki, and Katz¹ found that subjects made more conservative bets in throwing dice when they were asked to do so after the dice had been thrown (but not seen), than they did before they threw the dice. The researchers' interpretation was that the subjects believed they had some control over how the dice would fall. On the other hand, Cohen² has found evidence that subjects introduce chance factors into their perception of skilled performance. He further implies that individuals are more prone to risk taking if they believe they can influence the outcome of the decision.

Littig³ modifies the Cohen findings by postulating that the perception of some measure of control of the outcome leads to moderate risks, whereas belief in no influence elicits avoidance of intermediate approaches in favor of excessively

¹L. H. Strickland, R. J. Lewicki, and A. M. Katz, "Temporal Orientation and Perceived Control as Determinants of Risk-Taking," Journal of Experimental Social Psychology, 2 (1966), 143-151.

²J. Cohen, Chance, Skill, and Luck (Baltimore: Penguin, 1960).

³L. W. Littig, "Effects of Skill and Chance Orientations on Probability Preferences," Psychological Reports, 10 (1962), 67-70.

risky or excessively conservative approaches. Littig's evidence is very much in line with Atkinson,¹ who found the same relationship between achievement motive and risk taking. This concomitance seems to suggest a powerful interaction between the situational and the personality elements of risk-taking behaviors as Atkinson puts it:

The strength of motivation to achieve at a particular task in a particular situation must be viewed as jointly determined by a general disposition to achieve and an expectancy concerning the consequences of action that is defined by situational cues at the time of performance.²

Effects of Gains and Costs in Decision

A very important determinant of riskiness of a decision is the "seriousness" of that decision in terms of what can be gained or lost because of it. This aspect of risk-taking behavior has been investigated most extensively with the Kogan and Wallach Choice Dilemmas³ (Appendix A).

The Choice Dilemmas are a series of 12 life situations, in which subjects indicate the lowest odds they would accept for selecting a risky, but desirable, alternative when given the choice of a more certain, but less desirable, alternative. Kogan and Wallach's problems cover a wide range of topics,

¹J. W. Atkinson, "Motivational Determinants of Risk-Taking Behavior," Psychological Review, 64 (1957), 359-372; Atkinson, ed., Motives in Fantasy, Action and Society (Princeton, N.J.: Van Nostrand, 1958); and Atkinson, An Introduction to Motivation (Princeton, N.J.: Van Nostrand, 1964).

²Atkinson, An Introduction to Motivation, p. 267.

³Kogan and Wallach, op. cit.

entailing possible losses of prestige, self-satisfaction, life, and money. An example is item 8:

Mr. H, a college senior, has studied the piano since childhood. He has won amateur prizes and given small recitals, suggesting that Mr. H. has considerable musical talent. As graduation approaches, Mr. H. has the choice of going to medical school to become a physician, a profession which would bring certain prestige and financial rewards; or entering a conservatory of music for advanced training with a well-known pianist. Mr. H. realizes that even upon completion of his piano studies, which would take many more years and a lot of money, success as a concert pianist would not be assured.

The subject could elect not to take the risky alternatives or to indicate his willingness to take it with 1, 3, 5, 7, or 9 chances in 10 that Mr. H. would become a successful pianist. The lower the minimum acceptable odds selected by the subject, the riskier his choice is said to be.

Analysis of the differential response of each item reveals that in general "the costs of possible failure do affect the risk that will be tolerated by the subject."¹ It appears that as the value of the desirable outcome increases, the cost of failure will deter the individual less. In fact, Wallach and Kogan² speak of performance on the Choice-Dilemma instrument as an index of "deterrence of failure."

In selecting a probability value, the individual essentially is telling the extent to which possible costly failure will deter him from seeking desirable objectives. As we have seen, decision situations will vary in the degree to which the costs incurred by failure will detract from the pursuit of valued goals.³

¹Ibid., p. 135.

²M. A. Wallach and N. Kogan, Aspects of Judgment and Decision-Making: Interrelationships and Changes with Age," Behavioral Science, 6 (1961), 23-36.

³Kogan and Wallach, op. cit., p. 136.

Rettig and Rawson, Rettig and Pasanamick, and Rettig and Sinha¹ have a more broadly based but consistent interpretation of this phenomenon. Their analyses suggest that individuals weigh values in decision situations. They posit that values are associated with both the gain and the cost alternatives. To pursue one alternative and the corresponding values associated with it puts the other alternative and its associated values in jeopardy. As the values linked with gains achieve dominance over those associated with costs, risk-taking levels should go up.

This interpretation was further replicated with real and not imaginary incentives by Suydam and Myers.²

Effects of Prior Gains and Losses

The research here is equivocal. Edwards; Lichtenstein; and Slovic, Lichtenstein and Edwards³ contend that previous

¹S. Rettig and H. E. Rawson, "The Risk Hypothesis in Predictive Judgments of Unethical Behavior," Journal of Abnormal and Social Psychology, 66 (1963), 243-248; S. Rettig and B. Pasamanick, "Differential Judgment of Ethical Risk by Cheaters and Noncheaters," Journal of Abnormal and Social Psychology, 69 (1964), 109-113; and S. Rettig and J. B. Sinha, "Bad Faith and Ethical Risk Sensitivity," Journal of Personality, 34 (1966), 275-286.

²Mary M. Suydam and J. L. Myers, "Some Parameters of Risk-Taking Behavior," Psychological Reports, 10 (1962), 559-562.

³W. Edwards, "Subjective Probabilities Inferred from Decision," Psychological Review, 69 (1962), 109-135; Sarah Lichtenstein, "Bases for Preferences Among Three-Outcome Bets," Journal of Experimental Psychology, 69 (1965), 162-169; and P. Slovic, Sarah Lichtenstein, and W. Edwards, "Boredom-Induced Changes in Preferences Among Bets," American Journal of Psychology, 78 (1965), 208-217.

outcomes are unimportant, while McGlothlin,¹ Myers and Fort,² Kogan and Wallach,³ Greenberg and Weiner,⁴ and others have found both positive and negative recency effects.

Risk Taking in Mutual Settings

Field research on risk taking has not been conspicuous. Since risk-taking behavior is highly susceptible to situational elements, it is surprising that so few American psychologists have endeavored to check their laboratory findings with everyday life. By contrast, in the United Kingdom the aversion is not common. Perhaps, the best work done in Britain on this topic is by John Cohen. Summaries of this work are available in Cohen and Hansel⁵ and Cohen.⁶

¹W. H. McGlothlin, "Stability of Choices Among Uncertain Alternatives," American Journal of Psychology, 69 (1965), 604-615.

²J. L. Myers and Jane G. Fort, "A Sequential Analysis of Gambling Behavior," Journal of General Psychology, 69 (1963), 299-309.

³N. Kogan and M. A. Wallach, Risk Taking: A Study in Cognition and Personality (New York: Holt, Rinehart and Winston, 1964).

⁴M. G. Greenberg and B. Weiner, "Effects of Reinforcement History Upon Risk-Taking Behavior," Journal of Experimental Psychology, 71 (1966), 587-592.

⁵J. Cohen and C. E. M. Hansel, Risk and Gambling (London: Longmans, 1956).

⁶J. Cohen, Chance, Skill, and Luck (Baltimore: Penguin, 1960); and J. Cohen, Behavior in Uncertainty (New York: Basic Books, 1964).

In America, Griffith¹ and McGlothlin² found horse-race betters prone to wager proportionately more money on "long-shots." Thus, they tended toward riskier decisions than objective outcomes warranted. Munson's study of carnival betting³ found conflicting results but it seems clear that demand characteristics were artifacts of this study.

Field studies seem to find results in which subjects chose riskier alternatives than in laboratory studies. The exact relationship of the difference still needs to be explored.

Much still needs to be known about the situational and task parameters of risk-taking behavior. It does seem evident, however, that the situational elements interact with certain personal characteristics. What is known about the personality aspects of risk-taking behavior will be considered next.

The Role of Personal Characteristics in Risk Taking

Sex and Age Differences

It is commonly believed that women tend to be more conservative than men. Wallach and Kogan⁴ found no evidence to

¹R. M. Griffith, "Odds Adjustment by American Horse-Race Betters," American Journal of Psychology, 62 (1949), 290-294.

²McGlothlin, loc cit.

³R. F. Munson, "Decision-Making in an Actual Gambling Situation," American Journal of Psychology, 75 (1962), 640-643.

⁴M. A. Wallach and N. Kogan, "Sex Differences and Judgment Processes, Journal of Personality, 27 (1959), 555-564; and Wallach and Kogan, "Aspects of Judgment."

support this stereotypic view. They did find differences, however, which seemed to indicate that "each sex appeared to be willing to tolerate higher risk levels in pursuit of values considered more sex appropriate."¹ The values associated with the risk decision are important determinants of the level of risk both in terms of situational and personality characteristics.

With young children, Kass² found boys consistently riskier than girls in a momentary pay-off game. Again with children, Slovic³ in a study conducted at a county fair, found older boys (ages 11 to 16) manifested greater risk taking than did their female age mates.

The inconsistency of the adult and children findings has not been adequately explored. Perhaps, the difference is due to a lack of knowledge of sex appropriate values in children.

On the subject of age differences, Wallach and Kogan⁴ tested an elderly group of subjects (mean age of 70) with an intellectual equivalent group of college students with the Choice-Dilemmas instrument described previously. The older group scored consistently more conservative than the college students (both male and female). Unfortunately, studies to

¹Kogan and Wallach, "Risk Taking As a Function of the Situation, the Person, and the Group," p. 166.

²N. Kass, "Risk in Decision-Making As a Function of Age, Sex, and Probability Preference," Child Development, 35 (1964), 577-582.

³P. Slovic, "Risk-Taking in Children: Age and Sex Differences," Child Development, 37 (1966), 169-176.

⁴Wallach and Kogan, "Aspects of Judgment."

measure risk-taking differences along the age continuum have not been forthcoming. Consequently, no broad general conclusions concerning changes in risk-taking behavior in males and females across the total life span can be made. One can only conclude that there is evidence to support sex and age differences in risk taking.

Personality and Motivational Correlates

Achievement Motivation

A number of researchers have investigated the relationship between risk taking and achievement. The McClelland-Atkinson formulation of this relationship is best known.

According to Atkinson,¹ two components, subjective probability (Ps) and incentive values (Is) are inversely related. If a task is very difficult to perform (low Ps), its (Is) will be very high. A person will derive a great deal of satisfaction from it. The model postulates that there are also probabilities and incentive values for failure (Pf) (If). The $Ps + Pf = 1$; $Is + If = 1$. Atkinson also postulates two motives: the motive to succeed (Ms) and the motive to avoid failure (Mf). These two motives combine with the aforementioned probabilities and incentives to determine risk-taking behavior.

In those situations where skill and not chance are conceived to be the element which determines the outcome, the risk-taking level is determined by the following equation:

¹Atkinson, "Motivational Determinants."

$$\text{Resultant Motivation} = (M_s \times P_s \times I_s) + (M_f + P_f + I_f)$$

Analysis of the equation reveals that individuals higher in the motive to achieve success should prefer intermedial risks, while those individuals with $M_f > M_s$ will exhibit either extreme risks or very low risk levels.

McClelland's experiment with children in a ring toss game¹ confirmed the Atkinson model but de Charms and Davé,² in a similar experiment designed to operationalize more exactly the Atkinson model, found conflicting results. Subsequent empirical studies have, for the most part, confirmed the Atkinson theory. However, a number of undefined areas in the theory are troublesome. Kogan and Wallach sum them up:

- 1) The particular context under which the risk-taking procedures are administered.
- 2) The need to control for individual differences in skill so that subjects approach the decision-making tasks with equivalent objective probabilities of success.
- 3) The relevance of the motives to achieve success and avoid failure for decision making under chance conditions.
- 4) The influence of diverse methods for assessing achievement motivation on results obtained.³

¹D. C. McClelland, "Risk-Taking in Children with High and Low Need for Achievement," in Motives in Fantasy, Action, and Society, ed. by J. W. Atkinson (Princeton, N.J.: Van Nostrand, 1958), 306-321.

²R. de Charms and P. N. Davé, "Hope of Success, Fear of Failure, Subjective Probability, and Risk-Taking Behavior," Journal of Personality and Social Psychology, 1 (1965), 558-568.

³Kogan and Wallach, "Risk Taking As a Function of the Situation, the Person, and the Group," 173-190.

Whether or not these trouble spots are working out in the theory, it is doubtful that it could satisfactorily explain risk-taking behavior. In the many studies done to test the relationship of achievement motivation to risk taking, another personality construct has been uncovered as being operant. It has been variously labeled as need for social approval, social desirability, and defensiveness.¹ Spontaneous remarks by subjects in various experiments indicate that they thought it would have been "weird" or "not sensible" to pick the particular task, even though they felt inclined to do so.² These subjects might have been influenced by their desire to appear "acceptable" to the experimenter.

This aspect of the risk-taking phenomenon will be considered again in the section of the review on group influences. For now, it appears that individuals discern that certain social values are associated with the level and extent of risk taking they exemplify. Furthermore, subjects who are more failure threatened appear to seek approval from experimenters more than success-oriented subjects in their risk taking. These former subjects would be less prone to

¹D. P. Crowne and D. Marlowe, The Approval Motive (New York: Wiley, 1964); R. W. Moulton, "Effects of Success and Failure on Level of Aspiration As Related to Achievement Motives, Journal of Personality and Social Psychology, 1 (1965), 399-406; J. W. Atkinson and N. T. Feather (eds.), A Theory of Achievement Motivation (New York: Wiley, 1966); and Kogan and Wallach, "Risk Taking As a Function of the Situation, the Person, and the Group."

²Moulton, "Effects of Success and Failure," 405.

have internalized values; they would be more dependent. It seems that personality and situational variables interact to cause the salience of certain values or clusters of values in deciding risk situations.

Other Personality Correlates

The most comprehensive work on risk taking is Kogan and Wallach's Risk Taking.¹ In this book the authors examine a number of personality variables which are related to risk taking. Among them were inventories for impulsiveness, self-sufficiency, independence, and rigidity. Kogan and Wallach found that females high in risk-taking propensity were more independent and less rigid. Other factors were responsible for male risk taking. Perhaps variables associated with sex role identity become operant in risk decisions. If these variables are, as it seems, salient in females and not males, it suggests that the differential salience may be due to differences in the application of value systems between the sexes in risk-taking decisions.

In another study conducted by Cameron and Myers² a preference for low-payoff, high-probability bets (low risk) was found to be associated with autonomy and endurance needs, while exhibition, aggression, and dominance needs were related to high-payoff, low-probability bets (high risk).

¹Kogan and Wallach, Risk Taking: A Study in Cognition and Personality.

²B. Cameron and J. L. Myers, "Some Personality Correlates of Risk Taking," Journal of General Psychology, 74 (1966), 51-60.

In a doctoral dissertation finished at the University of Michigan, Williams¹ investigated risk takers in an industrial setting. He found that the greater the propensity of an individual to take risks, the more willing that individual will be to: 1) attempt large-scale change, 2) place emphasis on promotion, and 3) prefer ability and merit as criteria for mobility in the organization. Williams also concluded that the high risk taker has more of a need for independence and he exhibits greater tolerance for change. These findings are consistent with an earlier report by Ziller.²

Finally, Barron, Kaplan, and McClelland³ have proposed an association between risk-taking and creativity. These authors suggest that willingness to take at least a moderate level of risk is necessary for creative acts. Pankove⁴ has demonstrated this relationship in children. He concludes that the link between risk and creativity lies in the

¹L. D. Williams, "The Measurement of Risk-Taking Propensity in an Industrial Setting" (unpublished Doctoral dissertation, University of Michigan, 1960).

²R. C. Ziller, "Vocational Choice and Utility for Risk," Journal of Counselling Psychology, 4 (1957), 61-64.

³F. Barron, Creativity and Psychological Health (Princeton, N.J.: Van Nostrand, 1963); N. Kaplan, "The Relation of Creativity to Sociological Variables in Research Organizations," in Scientific Creativity, ed. by C. W. Taylor and F. Barron (New York: Wiley, 1963), 195-204; and D. C. McClelland, "The Calculated Risk: An Aspect of Scientific Performance," in Scientific Creativity, ed. by C. W. Taylor and F. Barron (New York: Wiley, 1963), 184-192.

⁴E. Pankove and N. Kogan, "Creative Ability and Risk-Taking in Elementary School Children," Journal of Personality, 36 (Sept., 1968), 420-439.

individual's ability to feel realistically self-confident.

Generality and Specificity of Risk Taking

Having examined some of the personality and situational elements of risk-taking behavior, it seems appropriate to consider the relative effect of each. The only comprehensive approach to this problem has been Kogan and Wallach's monograph - Risk-Taking.¹ This classic study digresses from traditional psychological distinctions of fields and topics, such as "personality," "opinions and attitudes," by positing moderating variables. The authors argue that researching the relationship of two variables for an unselected sample of persons is too simplistic and that by dividing the sample under study in terms of theoretically relevant characteristics (moderating variables) that relationships might hold for some subsamples and not others. In this way, Kogan and Wallach made clearer what interactions personality and situational elements have in risk-taking behavior. These interactions and relationships might easily be lost in a more traditional independent-dependent variable study. In fact, the authors found little generalized individual consistencies toward risk or conservatism.

Kogan and Wallach's Risk-Taking, however, did point out that some kinds of individuals did exhibit generality in risk taking. Persons who were high in "motivational disturbances,"

¹Kogan and Wallach, Risk Taking: A Study in Cognition and Personality.

that is high in test anxiety and defensiveness, did exhibit a great deal of consistency in their risk taking across a variety of decision-making tasks. Some of Kogan and Wallach's other findings which are relevant here are:

1. Independence, self-sufficiency is directly related to greater risk taking in females on the choice dilemmas ($r=.27$; $r=.42$).
2. Rigidity is associated with the male sample as a whole on the choice dilemmas ($r=.26$).
3. Self-sufficiency is related to conservatism in males and independence to risk taking in females on many risk-taking tasks.
4. Some personality determinants of risk-taking behavior become manifest only in the absence of motivational disturbance.
5. Individuals low in both test anxiety and defensiveness made more "rational" or "adoptive" decisions. That is, they were highly responsive to environmental contingencies bearing on choice of strategy for a given decision-making task.
6. Changes in betting strategies suggest dissonance reduction to be operant. This is evidence in support of Festinger's dissonance theory.¹

The Kogan and Wallach study has numerous implications for the study of cognitive-judgmental processes, intellectual abilities, decision making and personality. In fact, it deserves consideration from anyone interested in the psychology of thinking. De Kock² found that much of the variability of risk taking can be accounted for when the moderator variable technique is employed. More specifically, the monograph suggests that an individual will be more responsive to interval

¹Ibid.

²A. R. De Kock, "Relationship Between Decision Making Under Conditions of Risk and Selected Psychological Tests" (unpublished Doctoral dissertation, University of South Dakota, 1968).

dispositions or to environmental cues depending upon what is the nature of that person's motivational matrix. As Kogan and Wallach put it:

Look to the motivational matrix in which the thinker is operating if you seek to understand whether an over-generalized predisposition or, on the other hand, sensitivity to relevant environmental data, will tend to govern his thought processes.¹

Once again, it appears that an analysis of an individual's perception and disposition of the risk-taking context seems worthy of study. Individuals react differently to decision-making situations dependent upon what they perceive to be salient for them in that situation. The question of what exactly becomes salient to individuals in risk situations will be further clarified in the next section of this review.

Group Decisions Involving Risk

For the purposes of this thesis the author will confine his remarks to the most recent controversy in the literature on risk taking: the "risky shift."

The Risky-Shift Phenomenon

Several recent studies have disputed the common sense notion that groups tend to make more conservative decisions than individuals.² The experiment by Stoner, who first

¹Kogan and Wallach, "Risk Taking As a Function of the Situation, the Person, and the Group," 215.

²W. H. Whyte, Jr., The Organization Man (New York: Simon and Schuster, 1956); and N. Bateson, "Familiarization, Group Discussion, and Risk Taking," Journal of Experimental Social Psychology, 2 (1966), 119-129.

reported this phenomenon, is paradigmatic of these studies.¹ Stoner had male graduate students of industrial management at M. I. T. take the aforementioned choice dilemmas individually and then come together in groups of six to achieve consensus on levels of risk for each item. Stoner then separated the subjects again and asked them to state their preferential risk level. He found that both in group discussion and in the individual retest the subjects had increased in their preference for risk, i.e., toward an acceptance of lower odds of success for trying the risk alternative. This "risky shift" did not occur in the control sample, which had no group discussion but simply reconsidered the problem a few weeks later.

The risk-shift phenomenon has also been reported by Wallach, Kogan and Bem² with monetary rewards, and Bem, Wallach and Kogan³ with aversive consequences for failure.

Possible Explanations of the Risky-Shift Phenomenon

There are four major explanations that have been offered for the risky-shift. These four are diffusion of responsibility, leadership, rationality, and a cultural value for risk. A brief review of the support for each follows.

¹J. A. F. Stoner, "A Comparison of Individual and Group Decisions Involving Risk" (unpublished Master's thesis, Massachusetts Institute of Technology, School of Industrial Management, 1961).

²M. A. Wallach, N. Kogan, and D. J. Bem, "Diffusion of Responsibility and Level of Risk Taking in Groups," Journal of Abnormal and Social Psychology, 68 (1964), 263-274.

³D. J. Bem, M. A. Wallach, and N. Kogan, "Group Decision Making Under Risk of Aversive Consequences," Journal of Personality and Social Psychology, 1 (1965), 453-460.

The diffusion-of-responsibility hypothesis contends that the "affective bonds formed in discussion enable the individual to feel less than proportionally to blame when he entertains the possible failure of risky decision."¹ Thus the group accepts a higher risk level than the individual because the individual is deterred by greater feelings of responsibility for failure.

