A Comparative Analysis of the Skills and Satisfaction of Teenagers Taught Decision-Making Models

John T. Chapman

Western Michigan University

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A COMPARATIVE ANALYSIS OF THE SKILLS AND SATISFACTION OF TEENAGERS TAUGHT DECISION-MAKING MODELS

by

John T. Chapman

A Dissertation Submitted to the Faculty of The Graduate College in partial fulfillment of the requirements for the Degree of Doctor of Education Department of Counseling and Personnel

Western Michigan University Kalamazoo, Michigan August 1981

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A COMPARATIVE ANALYSIS OF THE SKILLS AND SATISFACTION OF TEENAGERS TAUGHT DECISION-MAKING MODELS

John T. Chapman, Ed.D.
Western Michigan University, 1981

This study was designed to measure the effectiveness of two generic types of decision-making models currently used to teach high school students decision-making.

Models that were used in this study were a deductive and an inductive model. Deductive decision-making is the philosophical process, that is a generalization of personal values to specific choice items. Induction is the scientific process; students consider a series of specific items and generalize a decision from the examinations.

Effectiveness in this study was defined as the process skills and student satisfaction with the methods. Individual student differences that were considered in the study were grades, decision-maturity, gender, and cognitive style. There were 32 hypotheses generated comparing the skills and satisfaction of students, with individual differences, using the two different models.

Students who were sampled in the study came from eleven different high schools in Van Buren County in southwestern Michigan. The 124 students in this study attend the Van Buren Skills Center. Students from seven representative vocational programs filled out a researcher
designed questionnaire that was developed to identify individual student differences. Students were then invited to attend one of the two treatment groups. One of the groups was taught a deductive decision-making process. The other group was taught an inductive decision-making process. Both groups were taught by the researcher.

Following the lesson, students in both groups were asked to make five decisions. Decisions the students were asked to make concerned: menu items, dates, cars, houses, and presidential candidates.

A one-factor analysis of variance was used to compare the skills; a chi-square analysis was used to compare satisfaction. A $p < 0.05$ level of confidence was set for the study.

The results of the study by individual difference groups were:

**Grades**

1. Students with high grades were more satisfied with the deductive model than with the inductive model at the $p < 0.05$ level of confidence.

2. Students with low grades were more satisfied with the inductive model at the $p < 0.05$ level of confidence.

3. Students with high grades had higher skill scores using the deductive model at the $p < 0.05$ level.
4. Students with low grades had higher skill scores using the deductive model at the $p<0.05$ level.

Decision-maturity

1. Decision-immature students had lower skill scores using the inductive model than did decision-mature students at the $p<0.01$ level.

2. Decision-mature students had higher skill scores with the deductive model than with the inductive model at the $p<0.05$ level.

3. Decision-immature students had higher skill scores with the deductive model than with the inductive model at the $p<0.01$ level.

Gender

1. Female students had higher skill scores than did male students using the inductive model at the $p<0.01$ level.

2. Female students were more satisfied with the inductive model than were male students at the $p<0.05$ level.

3. Male students had higher skill scores with the deductive model than they did with the inductive model at the $p<0.01$ level.

4. Female students were more satisfied with the deductive model than were male students at the $p<0.05$ level.
Cognitive Style

1. Students with a deductive cognitive style had higher skill scores using the deductive model than did inductive style students using the same model at the $p < .05$ level.

2. Students with a deductive cognitive style had higher skill scores using the deductive model than they did using the inductive model at the $p < .01$ level.

An implication for educators from this study is that, if only one method of decision-making could be selected for all high school students, the deductive method would probably be the preferred choice. If the instructor is working with a largely female population, either model could be used effectively.
ACKNOWLEDGEMENTS

This study on decision-making is gratefully dedicated to the people whose decisions have had such a major impact on my life and direction.

Thelma Urbick
Robert Brashear
Gilbert Mazer
Chris Korakos
Bill Martinson
Tom Coyne
A. L. Sebaly
Bill Buys

Harry Miller

Murdoch Chapman
Doris Chapman

Peggy Chapman

John T. Chapman
DID YOU EVER HAVE TO FINALLY DECIDE
AND SAY AS TO ONE AND LET THE OTHER
ONE SLIDE?

IT'S NOT ALWAYS EASY, IT'S NOT OFTEN
KIND, DID YOU EVER HAVE TO MAKE UP
YOUR MIND?

John Sebastian
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CHAPTER I

INTRODUCTION AND OVERVIEW

Many individuals do not see clearly what is really important to them; consequently they are often unable to specify what they want to attain today, tomorrow, or in the more distant future (Gelatt, 1973, p. 5). Decision-making skills are extremely important since they can affect the individual throughout the total life span. However, these skills are rarely taught formally in our school systems. Perhaps the skills are not taught because instructors are not sure about which models work, which models work best, and/or the individual student differences that affect the utility of the available models.

Students are faced with a multitude of daily decisions from homework to dating. Students are also faced with the long term decisions of training, job, marriage and family. The inability to decide brings these young people much sadness and regret; while impending decisions bring intense anxiety to the ill prepared decider. The regret and anxiety could be alleviated in many cases, if the student had some effective decision-making strategies.

As important as decision-making seems it is often overlooked in our educational system and society (Dinklage,
1966; Kosuth and Miltenberger, 1972). Gelatt, in a 1962 article, suggested that decision-making may well be the hope for the future for secondary guidance. Counselors are constantly faced with teaching decision-making to students: what class to take, what college to go to, whether or not to stay in school.

There are probably very few arguments as to the importance of decision-making. Everyone can give several examples of the result of good or poor deciding in their own lives. Despite the fact that people use decision-making (from hunches to systematic models) more frequently than math, science or music, it is rarely taught formally in our school systems (Egner and Jackson, 1978).

In 1974 the Michigan Department of Education established some minimal decision-making goals for students. One of the objectives (11.3) states that for students in grades ten through adult given a situation where an individual must make a decision, they can:

1. List the alternatives
2. Weigh the alternatives
3. Make a systematic decision based on identified information

The objectives did not mention a specific decision-making program to implement those steps; they did stress the importance of the skills. Instructors charged with implementing the steps must be able to evaluate commercially prepared and locally developed programs to insure
their effectiveness with and for students.

Decision-making programs usually fall under one of two headings, they are either deductive or they are inductive. The Michigan Occupational Information Systems (MOIS) structured search, Scientific Research Associates-Job Experience Kits, and the Central Item Analysis used at the Van Buren Skills Center, are examples of programs using the inductive approach. The Art of Developing a Career (Carkhuff and Friel, 1974), System for Interactive Guidance and Information (SIGI) (Borow, 1973), are examples of the deductive model as it is currently used with students.

The types of individual student differences that were examined in order to measure method effectiveness were: grades, decision-maturity, gender, and cognitive style. Finally, the effectiveness of the models is determined by the students' process skills and their satisfaction with the methods they were using.

Statement of the Problem

Major problems that occur in preparing students for the task are: (1) what are the individual characteristics of the students that influence their decision-making ability; (2) based on student differences, what decision-making model or models are best for students. This
research attempts to throw some light on those questions.

Whether one model is more effective, or what kind of students benefit more from a particular model is the main focus of this study.

**Definition of Terms**

Certain words in this study occur frequently and for the purposes of this research, will be defined as follows:

Deductive decision-making - a philosophical approach to decision-making. Deduction uses a syllogistic, "if-then," approach to problem-solving and works from the general to the specific.