The evidence in support of this hypothesis is, for the most part, indirect. Kogan and Wallach come to prefer this explanation by eliminating to their satisfaction other interpretation, and because this hypothesis is consistent with the way in which mobs act.² The little direct evidence Kogan and Wallach can marshal in support of the diffusion-of-responsibility hypothesis rests on the necessity of group discussion for eliciting the risky-shift.³ But more recent studies by Bateson⁴ and Flanders and Thistlewaite⁵ have found as strong a group shift toward risk when subjects

¹M. A. Wallach, N. Kogan, and R. B. Burt, "Can Group Members Recognize the Effects of Group Discussion Upon Risk Taking?" Journal of Experimental Social Psychology, 1 (1965), 395.

²A review of the Kogan and Wallach position is available in R. Brown, Social Psychology (New York: Free Press, 1965), 656-708.

³D. G. Marquis, "Individual Responsibility and Group Decisions Involving Risk," Industrial Management Review, 3 (1962), 8-23; and Wallach, Kogan and Burt, "Can Group Members Recognize the Effects."

⁴N. Bateson, "Familiarization, Group Discussion, and Risk Taking," Journal of Experimental Social Psychology, 2 (1966), 119-129.

⁵J. P. Flanders and D. L. Thistlewaite, "Effects of Familiarization and Group Discussion Upon Risk-Taking," Journal of Experimental Social Psychology, 5 (1967), 91-98.

were not involved in group discussions but were merely asked to prepare arguments for group debate.

The leadership hypothesis is supported by Collins and Guetzkow¹ and is based on correlational evidence that riskier members of the group are perceived as more self-assured² and as more influential members of the groups.³ In a study done by Nordhoy,⁴ conservative shifts in risk were found in some groups and these same groups stipulated that the more conservative members of the group had been the most influential. Influence in the group may be due to which way the group will shift. It seems now that the leadership hypothesis may be a partial explanation of risky-shift but, as Kogan and Wallace put it, after failing to replicate the earlier findings in support of the leadership hypothesis, "It can hardly qualify as the sole cause of group-induced shifts toward enhanced risk-taking."⁵

¹B. E. Collins and H. Guetzkow, A Social Psychology of Group Processes for Decision-Making (New York: Wiley, 1964).

²G. Clausen, "Risk Taking in Small Groups" (unpublished Doctoral dissertation, University of Michigan, 1965).

³M. A. Wallach, N. Kogan, and D. J. Bem, "Diffusion of Responsibility and Level of Risk Taking in Groups," Journal of Abnormal and Social Psychology, 65 (1962), 75-86; Y. Rim, "Risk-Taking and Need for Achievement," Acta Psychologica, 21 (1963), 108-115; Y. Rim, "Personality and Group Decisions Involving Risk," Psychological Record, 14 (1964), 37-45; and Y. Rim, "Social Attitudes and Risk-Taking," Human Relations, 17 (1964), 259-265.

⁴F. Nordhoy, "Group Interaction in Decision-Making Under Risk" (unpublished Master's thesis, Massachusetts Institute of Technology, School of Industrial Management, 1962).

⁵Kogan and Wallach, "Risk Taking As a Function of the Situation, the Person, and the Group," 260.

The rationality hypothesis assumes that in group discussion errors are eliminated and more information about the task is communicated so that individuals will make a more rational choice of risk level. The average level of information about the task will be increased. This interpretation is consistent with Bateson¹ and Flanders and Thistlewaite² cited above, in which individuals restudied and prepared arguments for group debate. However, the Bem, Wallach and Kogan study³ with risks of physical pain should have produced a more conservative risk shift if the rationality hypothesis is tenable.

The evidence on the risky-shift phenomenon seems to be more and more consistent with the last hypothesis to be considered - the cultural value hypothesis.

Several times in this review, evidence has indicated that value considerations are generic to risk decisions. Studies with the Choice Dilemmas reveal rhetoric in group discussions which is highly evaluative and influential. For example:

"Life is not static."

"Nothing ventured, nothing gained."

"Don't be such a stick-in-the-mud."

The persistence of this evaluative aspect of risk taking has led Brown⁴ and others to ask if risk itself is an American

¹Bateson, loc. cit.

²Flanders and Thistlewaite, loc. cit.

³Bem, Wallach and Kogan, loc. cit.

⁴Brown, Social Psychology.

value. Brown's answer is that perhaps moderate risk is, in fact, a value.

Hinds¹ found that subjects consistently rated themselves riskier than other people like them. They perceived that they were being daring in their choice of a risk level, and when they later found out they were not, the subjects opted for a less conservative level. In a study by Levinger and Schneider² subjects admired choices riskier than their own.

Brown postulates that:

Riskiness is indeed a cultural value but. . .cultural values cannot be realized in concrete situations until they are specified. The function of the group discussion . . .is chiefly informative. It teaches the individual how to be risky in the present concrete task; it gives specificity to the value.³

Some of the implications of this theory are that decision making, especially in terms of risk, needs to be examined in specific, concrete situations. Each situation elicits values or value clusters which are perceived to be linked to each alternative in the decision. At base, risk decisions may be value decisions and the preference for risk may itself be a value. The risky-shift may be explained as the competition of the value of risk with moral values.⁴

¹W. C. Hinds, "Individual and Group Decisions in Gambling Situations" (unpublished Master's thesis, Massachusetts Institute of Technology, School of Industrial Management, 1962).

²G. Levinger and D. J. Schneider, "Test of the 'Risk Is a Value' Hypothesis," Journal of Personality and Social Psychology, 11 (1969), 165-170.

³Brown, Social Psychology, 702.

⁴G. R. Madaras and D. J. Bem, "Risk and Conservatism in Group Decision Making," Journal of Experimental Social Psychology, 4 (1968), 350-366.

Recently, Stoner has reported evidence in favor of the value hypothesis. He offers a more comprehensive explanation of the risky-shift phenomenon within the context of the cultural value hypothesis. Stoner explains that the value hypothesis can deal with both conservative and risky shifts.

Risky-shifts arise because of the dominance of values favoring the risky alternative; cautious shifts come from the dominance of values favoring the cautious alternative; and the absence of a systematic shift would be explained by the failure of the problem to engage, in a consistent manner, values favoring one alternative over the other.¹

This is not an ex post facto explanation, in that Stoner found subjects' perceptions of their own relative riskiness were a good predictor of the group shift.

The value hypothesis accounts for much of the evidence compiled on the risky-shift phenomenon. It explains the Bateson² and Flanders and Thistlewaite³ findings on the development of a position for later debate as an observing of a greater consistency between alternatives and the values the individual holds. The Rabow et al study,⁴ which demonstrated that the introduction of ethical dimensions is not required in order for groups to demonstrate conservative shifts, is consistent with the value hypothesis. Also relevant here is

¹J. A. F. Stoner, "Risky and Cautious Shifts in Group Decisions: The Influence of Widely Held Values," Journal of Experimental Social Psychology, 4 (1968), 455.

²Bateson, loc. cit.

³Flanders and Thistlewaite, loc. cit.

⁴J. Rabow, F. J. Fowler, Jr., D. L. Bradford, M. A. Hofeller, and Y. Shibuya, "The Role of Social Norms and Leadership in Risk-Taking," Sociometry, 29 (1966), 16-27.

Teger and Pruitt's observation that in the Kogan and Wallach Choice Dilemmas the original position on the 12 items is correlated with subsequent group shift [$r = -.89$ $p < .001$].¹ In other words, items that are initially risky tend to exhibit risky shifts, and vice versa.

In gambling and other decision situations the value hypothesis would be of little help in understanding risk decision, but on the other hand, there is a great deal of evidence that for life situations which engage widely held values, the value hypothesis is most useful.

Summary and Conclusion

The research on risk-taking behavior became a general topic of concern to psychologists in about 1959. Since then, a consideration of situational and personality components led to investigation of group influences, especially the risky-shift phenomenon. It appears now, that no generalizable, simple relationship exists between situational or personality variable and risk level. However, mediating or moderating variables do make some relationships clear. The studies of risky-shift phenomenon and others suggest that an important mediating consideration is the value constellation associated with risky and conservative alternatives. Further, research should center on the interactions of values, personality, and situationally unique components. Perhaps, investigators should

¹A. I. Teger and D. G. Pruitt, "Components of Group Risk Taking," Journal of Experimental Social Psychology, 3 (1967), 189-205; and A. I. Teger, D. G. Pruitt, R. St. Jean, and G. Haaland, "A Re-examination of the Familiarization Hypothesis in Group Risk-Taking," Journal of Experimental Social Psychology, 1969, in press.

talk about, for example, risk taking of anxious individuals in the Department of Defense or defensive teachers confronted with value dilemmas in educational situations.

The literature reveals that further research in the area of risk taking should be concerned with the unique values and situational circumstances that are inherent in specific decision-making elements. That is, risk taking even in one individual will be different, depending upon in what situation the risk alternatives are present. In educational situations, for example, a teacher may opt for a risk level that is significantly different than the level that teacher chooses when he takes on the role of a stockholder or parent, or for that matter, a student. Risk-taking studies that investigate the educational sphere have not been forthcoming. Before anything of importance can be said about the risk taking of professional educators, the value constellations of alternatives and the situationally unique aspects of educational decision making need to begin to be investigated.

CHAPTER III

THE DESIGN

This chapter contains a description of the sample and the instruments; a discussion of the development of the experimental instrument and the procedures used to establish its reliability; the testable hypotheses; and an explanation of the procedure used in the collection, analysis and interpretation of the data.

The Sample

The population from which the sample was chosen were college students at Michigan State University. Specifically, these subjects were studying to become teachers. They enrolled in Education 200, the first course in the teacher training sequence at Michigan State University. Those subjects who entered the special classes of Education 200 were selected at random from all those who enrolled in Education 200 spring term. There is no reason to believe that the special section subjects differed in any systematic way from regular subjects.

All subjects in the study were interested in becoming teachers. None had taken any education course previously. Some students had teaching or quasi-teaching experience

previously, but previous experience was rare and appears to have become equivalent in each subgroup through randomization.

The age range was 19 years old to 51 years, but here again, the vast majority of the students (over 99 per cent) were 19 to 22 years of age. In all, 574 subjects were used. Two hundred fifty-one were male, and 323 were female.

The Education 200 Experience

Education 200 at Michigan State University is an educational psychology course which attempts to prepare individuals to become good teachers by concentrating on building competency in instructional design. Students are taught to make behavioral assessments, write appropriate behavioral objectives, and develop strategies to accomplish these objectives.

Of at least equal importance to the planners and teachers of Education 200 is building teacher trainees' awareness of themselves and the value systems of other individuals. The course is divided into two parts, the task demands of teaching and the personal demands of teaching. The task demands are the more cognitive aspects of the course described above. The personal demands are included to bring about affective changes. The course designers hope to produce teachers who will address themselves more frequently and vehemently to social issues and who will change education to be more relevant to children. The vehicle to cause this change is discussion and analysis of an individual's value

system. Appendix B, page 104, shows a value inventory which students fill out at the beginning and end of Education 200. The students compare their own rankings to see if any value change has ensued. Other materials of Education 200 which reflect the concern for values are in Appendix B.

The special classes of Education 200 are centered even more on values. The students in these sections attend no lecture as the regular students do, but instead have more small group sessions which are organized around the consideration of their own and other individuals' value systems. A typical outline of a ten week term for special section students is shown in Figures 3.1 and 3.2.

The purpose of this explanation of the Education 200 experience is not to evaluate if, in fact, value change occurs, but instead to demonstrate to the reader that value change in educational situations is intended to occur as a result of Education 200. The reader will recall from the review of the literature in Chapter II of this thesis that the values considered to be associated with alternatives in decision making have a profound effect on the riskiness of that decision. Education 200 purports to produce changes both in values and risk levels. Course planners also claim that the special classes of Education 200 change students even more.

Hence, Education 200 is an important part of the future teachers' developmental period. The course is an appropriate area of inquiry for risk taking in the educational sphere.

FIGURE 3.1

Suggested Reading Schedule
Summer
Sections 1, 2, 5, and 6

Time Table

- 1.0 COMMUNICATION
 - Workbook: Course Objectives (p. 1-3)
 - *Joy
 - *Sensory Awakening
 - *Games People Play
- 2.0 ASSESSMENT
 - *Death at an Early Age *Summerhill
 - 36 Children
 - *How Children Fail
 - *Lord of the Flies
- 3.0 TEACHING ROLE (POWER)
 - *The Power Elite
- 4.0 LISTENING EAR
 - *Workbook: Values (p. 9-56)
- 5.0 TEACHER'S ROLE (84)
 - Workbook: Born Female (p. 85-99)
- 6.0 RACISM
 - Autobiography of Malcolm X
 - Manchild in the Promised Land
 - *Black Power
 - *Black Rage
 - *The Wretched of the Earth
 - *The Man Who Cried "I am"
 - *The Souls of Black Folk
 - Politics of Protest
- 7.0 STUDENT
 - Student as Nigger
 - McKee Report (Handout)
 - *Teaching as a Subversive Activity
 - *Halls of Yearning
- 8.0 ACTION PROJECTS
- 9.0 ACTION PROJECTS
- 10.0 OPEN

*Recommended Readings

FIGURE 3.2
ACTION PROJECT

TITLE: Personal Objective

PURPOSE: You will, within a few weeks, have an opportunity to participate in an action project. In preparation for that experience, you should begin to identify some personal goals that you would like to attain and to formulate them into possible objectives.

DIRECTIONS: 1. List three value areas of personal concern.

A. _____

B. _____

C. _____

2. Identify a personal concern. HINT: A value conflict that arose during the small group discussions, a behavior you as a teacher would want to look at more closely, or a skill you as a teacher need to develop.

3. Using your concern, write a behavioral objective. Remember the description of an objective has three essential parts: a terminal behavior stated in unambiguous measurable performance terms, the conditions under which the behavior is to occur, and the criterion of acceptable performance.

Instrumentation

Two instruments were used to measure changes in risk taking. The first, the Kogan and Wallach Choice-Dilemmas, will be discussed next. The second, the experimental instrument, will then be considered.

The Kogan and Wallach Instrument

A detailed description of the group-administered Choice-Dilemmas procedure instrument may be found in Appendix A. Earlier research with this instrument was reported in Wallach and Kogan;¹ Kogan and Wallach;² and Wallach, Kogan and Bem.³

The Choice-Dilemmas are a series of 12 life situations in which subjects indicate the lowest odds they would accept for selecting a risky, but desirable alternative when given the choice of a more certain, but less desirable alternative. The subject's selection of the probability level for the success of the risky alternative which would make him choose it reflects that subject's "deterrence of failure"⁴ for him

¹M. A. Wallach and N. Kogan, "Aspects of Judgment and Decision-Making: Interrelationships and Changes With Age," Behavioral Science, 6 (1961), 23-36.

²N. Kogan and M. A. Wallach, "The Effect of Anxiety on Relations Between Subjective Age and Caution in an Older Sample," in Psychopathology of Aging, ed. by P. H. Hoch and J. Zubin (New York: Grune and Stratton, 1961).

³M. A. Wallach, N. Kogan, and D. J. Bem, "Group Influence on Individual Risk Taking," Journal of Abnormal and Social Psychology, 65 (1962), 75-86.

⁴N. Kogan and M. A. Wallach, Risk Taking: A Study in Cognition and Personality (New York: Holt, Rinehart and Winston, 1964), 26.

in a particular decision area. Levels of probability provided for the success of the risky alternative are 1 in 10, 3 in 10, 5 in 10, 7 in 10, and 9 in 10. If a subject refuses to gamble on the risky alternative, no matter what the probabilities, a score of 10 in 10 is assigned to the item. Higher scores are associated with greater conservatism.

The range of scores on the Choice-Dilemmas can be 12 to 120, with mean scores typically in the high 60's. Authors of the Choice-Dilemma instrument have reported corrected split-half reliabilities ranging from .53 to .80 for various samples¹ and test-retest reliabilities (one week) of .78 and .82.² In terms of validity, relationships with other risk-taking behaviors,³ and other types of risk-related phenomena⁴ have been demonstrated.

The Experimental Instrument

The experimental instrument is patterned after the Kogan and Wallach procedure, except that the dilemmas of choice are all concerned with the decision making of teachers. The Kogan and Wallach instrument is a general test of risk taking. Its items are drawn from many different situations of life. On the other hand, the experimental instrument

¹Kogan and Wallach, Risk Taking; and Wallach and Kogan, "Aspects of Judgment."

²Wallach, Kogan and Bem, "Group Influence."

³Kogan and Wallach, Risk Taking.

⁴Kogan and Wallach, "Effect of Anxiety;" and Wallach and Kogan, "Aspects of Judgment."

purports to measure risk taking in educational situation dilemmas.

The 12 items of the experimental instrument were selected by the following procedure. Two forms of the experimental instrument were constructed, each form containing 12 items. Each form was administered to a randomly selected sample of Education 200 students winter term of the 1969-1970 school year. Form I was given to Sample I (n=69); Form II was given to Sample II (n=68). For each Form, the intercorrelations between items and total score on that form were calculated. Then the intercorrelations for all 24 items were ranked, the 12 items having the highest intercorrelation with the associated total score being chosen for inclusion in the experimental instrument. Appendices D and E contain the item pool and the experimental instrument.

The item pool was administered in two forms because of the length of the test. The CDC 3600 computer at Michigan State University was used to calculate the Pearson product-moment correlation coefficients for both sets of 12 items in the pool. Those items which contributed most to the variance of the total score on each form became the experimental instrument. The intercorrelation matrix was calculated in order to select more homogeneous items for the instrument. Six items were selected from each form. Table 3.1 shows the correlations of the items in the pool with their corresponding total score. Those items with a correlation coefficient of .453 and above became the experimental instrument.

Table 3.1.--Pearson product-moment correlations of item pool with associated total scores.

Items 1-12	Correlation With Associated Total Scores	Items 13-24	Correlation With Associated Total Scores
*1	.57147	13	.45174
2	.35279	*14	.45749
*3	.45305	15	.38749
*4	.55677	16	.27798
5	.15951	17	-.05445
*6	.49538	*18	.52141
*7	.55269	*19	.51254
8	.41926	20	.43220
9	.09474	21	.26102
10	.22333	*22	.48699
*11	.48706	*23	.54484
12	.35249	*24	.52781

*Selected for experimental instrument.

Reliability Studies

In order to have a still more accurate estimate of the reliability of the instrument, another Bastat routine was run on the Michigan State University CDC 3600 computer. The responses of the subjects of this study (Education 200, spring term) on both the Kogan and Wallach and the experimental instrument were analyzed. The correlation of the items of both instruments with their total score is presented in Table 3.2.

A separate analysis of variance was also undertaken to compute a Hoyt reliability coefficient. The Hoyt test of reliability is an estimate by analysis of variance of the

average reliability of all possible split-halves. The results are identical with the Kuder-Richardson formulation. The Hoyt reliability coefficient is computed by the following formula:

$$r_{tt} = \frac{MS_s - MS_{si}}{MS_s}$$

Table 3.2.--Item correlation with total score for both instruments.

Items	Experimental	Kogan and Wallach
1	.43102	.46909
2	.57108	.57731
3	.47105	.46319
4	.43860	.42912
5	.59497	.38016
6	.49240	.44183
7	.52646	.52161
8	.51264	.47092
9	.57823	.54812
10	.55263	.53434
11	.55642	.55356
12	.45439	.37954

Tables 3.3 and 3.4 contain the mean squares for subjects, and items and subjects by item for both instruments. The result for the Kogan and Wallach instrument was $r_{tt} = .71$. The reliability of the experimental instrument was higher ($r_{tt} = .77$).

Table 3.3.--Mean squares for subjects and items on the Kogan and Wallach instrument.

Sources	SS	df	MS
Subjects	5,303	278	19.07
Items	4,221	11	383.78
Subjects By Items	17,169	3,058	5.61

Table 3.4.--Mean squares for subjects and items on the experimental instrument.

Sources	SS	df	MS
Subjects	8,457	294	28.77
Items	1,127	11	102.54
Subjects By Items	21,513	3,234	6.65

Procedures of Test Administration

The almost exclusive reliance on the pretest-post-test design in research on risk taking is rather curious. The pretest is not indispensable to experimental method.¹ Indeed, the alternative design used in this thesis offers the additional advantage of not having the obtained results depend upon the sensitizing effect of a pretest. This confounding effect of a pretest and post-test administered to the same subject is important to guard against in view of Bateson's hypothesis that merely increasing the familiarity with the

¹D. T. Campbell and J. C. Stanley, Experimental and Quasi-Experimental Designs for Research (Chicago: Rand McNally, 1963).

elements relevant to a decision on the Choice-Dilemmas will increase the riskiness of that decision.¹

In order to avoid the contamination of practice from taking a pretest, it was decided that no subject would take more than one test, one time. The Education 200 population for spring term of the 1969-1970 school year was randomly assigned into fourths. The first administration (1st week) of the Kogan and Wallach test was given to one-fourth; another fourth received the experimental instrument in the first week of class. A similar procedure was used for the second administration of the instrument to the remaining naïve two-fourths. A diagram of this procedure is contained in Table 3.5.

Table 3.5.--Hypothesized proportion of subject responses.

	Kogan and Wallach	Experimental
First Administration	1/4	1/4
- - - - -		
Second Administration	1/4	1/4

A table of random numbers was used to stack the two instruments and two unrelated questionnaires. Each instructor was given a pile of instruments to hand out to his students as they took their seats in the classroom on the first day of class. A cover sheet requesting the student's name was

¹N. Bateson, "Familiarization, Group Discussion, and Risk Taking," Journal of Experimental Social Psychology, 2 (1966), 119-129.

stapled to both instruments used in this study and the unrelated questionnaires. This was done to preserve the anonymity of the subject so that a more honest and frank response was engendered. These cover sheets were separated from the questionnaires and tests by the subjects during the class period prior to returning them to the instructor. The cover sheets from the two unrelated questionnaires served as a list of students who had not taken either the Kogan and Wallach general test of risk taking or the experimental, education-specific test. In the last week of the ten week term, these cover sheets were randomly stapled either to the Kogan and Wallach or the experimental instruments and were administered for the second time.

Because some of the subjects who were present at the first administration were absent at the second, a certain amount of mortality exists. The date of the second administration was not announced to the students. There is no reason to suspect that the mortality is related directly or indirectly to the subjects' risk-taking propensities. Table 3.6 shows the actual number of subjects who responded to the instrument.

Table 3.6.--Actual number of subject respondents.^a

	Kogan and Wallach	Experimental
First Administration	195	162
- - - - -	- - - - -	- - - - -
Second Administration	100	117

^aTotal N = 574.

Testable Hypotheses

The following are the testable forms of the hypotheses that were presented in Chapter I. They are stated in the null form.

Hypothesis I.--There will be no difference between scores on the first administration and the second administration of the experimental instrument.

Hypothesis II.--There will be no difference between scores on the first administration and the second administration of the Kogan and Wallach instrument.

Hypothesis III.--There will be no difference between the gain scores from the first to the second administration when the experimental and the Kogan and Wallach instrument are compared.

Hypothesis IV.--There will be no difference between classes for the comparison of the Kogan and Wallach instrument with the experimental instrument at the first administration.

Hypothesis V.--There will be no difference between gain scores from the first administration to the second administration in the special classes when the Kogan and Wallach and the experimental instrument are compared.

Hypothesis VI.--There will be no difference between males and females on the experimental instrument.

Hypothesis VII.--There will be no difference between males and females on the Kogan and Wallach instrument.

Hypothesis VIII.--There will be no difference between the difference scores of males and females when both instruments are compared.

Analysis

In order to test the statistical hypotheses the Finn Analysis of Variance was computed. This four-way analysis of variance procedure separated the four fixed factors into 16 unequal cells. Comparisons between appropriately weighted cell means were calculated and corresponding probability levels were determined so that the null hypotheses could be tested.

The analysis of variance was the most powerful, appropriate model to test the hypotheses because this procedure allowed for reordering of the basis vectors to achieve a more accurate estimate of their variance and because the nature of the data collected seemed to warrant the necessary assumptions.

The assumptions of the analysis of variance procedure and the reasons for accepting them follow:

Normality

A Bastat routine run on the sample data on the Michigan State University CDC 3600 computer indicated that the distributions of scores for both instruments approached normality. Skewness and kurtosis computations are given in Table 3.7.

Ideal skewness and kurtosis would be 0 and +3, respectively. But even if these data didn't indicate normality, the relatively large number of subjects in the sample ($N=574$)

would lead one to assume it because of the Central Limit Theorem. As Hays puts it:

Inferences made about means that are valid in the case of normal populations are also valid even when the forms of the population distributions depart considerably from normal, provided that the n in each sample is relatively large.¹

Table 3.7.--Skewness and kurtosis of sample on experimental and Kogan and Wallach instruments.

	Skewness	Kurtosis
Kogan and Wallach	-0.0514	3.4267
Experimental	0.1593	2.7959

Independence of Error Components

The design of this study warrants this assumption. In no case were there any repeated measures on subjects with either instrument. Each individual was given only one test. All responses were non-group responses. None of the classes discussed the items. It is doubtful that any interaction among subjects contaminated the findings in any systematic manner. Subjects were nested within all levels of all factors.

Equality of Variance

The variances of each cell in the sample were computed and were found not to differ significantly. The fact that

¹W. Hays, Statistics (New York: Holt, Rinehart and Winston, 1963), 378.

the smaller variances were associated with smaller cell n lends additional support for accepting this assumption.

Summary

The purpose of this chapter has been to explain the procedures and instrumentation used to fulfill the objectives of this study.

The sample and some of its characteristics were discussed, as was the Education 200 experience which the sample underwent during the developmental period. The two instruments used in this study were then considered, along with a presentation of their development, use, and reliability.

The procedures used in administering the instruments to the sample were then reviewed and reasons for the particular methodology were given.

The final section of this chapter was devoted to an explanation of the model used to test the hypotheses presented here and in Chapter I. The assumptions of the nature of the data appropriate to this model were also presented.

The following chapter will be devoted to the presentation and analysis of the data gathered in this study.

CHAPTER IV

ANALYSIS OF THE DATA

The data collected and analyzed by the procedures described in Chapter III are presented in this chapter. Each of the eight statistical hypotheses presented in Chapter III is analyzed separately.

In order to test all eight hypotheses a Finn analysis of variance was performed on the data. The four basic factors (instrument, administration, sex, class) and their interactions were reordered so that each first, second, or third order interaction of interest would appear last in the program. This reordering allowed for a more accurate estimate of mean squares. The omnibus analysis of variance table for all interactions of interest is available in Table 4.1.

It was decided that the .05 alpha level of significance would be used throughout the analysis. Further investigation into what was the nature of the significant interactions presented in Table 4.1 necessitated the use of Sheffé post-hoc comparison tests for significance. The null hypotheses were rejected if the specific Sheffé comparison did not include zero in its confidence interval at the .05 alpha level.

Table 4.1.--Analysis of variance of interactions of interest.^a

Interaction	Mean Square	"F"	"p"
Instrument	81.6667	42.2954	.0001
Administration	0.1170	.0606	.8057
Sex	12.3695	6.4062	.0117
Class	8.8192	4.5675	.0331
Administration by Instrument	9.9009	5.1277	.0240
Sex by Instrument	0.2881	0.1492	.6995
Class by Instrument	2.7020	1.3992	.2374
Administration by Class by Instrument	4.2597	2.2061	.1381
Error (IASC) ^b	1.9308		

^aAll tests run with $df = 1,558$

^bI=Instrument; A=Administration; S=Sex; C=Class.

In order to compute the necessary Sheffé comparisons, cell means and their respective n's were obtained. The 16 cell matrix of this design is presented in Table 4.2.

Lower scores indicate riskier choices. A consideration of the eight statistical hypotheses follows.

Null Hypothesis 1

There will be no difference between scores for the first administration and the second administration on the experimental instrument.

The analysis of this hypothesis and hypotheses 2 and 3 necessitated the computation of weighted means for both instruments and both administrations. Table 4.3, which follows, serves as a summary of this computation.

Table 4.2.--Cell identification, frequencies and mean item responses.^a

Class	Sex	Experimental Instrument		Kogan and Wallach Instrument		Total
		Admin.I	Admin.II	Admin.I	Admin.II	
REGULAR	MALE	① $\bar{X}=4.027$ n=73	⑤ $\bar{X}=4.368$ n=38	⑨ $\bar{X}=5.141$ n=64	⑬ $\bar{X}=5.500$ n=41	$\bar{X}=4.697$ n=216
	FEMALE	② $\bar{X}=4.786$ n=103	⑥ $\bar{X}=4.395$ n=49	⑩ $\bar{X}=5.623$ n=80	⑭ $\bar{X}=5.293$ n=57	$\bar{X}=5.051$ n=289
SPECIAL	MALE	③ $\bar{X}=3.259$ n=7	⑦ $\bar{X}=4.483$ n=5	⑪ $\bar{X}=5.187$ n=10	⑮ $\bar{X}=4.878$ n=13	$\bar{X}=4.584$ n=39
	FEMALE	④ $\bar{X}=3.625$ n=12	⑧ $\bar{X}=3.895$ n=8	⑫ $\bar{X}=5.635$ n=8	⑯ $\bar{X}=5.306$ n=6	$\bar{X}=4.458$ n=34
TOTAL:		$\bar{X}=4.375$ n=195	$\bar{X}=4.349$ n=100	$\bar{X}=5.406$ n=162	$\bar{X}=5.320$ n=117	

^aLower means indicate riskier choices.

Table 4.3.--Weighted means for instrument by administration.

Instrument	Admin. I	Admin. II	Admin. I-Admin. II
Experimental	$\bar{X}=4.375$	$\bar{X}=4.349$	.026
Kogan and Wallach	$\bar{X}=5.406$	$\bar{X}=5.320$	.086
ψ	-1.031	- .971	.06

The .026 difference between the first and second administration of the experimental instrument was found to be not significant. Null hypothesis 1 could not, therefore, be rejected.

Null Hypothesis 2

There will be no difference between scores for the first administration and the second administration on the Kogan and Wallach instrument.

Referring to the previous table, the difference between administrations is .086. This difference was also subjected to the Scheffé procedure at the .05 alpha level and found to be not significant. There were no grounds for rejecting null hypothesis 2.

Null Hypothesis 3

There will be no difference between the gain from the first to the second administration when the experimental and the Kogan and Wallach instruments are compared.

From Table 4.3, the difference between the gain scores on the two instruments is .06. This difference was found to be not significant by the Scheffé method.

This result was surprising because the analysis of variance indicated that the instrument by administration interaction was significant at the .02 level and the first order interaction of the instruments themselves was significant at the .0001 level! (Table 4.1)

Further probing with the Scheffé comparisons revealed that the significant differences were within administrations and between instruments. Both the -1.031 difference at administration 1 and the -.971 difference at administration 2 were found to be significant.

So that a still more accurate representation of the instrument by administration interaction could be ascertained, another analysis of variance was run on the CDC 3600 computer. This analysis concerned only the instrument/administration interaction. Mean scores for the cells were exactly the same as previously computed. Scheffé comparisons for the differences among the cells were also made. These Scheffé comparisons were made with 3,571 degrees of freedom rather than 1,558 because the data were reconstructed into a two-way analysis of variance. No change in the previously cited conclusion was made as a result of the new computations. Table 4.4 shows all simple comparisons for the instrument by administration interaction.

Table 4.4.--Simple comparisons for instrument by administration interaction (IA).

		Experimental		Kogan and Wallach	
		Admin. 1	Admin. 2	Admin. 1	Admin. 2
EXPERIMENTAL		4.375	4.349	5.406	5.320
	Admin. 1 4.375		-.026	1.031 ^a	.945 ^a
	Admin. 2 4.349	.026		1.057 ^a	.971 ^a
KOGAN AND WALLACH	Admin. 1 5.406	-1.031 ^a	-1.057 ^a		-.086
	Admin. 2 5.320	-.945 ^a	-.971 ^a	.086	

^aSignificant at .0005.

A summary of the Scheffé comparisons for the first three null hypotheses is presented in Table 4.5. A visual presentation of the interactions considered with these hypotheses is presented in Figure 4.1.

Table 4.5.--Scheffé comparisons for the instrument by administration interaction (IA).^a

Comparison	ψ	$S \sqrt{\text{Var}(\psi)}$	P
$EA_1 - EA_2$	.026	.333	NS
$KA_1 - KA_2$	.086	.322	NS
$(EA_1 - EA_2) - (KA_1 - KA_2)$	.060	.464	NS
$EA_1 - KA_1$	-1.001	.285	<.05
$EA_2 - KA_2$	-.971	.365	<.05

^aAll comparisons made at the .05 alpha level.

Key: E = Experimental
K = Kogan and Wallach
A = Administration

Null Hypothesis 4

There will be no difference between classes for the comparison of the Kogan and Wallach with the experimental instrument at the first administration.

To analyze this hypothesis weighted means for the two classes of Education 200 for both instruments on the first administration were computed. These means are presented in Table 4.6.

The difference between the two classes or sections of Education 200 for the Kogan and Wallach instrument was .023. The corresponding difference for the experimental instrument

Figure 4.1.--Instrument by administration interaction (IA).

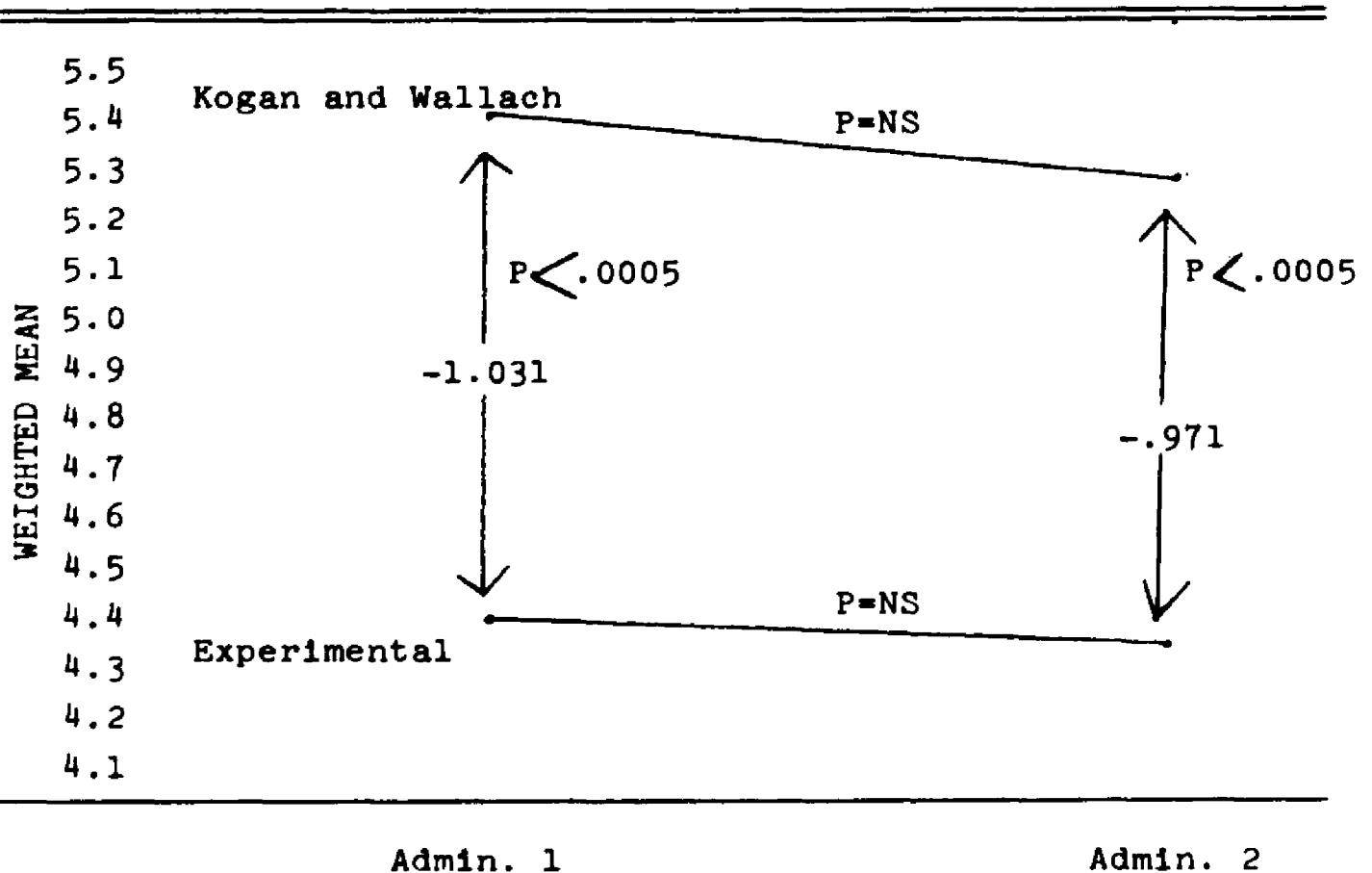


Table 4.6.--Weighted means for instrument by class interaction at the first administration.

Instrument	Regular	Special	Regular-Special
Kogan and Wallach	5.409	5.386	.023
Experimental	4.471	3.487	.984
			.961

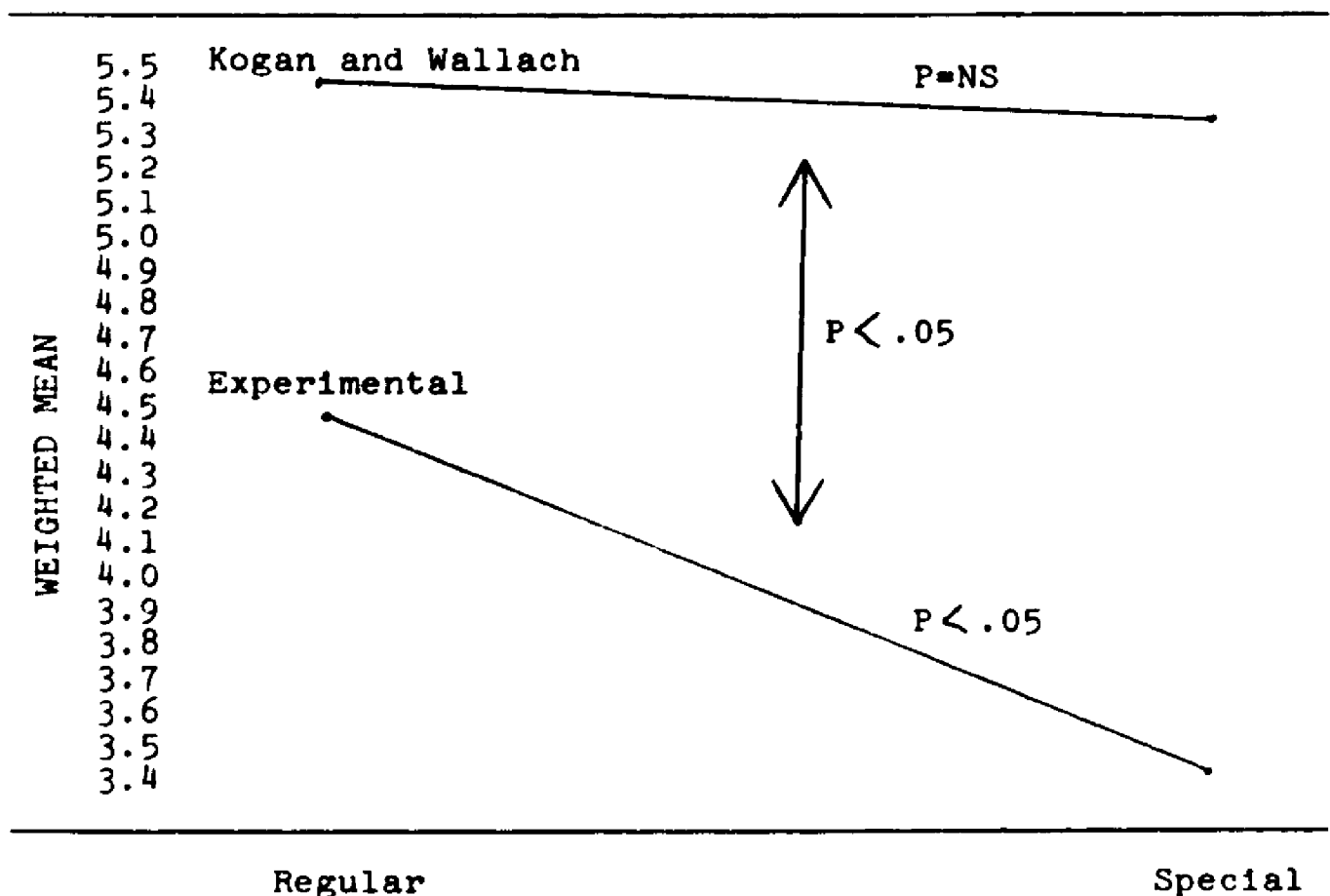
was .984. The difference between these scores (-.961) was analyzed with the Scheffé procedure and found to be significant at the .05 alpha level. Therefore, null hypothesis 4 was rejected and the following hypothesis accepted:

H_4 : At the first administration there is more of a difference in scores between classes with the experimental instrument than the Kogan and Wallach instrument.

This finding was explored further with the Scheffé technique. The differences between classes on each instrument at the first administration were examined. The Kogan and Wallach difference of .023 was not significant at the .05 level. The difference in classes between the instruments is due to the riskier responses of the special classes as opposed to the regular classes on the experimental instrument.

A graph of the interaction of instrument by class at the first administration is available in Figure 4.2.

Figure 4.2.--Instrument by class interaction at the first administration.



Null Hypothesis 5

There will be no difference between gain scores from the first administration to the second administration in the special classes when the Kogan and Wallach and the experimental instruments are compared.

Data for this hypothesis were gathered by computing the weighted means for the administration by class by instrument interaction. Table 4.7 contains the results of this computation.

Table 4.7.--Weighted means for instrument by administration by class interaction (IAC).