Inductive decision-making is the scientific approach to decision-making. Induction is the process whereby an individual open-mindedly examines each option thoroughly and works from the specific to the general. The investigator examines the particulars of each option and compares those specific items with their value system. While this appears to be an open-minded approach, it is often a result of a lack of experience with the choice items.

Decision-making skills - in the context of this study, decision-making skills are process skills rather than product skills. Product skills would concern the actual quality of the decision. The decision itself is hard to evaluate, as it may take days, months, or years.
to really know if a decision was good or bad for the person. Process skills, on the other hand, refer to the actual thoroughness and accuracy the person uses in making a decision. The actual process is important, because leaving out a critical step could have some serious implications for the final decision.

Decision-making satisfaction - refers to the actual benefit the student felt they received from the decision-making training. Elements of satisfaction in this study were:

1. How beneficial the training was deemed to be
2. The ability to use the model in other situations
3. Whether or not the student would use the model again
4. How difficult the model is to use in making a choice
5. Whether or not the students learned a better way to make decisions

User satisfaction is a very important concern to the instructor in selecting a type of decision-making model. Even if students can use a particular method, unless they value it, they will probably never use it again.

Decision-maturity - refers to the level of sophistication the student has regarding decision-making. Criteria for sophistication in this study are:

1. Experience with a variety of decisions
2. Personal autonomy in decision-making
3. Attitude about decision-making
4. Familiarity with personal values

Cognitive style - the person's general approach to deciding, prior to learning any new models. Some people tend to have a deductive (philosophical) predisposition in decision-making. Other people are more inductive or scientific in their problem-solving methods. Other terms that could be used for decision-maturity are predisposition, approach, or set.

Hypotheses

Substantive Hypotheses

The nature of this research is to attempt to determine whether a deductive or inductive model of decision-making is better for students. The research will also attempt to examine what factors are involved that may cause certain models to be more effective and more satisfying for students to use. The factors that are part of this investigation refers to the individual differences that effect students performance and satisfaction in decision-making. The individual differences are grades, decision-maturity, gender, and cognitive style.

Statistical Hypotheses

The following hypotheses have been formulated in an effort to determine if students would benefit more from
receiving training in one method or the other, to help the educator select suitable models, and to discover whether or not certain individual differences play a significant role in using various models.

Grades

$H_1$: There is no difference between the decision-making skills of students with high grades using a deductive model and students with low grades using the same model.

$H_2$: There is no difference between the satisfaction of students with high grades using a deductive decision-making model and students with low grades using the same model.

$H_3$: There is no difference between the decision-making skills of students with high grades using an inductive decision-making model and the scores of students with low grades using the same model.

$H_4$: There is no difference between the satisfaction of students with high grades using an inductive decision-making model and students with low grades using the same model.

$H_5$: There is no difference between the decision-making skills of students with high grades using the deductive decision-making model and students with high grades using the inductive decision-making model.
$H_6$: There is no difference in the satisfaction of students with high grades using the deductive decision-making model and students with high grades using the inductive decision-making model.

$H_7$: There is no difference between the decision-making skills of students with low grades using a deductive decision-making model and students with low grades using an inductive decision-making model.

$H_8$: There is no difference between the satisfaction of students with low grades using a deductive decision-making model and students with low grades using an inductive decision-making model.

Decision-making Maturity

$H_9$: There is no difference between the decision-making skills of decision-mature students using the deductive decision-making model and decision-immature students using the same model.

$H_{10}$: There is no difference between the satisfaction of decision-mature students using the deductive decision-making model and decision-immature students using the same model.

$H_{11}$: There is no difference between the decision-making skills of decision-mature students using the inductive model of decision-making and decision-immature students using the same model.
H_{12}: There is no difference between the satisfaction of decision-mature students using the inductive model and decision-immature students using the same model.

H_{13}: There is no difference between the decision-making skills of decision-mature students using the deductive decision-making model and decision-mature students using the inductive decision-making model.

H_{14}: There is no difference between the satisfaction of decision-mature students using the deductive decision-making model and decision-mature students using the inductive model.

H_{15}: There is no difference between the decision-making skills of the decision-immature student using the deductive decision-making model and the decision-immature student using the inductive decision-making model.

H_{16}: There is no difference between the satisfaction of the decision-immature student using the deductive decision-making model and the decision-immature student using the inductive decision-making model.

Gender

H_{17}: There is no difference between the decision-making skills of male students using a deductive decision-making model and female students using the same model.

H_{18}: There is no difference in the satisfaction of male students using the deductive decision-making model
and female students using the same model.

$H_{19}$: There is no difference between the decision-making skills of male students using the inductive decision-making model and female students using the same model.

$H_{20}$: There is no difference between the satisfaction of males using the inductive decision-making model and female students using the same model.

$H_{21}$: There is no difference between the decision-making skills of male students using the deductive decision-making model and male students using the inductive decision-making model.

$H_{22}$: There is no difference between the satisfaction of males using the deductive decision-making model and males using the inductive decision-making model.

$H_{23}$: There is no difference between the decision-making skills of females using the deductive decision-making model and female students using the inductive decision-making model.

$H_{24}$: There is no difference between the satisfaction of female students using the deductive decision-making model and female students using the inductive decision-making model.
Cognitive Style

H25: There is no difference between the decision-making skills of students with a deductive cognitive style using the deductive decision-making model and students with an inductive cognitive style using the same model.

H26: There is no difference in the satisfaction of students with a deductive cognitive style using the deductive decision-making model and students with an inductive cognitive style using the same model.

H27: There is no difference between the decision-making skills of students with a deductive cognitive style using the inductive decision-making model and students with an inductive cognitive style using the same model.

H28: There is no difference between the satisfaction of students with a deductive cognitive style using an inductive decision-making model and students with an inductive cognitive style using the same model.

H29: There is no difference between the decision-making skills of students with a deductive cognitive style using the deductive decision-making model and students with the same cognitive style using the inductive decision-making model.

H30: There is no difference between the satisfaction of students with a deductive cognitive style using a deductive decision-making model and students with the same
cognitive style using the inductive decision-making model.

H$_{31}$: There is no difference between the decision-making skills of students with an inductive cognitive style using the deductive decision-making model and students with the same cognitive style using the inductive decision-making model.

H$_{32}$: There is no difference in satisfaction between students with an inductive cognitive style using the deductive decision-making model and students with the same cognitive style using the inductive decision-making model.

Summary

Decision-making is an important set of skills for students to learn in school to prepare them for life. Despite the importance of these skills, they are rarely taught formally in our school systems.

The Michigan Department of Education (1974) outlined specific skills all students should have. The problem then is which model or models should be used to implement that skill training. Individual student differences and how they effect student performance in decision-making is a very important concern in choosing models.

This study was an attempt to measure the effectiveness of two generic decision-making models, deductive and inductive, with a group of one hundred and twenty-five
students. There were thirty-two hypotheses generated regarding the students' skills and satisfaction with the two models based on the individual differences of gender, decision-maturity, and cognitive style.
Overview

This chapter reviews previous studies that have some similarity to this study. The overall comparison is done in the first section of this chapter. The remainder of the chapter reviews previous work relative to: approaches to cognitive decision-making, both deductive and inductive; grades; maturity; gender and cognitive style in decision-making. Finally, this chapter has a summary section for review.