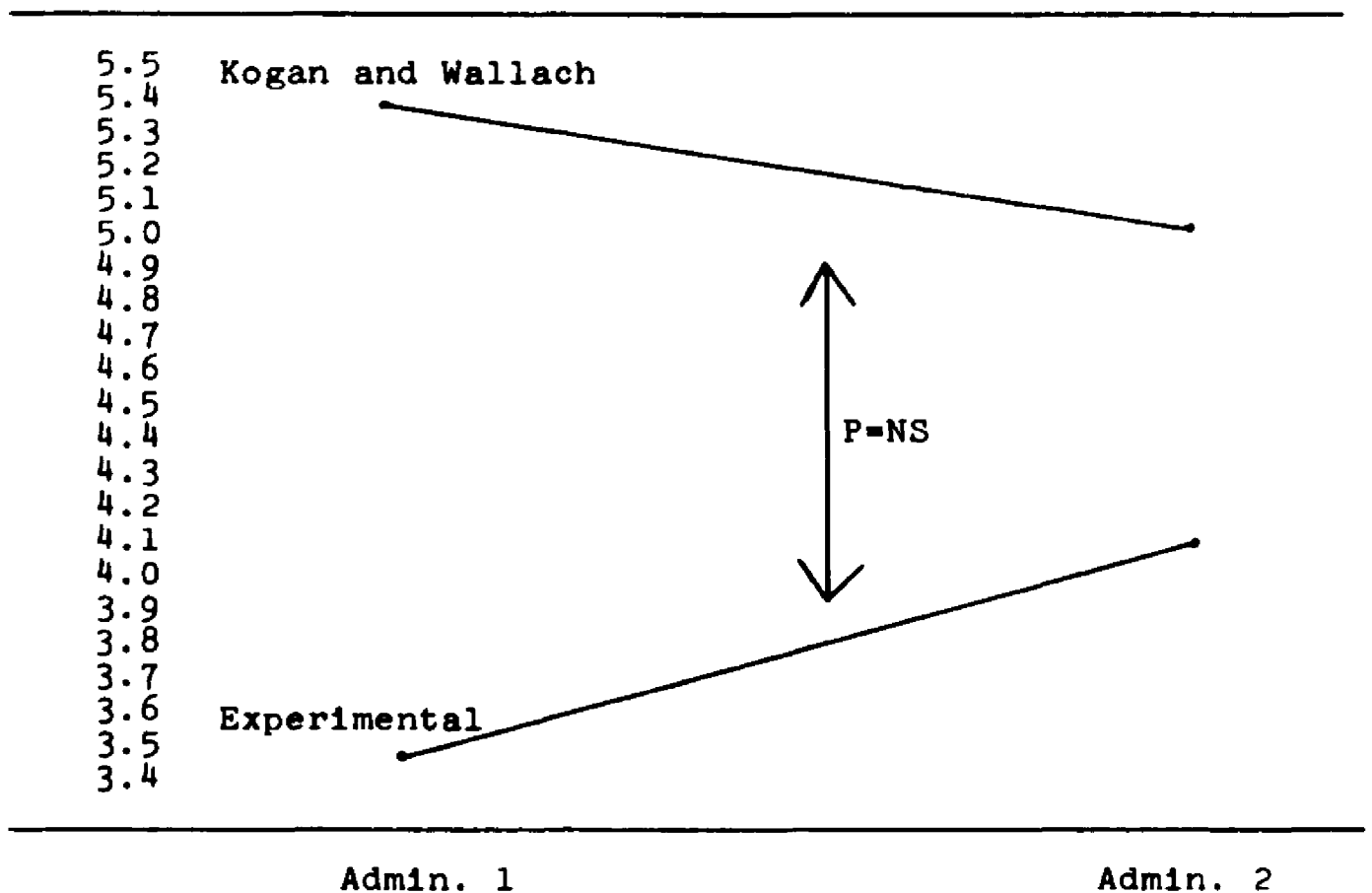
Instrument	Administration 1			Administration 2		
	Reg.	Spec.	Reg.- Spec.	Reg.	Spec.	Reg.- Spec.
Kogan and Wallach	5.409	5.386	.023	5.380	5.013	.267
Experimental	4.471	3.487	.984	4.383	4.122	.261
ψ			-.961			.006

The difference between the Kogan and Wallach special classes across administrations was .373. The corresponding difference for the experimental instrument was calculated as -.635. The difference between these scores is 1.008. The Scheffé comparison established that this difference was not significant at the .05 level. Consequently, the null hypothesis could not be rejected.

A graphic representation of the difference in gain scores in the special classes from the first to the second

administration is shown in the following figure. The closer the lines are to being parallel the less significant is the interaction. Although the lines on the graph representing the instruments seem to depart considerably from parallelism, they represent the smallest cell n's in the study. Hence, the Scheffé confidence interval at the .05 level (1.33) is rather large and the difference is not significant.

Figure 4.3.--Instrument by administration interaction for special classes.



A summary of the Scheffé comparisons used to test hypotheses 4 and 5 is presented in tabular form on the following page.

Table 4.8.--Scheffé comparisons for the instrument by administration by class interaction (IAC).^a

Comparison	ψ	$s \sqrt{\text{Var}(\psi)}$	p
$(KC_1 - KC_2) - (EC_1 - EC_2)$	-.961	.946	<.05
$KA_1C_1 - KA_1C_2$	.023	.672	NS
$EA_1C_1 - EA_1C_2$	.984	.649	<.05
$(KC_2A_1 - KC_2A_2) - (EC_2A_1 - EC_2A_2)$	1.008	1.330	NS

^aAll comparisons made at the .05 alpha level.

Key: E = Experimental C_1 = Regular Classes
 K = Kogan and Wallach C_2 = Special Classes
 A = Administration

Null Hypothesis 6

There will be no difference between males and females on the experimental instrument.

In order to test null hypotheses 6, 7 and 8 the weighted means for the interaction of the instrument by sex factors were calculated. They are available in the following table.

Table 4.9.--Weighted means for instrument by sex interaction (IS).

Instrument	Males	Females	Males-Females
Experimental	4.107	4.552	-.445
Kogan and Wallach	5.233	5.486	-.253
ψ			-.192

It can be readily observed that males tended to respond in a more risky manner on both instruments. To test null hypothesis 6, the observed difference (-.445) was subjected to the Scheffé procedure at the .05 level to see if that difference was significant. The Scheffé confidence interval called for $\pm .321$. Therefore, the observed difference was judged significant at the .05 level. Null hypothesis 6 was rejected and the following alternative hypothesis was accepted:

H_6 : Males score riskier than females on the experimental instrument.

Null Hypothesis 7

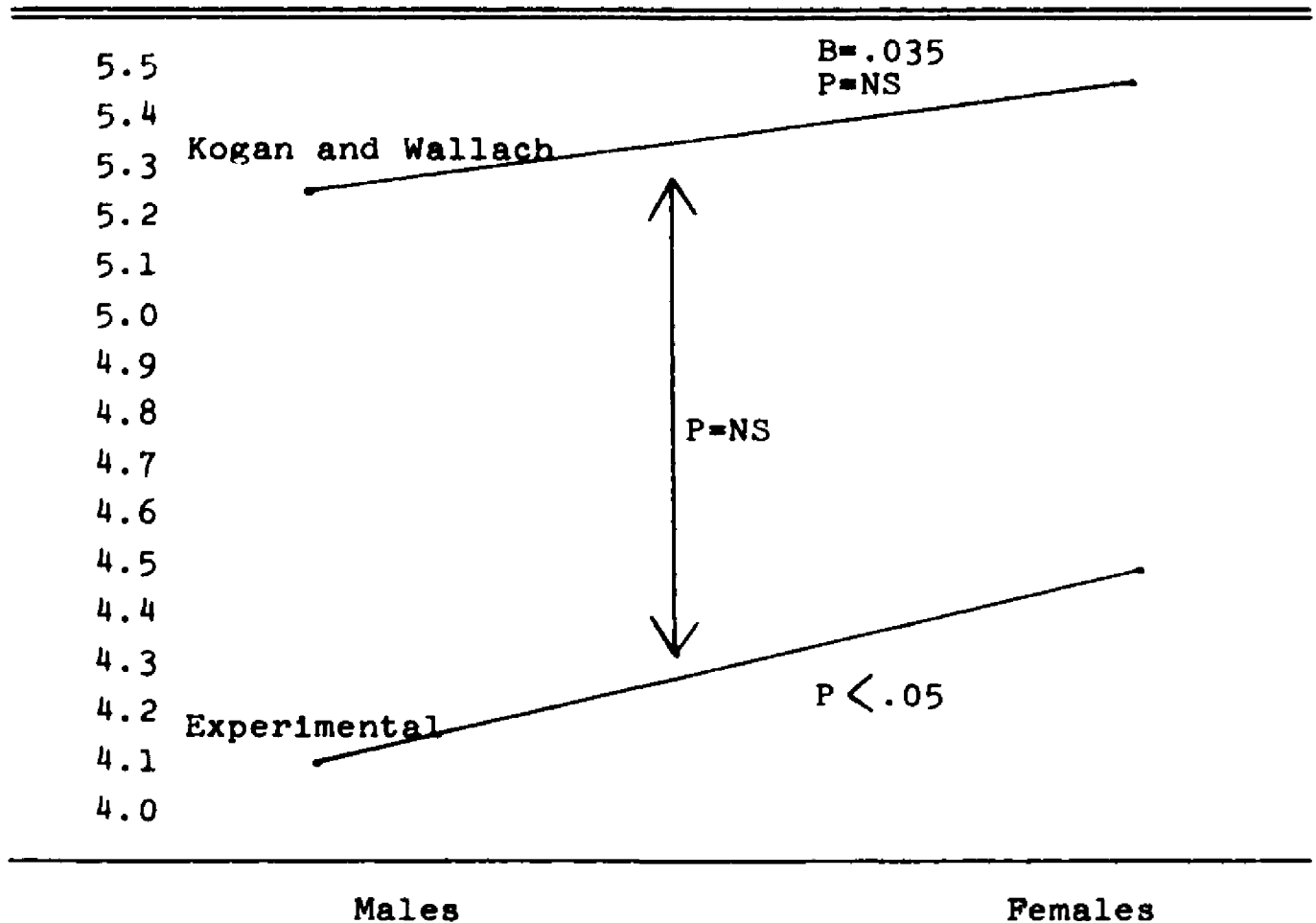
There will be no difference between males and females on the Kogan and Wallach instrument.

The observed difference (-.253) was also set in the Scheffé confidence interval and found to be not significant. The null hypothesis was not rejected.

Figure 4.4 is a graph of the interaction of sex with both instruments.

The reader will remember that null hypothesis 7 is also the hypothesis of interest. Because the null hypothesis was not rejected does not indicate that it can be accepted. So that, if it was warranted, a stronger statement could be made in support of the hypothesis of interest, a power test was run. This was possible because the analysis of variance procedure had previously calculated the error term. It was decided that a difference of 1.0 in the mean item score would

Figure 4.4.--Instrument by sex interaction (IS).



represent a real difference between males and females on the Kogan and Wallach instrument. ϕ was computed for the non-centrality parameters of 1.0 and .5 and at alpha levels of .05 and .01. Since 1.0 was decided as the difference and .05 the alpha level, the power was computed at .965. The null hypothesis could be accepted then at the .035 level, given the acceptance of 1.0 as a meaningful difference. It appears, then, that no real difference exists between males and females' scores on the Kogan and Wallach instrument. A summary of the findings of the power test for null hypothesis 7 is presented in Table 4.10.

Table 4.10.--Power test for null hypothesis 7.

Alpha Levels	Non-Centrality Parameters	
	1.0	.5
.05	.965	.40
.01	.86	.22
$\delta = 1.07$ at .5 difference.		
$\delta = 2.15$ at 1.0 difference.		

Null Hypothesis 8

There will be no difference between the difference scores of males and females when both instruments are compared.

As Table 4.9 reveals, the difference between the difference scores on sex is $-.192$. This value was tested for significance by the Scheffé method and found to be not significant.

A summary of the Scheffé comparisons for the tests of hypotheses 6, 7 and 8 is presented in Table 4.11.

Table 4.11.--Scheffé comparisons for the instrument by sex interaction (IS).^a

Comparison	ψ	$S\sqrt{\text{Var}(\psi)}$	p
EM-EF	$-.445$	$.321$	$<.05$
KM-KF	$-.253$	$.327$	NS
(EM-EF)-(KM-KF)	$-.192$	$.458$	NS

^aAll comparisons made at the .05 alpha level.

Key: E = Experimental M = Male
 K = Kogan and Wallach F = Female

Summary

In this chapter the hypotheses stated in Chapter I were stated in their null form and analyzed. Those which could be rejected in the null form were restated as directional, or delta hypotheses. A summary of the results follows.

Table 4.12.--Analysis of variance of interactions of interest.^a

Interaction	Mean Square	"F"	"p"
Instrument	81.6667	42.2954	.0001
Administration	0.1170	.0606	.8057
Sex	12.3695	6.4062	.0117
Class	8.8192	4.5675	.0331
Administration by Instrument	9.9009	5.1277	.0240
Sex by Instrument	0.2881	0.1492	.6995
Class by Instrument	2.7020	1.3992	.2374
Administration by Class by Instrument	4.2597	2.2061	.1381
Error (IASC) ^b	1.9308		

^aAll tests run with df = 1,558.

^bI=Instrument; A=Administration; S=Sex; C=Class.

Null Hypothesis 1.--There will be no difference between scores for the first administration and the second administration on the experimental instrument.

The difference of .026 in the weighted mean item response was found to be not significant at the .05 level. The hypothesis was not rejected.

Null Hypothesis 2.--There will be no difference between scores for the first administration and the second administration on the Kogan and Wallach instrument.

The observed difference of .086 in the weighted mean item response was subjected to the Scheffé procedure and found not significant at the .05 level.

Null Hypothesis 3.--There will be no difference between the gain from the first to the second administration when the experimental and the Kogan and Wallach instruments are compared.

The observed difference of .06 was not significant at the .05 level. Analysis of variance found the interaction of instrument and administration to be significant at the .02 level and instrument alone to be significant at the .0001 level. Scheffé post-hoc tests revealed that all simple comparisons of the two instruments regardless of administration were significant at the .0005 level. It appears that subjects responded differently on the two instruments but not differently at the two administrations.

Null Hypothesis 4.--There will be no difference between classes for the comparison of the Kogan and Wallach with the experimental instrument at the first administration.

The observed difference between the two instruments was -.961. This difference was found to be significant at the .05 level. The following alternative hypothesis was accepted.

H_4 : At the first administration there is more of a difference in scores between classes with the experimental instrument than the Kogan and Wallach instrument.

It was also found that at the first administration the special classes of Education 200 scored significantly (.05)

riskier than regular classes on the experimental instrument but not on the Kogan and Wallach instrument.

Null Hypothesis 5.--There will be no difference between gain scores from the first administration to the second administration in the special classes when the Kogan and Wallach and the experimental instruments are compared.

The difference (1.008) was tested with the Scheffé post-hoc procedure at alpha .05 and found to lack significance. This difference represented the smallest cell n's in the study. Consequently, the Scheffé confidence interval was the largest at the .05 level. There is some question in the author's mind concerning the effect of an increased sample. But nevertheless, the null hypothesis could not be rejected at the .05 level.

Null Hypothesis 6.--There will be no difference between males and females on the experimental instrument.

The observed difference (.445) was judged significant at the .05 level and the following alternative hypothesis was accepted:

H_6 : Males score riskier than females on the experimental instrument.

Null Hypothesis 7.--There will be no difference between males and females on the Kogan and Wallach instrument.

This null hypothesis is also the hypothesis of interest. The observed difference was found to be not significant at .05. The author was interested in making a stronger statement about this hypothesis if it was warranted. A power test was run to determine Beta. For the non-centrality parameter of 1.0 and

alpha level of .05 the power was calculated at .965. Beta, the probability of a Type II error, was therefore .035. The null hypothesis was accepted at the .035 level.

Null Hypothesis 8.--There will be no differences between the difference scores of males and females when both instruments are compared.

The observed difference (-.192) was tested for significance by the Scheffé method at the .05 level and found to be not significant. Null hypothesis 8 could not be rejected.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

This final chapter will be devoted to a summary of the study, followed by a discussion of the conclusions generated from the analysis of the data, and concluded with recommendations for further research.

Summary

Purposes of the Study

1. The basic purpose of this study was to develop an instrument to measure risk taking in educational situations and to compare it to a general test of risk taking (Kogan and Wallach's Choice-Dilemmas) to see in what ways the two instruments differed.
2. Closely allied with this purpose was the desire to ascertain if prospective teachers scored differently on the two instruments.
3. The study additionally sought to determine if there existed significant differences between:
 - a. The first and second administrations of the instrument.

- b. Special classes concentrating on value decisions in education and regular educational psychology classes.
- c. Male and female subjects.
- d. Interactions of the instruments with the three other basic factors of the study (administration, class, sex).

In order to explore these related purposes, eight hypotheses were developed. These will be discussed later in this chapter under Conclusions.

Limitations of the Study

1. Only students in the first course of the teacher training sequence at Michigan State University were subjects.
2. The study does not consider other situational or personality variables which might affect risk taking.
3. The developmental period (Education 200) is not the only input which could affect the risk-taking propensities of the subjects.

Review of the Literature

A review of the literature for this study consisted of an analysis of the research done on risk taking in terms of environmental or situational factors, individual or organismic factors, and social or group factors.

The review indicated that further study of risk taking should include a consideration of the unique situational factors and value alternatives inherent in specific decision-making tasks. Before anything of importance can be said

about the risk taking of professional educators, the unique aspects of educational decision making need to begin to be investigated.

Design of the Study

The Sample.--Students enrolled in Education 200 at Michigan State University, spring term, 1969-1970, were the subjects of this study.

Instrumentation.--The Kogan and Wallach Choice-Dilemmas and an experimental instrument patterned after that instrument, but with educational dilemmas, were the two instruments of the study. The Kogan and Wallach general test of risk taking had a Hoyt reliability coefficient of $r_{tt} = .71$. The experimental instrument's reliability was computed at $r_{tt} = .77$.

Procedure.--The subjects were randomly assigned into different fourths of the total Education 200 population. No subject took more than one instrument, one time. Besides instrument and administration, two other factors were considered--sex and class. Subjects were nested in all levels of all factors.

Analysis.--The eight statistical hypotheses were tested by analysis of variance and appropriate Scheffé comparisons.

Conclusions

The following conclusions have been drawn from the findings:

1. Large (295,279), randomly chosen groups of the same population (Education 200) score riskier on the

experimental instrument than the Kogan and Wallach instrument ($P < .0001$) regardless of administration.

2. No significant differences were found between administrations on either instrument.

3. At the first administration, special classes scored significantly riskier ($P < .05$) than regular classes on the experimental instrument.

4. No significant differences were found between classes at the first administration on the Kogan and Wallach instrument.

5. At the first administration there is more of a difference ($P < .05$) in scores between classes with the experimental instrument than the Kogan and Wallach instrument.

6. No significant differences were found between gain scores from the first administration to the second administration in the special classes when the Kogan and Wallach and the experimental instruments were compared.

7. Special classes score riskier than regular classes ($P < .03$).

8. Males score riskier than females ($P < .01$).

9. Males score riskier than females on the experimental instrument ($P < .05$).

10. No differences exist between males and females on the Kogan and Wallach instrument ($B = .035$, with a non-centrality parameter of 1.0).

11. No significant differences were found between the difference scores of males and females when both instruments were compared.

Implications

It seems apparent that the instruments behaved differently in the study ($P > .0001$). This is consistent with the theoretical framework of the study. Risk decisions in educational situations are different than the general risk decisions. It would be interesting to explore further this difference between the instruments. Further research in this area should certainly establish the correlation of both instruments on the same subjects. But caution must be exercised in interpreting that correlation. If it is very high, which seems doubtful from the results of this study, then perhaps the instruments are tapping the same propensity. In that case, there would be no need for the experimental instrument. If the correlation between the instruments is very low, it would leave doubts about its validity as a measure of risk taking.

Analysis of the distributions of scores on both instruments is revealing, in that they are remarkably similar. Both distributions are almost perfectly normal. Skewness and kurtosis figures are available in Table 3.7. It appears that both instruments spread scores in the same manner. The experimental instrument's relatively high reliability for an instrument of this type ($r_{tt} = .77$) lends credence to its continued use in exploring the differences in general and educationally specific risk taking.

The data indicate a lack of significant differences between administrations on either instrument. Of course, mere failure to reject a null hypothesis is not the same as

accepting it. But it raises some doubt about the effectiveness of the Education 200 developmental period on risk taking. Both instruments measured a change toward greater risk taking (.026, .086), but that change was not significant. Perhaps, further research with a control group will help to clarify the effect of a specific treatment on risk taking, both in general and in educational decisions.

The difference between special and regular classes at the first administration was an unexpected result of this study. It was assumed that the decision concerning who would go into special and regular classes of Education 200 would not cause any significant differences in risk taking between the classes.

It now seems plausible that demand characteristics have entered the study. It is possible that subjects, because they were picked for special classes, thought they should respond in a "special" manner on the instruments. This seems even more likely in light of the finding that significant differences between special and regular classes existed at the first administration on the experimental instrument but not the Kogan and Wallach instrument. It seems reasonable to assume that the instrument more directly related to the teaching situations would elicit demand characteristics in a classroom of prospective teachers. Future researchers might do well to guard against demand characteristics in their studies.

The whole question of demand characteristics and the finding of significant difference at the first administration

between regular and special classes makes suspect both the finding of a significant difference between special and regular classes ($P < .03$) and the finding of no difference in gain scores in the special classes when the two instruments are compared.

Another issue confounding this interpretation is the fact that between administrations of the instruments a student strike was called. Some students stayed out of classes for the rest of the term. It is difficult to measure what effect this strike had on the subjects, but it seems plausible that a selection process was operant. It is reasonable to assume that more high risk students would not be present for the second administration of the instruments than low risk takers. Students who stayed away from classes during the strike took the risk of losing credit for their courses. However, analysis of the number of subjects absent at the second administration because of the strike indicates a small minority.

Males score riskier than females in the study ($P < .01$). Although males score riskier than females on the Kogan and Wallach instrument, the difference was not significant ($B = .035$). However, on the experimental instrument males were significantly riskier than females ($P < .05$).

These findings are perhaps the most interesting of the study. Clearly, the experimental instrument differentiates sex; clearly, the Kogan and Wallach instrument does not. It has often been said that schools are feminine institutions which require behavior which is more congruent with "female"

behavior than "male." It has also been said that school personnel are not prone to take risks. Perhaps, this study will be a beginning in the exploration of the relationship of these two ideas.

The theory of risk taking indicates that risk decisions are often value decisions. Alternatives in risk decisions are constellations of values vying for prominence. The experimental instrument may separate male from female on the basis of value constellations which are more or less sex appropriate. The Kogan and Wallach instrument does not communicate sex-appropriate value dilemmas. The findings in this study are consistent with Kogan and Wallach's own studies in this regard. The experimental instrument may be measuring some of the value constellations which are responsible for both lack of risk and a "feminized" environment in the school. If future researchers investigate further into educational risk taking, they might design their studies to correlate risk propensity and sex-appropriate values.

It should be obvious to the reader that this study only barely scrapes the surface of the investigation of risk taking in the educational sphere. Much yet needs to be known about the relationship of such concepts as general and educational-specific risk taking, sex and risk, personality and educational risk. The experimental instrument can be of use to future researchers but more about what exactly it is measuring needs to be known. The administration of the instrument to known high and low educational risk takers of both sexes is perhaps the next step.

Questions for Further Study

1. What would be the result of a study correlating the same subjects' responses on both instruments?
2. Can other training programs for educators be evaluated in terms of risk taking with the use of a control group?
3. Would the absence of a student strike and/or demand characteristics of being in "special" sections have made a difference in the results?
4. What is the relationship of a feminized school environment and low risk in the schools?
5. What is the relationship of sex-appropriate values to risk decisions in males and females?
6. Would the encouragement of more masculine administrative techniques cause changes in the risk taking of educational administrators?
7. Do male administrators take more risks than female administrators?
8. Would practitioners score differently than teacher trainees on the experimental instrument?
9. What value considerations would serve to promote risk taking in teachers and administrators?
10. Would elementary teachers score riskier than secondary teachers?
11. Would a longitudinal study of the teacher trainees of this study show them to be higher or lower risk takers when they become practitioners?

12. Do certain personality types score differently on the experimental instrument?

13. What would the administration of the experimental instrument to known high and low educational risk takers reveal?

14. What educational values do high and low risk takers of both sexes have in common?

15. Did the high risk takers tend to participate in the student strike more often than low risk takers?

16. Does age make a difference in risk taking in educational situations?

Reflections

The continued study of risk taking in the educational field should be undertaken. The author is very much concerned with the current state of education. If schools continue to be chiefly concerned with safety first, they may very well face the prospect of being superceded by other approaches to education. Many private firms have already demonstrated that they can do a better job than public schools. Unless public education fosters innovative, high risk personnel, it is likely to become obsolete.

It is, therefore, incumbent upon universities to accept the responsibility for training teachers and administrators toward taking risks. Investigation of what experiences could encourage risk in educators is also of paramount concern.

Students, parents, teachers, school boards, legislators and administrators all must be freed to try brave, new

approaches. Time, money and opportunities must be made available for experimental programs. Mistakes must not only be tolerated, but those who dare must be appreciated. Too long, the schools have played the role of the conservator of mores. Now, the role of the school as a change agent needs to be emphasized.

It is not the critic who counts, not the man who points out how the strong man stumbled, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena; whose face is marred by dust and sweat and blood; who strives valiantly; who errs and comes short again and again; who knows the great enthusiasms, the great devotions, and spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement; and who at the worst, if he fails, at least fails while daring greatly; so that his place shall never be with those cold and timid souls who know neither victory nor defeat.

--Theodore Roosevelt

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APPENDICES

APPENDIX A

KOGAN AND WALLACH'S "DILEMMAS-OF-CHOICE"

MALE _____
 FEMALE _____

OPINION QUESTIONNAIRE II

Instructions: On the following pages, you will find a series of situations that are likely to occur in everyday life. The central person in each situation is faced with a choice between two alternative courses of action, which we might call X and Y. Alternative X is more desirable and attractive than alternative Y, but the probability of attaining or achieving X is less than that of attaining or achieving Y.

For each situation on the following pages, you will be asked to indicate the minimum probability of success you would demand before recommending that the more attractive or desirable alternative, X, be chosen.

Read each situation carefully before giving your judgment. Try to place yourself in the position of the central person in each of the situations. There are twelve situations in all. Please do not omit any of them.

Mr. A, an electrical engineer, who is married and has one child, has been working for a large electronics corporation since graduating from college five years ago. He is assured of a lifetime job with a modest, though adequate, salary, and liberal pension benefits upon retirement. On the other hand, it is very unlikely that his salary will increase much before he retires. While attending a convention, Mr. A is offered a job with a small, newly founded company which has a highly uncertain future. The new job would pay more to start and would offer the possibility of a share in the ownership if the company survived the competition of the larger firms.

Imagine you are advising Mr. A. Listed below are several probabilities or odds of the new company's proving financially sound.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. A to take the new job.

- ☐ The chances are 1 in 10 that the company will prove financially sound.
- ☐ The chances are 3 in 10 that the company will prove financially sound.
- ☐ The chances are 5 in 10 that the company will prove financially sound.
- ☐ The chances are 7 in 10 that the company will prove financially sound.
- ☐ The chances are 9 in 10 that the company will prove financially sound.
- ☐ Place a check here if you think Mr. A should not take the new job no matter what the probabilities.

Mr. B, a 45-year-old accountant, has recently been informed by his physician that he has developed a severe heart ailment. The disease would be sufficiently serious to force Mr. B to change many of his strongest life habits - reducing his work load, drastically changing his diet, giving up favorite leisure-time pursuits. The physician suggests that a delicate medical operation could be attempted which, if successful, would completely relieve the heart condition. But its success could not be assured, and in fact, the operation might prove fatal.

Imagine that you are advising Mr. B. Listed below are several probabilities or odds that the operation will prove successful.

Please check the lowest probability that you would consider acceptable for the operation to be performed.

- ☐ Place a check here if you think Mr. B should not have the operation no matter what the probabilities.
- ☐ The chances are 9 in 10 that the operation will be a success.
- ☐ The chances are 7 in 10 that the operation will be a success.
- ☐ The chances are 5 in 10 that the operation will be a success.
- ☐ The chances are 3 in 10 that the operation will be a success.

Mr. C, a married man with two children, has a steady job that pays him about \$6000 per year. He can easily afford the necessities of life, but few of the luxuries. Mr. C's father, who died recently, carried a \$4000 life insurance policy. Mr. C would like to invest this money in stocks. He is well aware of the secure "blue-chip" stocks and bonds that would pay approximately 6% on his investment. On the other hand, Mr. C has heard that the stocks of a relatively unknown Company X might double their present value if a new product currently in production is favorably received by the buying public. However, if the product is unfavorably received, the stocks would decline in value.

Imagine that you are advising Mr. C. Listed below are several probabilities or odds that Company X stocks will double their value.

Please check the lowest probability that you would consider acceptable for Mr. C to invest in Company X stocks.

- ☐ The chances are 1 in 10 that the stocks will double their value.
- ☐ The chances are 3 in 10 that the stocks will double their value.
- ☐ The chances are 5 in 10 that the stocks will double their value.
- ☐ The chances are 7 in 10 that the stocks will double their value.
- ☐ The chances are 9 in 10 that the stocks will double their value.
- ☐ Place a check here if you think Mr. C should not invest in Company X stocks, no matter what the probabilities.

Mr. D is the captain of College X's football team. College X is playing its traditional rival, College Y, in the final game of the season. The game is in its final seconds, and Mr. D's team, College X, is behind the score. College X has time to run one more play. Mr. D, the captain, must decide whether it would be best to settle for a tie score with a play which would be almost certain to work or, on the other hand, should he try a more complicated and risky play which could bring victory if it succeeded, but defeat if not.

Imagine that you are advising Mr. D. Listed below are several probabilities or odds that the risky play will work.

Please check the lowest probability that you would consider acceptable for the risky play to be attempted.

- ☐ Place a check here if you think Mr. D should not attempt the risky play no matter what the probabilities.
- ☐ The chances are 9 in 10 that the risky play will work.
- ☐ The chances are 7 in 10 that the risky play will work.
- ☐ The chances are 5 in 10 that the risky play will work.
- ☐ The chances are 3 in 10 that the risky play will work.
- ☐ The chances are 1 in 10 that the risky play will work.

Mr. E is president of a light metals corporation in the United States. The corporation is quite prosperous, and has strongly considered the possibilities of business expansion by building an additional plant in a new location. The choice is between building another plant in the U.S., where there would be a moderate return on the initial investment, or building a plant in a foreign country. Lower labor costs and easy access to raw materials in that country would mean a much higher return on the initial investment. On the other hand, there is a history of political instability and revolution in the foreign country under consideration. In fact, the leader of a small minority party is committed to nationalizing, that is, taking over, all foreign investments.

Imagine that you are advising Mr. E. Listed below are several probabilities or odds of continued political stability in the foreign country under consideration. Please check the lowest probability that you would consider acceptable for Mr. E's corporation to build a plant in that country.

- ☐ The chances are 1 in 10 that the foreign country will remain politically stable.
- ☐ The chances are 3 in 10 that the foreign country will remain politically stable.
- ☐ The chances are 5 in 10 that the foreign country will remain politically stable.
- ☐ The chances are 7 in 10 that the foreign country will remain politically stable.
- ☐ The chances are 9 in 10 that the foreign country will remain politically stable.
- ☐ Place a check here if you think Mr. E's corporation should not build a plant in the foreign country, no matter what the probabilities.

Mr. F is currently a college senior who is very eager to pursue graduate study in chemistry leading to the Doctor of Philosophy degree. He has been accepted by both University X and University Y. University X has a world-wide reputation for excellence in Chemistry. While a degree from University X would signify outstanding training in this field, the standards are so very rigorous that only a fraction of the degree candidates actually receive the degree. University Y, on the other hand, has much less of a reputation in chemistry, but almost everyone admitted is awarded the Doctor of Philosophy degree, though the degree has much less prestige than the corresponding degree from University X.

Imagine that you are advising Mr. F. Listed below are several probabilities or odds that Mr. F would be awarded a degree at University X, the one with the greater prestige. Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. F to enroll in University X rather than University Y.

- ☐ The chances are 9 in 10 that Mr. F would receive a degree from University X.
- ☐ The chances are 7 in 10 that Mr. F would receive a degree from University X.
- ☐ The chances are 5 in 10 that Mr. F would receive a degree from University X.
- ☐ The chances are 3 in 10 that Mr. F would receive a degree from University X.
- ☐ The chances are 1 in 10 that Mr. F would receive a degree from University X.
- ☐ Place a check here if you think Mr. F should not enroll in University X, no matter what the probabilities.

Mr. G, a competent chess player, is participating in a national chess tournament. In an early match he draws the top-favored player in the tournament as his opponent. Mr. G has been given a relatively low ranking in view of his performance in previous tournaments. During the course of his play with the top-favored man, Mr. G notes the possibility of a deceptive though risky maneuver which might bring him a quick victory. At the same time, if the attempted maneuver should fail, Mr. G would be left in an exposed position and defeat would almost certainly follow.

Imagine that you are advising Mr. G. Listed below are several probabilities or odds that Mr. G's deceptive play would succeed. Please check the lowest probability that you would consider acceptable for the risky play in question to be attempted.

- ☐ The chances are 1 in 10 that the play would succeed.
- ☐ The chances are 3 in 10 that the play would succeed.
- ☐ The chances are 5 in 10 that the play would succeed.
- ☐ The chances are 7 in 10 that the play would succeed.
- ☐ The chances are 9 in 10 that the play would succeed.
- ☐ Place a check here if you think Mr. G should not attempt the risky play, no matter what the probabilities.

Mr. H, a college senior, has studied the piano since childhood. He has won amateur prizes and given small recitals, suggesting that Mr. H has considerable musical talent. As graduation approaches, Mr. H has the choice of going to medical school to become a physician, a profession which would bring certain prestige and financial rewards; or entering a conservatory of music for advanced training with a well-known pianist. Mr. H realizes that even upon completion of his piano studies, which would take many more years and a lot of money, success as a concert pianist would not be assured.

Imagine that you are advising Mr. H. Listed below are several probabilities or odds that Mr. H would succeed as a concert pianist. Please check the lowest probability that you would consider acceptable for Mr. H to continue with his musical training.

- ☐ Place a check here if you think Mr. H should not pursue his musical training, no matter what the probabilities.
- ☐ The chances are 9 in 10 that Mr. H would succeed as a concert pianist.
- ☐ The chances are 7 in 10 that Mr. H would succeed as a concert pianist.
- ☐ The chances are 5 in 10 that Mr. H would succeed as a concert pianist.
- ☐ The chances are 3 in 10 that Mr. H would succeed as a concert pianist.
- ☐ The chances are 1 in 10 that Mr. H would succeed as a concert pianist.

Mr. J is an American captured by the enemy in World War II and placed in a prisoner-of-war camp. Conditions in the camp are quite bad, with long hours of hard physical labor and a barely sufficient diet. After spending several months in this camp, Mr. J notes the possibility of escape by concealing himself in a supply truck that shuttles in and out of the camp. Of course, there is no guarantee that the escape would prove successful. Recapture by the enemy could well mean execution.

Imagine that you are advising Mr. J. Listed below are several probabilities or odds of a successful escape from the prisoner-of-war camp. Please check the lowest probability that you would consider acceptable for an escape to be attempted.

- ☐ The chances are 1 in 10 that the escape would succeed.
- ☐ The chances are 3 in 10 that the escape would succeed.
- ☐ The chances are 5 in 10 that the escape would succeed.
- ☐ The chances are 7 in 10 that the escape would succeed.
- ☐ The chances are 9 in 10 that the escape would succeed.
- ☐ Place a check here if you think Mr. J should not try to escape no matter what the probabilities.

Mr. K is a successful businessman who has participated in a number of civic activities of considerable value to the community. Mr. K has been approached by the leaders of his political party as a possible congressional candidate in the next election. Mr. K's party is a minority party in the district, though the party has won occasional elections in the past. Mr. K would like to hold political office, but to do so would involve a serious financial sacrifice, since the party has insufficient campaign funds. He would also have to endure the attacks of his political opponents in a hot campaign.

Imagine that you are advising Mr. K. Listed below are several probabilities or odds of Mr. K's winning the election in his district. Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. K to run for political office.

- ☐ Place a check here if you think Mr. K should not run for political office no matter what the probabilities.

- ☐ The chances are 9 in 10 that Mr. K would win the election.
- ☐ The chances are 7 in 10 that Mr. K would win the election.
- ☐ The chances are 5 in 10 that Mr. K would win the election.
- ☐ The chances are 3 in 10 that Mr. K would win the election.
- ☐ The chances are 1 in 10 that Mr. K would win the election.

Mr. L, a married 30-year-old research physicist, has been given a five-year appointment by a major university laboratory. As he contemplates the next five years, he realizes that he might work on a difficult, long-term problem which, if a solution could be found, would resolve the basic scientific issues in the field and bring high scientific honors. If no solution were found, however, Mr. L would have little to show for his five years in the laboratory, and this would make it hard for him to get a good job afterwards. On the other hand, he could, as most of his professional associates are doing, work on a series of short-term problems where solutions would be easier to find, but where the problems are of lesser scientific importance.

Imagine that you are advising Mr. L. Listed below are several probabilities or odds that a solution would be found to the difficult, long-term problem that Mr. L has in mind.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. L to work on the more difficult long-term problem.

- ☐ The chances are 1 in 10 that Mr. L would solve the long-term problem.
- ☐ The chances are 3 in 10 that Mr. L would solve the long-term problem.
- ☐ The chances are 5 in 10 that Mr. L would solve the long-term problem.
- ☐ The chances are 7 in 10 that Mr. L would solve the long-term problem.
- ☐ The chances are 9 in 10 that Mr. L would solve the long-term problem.
- ☐ Place a check here if you think Mr. L should not choose the long-term, difficult problem, no matter what the probabilities.

Mr. M is contemplating marriage to Miss T, a girl whom he has known for a little more than a year. Recently, however, a number of arguments have occurred between them, suggesting some sharp differences of opinion in the way each views certain matters. Indeed, they decide to seek professional advice from a marriage counselor as to whether it would be wise for them to marry. On the basis of these meetings with a marriage counselor, they realize that a happy marriage, while possible, would not be assured.

Imagine that you are advising Mr. M and Miss T. Listed below are several probabilities or odds that their marriage would prove to be a happy and successful one.

Please check the lowest probability that you would consider acceptable for Mr. M and Miss T to get married.

- ☐ Place a check here if you think Mr. M and Miss T should not marry, no matter what the probabilities.
- ☐ The chances are 9 in 10 that the marriage would be happy and successful.
- ☐ The chances are 7 in 10 that the marriage would be happy and successful.
- ☐ The chances are 5 in 10 that the marriage would be happy and successful.
- ☐ The chances are 3 in 10 that the marriage would be happy and successful.
- ☐ The chances are 1 in 10 that the marriage would be happy and successful.

APPENDIX B

MATERIALS FROM SPECIAL CLASSES OF
EDUCATION 200

THE PERSONAL DEMANDS OF TEACHING

OBJECTIVES

- I. The student will complete an action project indicating his individual growth in personal freedom and/or acceptance of others' freedoms. His project will focus on "active involvement" in one of the value areas selected by the student. The project will include a description or explanation of the growth he feels the project represents and will be due Monday, August 17, 1970.
- II. Following the reading of Student as Nigger by Farber, the student will write a paper on any theme that is of relevance to the student. He will then indicate, without direct references, why and in what ways he agrees or disagrees with Farber. The paper will be due Monday, August 10, 1970.

The main requirement for this paper is evidence of critical thought on your part. We are interested in your views concerning those concepts and/or values you select. We do not want a book report; therefore, any paper which is largely a matter of paraphrasing of Farber will not be acceptable.

BOOKS:

REQUIRED:

SMALL GROUP

Student As Nigger, Farber
36 Children, Kohl
Politics of Protest, Skolnick
Autobiography of Malcolm X
 or
Manchild in the Promised Land
Workbook by Henderson
 3 of your choice from the
 recommended reading list.

CARRELS

Preparing Instructional
 Objectives, Mager
 Developing Attitudes
 Toward Learning, Mager

VALUE INVENTORY

Here is a list of values. The list is in alphabetical order. Change the ranking to match your own ranking by placing the letter of each value in the right hand column. The top space should have the letter of the value which is most important to you. Put only one letter in a space - no ties. Feel free to erase or to rearrange your list.

You will not be graded on how you rank the values. This is simply an opportunity for you to look at the values which you hold most important for your life. OK?

- A - AESTHETICS (appreciation of the arts, nature, one's own appearance, beauty)
- B - EQUALITY (the treatment of others as equally important human beings)
- C - FREEDOM (independence, self respect, freedom from overwhelming anxieties)
- D - HEALTH (physical and emotional health, inner harmony, absence of pain)
- E - HONESTY & JUSTICE (personal integrity and fairness)
- F - MATERIAL WEALTH/POWER (freedom from want, affluence, security & comfort)
- G - MATURE LOVE (sexual and spiritual intimacy)
- H - PEACE (harmony among nations & groups)
- I - SAFETY (freedom from violent harm at work, on the streets or in the home)
- J - SOCIAL RECOGNITION (sense of social worth, attractiveness to opposite sex, popularity)
- K - TRUE FRIENDSHIP (close companionship, loyal friends, camaraderie)
- L - WISDOM (mature understanding acquisition of knowledge, skills & "common sense")

RANK ORDER:
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(After filling this out, remove page by tearing along perforations.)

June 29, 1970, begin carrel work.

Complete unit I - July 16, unit II - July 31, unit III - August 21.

- I. A. Introduction to teaching
 1. Handout will be made available
 2. Assigned readings
 - a. Differentiating between the personal demands and task demands of teaching (pg. 114-115)
 - b. The model of teaching (pg. 116-117)
 - c. Definition of teaching (pg. 116)
 - d. Differentiate between instructional design and instruction
 1. Teaching vs. learning (pg. 118 & 123)
 - e. Behavioral vs. nonbehavioral (fact vs. opinion)
 1. Refer to exercises in manual (pg. 119-122)
 - f. Assessing and describing status conditions
 1. Objectives for unit II (pg. 129-132)
 2. Assessment used in 36 Children (pg. 124-128)
- B. Assessment (three tapes plus handbook readings)
 1. Assigned readings--to be read prior to first tape on intellectual assessment
 - a. Objectives (pg. 129)
 - b. Chart - Intellectual Behavior, (pg. 133-135)
 - c. Nature of Intelligence, (pg. 141-149)
 - d. Distribution of Intelligence, (pg. 150) (pgs. 151-171 will be covered in tape)
 - e. Piaget - (pg. 172-178) - Clarizio
 - f. Piaget - Handout - Prawat
 2. Bring handbook to carrel to use during assessment tapes.
 3. Intellectual Assessment (one tape plus handbook, (approximate time in carrel - 45 minutes)
 4. Assigned readings--Social-emotional assessment
 - a. Social-emotional - Constructs, (read pgs. 179-182)
 - b. Child as a Moral Philosopher, (pgs. 187-194)
 - c. Exercises on Moral Development, (pgs. 195-202)
 - d. Handout on Parent-Child Interaction
 - e. Environment, (pgs. 203-205), Look at Office of Ed. Survey, (pg. 205-213)
 5. In-basket assessment (approximately one hour each). Assess two students and attend at least one session to discuss hypotheses arrived at. Sessions have been scheduled for all day July 8 and 9 to provide interaction and feedback on the assessment unit.
 6. Exam - exam may be taken when unit is completed but must be completed no later than July 16. (taken in carrel room)
- II. Objectives Unit (five tapes and two handouts)
 - A. Overview (approximately 20-30 minutes)
 - B. Relevance - What is it? (approximately 40 minutes)
 - C. Making Relevance Operational (approximately 20-30 minutes)
 - D. Preparing Behavioral Objectives (approximately 45-60 minutes) probably a handout on different types of behavioral objectives.
 - E. Mental Operations - handout and game. Read Mager if necessary--trial writing of objectives.
 - F. Take Home Exam - Must be completed no later than July 31, 1970
- III. Strategies | Unsure of what form these will be in yet. May be hand-
Operant | outs plus meetings in Kiva for films or lectures if
Respondent | tapes aren't ready. These will be provided and scheduled
Modeling | during the early part of August, and unit is scheduled
to be completed by August 21, 1970.

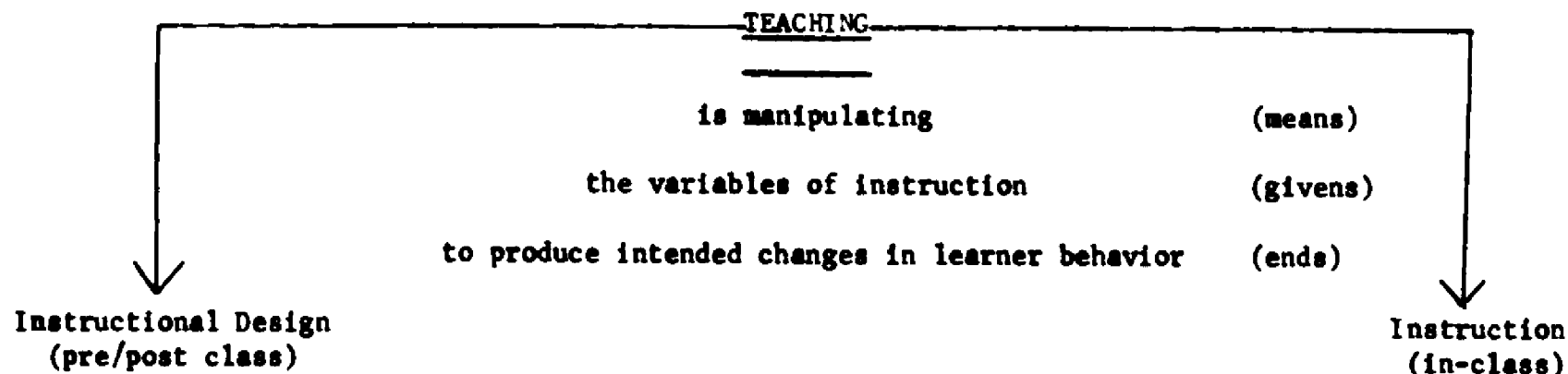
APPENDIX C

MATERIALS FROM REGULAR CLASSES OF
EDUCATION 200

TEACHING

is manipulating	(means)
the variables of instruction	(givens)
to produce intended changes in learner behavior	(ends)

A framework for the organization and systematic application
of behavioral science to instructional design and instruction.