Previous Decision-making Studies

A literature search by Joan Roos Egner and Dorothy Jackson (1978) reported no prior comprehensive research studies related to teaching decision-making skills. Their study found only articles and research dealing with selected variables, such as individual differences, effecting decision-making.

Egner and Jackson (1973) designed a study, however, that in many respects parallels the present study. They studied the influence of gender, grades, socio-economic status and intelligence on the dependent variables of career maturity and decision-making skills. The
researchers pretested and posttested students with a Career Decision-making Questionnaire of their own design.

The second goal of their study was to determine the effectiveness of an experimenter designed decision-making model. The Jackson-Egner Decision-making Model was based on the Blau Model (1956). The Blau Model has eight stages: (1) demand, (2) qualifications, (3) non-functional qualifications, (4) rewards, (5) information, (6) ability, (7) social rewards, and (8) value hierarchy. However, the Jackson-Egner Model used only three stages: (1) values, (2) information, and (3) decision-making.

The researchers worked with 334 eleventh grade students from four high schools. Two of the high schools were rural; and, two were urban. Students were taught decision-making in groups of from 10 to 18 over a ten week period.

An analysis of covariance was used to measure improvement in career maturity and decision-making ability. The researchers selected .05 as the level of significance.

Results indicated that students in the program significantly improved in career maturity and decision-making, at the .01 level of significance. Other results indicated the following: (1) all students improved on the posttest, (2) students who were above average academically scored significantly higher than less nonacademically inclined students at the .001 level, (3) above average academic
students also scored higher on career maturity, (4) females scored higher on both dimensions, (.001 on career maturity and .02 on decision-making skills), (5) an interaction of IQ and academic ability contributed significantly at the .05 level to decision-making scores, (6) socio-economic status had no significant effect.

Egner and Jackson also used a satisfaction questionnaire and found that 62% of the students rated their satisfaction from well satisfied to fairly well satisfied with the decision-making program and used it to make future choices.

Some common points between the Jackson-Egner study and the study reported here include: a measurement of decision-making skills with high school students, measurement of the students satisfaction with the decision-making program, evaluation of the effect gender has on decision-making and the effect grades have on decision-making. The difference is that instead of comparing pre and posttest scores with the same decision-making model, this study compared the results on two different models.

Approaches to Decision-making in Literature

The terms deductive and inductive for two styles of decision-making is appropriate, and some references to these styles were found in the literature review. The American College Dictionary defines deductive as applying
an accepted general principle to an individual case. Inductive, on the other hand, is the scientific method of studying individual cases and forming a general principle from the observations.

Syllogisms are a good example of the deductive process: If all birds have feathers, and a woodpecker has feathers; then a woodpecker is a bird. Inductive learning on the other hand, is closer to the stimulus-response model. The subject has only to discriminate the positive stimulus from the negative stimuli before responding, according to a study done to describe cognitive processes through the Rule Learning Project in Tallahassee, Florida (Fletcher, 1969).

The researchers in the Tallahassee Study used a modification of the Guilford Model (1967) to describe the inductive process.

Figure 1. Schematic of inductive process
The relevance of these definitions of cognitive styles for this study are best illustrated by the following:

Deductive: If...then...

If a woman liked dark haired men, in an educational profession, who like jogging...and she sees John Doe who possesses those traits she may deduce...I would like to meet him.

Inductive:

![Diagram of inductive process]

Figure 2. Application of inductive process

and then the same process would take place for profession and jogging.

The two models that were selected for this study closely paralleled the theoretical constructs from literature regarding decision-making. The deductive model required the person to know their values at the beginning of the decision-making process. The inductive method gave the individual the necessary prompts or stimuli to which the student responded.
Some alternate terms that are suggested in research are proactive and reactive. Proactive was suggested as a cognitive style by Guilford (1967) for the deductive process. Proactive implied a well understood base of comparison and an active examination of the different choices. Reactive approach suggests a "wait and see" examination of each item.

An earlier study that was done comparing these two methods of learning was conducted by Lloyd Murdock (1971). Murdock defined the deductive method as "being told the rule" (p. 15). Murdock defined the inductive method as "discovering the rule for yourself" (p. 16). The study checked the effects and interaction of three variables: (1) method of stimulus presentation, (2) learning process and (3) intellectual ability.

The study was conducted with 144 fourth graders. The students were divided into three groups of high, average and low intellectual ability.

The results of the teaching of concepts seemed to indicate that all three of the groups did better with the deductive model than the inductive, regardless of ability. The study also concluded that retention of concepts did not depend on how the concept was learned; but, rather how well it was learned. Stimulus presentation did not seem to have any influence on the results.
Grades

Reports in studies suggest that grades are definitely a factor in how well students do with decision-making. Egner and Jackson (1978) states that there are more studies on the influence of variables on decision-making than on the decision-making process itself.

Egner and Jackson (1978) found that grades, above average academic vs. below average was a significant factor at the .01 level. Some other studies done on the impact of grades were by Jepsen (1974) and Mathewson and Orton (1963).

A study that was done by O'Neil, Ohlde, Tollefson, Borke and Piggot (1980) worked with 1,436 high school, undergraduate and graduate students using a Career Factor Checklist. The results were that the interaction of sex and grade level was significant in four out of six cases using a two-way analysis of variance (ANOVA).

Decision-maturity

Decision-maturity is another semantic nightmare. The other synonyms that were used in the search were: experience, attitude and value awareness. Career maturity was used as a dependent variable in the Jackson-Egner study (1978). There was an increase in this variable by students as a result of learning the Jackson-Egner method of
decision-making.

Maturity as it was defined for this study was the students ability to identify a significant number of personal values and having a great deal of decision-making experience. A study that listed attitude as a factor was done by Harren, Koos, Tinsley and Moreland (1978). They found that attitude had very little to do with the decision itself but, rather attitude influenced the process of deciding.

Holland (1966) stated that maturity is a complex structure, composed of skills and dispositions that lead to adjustment. Super (1962) suggested that immaturity was really inadequate self-knowledge. He also said that maturity in choice occurs over a period of time.

Gender

There was a great deal of research done on the variable of sex and its influence on decision-making. No other variable had as much conflicting evidence. Some studies showed no difference in ability between the sexes while other studies showed females as superior. Still other studies indicated males were better decision-makers.

A study that was presented in Detroit, Michigan at the Midwest Psychological Association (Schwartz, 1971) dealt with gender and deductive problem-solving. The study by Schwartz and Patollah suggested that females did poorly
when it came to reorganizing the presentation of problems from the original mode. The difference was significant at the .01 level. The researchers suggested that males tend to be more active in the problem solving process than do females.

Conversely, a study done by Yabroff (1976) with 248 ninth graders showed no difference in the decision-making ability of males and females. Lunnenborg (1977) stated that sex is not a factor as far as using an intuitive or planning approach to selecting a college major, and that therefore, differential counseling is not warranted.

An article written by Baumgardner and Rappaport (1978) suggested that there was a difference in the way people made decisions. The two approaches were intuitive and analytic. Intuitive decision-making is based on emotion and is global in nature. Analytic decision-making is empirical and statistical. The study with six hundred college students found that most of them used the intuitive method of picking a major. Intuitive was a more frequent method used by students who picked a soft major rather than a hard major. Soft majors were defined as: liberal arts programs. Science and business classes were referred to in the study as the hard majors.