INSTRUCTIONAL VARIABLES

	Classroom	School	Home	Community
A. Humans				
1. Individual Students				
2. Groups				
3. Teachers				
B. Environments				
1. Sensory Conditions				
2. Supplies & Equipment				
3. Space & Arrangement				
4. Time				
C. Curricula				
1. Basic Abilities, Concepts Principles				
2. Subject Matter Materials				
3. Required Teacher and Student Activities				

TEACHING

is manipulating (means)
the variables of instruction (givens)
to produce intended changes in learner behavior (ends)

INSTRUCTIONAL DESIGN TASKS
(pre/post class)

I. Assessing and Describing Status
Conditions. (givens)

- A. Human Components (others-self)
- B. Environmental Conditions.
- C. Curricular Structure.

II. Specifying Intended Changes. (ends)

- A. Selecting the beyond-school and in-class analogue behaviors.
- B. Formulating the behavioral objectives.
- C. Analyzing the terminal and prerequisite behaviors.

III. Selecting and Preparing Strategies for
Producing Intended Changes. (means)

- A. Operant strategies.
- B. Respondent strategies.
- C. Modeling strategies.

INSTRUCTION TASKS
(in-class)

I. Assessing status conditions;
determining appropriateness of instructional
design and revising if necessary. (givens)

- A. Humans
- B. Environment
- C. Curriculum

II. Implementing strategies for producing
intended changes. (means)

- A. Operant strategies.
- B. Respondent strategies.
- C. Modeling strategies.

III. Evaluating type, extent and potential cause
of changes. (ends)

- A. In regard to givens.
- B. In regard to objectives.
- C. In regard to strategies.

INSTRUCTIONAL DESIGN

1. Assessing and Describing Status Conditions. (givens)

- A. Human Dimension (individual students, groups, teachers)
 - 1. physical behaviors
 - 2. social-emotional behaviors
 - 3. intellectual behaviors
- B. Environmental Dimension
 - 1. sensory conditions
 - 2. supplies and equipment
 - 3. space and arrangement
 - 4. time
- C. Curricular Dimension
 - 1. basic abilities, concepts, and principles
 - 2. subject matter materials
 - 3. required teacher and/or student activities

2. Specifying Intended Changes. (ends)

- A. Selecting the beyond school and in-class analogue behaviors
 - 1. physical
 - 2. social-emotional
 - 3. intellectual
- B. Formulating the Objectives
 - 1. terminal behaviors
 - 2. conditions
 - 3. criteria
- C. Analyzing the Terminal and Prerequisite Behaviors
 - 1. information types
 - 2. mental operations
 - 3. complexity levels

3. Selecting and Preparing Strategies for Producing Intended Changes. (means)

- A. Operant Strategies
 - 1. creating a response
 - 2. maintaining a response
 - 3. extinguishing a response
- B. Respondent Strategies
 - 1. creating a response
 - 2. extinguishing a response
- C. Modeling Strategies
 - 1. creating a response
 - 2. maintaining a response
 - 3. extinguishing a response

Ed. 200 Office: 238 Erickson Hall
 Phone: 353-8765
 Course Coordinator: Dr. Judith Henderson

EDUCATION 200

General Description

Education 200 is the first of four courses constituting the core of the professional training program in education. These courses share the common objective of helping each and every one of you to become competent and dedicated teachers. Education 200 has the unique responsibility of serving both as an "advance organizer" for what will follow, that is, as an introduction to the process of education known as "teaching," and as a format for the presentation of certain concepts and principles known to the behavioral sciences and relevant to you as prospective teachers.

With these purposes in mind, we have organized course material around a conceptual model of what we think teaching is, or should be, all about. This "Teaching Model" serves as a framework for organizing most of what will follow in the course (see appendix). In Education 200 we shall deal almost exclusively with the "Instructional Design" half of the model, leaving for later the actual face to face confrontation with students known as "Instruction."

Content

Education 200 is arranged into four basic units. Unit I is An Overview of Teaching. It is designed to provide you with a common referent for understanding the tasks and the rationale behind the tasks teachers perform.

Here the distinction is made between "Instructional Design" and "Instruction"; a concept considered basic to an understanding of the various tasks involved in teaching. "Instructional Design" is best compared to the pre and post game planning undertaken by a football coach, while "Instruction" is comparable to the implementation of that plan during a football game. A teacher goes through certain procedures prior to setting foot in a classroom just as a good coach views game films and devises strategies before meeting opponents. Like a good coach, a good teacher frequently must change and amend plans to suit the realities of the situation. This second set of skills is known as "Instruction". The total teacher combines both of these abilities and is an effective improviser as well as a careful and deliberate planner.

As we have indicated, Education 200 is concerned with the "Instructional Design" aspects of teaching. There are three major tasks involved in "Instructional Design". Unit II is an in depth examination of the first task encountered by teachers, that of Assessing and Describing the Status Conditions. Here, quite simply, a teacher examines what he has to work with in the way of students, environment, and curriculum. The teacher must consider not only the needs and limitations of the students, but also the environmental and subject matter "givens". After these factors have been properly assessed, the teacher is ready to consider the goals of his instruction.

This takes us to the second major task a teacher faces, that of "Specifying Intended Changes". This is the concern of Unit III. Here the teacher decides where he is going with his instruction by making explicit the exact changes in student behavior (or learning) which he intends to bring about. Statements of these intended changes are known as "objectives". In formulating objectives, it is necessary to consider not only where the students are at a given point in time, which is the function of assessment, but also where the students will be at some distant point in the future. This "beyond school" consideration forces school learning to

be relevant, for few teachers would have students memorize dates of battles after first considering the out-of-school application of such an intended change.

Finally, Unit IV addresses itself to the third task involved in instructional design, that of Selecting and Preparing Strategies for Producing Intended Changes. Here the teacher must choose from among a number of alternative strategies or means for achieving the desired end which is the change in behavior described in the objective. Proper selection of strategies depends upon an accurate reading of both the givens and the ends. Thus, strategies are tailored to the human, environmental, and curricular givens, as well as the type of response sought by the teacher. For example, research shows that concrete kinds of rewards, such as money or candy, are more effective than abstract rewards for disadvantaged children. Thus, a teacher with lower class youngsters might well decide upon a strategy employing concrete rewards.

Procedures

Education 200 meets five times a week, in three large group and two small group sessions.

The large group sessions are designed to provide content that cannot be obtained in the readings and to clarify concepts that are frequently difficult to grasp.

The small group sessions are designed to provide information and also to enable you to question and interact with others about course content.

You will receive copies of the objectives for each unit prior to the initiation of the unit. These objectives specify the abilities that you should be able to demonstrate at the end of the period of instruction. We highly recommend that you gear your study to these objectives since they represent the important concepts presented in the course and the content over which you will be examined.

Included in this handout are the objectives for Unit I, the reading assignments for the course and a description of the evaluation procedures.

EDUCATION 200 FACULTY AND STAFF

Large group instruction:

Mr. Keith Anderson	Dr. Donald Hamachek
Mr. Norman Bell	Mr. George Harris
Mr. Donald Freeman	Dr. Judith Henderson
Mr. Robert Green	

Small group instruction:

Miss Madelyn Albrecht	Mr. James Parker
Ms. Henrietta Barns	Mrs. Vivian Riddle
Mr. Clyde Claycomb	Sr. Dolore Rockers
Mr. Frederick Ebbeck	Mr. Kenneth Rode
Mr. Albert Gary	Mr. Gerald Stone
Ms. Katherine Gordon	Mr. Terrill Taylor
Mr. Matthew Klein	Mr. Kenneth Washington
Mr. Joseph Koch	Mrs. Phyllis Welsh
Mr. Steven Levenkron	Mr. Michael Wroblewski
Miss Marcy Nabrezny	Mrs. Shirley Willard
Miss Barbara Nicholas	

Instructional Design:

Ms. Henrietta Barns	Mr. Richard Prawat
Mr. Donald Biskin	Mrs. Vivian Riddle
Ms. Celia Guro	Mr. Terrill Taylor

Course administration:

Dr. Judith Henderson, Course Coordinator	Mrs. Marian Tesser, Administrative Assistant
Miss Janis Johnson, Secretary	Mrs. Jane Payne, Administrative Assistant

9/26 FIRST SESSION (L.G.) COURSE INTRODUCTION: At the end of the first session, you should be able to describe the teacher training programs at M.S.U. (i.e. course names and descriptions), and the general format, requirements and methods of evaluation for Education 200. You should know who to contact, and where, for various types of opportunities and/or problems associated with this course. In addition, you as prospective teachers should be aware of the vitality and critical importance of education in our society today. Far from being a haven or refuge, the schools of today are truly "where the action is."

9/29 SECOND SESSION (L.G.) UNIT ONE. THE RELATIONSHIP BETWEEN TEACHING AND LEARNING; THE IMPORTANCE OF SPEAKING BEHAVIORALLY: At the end of the second session, you will recognize the following points: (1) the distinction between teaching and learning (i.e., teaching can be directly observed, learning must be inferred; a teacher can be teaching one thing, the students learning something totally different; (2) the fact that teaching aims at a specific bit of learning (intention enters in); (3) the fact that learning is best conceptualized, as well as observed and measured, as a "change in behavior"; (4) the fact that statements of observable behavior must be used for the making of viable hypotheses regarding students' needs as well as for valid evaluation of behavioral change.

In addition, you should be able to distinguish statements of observable behavior from nonobservable statements. Practice exercises will be available after class; these should be completed and brought to the following small group session.

9/30 THIRD SESSION (S.G.) SMALL GROUP INTRODUCTIONS OF PEOPLE AND PROCEDURES:
SPEAKING BEHAVIORALLY: It is important that the small group members (instructor and students) get to know each other so one objective of this session is to get your pictures; another is simply to have you interact. You will receive feedback

concerning your performance on the "recognizing - behavioral - statements" exercises. You should now be able to demonstrate (verbally and in writing) an ability to operationalize or speak behaviorally and explain the two reasons for this important skill; the first centering around the importance of intentions in teaching, and the fact that learning can only be seen as a change in behavior; the second centering around the need to gather information and construct valid hypotheses concerning students - both of which are facilitated by speaking in terms of specific behaviors.

In addition, at this session application forms for the field trip and student education corps will be available.

10/1 FOURTH SESSION (L.G.) INTRODUCTION AND APPLICATION OF TEACHING MODEL:

This session will be concerned with the three major classes of instructional variables and the various tasks of teaching as defined by the Teaching Model. At the end of this session you should be able to explain what is meant by "Instructional Design" and "Instruction," and describe the various components of these two aspects of teaching. You should also be able to explain the rationale for the sequence in which the tasks are performed. You should be able to analyze given teaching situations by identifying and citing examples of the various components. Practice exercises will be available after class; these should be completed and brought to the following small group session.

10/2 FIFTH SESSION (S.G.) FEEDBACK REGARDING APPLICATION OF MODEL AND QUIZ:

Here you will briefly discuss your analysis of the teaching situations taken from yesterday's large group session. Questions over the content covered thus far will be entertained and a short quiz to assess your mastery of Unit One objectives will be given.

READING SCHEDULE, FALL TERM, 1969

The following five books will be used for required readings in Ed. 200.

<u>Titles</u>	<u>Date when reading should be completed</u>
<u>36 Children</u> , by Herbert Kohl, 1968.	Oct. 1
<u>The Way It Spoze To Be</u> , by James Herndon, 1968.	Oct. 3
<u>Educational Psychology in the Classroom</u> , by Henry Clay Lindgren, 1967.	
Chapter 3, Chapter 14 (p. 465-478)	Oct. 6
Chapter 13	Oct. 7
Chapter 2, Chapter 5	Oct. 9
Chapter 6, Chapter 14 (p. 478-494)	Oct. 10
Chapter 18	Oct. 17
Chapter 16	Oct. 20
Chapter 4	Oct. 24
Chapter 15	Oct. 29
<u>Educational Change and Architectural Consequences</u> , by Educational Facilities Laboratories, Inc., 1968	Oct. 15
<u>Preparing Instructional Objectives</u> , by Robert F. Mager, 1962	Nov. 5

The required readings are those which include information considered essential to your mastery of the key concepts contained in this course. You will be held responsible for the information presented in these readings as related to the course objectives.

Chapters 17 (Oct. 15) and Seven (Nov. 19), Eight (Nov. 21), and Nine (Nov. 24) in Lindgren represent recommended readings; that is, they will, in all likelihood, increase your understanding of the course content. They are not, however, considered vital to your attainment of the course objectives. The remaining chapters in Lindgren (1, 10, 11, and 12) are optional. They contain information that may be of interest to you as a prospective teacher but were considered either unnecessary or inappropriate for this particular course.

EVALUATION PROCEDURES, FALL TERM, 1969

1. You will receive one of the following grades: 4.5, 4.0, 3.5, 3.0, 2.5, 2.0, 1.5, 1.0, .5.
2. Your evaluations will be based on individual attainment of the course objectives. You will be asked to demonstrate objective attainment in a variety of ways. The course is divided into four basic units, thus a test will be administered at the conclusion of each unit over the content objectives contained in that segment of the course. The tests will vary in type, some containing short answer, multiple choice, and production items. They will also vary in length and weight; the size of the test, and weight assigned in terms of grade determination, will be based on the amount of content required for mastery. A multiple choice final exam will also be given.

In addition, a part of the evaluation will be based on your performance on class assignments as well as your contributions and participation in the small group sessions.

3. Your final grade will be computed according to the following:

<u>Measure</u>	<u>% of final grade</u>
Test - Unit #1	5
Test - Unit #2	20
Test - Unit #3	10
Test - Unit #4	15
Final Examination	25
Small Group Participation	<u>25</u>
	100%

It is anticipated that the following scale will be used for assigning grades:

95 - 100	=	4.5
90 - 94	=	4.0
85 - 89	=	3.5
80 - 84	=	3.0
75 - 79	=	2.5
70 - 74	=	2.0
65 - 69	=	1.5
60 - 64	=	1.0
55 - 59	=	.5

OBJECTIVES - UNIT TWO

ASSESSING AND DESCRIBING STATUS CONDITIONS:

A teacher must assess student, environmental, and curricular givens. Teaching is a purposeful activity aimed at bringing about certain intended behavioral changes in students. A teacher must assess student "needs", the limitations and opportunities inherent in the environment, and the subject matter givens prior to the formulation of instructional goals or objectives. The objectives are based upon student needs.

A teacher assesses student behavior by gathering behavioral data and constructing "hypotheses". Hypotheses are hunches about student needs. These needs may be physical, social-emotional, and/or intellectual in nature. Because of the probabilistic nature of human behavior, student assessment is a difficult task.

Assessment of the classroom, school, and community environment involves knowing what variables are important and how information about those variables may be required.

Assessment of curricular structure is a specialized task that necessitates understanding of subject matter hierarchies in both a general and specific sense. Thus, a teacher must understand what is meant by facts, concepts, and principles, and how these may be ordered within a discipline; a teacher must be able to identify the important facts, concepts, and principles peculiar to his subject matter area.

OBJECTIVES FOR "ASSESSING AND DESCRIBING STATUS CONDITIONS":

The objectives for this sub-unit involving two levels of skills - production and recognition-recall. The production objective for this sub-unit involves the gathering of relevant data on, and the formulation of hypotheses about, the physical, social-emotional, and intellectual needs of a group of children. The hypotheses must follow logically from the information provided.

The recognition-recall objectives are prerequisite to the production task. These objectives may be listed according to the category of variable to be assessed:

HUMAN COMPONENTS

Physical behavior: You should be able to identify (1) the variables to be assessed; (2) the reasons or rationale for this assessment; (3) the ways or means by which this assessment can be carried out. You should be able to identify "normal" and "abnormal" physical characteristics for children of a given age range and sex. From a number of alternatives, you should be able to choose the most probable effects of certain physical characteristics on social-emotional and intellectual behavior. Related to this problem of the assessment of physical "needs" is a more central question concerning the role of the school in promoting the physical well being of students. Should the school assume responsibility for factors such as nutrition, cleanliness, general health care, etc? You should be able to present arguments for, or against, the assumption of such a role.

Social-emotional behavior: You should know and be able to identify the relevant social-emotional variables, such as personality characteristics, moral development, etc., the rationale for the assessment of those variables, that is, why it is important to assess those particular aspects of social-emotional behavior, and the means of assessment. You should be able to identify the various yardsticks of Moral Development - behavior, affect or feeling, and judgment - and describe how they relate to one another. You should be able to identify the Stages of Moral Judgment and select the most appropriate mode of moralizing for each stage.

You should be able to identify the specific indicators of social-emotional maladjustment, such as negativism, withdrawal, etc., and list three criteria for referral of children with such problems. You should be able to describe the probable social-emotional effects on children of certain modes of parent-child interaction. In addition, you should be able to identify the probable effects of certain social-emotional behaviors such as high need-achievement, on intellectual behavior.

Intellectual behavior: You should be able to define the two approaches to intelligence, the cognitive-developmental and the psychometric approach, and identify similarities and differences between the two. You should be able to name the three assumptions and two requirements of intelligence tests. You should be able to describe the procedure used in determining test reliability, and be able to describe the rationale for interpreting intelligence test results in terms of a range of scores. You should be able to describe the two types of validity. You should be able to explain the abuses of intelligence tests in terms of the violations of certain assumptions discussed in class.

You should be able to identify the Stages of Cognitive Development and select the most appropriate mode of presenting instructional material for each stage. You should be able to identify the important intellectual variables and how and why each variable is to be assessed.

You should be able to identify the relevant intellectual variables, how they may be assessed, and reasons why they should be assessed.

Environment - Classroom, school, community, home: You should be able to identify environmental givens in the classroom and school which influence the formulation of objectives and the selection of teaching strategies. You should know which characteristics of the community need to be considered for their probable impact on the school and how a teacher may go about assessing those characteristics. You should be able to "operationalize" the general categories of environmental variables---space, sensory, and material conditions -- in relation to assessment of the home environment. Thus you should be able to name specific variables (i.e., amount of available study space, number of reference books in the home) and describe how these variables affect a child's intellectual, social-emotional, and physical behaviors.

Curricular Structure: You should be able to identify and define the major categories of curricular variables -- i.e., facts, low level concepts, abstract concepts, principles. You should be able to describe what to look for, and how to proceed when assessing curricular structure. For instance, you should be able to identify concepts and principles and explain how a teacher might go about selecting the concepts and principles basic to a given subject area. You should be able to order a hierarchy of concepts.

OBJECTIVES - UNIT II, Part II

SPECIFYING INTENDED CHANGES

Instructional objectives, which are precise statements of teacher intent in student performance terms are a logical necessity if teaching is viewed as a purposeful activity aimed at affecting specific changes in learner behavior. Thus, if teaching aims at bringing about certain changes in learners, the teacher must give some consideration as to just what those changes are. This is the purpose of a behavioral objective. A behavioral objective is a statement of teacher intent. It is stated in student performance terms because the teacher is trying to bring about changes in learners, not in herself, although personal changes may be prerequisite to learner changes. Instructional objectives must be geared to the needs of the students. As we have already seen, these needs assume an order of priority, with physical needs paramount, social and emotional needs second, and intellectual needs third. Thus, if a child has an empty stomach, or is "turned off", his intellectual needs will probably go unfulfilled. Instructional objectives, then, are of three types - those concerned with physical changes, those concerned with social and emotional changes, and those concerned with intellectual changes.

OBJECTIVES FOR "SPECIFYING INTENDED CHANGES":

Objectives for this sub-unit involve two levels of skills -- production and recognition-recall. The production level objectives are two in number. The first goal or objective is simply to be able to produce a good behavioral objective. Such an objective describes educational intent in unambiguous performance terms. Thus, given students with certain "needs", you should be able to name the appropriate objective types and formulate several objectives geared to those needs. These

Objectives may represent day by day or unit by unit intentions.

The second production task, a "convergent production" task, involves analyzing the terminal behavior and conditions of various objectives. Thus, given a statement of a behavioral objective, you should be able to categorize the "conditions" of that objective, according to levels of abstractness, that is, you should be able to determine if concrete, pictorial, or semantic information is to be processed by the student. You should also be able to categorize the "terminal behavior" specified in the objective as to the type of mental operation involved, (i.e. recognition, recall, convergent and divergent production, and evaluation).

The recognition-recall tasks are prerequisite to the production tasks. They are listed below.

First, you should be able to distinguish behavioral from non-behavioral statements of objectives, and distinguish between objectives or ends that are intellectual, social-emotional, or physical in nature. In addition you should be able to describe what is meant by "beyond school behaviors", and how consideration of such behaviors influence the selection of "in-class analogue behaviors" known as instructional objectives. In connection with the distinction, you should be able to describe what is meant by "relevancy".

Given a behavioral objective you should be able to, first, identify the "terminal behavior" or what the learner is doing when he is demonstrating that he has achieved the objective; second, identify the "conditions" under which the terminal behavior is expected to occur; third, identify that part of the behavioral objective that indicates the standard or "criterion" by which the terminal behavior is to be judged, that is, the level of acceptable performance. You should also be able to define these three components of behavioral objectives: conditions, terminal behavior, and criterion.