The study revealed that females were more intuitive than males. Females in soft programs were more analytic than were males in soft programs. Males in hard programs

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were more analytic than females in hard programs.

The Egner and Jackson study (1978) showed that females scored higher than males on decision-making skills. To summarize, there seems to be a small but consistent difference between the sexes when it comes to decision-making.

**Cognitive Style**

The final area that was researched as to related literature was cognitive styles. In this study an individual was said to have either a predisposition towards the deductive model, a predisposition toward the inductive model or no predisposition.

The deductive person, by definition, was one that knew what they wanted and where they were going. The inductive person was the one who would rather open mindedly scrutinize the details of each option. A study by Earren, Koss, Tinsley and Moreland (1978) on the effect of sex role, attitude, and cognitive style on career decision-making suggested that cognitive styles have an indirect influence on the decision-making process, at the .05 level of significance.

**Summary**

A study by Egner and Jackson, that in many respects paralleled this study, found that sex and grades were
important variables in decision-making skill acquisition.

There seems to exist various cognitive approaches to decision-making. Two models are the deductive and inductive processes. Some theorists referred to these models as proactive and reactive. One study that was located indicated that the deductive approach was superior to the inductive approach in teaching concepts.

The literature revealed evidence that grades were influential on the decision-making process of students. Maturity is an influence on a person's decision-making as it deals with the amount of self-knowledge the person possesses.

Gender was the most hotly debated variable. There was an abundance of conflicting reports.

Cognitive style had the least amount of research, what little there was, suggested that it has an indirect effect on decision-making.

The next chapter of this study deals with the step by step methods that were used in conducting this study.
CHAPTER III

METHODS

**Population**

Students from eleven high schools in Van Buren county in Michigan were asked to participate in this study. The eleven high schools were: Bangor, Bloomingdale, Covert, Decatur, Gobles, Hartford, Lawrence, Lawton, Mattawan, Paw Paw and South Haven. Nine of these eleven high schools are rural villages. Paw Paw and South Haven are small cities. The students who were in this study were also students in vocational programs at the Van Buren Skills Center and attend their local high school for half a day and attend the skills center for the remainder of the day.

The sample of students was drawn from seven programs at the skills center. Programs that were involved were: Distributive Education, Electronics, Welding, Nurse Aide, Child Care, Secretarial and Building trades.

**Selection Procedure**

The programs were chosen on the following basis: (1) The seven programs represent one third of the total number of programs at the Skills Center. (2) They were drawn
randomly from a list of twenty-two programs. (3) The instructors were willing to let their students participate in the study and (4) the programs cover a wide range of skill areas, from the highly technical and scientific Electronics program, to the people oriented world of the health care program, Nurse Aide.

Figure 3 represents the step by step process utilized in the research study.
7. Random assignment to inductive decision-making training

Letter of invitation sent to students

Students taught the inductive method

Students perform five decisions inductively

Students answer satisfaction survey

6. Position students on variable matrix

5. Test instrument reliability

4. Survey population

3. Develop survey instrument

2. Select population

1. Identify variables to test

7. Random assignment to deductive decision-making training

Letter of invitation sent to students

Students taught the deductive method

Students perform five decisions deductively

Students answer satisfaction survey

Results compared using analysis of variance

Figure 3. Flow chart overview of method process

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Table 1 reflects the student representation in the study by program and by school. The total was one hundred twenty-four. There were one hundred sixty-six students involved in filling out the survey. Some students decided not to participate in the study and some were absent during the scheduled times for training.

Table 1
Student and Program Representation in the Actual Study

<table>
<thead>
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<th>Location</th>
<th>Distributive Education</th>
<th>Secretarial Clerical</th>
<th>Nurse Aide</th>
<th>Child Care</th>
<th>Building Trades</th>
<th>Welding</th>
<th>Electronics</th>
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<td></td>
<td></td>
</tr>
<tr>
<td>Covert</td>
<td></td>
<td></td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Decatur</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gobles</td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Hartford</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Lawrence</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Lawton</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Mattawan</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Paw Paw</td>
<td></td>
<td></td>
<td>1</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Haven</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17 16 27 14 14 18 18 124
Survey Instrument

An experimenter designed instrument (Appendix A) was used to survey the population in order to classify students as to individual difference. An instrument was needed that could identify each student by grade, maturity, gender, and cognitive style.

There was no readily available instrument that would have evaluated students on those four factors. There were instruments available that considered one or two of the factors; but, not all of them at one time. The following is a description of the components of the instrument as they related to the factors of grades, maturity, gender and cognitive style.

Grades

The students were asked to identify their overall grade point average: My grade average is: A  B  C  D  E
(Circle one)

Decision-making Maturity

Maturity in decision-making was a hard domain to define and measure. Most students have had some experience in choosing clothes, movies, dates and jobs. For the purpose of this study, it was decided that the mature decider was someone who: (1) had experience making decisions, (2) had a method of making those decisions and
could identify their values relative to five common decision-making areas.

In an attempt to measure those factors, the instrument contained the following questions:

1. I usually pick out my own clothes  Y  N
2. I usually set up my own schedule (homework, work, dates)  Y  N
3. I usually have no trouble selecting friends  Y  N
4. My parents encourage and let me make my own decisions  Y  N
5. I usually like to make decisions  Y  N

CIRCLE THE DESCRIPTION THAT BEST DESCRIBES YOU

1. I hardly ever make decisions
   I make a lot of decisions
   I make some decisions

2. My parents make most of my decisions
   My parents make some of my decisions
   My parents make none of my decisions

3. Many of my decisions are poor ones
   My decisions are probably 50/50 good and bad
   Most of my decisions are pretty good ones

4. My decision making is mostly guesswork
   I have a good way to make simple decisions
   I have a good plan I can use for all decisions

Sometimes you can identify the values that influence your choice. Usually you can do this after you have made a certain kind of decision many different times. For example, if I have bought a lot of cars and most of them broke down on me after a few miles, then one of my values in choosing a car would certainly be RELIABILITY. I would not want to pick another car that was going to break down on me!

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SEE IF YOU CAN LIST SOME OF YOUR VALUES (AS MANY AS YOU CAN) FOR THE FOLLOWING KINDS OF DECISIONS:

When it comes to choosing a meal, my food values are: (example – taste)

1. _______ 2. _______ 3. _______ 4. _______
5. _______ 6. _______ 7. _______ 8. _______
9. _______

When it comes to deciding who to go out with, my dating values are: (example – personality)

1. _______ 2. _______ 3. _______ 4. _______
5. _______ 6. _______ 7. _______ 8. _______
9. _______

When it comes to choosing a car, my values are: (example – reliability)

1. _______ 2. _______ 3. _______ 4. _______
5. _______ 6. _______ 7. _______ 8. _______
9. _______

When it comes to picking a house, my values are: (example – cost)

1. _______ 2. _______ 3. _______ 4. _______
5. _______ 6. _______ 7. _______ 8. _______
9. _______

Gender

SEX: M F
Cognitive Style

In an effort to assess the students cognitive style or predisposition towards a particular model of decision-making, two different descriptions of a way to make a choice were given to the students. The item to be purchased was a dress.

The following paragraphs are descriptions of how two different people go about making decisions. You may have never bought a dress; but if you did, which method sounds most like your approach to the problem?

(A) Sarah had to choose between two outfits for school. She thought, "how much the clothes cost is important to me. The next most important factor is how stylish they are because I do not want to wear out-of-date clothes! Finally, I do not want colors that are too loud, because I do not want to stick out like a sore thumb." After she thought all this out, she went to the store and found an outfit that met her needs.

(B) Mary was not exactly sure what she wanted, but as she looked at the two possibilities, she noticed one was red and the other yellow. She thought, "I prefer the color red to yellow." The yellow dress had buttons while the red dress had a zipper. Mary thought, "I really prefer buttons to a zipper." The yellow dress was five dollars cheaper. Mary thought to herself, "that does it; I will take the yellow dress."

I MAKE DECISIONS MORE THE WAY SARAH DID  A  CIRCLE ONE
I MAKE DECISIONS MORE THE WAY MARY DID  B

The survey instrument was administered to one hundred and sixty-six students in the seven different programs at the Van Buren Skills Center.
Survey Results

Table 2 shows the results of the survey. The average grade was 2.5 on a four point scale. There were 74 males surveyed and 92 females. The average student scored approximately thirty four out of fifty-seven on the decision-making maturity section. The decision-maturity score was, on the average, 60%. Forty four students picked the inductive process. One hundred and twenty students picked the deductive process. Students picked the deductive cognitive style on the average at a rate of 3:1 over the inductive cognitive style.
Table 2
Results of Survey Instrument Used with 164 Students in Seven Programs. Results Indicate Numbers and Averages for Grade Point, Maturity, Gender, and Cognitive Style

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Academic Grade Average</th>
<th>Maturity Decisions</th>
<th>Values</th>
<th>Gender Males</th>
<th>Gender Females</th>
<th>&quot;Cognitive Style&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributive</td>
<td>2.3</td>
<td>9.95</td>
<td>22</td>
<td>3</td>
<td>22</td>
<td>5</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secretarial</td>
<td>2.5</td>
<td>9.95</td>
<td>26</td>
<td>0</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Clerical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Aides</td>
<td>2.4</td>
<td>9.95</td>
<td>52</td>
<td>0</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>Child Care</td>
<td>1.8</td>
<td>9.95</td>
<td>25</td>
<td>0</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>Building Trades</td>
<td>2.4</td>
<td>9.4</td>
<td>23</td>
<td>22</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Trades</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welding</td>
<td>2.3</td>
<td>9.6</td>
<td>21</td>
<td>7</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Electronics</td>
<td>2.6</td>
<td>10</td>
<td>23</td>
<td>23</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>Total Average</td>
<td>2.3</td>
<td>9.3</td>
<td>24</td>
<td>74</td>
<td>92</td>
<td>44</td>
</tr>
<tr>
<td>Maximum</td>
<td>4.0</td>
<td>12</td>
<td>45</td>
<td>166</td>
<td>164</td>
<td></td>
</tr>
</tbody>
</table>

*Not everyone responded to this item.*
Instrument Reliability

Reliability refers to the consistency of scores obtained by the same individual when examined with the same test on different occasions (Anastasi, 1976). There are four different types of reliability: (1) test-retest, (2) Kuder-Richardson, (3) split-half, and (4) scorer reliability. For this study, test-retest was used.

Twenty students, randomly selected, were asked to fill out the survey one month after they had originally taken it. Twenty students represent approximately twelve percent of the population that was surveyed.

A comparison between the two surveys for the students revealed only a 5% change in the responses.

Instrument Validity

There are five basic types of validity: (1) face, (2) construct, (3) content, (4) predictive, and (5) concurrent (Anastasi, 1976). Content and construct validity were the two most important types of validity for this study.

Content Validity

Content validity insures that the domain measured has been effectively sampled according to Anastasi (1976). Grades and gender were two rather obvious areas for content validation. Maturity and cognitive style are
somewhat more difficult areas to sample. The question used for the cognitive styles did seem to follow the models. The area most open to scrutiny was decision-maturity. Does a student who can list many personal values really have decision-maturity?

Construct Validity

Construct validity is the extent to which a test or survey measures that which it is trying to measure. Two methods of measuring construct validity are correlations with other tests and factor analysis. There were no other tests available for a correlation study. A reliability check on the survey instrument with adults and seventh grade students seemed to validate cognitive style as an adequately sampled domain (reported on page 39).

Group Assignment

Before assigning students to treatment groups, the independent variables, grades, decision-maturity, gender and cognitive style were dichotomized. The dichotomy for grades was high or low grades. The dichotomy for decision-maturity was mature or immature. The dichotomy for gender was male and female. The dichotomy for cognitive style was inductive or deductive.
Grades

The decision of what constituted high grades or low grades was made by examining the average score for the 166 students. The mean for grades was 2.5, this would correspond to a letter grade of C+. It was decided that for this study, a grade point of 2 or below would be considered low. A grade of B or better would be considered high for grades.

Decision-maturity

The decision concerning maturity vs. immaturity was made by an examination of the mean score on the survey. Students could have scored as high as 57 on this part of the survey. The mean was 9.3 (81%) for decision experience. The mean was 24 (53%) for identifying personal values. A combined score of 34 (60%) was established as the cutting score. A score of 34 or more placed a student in the decision-mature group. A score of thirty-three or less placed the student in the immature group.

Cognitive Style

Individuals that selected method (A) of choosing a dress on the survey were considered to have a deductive cognitive style. Students that selected method (B) as the way they would choose a dress were considered to have an inductive cognitive style.
Coding

Each student was given an identifying code depending on their responses on the survey.

<table>
<thead>
<tr>
<th></th>
<th>Grade</th>
<th>Mature</th>
<th>Gender</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jane Adams</td>
<td>H</td>
<td>M</td>
<td>F</td>
<td>D</td>
</tr>
<tr>
<td>Martin Van Buren</td>
<td>L</td>
<td>I</td>
<td>M</td>
<td>I</td>
</tr>
<tr>
<td>Rachael Jackson</td>
<td>L</td>
<td>M</td>
<td>F</td>
<td>I</td>
</tr>
</tbody>
</table>

Figure 4. Example of student codes

Figure 4 represents some sample coding. Jane Adams is a student with high grades, decision mature, female that tends to use the deductive cognitive style.

Table 3 is the distribution of students on the survey.
Table 3
The Variable Distribution of
the Students in the Study

<table>
<thead>
<tr>
<th></th>
<th>High Grades</th>
<th>Low Grades</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mature</td>
<td>9</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>Immature</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
</tbody>
</table>

The low numbers of inductive students was an area of concern. It seemed that if there was such a disproportionately low number of inductive students there might have been a problem with using cognitive style as a variable.

A study was then done on twenty randomly selected adults from the Comprehensive Employment Training Act (CETA) programs at the Van Buren Skills Center. Of the twenty that were surveyed, nineteen were deductive. Another survey was then done with twenty five junior high school students in Portage, Michigan. Thirteen of the junior high school students were inductive or approximately fifty percent. Some possible explanations were:
younger students tend to be inductive until they have enough experience to generalize their values, cognitive style and decision-maturity.

The results from the two surveys seemed to justify keeping cognitive style as a variable in this study. The deductive to inductive cognitive style ratio of 3:1 made selection of additional inductive students at the skills center impossible for this research.

Assignment to Treatment Groups

Members of each cell on Table 5 were then randomly placed in either a deductive or inductive decision-making training group.