You should be able to cite reasons for the categorization of terminal behavior advocated as an important third step in the process known as "Specifying Intended Change". Analysis of terminal behavior tells a teacher something about prerequisite behaviors,

instructional strategies, and relevancy. It provides a means of "assessing" the instructional objective.) Finally, you should be able to define what is meant by "information types" (concrete, pictorial, semantic), "mental operations" (recognition, recall, production), and "complexity levels" (units, classes, relations).

II: Personal Rewards

<u>Content</u>	<u>By</u>
Jinxed by weather	
Changing student-teacher relationship + Media presentation a.m. - McKee Report, High School Activists p.m. - Statewide perspective	Ken Wood Gina Schrack Deeb, Sec. of Sta Bd. of Education
Changing Sex Role Expectations, focus on Women's Liberation	Panel; Jackson, e
Movie: "We Are One" Economic-Social Dichotomies	Intro. by Hurwitz
Movie: "Where Prejudice Is"	
Racism in the Classroom "The Black Experience"	Al Hurwitz, Judy Jinx
"Rightness of Whiteness" "The Black Experience"	Abe Citron Jinx
Political Ramifications of Social Changes	Rep. Jackie Vaugh
Media: Cave of the Shadows	Willard, et al

III: Task Demands

Assessing the Environment and its effects on people	Robert Green
Assessing Social-emotional needs and their effect on learning	Don Freeman
Intellectual Assessment: The psychometric point of view	Keith Anderson
Intellectual Assessment: The developmental point of view	Don Freeman
Quiz I on Assessment (In-class)	
Behavioral Objectives: Why and How	Keith Anderson
Quiz II on Objectives: Take home due 5/25	
Analysis of Objectives	Don Freeman
Film on the application of Operant Strategies	Judy Henderson
Operant and Respondent Strategies	Judy Henderson
Respondent Strategies	Elwood Miller
Modeling: Slides and Talk	Anderson and Tayl
Final Take Home, due 6/9	

D R A F T

Minimum Expected Reading List - Education 200 (Spring 1970)

Books:

The Individual and the School (Workbook for Ed. 200) \$5.00
The Student as Nigger, Jerry Farber, (paperback) \$2.95
Racial Crisis in American Education, Robert Green, \$7.95
Preparing Instructional Objectives, Robert Mager, \$1.75
Developing Attitude Toward Learning, Robert Mager, \$2.00
36 Children, Herbert Kohl, \$.95

Time Table:

April 10	Workbook: Course Objectives (p. 1-3) <u>Born Female</u> (p. 85-99) Handout: McKee Report Farber: <u>The Student as Nigger</u>
April 17	Workbook: On Values (p. 9-19) On Making Morality Operational (p. 36-43) Green: Racial Crisis in American Education, Chpt. 14
April 21	Workbook: The Rightness of Whiteness (p. 68-83) The Myth of Negro Progress (p. 63-67) Green: Chapters 7 and 12.
April 28	Kohl: <u>36 Children</u> Green: Chapters 6 and 11.
May 1	Workbook: Teaching Model (p. 116-118) Unit Two Objectives on Assessment (114-115, 129-132)
May 8	Workbook: Assessing Social-Emotional Behavior (p. 179-182) The Child as a Moral Philosopher (p. 187-194)
May 15	Workbook: Requirements for Intelligence Tests (p. 140-149) How a Child's Mind Develops (p. 172-178) Assessing Intellectual Behavior (p. 133-135)
May 22	Workbook: Unit Two Objectives (p. 219-221) Probing the Validity of Arguments Against Behavioral Goals (p. 222-227) Mager: <u>Preparing Instructional Objectives</u>
May 29	Green: Chapters 5, 8 and 10
June 4	Handout: Respondent and Operant Strategies Mager: <u>Developing Attitude Toward Learning</u>

APPENDIX D

ITEM POOL FOR EXPERIMENTAL INSTRUMENT

INSTRUCTIONS: On the following pages, you will find a series of situations that are likely to occur in the everyday life of a teacher. The central person in each situation is faced with a choice between two alternative courses of action, which we might call X and Y. Alternative X is more desirable and attractive than alternative Y but the probability of attaining or achieving X is less than that of attaining or achieving Y.

For each situation on the following pages, you will be asked to indicate the minimum odds of success you would demand before recommending that the more attractive or desirable alternative, X, be chosen.

Read each situation carefully before giving your judgment. Try to place yourself in the position of the central person in each of the situations. There are twelve situations in all. Please do not omit any of them.

1. Miss A, a newly certified teacher, is looking for a teaching job. After a considerable number of interviews, she is offered two contracts. One position is in Willow Run, a suburban community in which she would earn a good salary preparing students for college. In Willow Run she would have few behavior problems. Also Miss A would have few challenging experiences. The other contract is with Middletown, an urban system which is currently "heated" because its majority Black population demands local control of the schools. Miss A feels she would derive great satisfaction from working with economically deprived students but is fearful that she might not be retained once local control is realized.

Imagine that you are advising Miss A. Listed below are several probabilities or odds that her contract will be renewed in Middletown.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Miss A to sign the Middletown contract.

- ☐ The chances are 1 in 10 that she will be asked to stay on at Middletown.
- ☐ The chances are 3 in 10 that she will be asked to stay on at Middletown.
- ☐ The chances are 5 in 10 that she will be asked to stay on at Middletown.
- ☐ The chances are 7 in 10 that she will be asked to stay on at Middletown.
- ☐ The chances are 9 in 10 that she will be asked to stay on at Middletown.
- ☐ Place a check here if you think Miss A should not take the job no matter what the probabilities.

2. Mr. B, a first year teacher in a small town high-school, is about to attend a social science departmental meeting. It is the middle of the school year and he has noticed that all the teachers in the department seem to do "their own thing" in their instruction. He feels strongly that there ought to be more co-ordination in the department curriculum and that the lack of organization does the students a great misservice. He perceives two courses of action. He can openly confront his colleagues with his perceptions but they might possibly become defensive, regard him as a young upstart, and no change will result or they might welcome a fresh approach. Mr. B's other course of action is to sway them by the example of his own organization and attempt in private conversations to influence them in a non-threatening way. This second method is surer but slower and in the meantime many students will not receive the benefit of a more co-ordinated approach.

Imagine that you are advising Mr. B. Listed below are several probabilities or odds that his fellow teachers will react favorably to confrontation.

Please check the lowest probability that you would consider acceptable for Mr. B to speak up in the meeting.

- ☐ The chances are 9 in 10 that the teachers will react favorably.
- ☐ The chances are 7 in 10 that the teachers will react favorably.
- ☐ The chances are 5 in 10 that the teachers will react favorably.
- ☐ The chances are 3 in 10 that the teachers will react favorably.
- ☐ The chances are 1 in 10 that the teachers will react favorably.
- ☐ Place a check here if you think Mr. B should not directly confront his fellow-teachers.

3. Mr. D, a special education teacher, has been assigned to a class of students whose truancy rate is three times that of the regular students in the school. He would very much like to initiate consultation with a nearby university about these students. If he asks for the university's help without talking it over with his principal, the university will almost certainly help, but if the principal finds out he will be in a lot of trouble. But, on the other hand, knowing the principal as he does, if Mr. D talks to him about the university's consultation, he will not allow it.

Imagine that you are advising Mr. D. Listed below are several probabilities or odds that the principal will not find out about the consultation.

Please check the lowest probability that you would consider acceptable for Mr. D to consult with the university.

- ☐ Place a check here if you think that Mr. D should not consult independently no matter what the probabilities.
☐ The chances are 9 in 10 that the principal will not find out.
☐ The chances are 7 in 10 that the principal will not find out.
☐ The chances are 5 in 10 that the principal will not find out.
☐ The chances are 3 in 10 that the principal will not find out.
☐ The chances are 1 in 10 that the principal will not find out.

4. Mr. E, a young, single teacher, has an attractive girl in his high-school class who desperately needs someone to take a special interest in her. He seems to have better rapport with her than any of the teachers in the school. She comes after school to talk to him but must leave soon because the students are bussed in to school each day. These after school talks seem to help her but they are over before they get to talk about anything meaningful. Mr. E wishes they could talk at length and after considering many alternatives decides that the only feasible, non-threatening way is for him to offer to drive her home the next time she starts to "open up" in her conversations. Mr. E realizes that although this time to talk in a more relaxed, natural atmosphere might be very helpful to the girl, the community might not approve. He would face the possibility of being fired.

Imagine that you are advising Mr. E. Listed below are several probabilities or odds that the community would look with disfavor on Mr. E.

Please check the lowest probability that you would consider acceptable for Mr. E to offer the girl a ride home.

- ☐ The chances are 1 in 10 that no unfavorable community reaction will ensue.
☐ The chances are 3 in 10 that no unfavorable community reaction will ensue.
☐ The chances are 5 in 10 that no unfavorable community reaction will ensue.
☐ The chances are 7 in 10 that no unfavorable community reaction will ensue.
☐ The chances are 9 in 10 that no unfavorable community reaction will ensue.
☐ Place a check here if you think Mr. E should not offer to drive the girl home, no matter what the probabilities.

5. Mr. F is a high-school social science teacher who believes that grades emphasize external punishment or rewards for learning and not internal motives. He would like to abolish grades in class because he would like his students to learn for themselves, not for him. If he does abolish grades he faces the prospect of censure from parents, fellow teachers and administration and the possibility that some of his students, because they are so conditioned to learning only for a grade, will stop doing anything in his class. On the other hand, if he continues grading most of his students learn most of the material even if it is for the wrong reasons.

Imagine that you are advising Mr. F. Listed below are several probabilities or odds that the community will be upset and the students will waste their time.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. F to stop giving grades.

- ☐ Place a check here if you think Mr. F should continue to give grades no matter what.
- ☐ The chances are 9 in 10 that the reaction to stopping grades will be unfavorable.
- ☐ The chances are 7 in 10 that the reaction to stopping grades will be unfavorable.
- ☐ The chances are 5 in 10 that the reaction to stopping grades will be unfavorable.
- ☐ The chances are 3 in 10 that the reaction to stopping grades will be unfavorable.
- ☐ The chances are 1 in 10 that the reaction to stopping grades will be unfavorable.

6. Mr. I has been teaching for 10 years at Red Oak school. The principal is retiring next year and Mr. I is almost sure to get the job. He is well-liked in the community. He is looking forward to the increase in pay and the chance to improve the educational experience of the students at Red Oak. There is a P.T.A. meeting coming up on whether or not sex education should come to Red Oak. Mr. I knows well the feeling of the more influential parents. They are opposed to sex education. Mr. I believes Red Oak children need sex education. If he speaks up at the next meeting there is a good chance he can influence the undecided parents because of his prestige in the community. However, if he does so he will offend the more powerful elements in the community and his chances for the principalship with all of the accompanying good he could do in that position are reduced. If he doesn't say anything at the meeting, the principalship is his but sex education is lost.

Imagine that you are advising Mr. I. Listed below are several possibilities or odds that Mr. I will still get the principalship even if he does speak out.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. I to try to sway the P.T.A.

- _____ Place a check here if you think Mr. I should not attempt to sway the meeting no matter what the probabilities.
- _____ The chances are 1 in 10 that Mr. I will still be principal.
- _____ The chances are 3 in 10 that Mr. I will still be principal.
- _____ The chances are 5 in 10 that Mr. I will still be principal.
- _____ The chances are 7 in 10 that Mr. I will still be principal.
- _____ The chances are 9 in 10 that Mr. I will still be principal.

7. Mr. J's Human Relations class has just returned from the auditorium from a required Veteran's Day assembly. The main speaker, who the principal invited, lauded at length America's military achievements from Generals Custer to Westmoreland. Mr. J had taught his class all year long the way to avoid nuclear holocaust was international cooperation. One of the students inspired by the speaker's remarks, proclaimed that America should bomb the _____ out of the Communists. Mr. J feels angry and obligated to respond to the remark and the Veteran's Day speaker. He would like to hold a sober discussion and have the students express their viewpoints but little time is left in the class period and by tomorrow the students would no longer be excited by the issue. However, if Mr. J expresses his own political viewpoint he may get to make a point he has been trying to get across all year but he stands a good chance that what he says will get back to the principal, who will disapprove.

Imagine that you are advising Mr. J. Listed below are several probabilities or odds that his oration will not be retold to the principal.

Please check the lowest probability that would consider acceptable to make it worthwhile for Mr. J to tell the students what he thought about the Veteran's Day speaker.

- _____ Place a check here if you think Mr. J should not tell the students what he thought about the speaker no matter what the probabilities.
- _____ The chances are 9 in 10 that the principal won't hear about it.
- _____ The chances are 7 in 10 that the principal won't hear about it.
- _____ The chances are 5 in 10 that the principal won't hear about it.
- _____ The chances are 3 in 10 that the principal won't hear about it.
- _____ The chances are 1 in 10 that the principal won't hear about it.

8. Mr. K is in a faculty meeting. Miss White, a fellow teacher, has just had an argument with the principal about a committee report. The school is going through accreditation by North Central Accrediting Association. Miss White, the chairman of the administration-faculty relations committee, turned in a report stating that the relations between the principal and teachers leave something to be desired. Mr. K believes Miss White has a valid point. He thinks he should support her but if he says anything the principal may be offended.

Imagine you are advising Mr. K. Listed below are several probabilities or odds that the principal will not be offended.

Please check the lowest probability that you would consider acceptable to make it worthwhile to support Miss White.

- ☐ The chances are 1 out of 10 that the principal will not be offended.
- ☐ The chances are 3 out of 10 that the principal will not be offended.
- ☐ The chances are 5 out of 10 that the principal will not be offended.
- ☐ The chances are 7 out of 10 that the principal will not be offended.
- ☐ The chances are 9 out of 10 that the principal will not be offended.
- ☐ Place a check here if you think Mr. K should not support Miss White no matter what the probabilities.

9. Mr. L has been approached by a group of students to sign a petition circulating in the school to abolish the dress code. Mr. L has taught his classes about social action and in fact the petition was started by a student in his class. He fears he will lose face with his students as he does not now enforce the code in his classes. However, the petition will be presented to the principal and the superintendent. If he signs it he might be called on the carpet.

Imagine that you are advising Mr. L. Listed below are several probabilities or odds that he will not be called on the carpet.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. L to sign the petition.

- ☐ Place a check here if you think Mr. L should not sign the petition no matter what the probabilities.
☐ The chances are 9 in 10 that Mr. L will be called on the carpet.
☐ The chances are 7 in 10 that Mr. L will be called on the carpet.
☐ The chances are 5 in 10 that Mr. L will be called on the carpet.
☐ The chances are 3 in 10 that Mr. L will be called on the carpet.
☐ The chances are 1 in 10 that Mr. L will be called on the carpet.

10. Miss O, a fifth grade teacher, has a class of children who refuse to stop talk'g when she is presenting the lesson. She feels if she could stop a few of the leaders she could solve her problem. She could continue to discourage talking out of turn and in time the talking would stop, but meanwhile every student would not hear the lesson. Miss O thinks that a quicker way to stop the talking would be to place adhesive tape over the offenders' mouths to shock them into realizing that they must stop. However, if she does this she's likely to be severely criticized by the parents.

Imagine you are advising Miss O. Listed below are several probabilities or odds that Miss O will not be criticized by the parents.

Please check the lowest probability that you would consider acceptable for Miss O to tape the children's mouths.

- ☐ The chances are 1 in 10 that the parents will not object
☐ The chances are 3 in 10 that the parents will not object
☐ The chances are 5 in 10 that the parents will not object
☐ The chances are 7 in 10 that the parents will not object
☐ The chances are 9 in 10 that the parents will not object
☐ Place a check here if you think Miss O should not tape the children no matter what the probabilities.

11. Mr. P, a teacher in the local high school, has been active in his opposition to de facto segregation in his school system. He has been instrumental in planning a boycott of his high school because of alleged de facto segregation there. He would like to join the picket line and refuse to teach his classes for the duration of the boycott, but if he does so he risks being fired. He could take a safer course of action and teach his students about segregation during the boycott but he feels nothing teaches as well as action and example.

Imagine you are advising Mr. P. Listed below are several probabilities or odds that Mr. P will retain his job.

Please check the lowest probability that you would consider acceptable for Mr. P to join the demonstration.

- ☐ The chances are 1 in 10 that he will keep his job.
- ☐ The chances are 3 in 10 that he will keep his job.
- ☐ The chances are 5 in 10 that he will keep his job.
- ☐ The chances are 7 in 10 that he will keep his job.
- ☐ The chances are 9 in 10 that he will keep his job.
- ☐ Place a check here if you think Mr. P should not join the demonstration no matter what the probabilities.

12. Mr. S has found a student smoking in the lavatory and has asked the student to come after school to see him. The school policy is a three day suspension for smoking in the school. Mr. S smokes and he feels the suspension would not do the student any good; in fact, it will mean that the student will be three days behind in his studies. Mr. S knows the vice-principal will not make any exception to the school policy. If Mr. S does not send the student to the office, the administration may find out and Mr. S will be in trouble.

Imagine that you are advising Mr. S. Listed below are several probabilities or odds that the administration will not find out if Mr. S does not send the student to the office for smoking.

Please check the lowest probability that you would consider acceptable for Mr. S to neglect to send the student to the office.

- ☐ The chances are 1 in 10 that the administration will not find out.
- ☐ The chances are 3 in 10 that the administration will not find out.
- ☐ The chances are 5 in 10 that the administration will not find out.
- ☐ The chances are 7 in 10 that the administration will not find out.
- ☐ The chances are 9 in 10 that the administration will not find out.
- ☐ Place a check here if you think Mr. S should send the student to the office regardless of the probabilities.

INSTRUCTIONS: On the following pages, you will find a series of situations that are likely to occur in the everyday life of a teacher. The central person in each situation is faced with a choice between two alternative courses of action, which we might call X and Y. Alternative X is more desirable and attractive than alternative Y but the probability of attaining or achieving X is less than that of attaining or achieving Y.

For each situation on the following pages, you will be asked to indicate the minimum odds of success you would demand before recommending that the more attractive or desirable alternative, X, be chosen.

Read each situation carefully before giving your judgment. Try to place yourself in the position of the central person in each of the situations. There are twelve situations in all. Please do not omit any of them.

-
1. Mr. C is 45, married, and has two children. He is the principal of a moderately successful school. He is well liked in the community and could stay on as principal until he is ready to retire. He has a chance to take a position as superintendent of schools for Middletown and he welcomes the opportunity because his present position has become too routine of late; however, Middletown has had three superintendents in the last four years. Community ferment in Middletown continues to make it difficult for the superintendent to keep his job.

Imagine you are advising Mr. C. Listed below are several probabilities or odds that Mr. C will be able to stay on as superintendent of Middletown.

Please check the lowest probability that you would consider acceptable for Mr. C to take the new position.

- ☐ The chances are 1 in 10 that Mr. C will be able to hold the superintendency.
- ☐ The chances are 3 in 10 that Mr. C will be able to hold the superintendency.
- ☐ The chances are 5 in 10 that Mr. C will be able to hold the superintendency.
- ☐ The chances are 7 in 10 that Mr. C will be able to hold the superintendency.
- ☐ The chances are 9 in 10 that Mr. C will be able to hold the superintendency.
- ☐ Place a check here if you think Mr. C should not accept the superintendency position no matter what the probabilities.

2. Mr. G, a fifth grade teacher, has a number of students in his classroom who are rambunctious, energetic children. They have a short attention span and find it difficult to remain in their seats. Mr. G has provided a corner of his room where they can express some of their energy but he wishes they had more outlets. He would like to occasionally send some of these students on an errand or to the library, but if he does so the principal might think he can't control the class.

Imagine that you are advising Mr. G. Listed below are several probabilities or odds that the principal might not object.

Please check the lowest probability you would consider acceptable to make it worthwhile to allow the children to leave the classroom.

- ☐ The chances are 1 in 10 that the principal won't object.
☐ The chances are 3 in 10 that the principal won't object.
☐ The chances are 5 in 10 that the principal won't object.
☐ The chances are 7 in 10 that the principal won't object.
☐ The chances are 9 in 10 that the principal won't object.
☐ Place a check here if you think that Mr. G should have the children stay in the room no matter what the probability is.

3. Mr. H is teaching social studies in an all white community. He believes his students need more exposure to Blacks. In planning a unit on racism he plans to bring in the local head of the NAACP but he would also like to invite some Black Panthers because he feels they would give a more complete picture of the Black situation. If he has the Panthers in he is more likely to incur the wrath of the parents, but he believes the educational gain would be much greater for the children.

Imagine that you are advising Mr. H. Listed below are several probabilities or odds that the parents will not react negatively to the Panthers.

Please check the lowest probability that you would consider acceptable to make it worthwhile to have Mr. H invite the Panthers.

- ☐ Place a check here if you think Mr. H should not invite the Panthers.
☐ The chances are 9 in 10 that the parents will not react negatively.
☐ The chances are 7 in 10 that the parents will not react negatively.
☐ The chances are 5 in 10 that the parents will not react negatively.
☐ The chances are 3 in 10 that the parents will not react negatively.
☐ The chances are 1 in 10 that the parents will not react negatively.

4. Miss M, a high school English teacher, has a mini-skirt she would like to wear to school. Her school has no rule against mini-skirts and many students would probably think she was more contemporary if she wore it. However, her colleagues and some of the parents might be shocked, and she has a reasonably good rapport with her students already.

Imagine you are advising Miss M. Listed below are several probabilities or odds that the parents and Miss M's colleagues will not be shocked.

Please check the lowest probability you would consider acceptable for Miss M to wear the mini-skirt at school.

- ☐ The chances are 1 in 10 that the colleagues and parents will be shocked.
- ☐ The chances are 3 in 10 that the colleagues and parents will be shocked.
- ☐ The chances are 5 in 10 that the colleagues and parents will be shocked.
- ☐ The chances are 7 in 10 that the colleagues and parents will be shocked.
- ☐ The chances are 9 in 10 that the colleagues and parents will be shocked.
- ☐ Place a check here if you think Miss M should not wear the mini-skirt to school no matter what the probabilities.