Invitation to Participation

A letter was sent to each student inviting participation in the study (Appendix H). The students were invited to one of the four two hour training sessions. They were told nothing about the class other than that it was for decision-making. The students attended the class during their usual skill center period. Of the 166 that were originally surveyed, 124 were in the actual study.
Teaching Sessions

Content

Deductive training. The group that received the deductive training was taught a process where they:
(Actual lesson plan in Appendix B)

1. Identified their values relative to the decision areas. For example, if they had to choose a date, they would identify their dating values: nice personality, hair color, or looks.

2. The students then rank ordered their values. They put their values in a preferential order such as: nice personality (3), looks (2), and hair color (1).

3. The next step was to define each of their values. A sampler definition would be:

| Hair color (1) | Good (3) = Blonde hair | O.K. (2) = Brunette or Black hair | Bad (1) = Red hair |

4. Then, using a matrix, the students were taught to compare their values to various options: Example

<table>
<thead>
<tr>
<th>Hair color (1)</th>
<th>Mr. Ideal</th>
<th>John</th>
<th>Jim</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

The ideal choice always gets a good or (3) rating. If John had brown hair he received a (2). If Jim happened to have red hair, he received a (1).
5. The students then multiplied the rank of their value times the score of each option. Example:

<table>
<thead>
<tr>
<th>Hair color (1)</th>
<th>Mr. Ideal</th>
<th>John</th>
<th>Jim</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>3 = 3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

6. Students were taught next:

<table>
<thead>
<tr>
<th>Hair color (1)</th>
<th>Mr. Ideal</th>
<th>John</th>
<th>Jim</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>3 = 3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Personality (3)</th>
<th>Mr. Ideal</th>
<th>John</th>
<th>Jim</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 = 9</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2 = 6</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Looks (2)</th>
<th>Mr. Ideal</th>
<th>John</th>
<th>Jim</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 = 6</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

| Totals          | 18        | 10   | 6   |

7. The students divided each score by Mr. Ideal's score. The result is the percentage of satisfaction for each option.

\[
\text{John} = \frac{10}{18} = 56\% \\
\text{Jim} = \frac{6}{18} = 33\%
\]

8. Finally, the students were taught to evaluate the results - John still has a chance; but poor Jim is out of the running.

**Inductive Training**

The group that received the inductive decision-making training were taught a process whereby: (Appendix C)
1. The students were taught to identify information sources. There are basically two types, people and thing sources of information.

2. The students were then taught to look at the individual options: example, John has brown hair and Jim has red hair.

3. The students were taught to think about how they felt about each important item: "Brown hair is all right; but I do not care for red hair."

4. The students were taught to rate each important item, giving the item a+ if it sounded good; a 0 if it was just O.K.; and a- if it sounded bad.
Example: John Jim
Brown hair 0 Red hair -
Outgoing + Shy -

5. The next step was to identify the reasons for the rating: "I guess being outgoing is pretty important to me!"

6. Generalize values: "Personality of a person seems to come up a lot on my rating sheet!"

7. Students were then asked to total the ratings.
John Jim
6 +'s, 3 0's, 0 -'s 0 +'s, 5 0's, 6 -'s

8. Finally, the students made a choice. You lose again Jim!

Delivery

Delivery of content for both models (see Appendices B and C) was a highly effective method of teaching that
was developed by Carkhuff and Associates. The teaching method has a tell, show and do delivery. The teacher described each step in the process and demonstrated each step in the process. Finally, the class did each step in a simulated decision with the teacher. After the lesson, each student applied what they learned to five different decisions.

In modeling the processes the teacher actually made a decision with the groups about what kind of lawn mower to buy. The simulation decision that the groups were asked to make was concerned about which of two possible classes they would rather take.

The groups were asked to make five decisions: (1) which menu item they preferred, (2) which date they preferred, (3) which car to buy, (4) which house to buy, and (5) whom to vote for for president. The decisions ranged from something they were all familiar with, food, to a decision, none of them had made, whom to vote for.

Information is a very important part of the decision-making process. Because of the time constraints, and in order to insure some uniformity on this variable, the same information package was presented to both groups (see Appendix D). The researcher was the teacher and taught both models with equal zeal.
Satisfaction Questionnaire

After the students finished working on the five decisions, they were asked to fill out a questionnaire on how satisfied they were with the decision-making training.

The questions on the survey dealt with: (1) whether or not the students felt they learned how to make better decisions, (2) what they thought of the training in general, (3) if they could use the method again, (4) if they would use the method again, (5) whether or not the method was difficult, and (6) if they thought other students would benefit from learning this method. The responses were set up with a modified semantic differential: good, O.K., bad; or yes, not sure, no. There was also space at the end for any additional comments.

The Student Work Book

An experimenter developed book of information called Decisions, Decisions, Decisions (see Appendix D) was used by both groups. The workbook contained information on two menu items, two dates, two cars, two houses and two presidential candidates. The workbook was set up, with the type of decision-making getting harder as the student worked through the book. The clarity and amount of information decreased as the student worked their way through the workbook. The first choice dealing with
food items had a very organized presentation of items and details. The final decision has only their voting records presented in a rather obscure fashion. The design of the workbook is such, that neither method was particularly favored.

The Answer Sheets (Appendix E)

Work sheets for the deductive group were set up to let them: list the options, rate the options, reason, compute the scores and figure the percentiles.

The answer sheets for deductive deciders were set up so that the students could identify their values, define their values, rank the values, compare their values to the options, compile, and compare.

Scoring Procedures

Skills

In chapter one there was discussion about the difficulty in evaluating decision-making skills. It is nearly impossible to evaluate the product, the decision itself. For this study, the process was evaluated. The question then on evaluation was whether or not the student could use the model step by step, thoroughly, for all five decisions. The importance of not leaving any step out in a systematic decision is obvious.

Students were awarded one point for each part of the
decision-making process they did for each of the five decisions. The maximum points for a student using a deductive model was 300. The maximum points for a student using the inductive model was 360. The discrepancy between the two score totals was corrected by computing percentages for each score.

Satisfaction

Students' satisfaction with their decisions must also be evaluated. There were 5 questions on the satisfaction survey (Appendix G) and students were evaluated on their response to each item. Students were rated: 3 for an elevated response such as good; 2 for a neutral response like unsure; and 1 for a depressed response, for example bad. Each student had 6 scores for satisfaction.

Data Analysis

Inferential Statistic

The skill score and the satisfaction scores were then added to the original code for each student. If the theoretical Jane Adams from earlier in the chapter had scored 260 on the process skills and 2, 3, 1, 3, 3, 3 on the satisfaction survey, her code would now be:
The letter codes were subsequently changed to numbers before being entered into a data file.

A one factor analysis of variance (ANOVA) was used as the statistic to compare the process skill scores. The ANOVA requires nominal data on the independent variable and interval data on the dependent variable. The individual differences were treated as nominal data: high vs. low grades, mature vs. immature, male vs. female, and deductive vs. inductive cognitive style. The skill scores range from 0 to 360 continuously, qualifying as interval data. The other requirements for the ANOVA normality, independence, randomness, and homogeneity were met by the data. Analysis of variance was selected as the technique because it allowed a manipulation of the data allowing for a comparison of the means between and within the various groups.

The satisfaction responses were discontinuous; therefore, they were treated as nominal data. Chi-square analysis ($\chi^2$) was used as the statistic to compare the responses of the groups to the survey answers.
Significance

The level of confidence established for both skills and satisfaction for this study was \( p < 0.05 \).

The acceptance or rejection of the null hypothesis for process skills for this study is straightforward. Acceptance or rejection of the null hypothesis for satisfaction is more complicated.

Under the heading of satisfaction, each hypothesis has six separate survey responses, for example, consider hypothesis 2.

\( H_2 \): There is no difference in the satisfaction of students with high grades using the deductive decision-making model and students with low grades using the same model.

1. Decision-making training was:
   - Bad - O.K. - Good
2. I learned how to make a better decision:
   - No - Not sure - Yes
3. I could use this method again:
   - No - Maybe - Yes
4. I would use this method again:
   - Never - Maybe - Yes
5. This method is:
   - Hard - O.K. - Easy
6. Other students would benefit from training:
   - No - Maybe - Yes

Since the responses are nominal data and not continuous they cannot be summed. Therefore, six chi-squares were figured for each hypothesis dealing with satisfaction. A total of 96 chi-squares were calculated for this study.
For the purpose of this study, a rejection of the null hypothesis at the $p < .05$ level for any of the six items in a particular hypothesis will constitute rejection of that hypothesis in part, for the specific item. Following the earlier example, if there was a significant difference in the responses of students with high grades as compared to students with low grades on question 4, for example, the null hypothesis for $H_2$ would be rejected for item 4 only.

The alternative treatment for satisfaction was to treat each of the 96 chi-squares as a separate hypothesis. This idea was rejected as it would have resulted in an incomprehensible degree of specificity.
CHAPTER IV

THE RESULTS

Introduction

This chapter contains an overview of the results of this study using a series of tables. Each of the 32 hypotheses is reported with: results, a statistical table, and inferred results tabulation for hypotheses concerning satisfaction will be replete with a 6 item response chi-square table.

Students were given the option of three responses to each item, for example: bad, O.K., good; no, maybe, yes. Since there was a variation in the answer format, the chi-square summary table utilizes low (L), medium (M), and high (H). Inasmuch as there were few low responses on the satisfaction survey, such as bad or no, the low cells were collapsed for statistical analysis. The actual frequency of response is still reported in the table.

Overview

Table 4 graphically depicts the direction of each of the 32 hypotheses. The arrows indicate the direction between or within variable groups, for each of the numbered hypotheses.
Table 4
Direction of the Hypotheses as Represented by Arrows Indicating Directionality and Numbers Corresponding to Individual Hypothesis

<table>
<thead>
<tr>
<th>Individual Differences</th>
<th>Process Skills</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inductive Method</td>
<td>Deductive Method</td>
</tr>
<tr>
<td>Grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>High</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>Decision-maturity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mature</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>Immature</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>Female</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>Cognitive Style</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inductive</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>Deductive</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
</tr>
</tbody>
</table>

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Table 5 represents the actual number of students in each treatment group. The low numbers in the inductive cognitive group was discussed in Chapter III. Because of the size of the cells, the results of hypotheses 25, 26, 27, 28, 31, and 32 should be cautiously interpreted. Further study with a larger number of inductive cognitive style students is recommended.
Table 5
The Number of Students in Each Group for the Study

<table>
<thead>
<tr>
<th>Variables</th>
<th>Inductive</th>
<th>Deductive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>35</td>
<td>32</td>
</tr>
<tr>
<td>High</td>
<td>24</td>
<td>34</td>
</tr>
<tr>
<td>Immature Decision-maturity</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>Mature</td>
<td>35</td>
<td>29</td>
</tr>
<tr>
<td>Males</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Female</td>
<td>34</td>
<td>30</td>
</tr>
<tr>
<td>Inductive Cognitive Style</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Deductive</td>
<td>45</td>
<td>44</td>
</tr>
</tbody>
</table>

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Table 6 indicates the average scores for each variable group. The mean is given for the process skill scores.

Table 7 overviews the significant differences between and among the different variable groups in this study. The different lines indicate at what level of confidence a significant difference was found. A single black line indicates that the null hypothesis was rejected at the \( p < 0.05 \) level of confidence. A double black line indicates the null hypothesis was rejected at the \( p < 0.01 \) level of confidence.
Table 6
Matrix Representing the Average Decision-making Process Skills Scores for Each Group in the Study

<table>
<thead>
<tr>
<th>Individual Differences</th>
<th>Process Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inductive Method</td>
</tr>
<tr>
<td>Low Grades</td>
<td>.73</td>
</tr>
<tr>
<td>High Grades</td>
<td>.74</td>
</tr>
<tr>
<td>Immature Decision-maturity</td>
<td>.68</td>
</tr>
<tr>
<td>Mature Decision-maturity</td>
<td>.77</td>
</tr>
<tr>
<td>Male Gender</td>
<td>.67</td>
</tr>
<tr>
<td>Female Gender</td>
<td>.78</td>
</tr>
<tr>
<td>Inductive Cognitive Style</td>
<td>.75</td>
</tr>
<tr>
<td>Deductive Cognitive Style</td>
<td>.73</td>
</tr>
</tbody>
</table>

KEY: --- = no significance = significance at .05
= significance at .01 level = hypothesis number
Table 7
Results of the Study Representing Significant Differences Detected Employing Single Lines to Represent Differences at the $p<.05$ Level and Double Lines to Indicate Differences at the $p<.01$ Level

<table>
<thead>
<tr>
<th>Individual Differences</th>
<th>Process Skills</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inductive Method</td>
<td>Deductive Method</td>
</tr>
<tr>
<td>Grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decision-maturity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Style</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inductive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deductive</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

KEY = —— = $p<.05$ = —— = $p<.01$
Hypothesis 1

Grades

H₁: There is no difference between the decision-making skills of students with high grades using a deductive decision-making model and students with low grades using the same model.

An analysis of variance between the scores of the two groups yielded a F ratio of .32. The probability of that score occurring is .57. Therefore, the null hypothesis cannot be rejected at the p < .05 level of confidence.

Table 8

Results of One-factor ANOVA Comparing the Decision-making Skills of Students Using the Deductive Decision-making Model with Different Grades

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.0139</td>
<td>.32</td>
<td>ns</td>
</tr>
<tr>
<td>Within groups</td>
<td>54</td>
<td>.3532</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inferred Results

It appears from this study that high or low grades are not a factor for the professional to consider when selecting or using the deductive decision-making model. Both groups of students, regardless of grades, did well.
with this model, .83 for low grade students and .86 for high grade students. Therefore, it would appear that the deductive model would be a good model to use in a situation where there is a variety of academic abilities.

**Hypothesis 2**

H₂: There is no difference between the satisfaction of students with high grades using the deductive decision-making model and students with low grades using the same model.