5. Mr. N has a student teacher working with him who is presenting material to the students as if the class were a college level course. Mr. N feels he should bring this to the student teacher's attention and work with him on it. However, he doesn't know when would be the best time to do so. If he does so immediately, the students will not have to continue to be lost, but the student teacher may not be convinced he was not getting through to the students and may believe Mr. N does not give the students enough credit for being able to master the material. If Mr. N waits until the unit test he is much more likely to reach the student teacher because he will have more evidence. Waiting until the unit test, however, may mean that the students will be wasting time in class.

Imagine you are advising Mr. N. Listed below are several probabilities or odds that the students will not be wasting their time if Mr. N waits to confront the student teacher.

Please check the lowest probability that you would consider acceptable for Mr. N to wait to confront the student teacher.

- ☐ The chances are 1 in 10 that the students will not be wasting their time.
☐ The chances are 3 in 10 that the students will not be wasting their time.
☐ The chances are 5 in 10 that the students will not be wasting their time.
☐ The chances are 7 in 10 that the students will not be wasting their time.
☐ The chances are 9 in 10 that the students will not be wasting their time.
☐ Please check here if you think Mr. N should not wait regardless of the odds.

6. Mr. Q has a boy in class who he feels he just doesn't understand. He feels if he had the opportunity to talk to the boy's parents and visit his home, Mr. Q could do much more for the student. The boy's parents work nights and Mr. Q would like to make a home visit. Mr. Q would like to visit during the day and feels strongly that he should be given released time to do so. Mr. Q has reason to believe the principal does not share his convictions. In fact, there is a good chance that the principal will view Mr. Q's request as an attempt to "goof off." Mr. Q could try to see the boy more often after school but he feels this would not be as effective as the home visit.

Imagine you are advising Mr. Q. Listed below are several probabilities or odds that the principal will honor his request.

Please check the lowest probability that you would consider acceptable for Mr. Q to consult the principal about the home visit.

- ☐ The chances are 1 in 10 that the principal will not think Mr. Q is trying to "goof-off."
☐ The chances are 3 in 10 that the principal will not think Mr. Q is trying to "goof-off."
☐ The chances are 5 in 10 that the principal will not think Mr. Q is trying to "goof-off."
☐ The chances are 7 in 10 that the principal will not think Mr. Q is trying to "goof-off."
☐ The chances are 9 in 10 that the principal will not think Mr. Q is trying to "goof-off."
☐ Place a check here if you think Mr. Q should not ask the principal no matter what the probabilities.

7. Mr. R is about to start teaching a class of senior English in an inner-city school. He would like to use language in the classroom that truly communicates to his students. Mr. R believes that if he uses "street terms" and colloquialism he will more effectively communicate with his students and the students will be more interested and involved in the class. However, Mr. R fears this may cause a furor in the school.

Imagine you are advising Mr. R. Listed below are several probabilities or odds that Mr. R's approach to English will be tolerated.

Please check the lowest probability you would consider acceptable for Mr. R to use "street language" in his English class.

- ☐ The chances are 1 in 10 that it will not cause a furor in the school.
- ☐ The chances are 3 in 10 that it will not cause a furor in the school.
- ☐ The chances are 5 in 10 that it will not cause a furor in the school.
- ☐ The chances are 7 in 10 that it will not cause a furor in the school.
- ☐ The chances are 9 in 10 that it will not cause a furor in the school.
- ☐ Place a check here if you think Mr. R should not use "street language" in his class no matter what the probabilities.

8. Miss T is on her way to a staff meeting when she runs into a student of hers who is crying. The student seems eager to talk with Miss T, and she would like to help but she fears she will be missed at the required meeting. Miss T may not be able to help the student but she won't know that unless she stays and talks to him. On the other hand, she is almost certain that nothing much will be discussed at the meeting that will be of help to any of the students.

Imagine that you are advising Miss T. Listed below are several probabilities or odds that Miss T will not be missed at the faculty meeting.

Please check the lowest probability that you would consider acceptable for Miss T to stay and confer with the students.

- ☐ Place a check here if you think Miss T should go to the faculty meeting regardless of the odds of her being missed.
- ☐ The chances are 9 in 10 that she will not be missed.
- ☐ The chances are 7 in 10 that she will not be missed.
- ☐ The chances are 5 in 10 that she will not be missed.
- ☐ The chances are 3 in 10 that she will not be missed.
- ☐ The chances are 1 in 10 that she will not be missed.

9. Mr. U, a nontenure teacher, has been approached by his fellow teachers to represent them to the principal. His colleagues want him to express their desire to be more involved in curriculum construction. Mr. U feels honored to be chosen and welcomes the opportunity to present the faculty grievance as he sees it, but wonders if the principal's forthcoming evaluation of his teaching might be prejudiced.

Imagine that you are advising Mr. U. Listed below are several probabilities or odds that the principal will turn in a good evaluation of Mr. U.

Please check the lowest probability that you would consider acceptable for Mr. U to present the faculty grievance.

- ☐ The chances are 1 in 10 that the principal will not be prejudiced in his evaluation.
- ☐ The chances are 3 in 10 that the principal will not be prejudiced in his evaluation.
- ☐ The chances are 5 in 10 that the principal will not be prejudiced in his evaluation.
- ☐ The chances are 7 in 10 that the principal will not be prejudiced in his evaluation.
- ☐ The chances are 9 in 10 that the principal will not be prejudiced in his evaluation.
- ☐ Place a check here if you think Mr. U should not present the grievance regardless of the odds.

10. Mrs. V, a high school social problems teacher, has had her class conduct a community survey of pollution. The class has become excited about the problems of air pollution from a local factory. Mrs. V has encouraged student planning and participation in developing and conducting the study. The class wants to file a citizen's suit to force the factory to install abatement equipment. The factory is the largest taxpayer in the school district. The class needs Mrs. V's help and she has advocated responsible social action. However, if she loses her job she may not get to help any students.

Imagine you are advising Mrs. V. Listed below are several probabilities or odds that Mrs. V will not lose her job.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Mrs. V to help her class with the suit.

- ☐ The chances are 1 in 10 that Mrs. V will retain her job.
- ☐ The chances are 3 in 10 that Mrs. V will retain her job.
- ☐ The chances are 5 in 10 that Mrs. V will retain her job.
- ☐ The chances are 7 in 10 that Mrs. V will retain her job.
- ☐ The chances are 9 in 10 that Mrs. V will retain her job.
- ☐ Place a check here if you think Mrs. V should not help her class file the suit no matter what the probabilities.

11. Miss W. a fifth grade teacher, is soon to be evaluated by the district's curriculum coordinator. The school district's curriculum calls for her to present a balanced presentation of subjects in a sequential manner. Miss W has, however, had her class continue on a unit of instruction which is of particular interest to her students. She would like very much to continue on this unit because her students are excited about it, but she fears the curriculum coordinator will criticize her.

Imagine you are advising Miss W. Listed below are several probabilities or odds that the curriculum coordinator will not criticize her.

Please check the lowest probability that you would consider acceptable for Miss W to continue the high interest unit.

- ☐ The chances are 1 in 10 that the curriculum coordinator will not object.
- ☐ The chances are 3 in 10 that the curriculum coordinator will not object.
- ☐ The chances are 5 in 10 that the curriculum coordinator will not object.
- ☐ The chances are 7 in 10 that the curriculum coordinator will not object.
- ☐ The chances are 9 in 10 that the curriculum coordinator will not object.
- ☐ Place a check here if you think Miss W should go on to the next unit no matter what the probabilities.

12. Miss X has a teacher aide in her classroom who is the wife of a school board member. Miss X feels the teacher aide's methods of instruction are philosophically opposed to her own. Miss X has talked to the aide repeatedly about her classroom behavior but the aide continues in her approach. Miss X contemplates speaking to the principal about it. Miss X feels she and the children could somehow manage to tolerate the aide until the end of the year, but if they did so she believes the children will suffer. On the other hand, if she goes to the principal, he may change the aide, but there is a good chance Miss X's request will be denied, which will result in worse consequences for everyone.

Imagine you are advising Miss X. Listed below are several probabilities or odds that the principal will change the teacher aide.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Miss X to consult the principal.

- _____ The chances are 1 in 10 that the principal will change the teacher aide.
- _____ The chances are 3 in 10 that the principal will change the teacher aide.
- _____ The chances are 5 in 10 that the principal will change the teacher aide.
- _____ The chances are 7 in 10 that the principal will change the teacher aide.
- _____ The chances are 9 in 10 that the principal will change the teacher aide.
- _____ Place a check here if you think Miss X should not talk to the principal no matter what the probabilities.

APPENDIX E

EXPERIMENTAL INSTRUMENT

OPINION QUESTIONNAIRE I

MALE _____
 FEMALE _____

INSTRUCTIONS: On the following pages, you will find a series of situations that are likely to occur in the everyday life of a teacher. The central person in each situation is faced with a choice between two alternative courses of action, which we might call X and Y. Alternative X is more desirable and attractive than alternative Y but the probability of attaining or achieving X is less than that of attaining or achieving Y.

For each situation on the following pages, you will be asked to indicate the minimum odds of success you would demand before recommending that the more attractive or desirable alternative, X, be chosen.

Read each situation carefully before giving your judgment. Try to place yourself in the position of the central person in each of the situations. There are twelve situations in all. Please do not omit any of them.

1. Miss A, a newly certified teacher is looking for a teaching job. After a considerable number of interviews, she is offered two contracts. One position is in Willow Run, a suburban community in which she would earn a good salary preparing students for college. In Willow Run she would have few behavior problems. Also Miss A would have few challenging experiences. The other contract is with Middletown, an urban system which is currently "heated" because its majority Black population demands local control of the schools. Miss A feels she would derive great satisfaction from working with economically deprived students but is fearful that she might not be retained once local control is realized.

Imagine that you are advising Miss A. Listed below are several probabilities or odds that her contract will be renewed in Middletown.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Miss A to sign the Middletown contract.

- _____ The chances are 1 in 10 that she will be asked to stay on at Middletown.
- _____ The chances are 3 in 10 that she will be asked to stay on at Middletown.
- _____ The chances are 5 in 10 that she will be asked to stay on at Middletown.
- _____ The chances are 7 in 10 that she will be asked to stay on at Middletown.
- _____ The chances are 9 in 10 that she will be asked to stay on at Middletown.
- _____ Place a check here if you think Miss A should not take the job no matter what the probabilities.

2. Mr. B, a special education teacher has been assigned to a class of students whose truancy rate is three times that of the regular students in the school. He would very much like to initiate consultation with a nearby university about these students. If he asks for the university's help without talking it over with his principal, the university will almost certainly help but if the principal finds out he will be in a lot of trouble. But, on the other hand, knowing the principal as he does, if Mr. B talks to him about the university's consultation, he will not allow it.

Imagine that you are advising Mr. B. Listed below are several probabilities or odds that the principal will not find out about the consultation.

Please check the lowest probability that you would consider acceptable for Mr. B to consult with the university.

Place a check here if you think Mr. B should not consult independently no matter what the probabilities.

The chances are 9 in 10 that the principal will not find out.

The chances are 7 in 10 that the principal will not find out.

The chances are 5 in 10 that the principal will not find out.

The chances are 3 in 10 that the principal will not find out.

The chances are 1 in 10 that the principal will not find out.

3. Mr. C, a young, single teacher has an attractive girl in his high-school class who desperately needs someone to take a special interest in her. He seems to have better rapport with her than any of the teachers in the school. She comes after school to talk to him but must leave soon because the students are bussed in to school each day. These after school talks seem to help her but they are over before they get to talk about anything meaningful. Mr. C wishes they could talk at length and after considering many alternatives decides that the only feasible, non-threatening way is for him to offer to drive her home the next time she starts to "open up" in her conversations. Mr. C realizes that although this time to talk in a more relaxed, natural atmosphere might be very helpful to the girl, the community might not approve. He would face the possibility of being fired.

Imagine that you are advising Mr. C. Listed below are several probabilities or odds that the community would look with disfavor on Mr. C.

Please check the lowest probability that you would consider acceptable for Mr. C to offer the girl a ride home.

The chances are 1 in 10 that no unfavorable community reaction will ensue.

The chances are 3 in 10 that no unfavorable community reaction will ensue.

The chances are 5 in 10 that no unfavorable community reaction will ensue.

The chances are 7 in 10 that no unfavorable community reaction will ensue.

The chances are 9 in 10 that no unfavorable community reaction will ensue.

Place a check here if you think Mr. C should not offer to drive the girl home, no matter what the probabilities.

4. Mr. D has been teaching for 10 years at Red Oak school. The principal is retiring next year and Mr. D is almost sure to get the job. He is well-liked in the community. He is looking forward to the increase in pay and the chance to improve the educational experience of the students at Red Oak. There is a P.T.A. meeting coming up on whether or not sex education should come to Red Oak. Mr. D knows well the feeling of the more influential parents. They are opposed to sex education. Mr. D believes Red Oak children need sex education. If he speaks up at the next meeting there is a good chance he can influence the undecided parents because of his prestige in the community. However, if he does so he will offend the more powerful elements in the community and his chances for the principalship with all of the accompanying good he could do in that position are reduced. If he doesn't say anything at the meeting, the principalship is his but sex education is lost.

Imagine that you are advising Mr. D. Listed below are several probabilities or odds that Mr. D will still get the principalship even if he does speak out.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. D to try to sway the P.T.A.

Place a check here if you think Mr. D should not attempt to sway the meeting no matter what the probabilities.

The chances are 9 in 10 that Mr. D will still be principal.

The chances are 7 in 10 that Mr. D will still be principal.

The chances are 5 in 10 that Mr. D will still be principal.

The chances are 3 in 10 that Mr. D will still be principal.

The chances are 1 in 10 that Mr. D will still be principal.

5. Mr. E's Human Relations class has just returned from the auditorium from a require Veteran's Day assembly. The main speaker, who the principal invited, lauded at length America's military achievements from Generals Custer to Westmoreland. Mr. E had taught his class all year long the way to avoid nuclear holocaust was international cooperation. One of the students inspired by the speaker's remarks, proclaimed that America should bomb the _____ out of the Communists. Mr. E feels angry and obligated to respond to the remark and the Veteran's Day speaker. He would like to hold a sober discussion and have the students express their viewpoint but little time is left in the class period and by tomorrow the students would no longer be excited by the issue. However, if Mr. E expresses his own political viewpoint he may get to make a point he has been trying to get across all year but stands a good chance that what he says will get back to the principal who will disapprove.

Imagine that you are advising Mr. E. Listed below are several probabilities or odds that his oration will not be retold to the principal.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. E to tell the students what he thought about the Veteran's Day speaker.

- ☐ The chances are 1 in 10 that the principal won't hear about it.
- ☐ The chances are 3 in 10 that the principal won't hear about it.
- ☐ The chances are 5 in 10 that the principal won't hear about it.
- ☐ The chances are 7 in 10 that the principal won't hear about it.
- ☐ The chances are 9 in 10 that the principal won't hear about it.
- ☐ Place a check here if you think Mr. E should not tell the students what he thought about the speaker no matter what the probabilities.

6. Mr. F, a teacher in the local high school has been active in his opposition to de facto segregation in his school system. He has been instrumental in planning a boycott of his high school because of alleged de facto segregation there. He would like to join the picket line and refuse to teach his classes for the duration of the boycott, but if he does so he risks being fired. He could take a safer course of action and teach his students about segregation during the boycott but he feels nothing teaches as well as action and example.

Imagine you are advising Mr. F. Listed below are several probabilities or odds that Mr. F will retain his job.

Please check the lowest probability that you would consider acceptable for Mr. F to join the demonstration.

- ☐ Place a check here if you think Mr. F should not join the demonstration no matter what the probabilities.
- ☐ The chances are 9 in 10 that he will keep his job.
- ☐ The chances are 7 in 10 that he will keep his job.
- ☐ The chances are 5 in 10 that he will keep his job.
- ☐ The chances are 3 in 10 that he will keep his job.
- ☐ The chances are 1 in 10 that he will keep his job.

7. Mr. G, a fifth grade teacher, has a number of students in his classroom who are rambunctious, energetic children. They have a short attention span and find it difficult to remain in their seats. Mr. G has provided a corner of his room where they can express some of their energy but he wishes they had more outlets. He would like to occasionally send some of these students on an errand or to the library but if he does so the principal might think he can't control the class.

Imagine that you are advising Mr. G. Listed below are several probabilities or odds that the principal might not object.

Please check the lowest probability that you would consider acceptable to make it worthwhile to allow the children to leave the classroom.

- ☐ The chances are 1 in 10 that the principal won't object.
- ☐ The chances are 3 in 10 that the principal won't object.
- ☐ The chances are 5 in 10 that the principal won't object.
- ☐ The chances are 7 in 10 that the principal won't object.
- ☐ The chances are 9 in 10 that the principal won't object.
- ☐ Place a check here if you think that Mr. G should have the children stay in the room no matter what the probability is.

8. Mr. H has a boy in class who he feels he just doesn't understand. He feels if he had the opportunity to talk to the boy's parents and visit his home, Mr. H could do much more for the student. The boy's parents work nights and Mr. H would like to make a home visit. Mr. H would like to visit during the day and feels strongly that he should be given released time to do so. Mr. H has reason to believe the principal does not share his convictions. In fact, there is a good chance that the principal will view Mr. H's request as an attempt to "goof off". Mr. H could try to see the boy more often after school but he feels this would not be as effective as the home visit.

Imagine you are advising Mr. H. Listed below are several probabilities or odds that the principal will honor his request.

Please check the lowest probability that you could consider acceptable for Mr. H to consult the principal about the home visit.

- ☐ Place a check here if you think Mr. H should not ask the principal no matter what the probabilities.
- ☐ The chances are 9 in 10 that the principal will not think Mr. H is trying to "goof off".
- ☐ The chances are 7 in 10 that the principal will not think Mr. H is trying to "goof off".
- ☐ The chances are 5 in 10 that the principal will not think Mr. H is trying to "goof off".
- ☐ The chances are 3 in 10 that the principal will not think Mr. H is trying to "goof off".
- ☐ The chances are 1 in 10 that the principal will not think Mr. H is trying to "goof off".

9. Mr. I is about to start teaching a class of senior English in an inner-city school. He would like to use language in the classroom that truly communicates to his students. Mr. I believes that if he uses "street terms" and colloquialism he will more effectively communicate with his students and the students will be more interested and involved in the class. However, Mr. I fears this may cause a furor in the school.

Imagine you are advising Mr. I. Listed below are several probabilities or odds that Mr. I's approach to English will be tolerated.

Please check the lowest probability you would consider acceptable for Mr. I to use "street language" in his English class.

- ☐ The chances are 1 in 10 that it will not cause a furor in the school.
- ☐ The chances are 3 in 10 that it will not cause a furor in the school.
- ☐ The chances are 5 in 10 that it will not cause a furor in the school.
- ☐ The chances are 7 in 10 that it will not cause a furor in the school.
- ☐ The chances are 9 in 10 that it will not cause a furor in the school.
- ☐ Place a check here if you think Mr. I should not use "street language" in his class no matter what the probabilities.

10. Mrs. J, a high school social problem teacher, has had her class conduct a community survey on pollution. The class has become excited about the problem of air pollution from a local factory. Mrs. J has encouraged student planning and participation in developing and conducting the study. The class wants to file a citizen suit to force the factory to install abatement equipment. The factory is the largest taxpayer in the school district. The class needs Mrs. J's help and she has advocated responsible social action. However, if she loses her job she may not get to help any students.

Imagine you are advising Mrs. J. Listed below are several probabilities or odds that Mrs. J will not lose her job.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Mrs. J to help her class with the suit.

- ☐ Place a check here if you think Mrs. J should not help her class file the suit no matter what the probabilities.
- ☐ The chances are 9 in 10 that Mrs. J will retain her job.
- ☐ The chances are 7 in 10 that Mrs. J will retain her job.
- ☐ The chances are 5 in 10 that Mrs. J will retain her job.
- ☐ The chances are 3 in 10 that Mrs. J will retain her job.
- ☐ The chances are 1 in 10 that Mrs. J will retain her job.

11. Miss K, a fifth grade teacher is soon to be evaluated by the district's curriculum co-ordinator. The school district's curriculum calls for her to present a balanced presentation of subjects in a sequential manner. Miss K has, however, had her class continue on a unit of instruction which is of particular interest to her students. She would like very much to continue on this unit because her students are excited about it but she fears the curriculum coordinator will criticize her.

Imagine you are advising Miss K. Listed below are several probabilities or odds that the curriculum coordinator will not criticize her.

Please check the lowest probability that you would consider acceptable for Miss K to continue the high interest unit.

- ☐ The chances are 1 in 10 that the curriculum coordinator will not object.
- ☐ The chances are 3 in 10 that the curriculum coordinator will not object.
- ☐ The chances are 5 in 10 that the curriculum coordinator will not object.
- ☐ The chances are 7 in 10 that the curriculum coordinator will not object.
- ☐ The chances are 9 in 10 that the curriculum coordinator will not object.
- ☐ Place a check here if you think Miss K should go on to the next unit no matter what the probabilities.

12. Miss L has a teacher aide in her classroom who is the wife of a school board member. Miss L feels the teacher aide's methods of instruction are philosophical opposed to her own. Miss L has talked to the aide repeatedly about her classroom behavior but the aide continues in her approach. Miss L contemplates speaking to the principal about it. Miss L feels she and the children could somehow manage to tolerate the aide until the end of the year but if they did so she believes the children will suffer. On the other hand, if she goes to the principal, he may change the aide, but there is a good chance Miss L's request will be denied, which will result in worse consequences for everyone.

Imagine you are advising Miss L. Listed below are several probabilities or odds that the principal will change the teacher aide.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Miss L to consult the principal.

- _____ Place a check here if you think Miss L should not talk to the principal no matter what the probabilities.
- _____ The chances are 9 in 10 that the principal will change the teacher aide.
- _____ The chances are 7 in 10 that the principal will change the teacher aide.
- _____ The chances are 5 in 10 that the principal will change the teacher aide.
- _____ The chances are 3 in 10 that the principal will change the teacher aide.
- _____ The chances are 1 in 10 that the principal will change the teacher aide.