A chi-square analysis of the student responses revealed no significant differences on the questionnaire reported in Table 9. The highest obtained \( \chi^2 \) was 2.978 on question 4. The probability of that score occurring is \( p(\chi^2 = 2.978) = .08 \). Therefore, the null hypothesis cannot be rejected at the \( p < .05 \) level of confidence.
### Table 9

Results of Chi-square Analysis Comparing the Satisfaction of Students Using the Deductive Decision-making Model with Different Grades Using a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Grades</th>
<th>Satisfaction</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Bad, O.K., Good)</td>
<td>Low</td>
<td>0  17 12</td>
<td>.2029</td>
<td>1</td>
<td>.37</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>1  13 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision:</td>
<td>Low</td>
<td>3  8  18</td>
<td>.1821</td>
<td>1</td>
<td>.91</td>
</tr>
<tr>
<td>(No, Not Sure, Yes)</td>
<td>High</td>
<td>2  7  12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again:</td>
<td>Low</td>
<td>0  14 8</td>
<td>.5123</td>
<td>1</td>
<td>.47</td>
</tr>
<tr>
<td>(No, Maybe, Yes)</td>
<td>High</td>
<td>0  15 13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again:</td>
<td>Low</td>
<td>3  19 7</td>
<td>2.978</td>
<td>1</td>
<td>.08</td>
</tr>
<tr>
<td>(Never, Maybe, Yes)</td>
<td>High</td>
<td>4  8  9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Low</td>
<td>1  14 14</td>
<td>.0313</td>
<td>1</td>
<td>.90</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>2  9  10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training:</td>
<td>Low</td>
<td>0  14 15</td>
<td>.3149</td>
<td>1</td>
<td>.33</td>
</tr>
<tr>
<td>(No, Maybe, Yes)</td>
<td>High</td>
<td>0  9  12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Inferred Results

If further research substantiated these findings, it seems that there is scarcely any difference in how pleased students are with the deductive model, despite their grade point average. Both groups seemed modestly pleased.

Hypothesis 3

H₃: There is no difference between the decision-making skills of students with high grades using the inductive decision-making process and the skills of low grade students using the same model.

An analysis of variance between the scores of students with high grades and the scores of students with low grades, yielded an F ratio of 0.2208. The probability of that score occurring is .64. Therefore, the null hypothesis cannot be rejected at the p<0.05 level of confidence.
Table 10

Results of One-factor ANOVA Comparing the Decision-making Skills of Students Using the Inductive Decision-making Model with Different Grades

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.00309</td>
<td>0.2208</td>
<td>ns</td>
</tr>
<tr>
<td>Within groups</td>
<td>57</td>
<td>.0177</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inferred Results**

Grades are apparently not a factor in deciding whether or not to teach the inductive decision-making model to high school students.

The average scores for the groups, .73 for low grade students, and .74 for high grade students are extremely close.
Hypothesis 4

H₄: There is no difference between the satisfaction of students with high grades using the inductive decision-making model and students with low grades using the same model.

A chi-square analysis of the student responses indicated no significant difference on the questionnaire reported in Table 11. The largest obtained $X^2$ was 4.342 on question 4. The probability of that score occurring is $p(X^2 = 4.342) = .03$. Therefore, the null hypothesis can be rejected at the $p < .05$ level of confidence.
Table 11

Results of Chi-square Analysis Comparing the Satisfaction of Students Using the Inductive Decision-making Model with Different Grades Using a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Grades</th>
<th>Satisfaction</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Bad, O.K., Good)</td>
<td>Low</td>
<td>2 17 16</td>
<td>.002</td>
<td>1</td>
<td>.3235</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>1 12 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision: (No, Not Sure, Yes)</td>
<td>Low</td>
<td>2 10 23</td>
<td>5.829</td>
<td>1</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>3 12 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again: (No, Maybe, Yes)</td>
<td>Low</td>
<td>0 14 21</td>
<td>2.426</td>
<td>1</td>
<td>.11</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>1 14 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again: (Never, Maybe, Yes)</td>
<td>Low</td>
<td>2 18 15</td>
<td>4.342</td>
<td>1</td>
<td>.03*</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>2 18 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Low</td>
<td>1 16 18</td>
<td>2.882</td>
<td>1</td>
<td>.09</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>1 16 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training: (No, Maybe, Yes)</td>
<td>Low</td>
<td>1 11 23</td>
<td>2.718</td>
<td>1</td>
<td>.09</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>2 12 10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05

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Inferred Results

A significant number of students with low grades thought they would use the model again ($p = .03$). Forty-three percent of the students with low grades said they would use the model again. Only 16% of high grade students thought they would use the inductive model again. Significance was approached on questions 2, 5, and 6, again with high responses from students with low grades.

Hypothesis 5

$H_0$: There is no difference between the decision-making skills of students with high grades using the deductive decision-making model and students with high grades using the inductive decision-making model.

An analysis of variance between the scores of the two groups yielded an $F$ ratio of 6.135. The probability of that score occurring is 0.0170. Therefore, the null hypothesis can be rejected at the $p < .05$ confidence level.
Table 12
Results of One-factor ANOVA Comparing the Decision-making Skills of Students with High Grades Using Different Decision-making Models

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.1516</td>
<td>6.135</td>
<td>.070</td>
</tr>
<tr>
<td>Within groups</td>
<td>46</td>
<td>.02471</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inferred Results**

The average score of students using the deductive model was .26. The average score of students using the inductive model was .74. All of the students had high grade averages, 3 or above. This would suggest that students with high grades do a significantly better, or a more thorough job, using the deductive decision-making model.
Hypothesis 6

H$_0$: There is no difference between the satisfaction of students with high grades using the deductive decision-making model and students with high grades using the inductive decision-making model.

A chi-square analysis of the student responses indicated a significant difference on the questionnaire reported in Table 13. An $X^2$ of 3.767 was obtained on question 4. The probability of that score occurring is $p(X^2 \ 3.767) = .04$. Therefore, the null hypothesis can be rejected at the $p<.05$ level of confidence for item 4.
Table 13
Results of Chi-square Analysis Comparing the Satisfaction of Students with High Grades Using Different Decision-making Models Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Treat.</th>
<th>Satisfaction</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
<td>M</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Bad, O.K., Good)</td>
<td>Ind.</td>
<td>7</td>
<td>12</td>
<td>11</td>
<td>.723</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>1</td>
<td>15</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision: (No, Not Sure, Yes)</td>
<td>Ind.</td>
<td>13</td>
<td>12</td>
<td>9</td>
<td>1.752</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>2</td>
<td>7</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>1</td>
<td>14</td>
<td>9</td>
<td>2.277</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0</td>
<td>6</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again: (Never, Maybe, Yes)</td>
<td>Ind.</td>
<td>2</td>
<td>18</td>
<td>4</td>
<td>3.757</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>4</td>
<td>8</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Ind.</td>
<td>1</td>
<td>16</td>
<td>7</td>
<td>2.127</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>2</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>2</td>
<td>12</td>
<td>10</td>
<td>.5874</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0</td>
<td>9</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

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Inferred Results

There was a significant difference detected between the satisfaction of students with high grades using different models. Specifically, 75% of the students with high grades were unsure as to whether or not they would want to use the inductive model again. Conversely, 42% of the students with high grades said they would be willing to use the deductive model again.

**Hypothesis 7**

$H_7$: There is no difference between the decision-making skills of students with low grades using a deductive decision-making model and students with low grades using a inductive decision-making model.

An analysis of variance was used to compare the scores of the two groups. The ANOVA yielded an $F$ ratio of 6.124. The probability of that ratio occurring is 0.0160. Therefore, the null hypothesis can be rejected at the $p<0.05$ level of confidence.
Table 14

Results of One-factor ANOVA Comparing the Decision-making Skills of Students with Low Grades Using Different Decision-making Models

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.1577</td>
<td>6.124</td>
<td>0.016</td>
</tr>
<tr>
<td>Within groups</td>
<td>65</td>
<td>.02758</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inferred Results**

Students with low grades appear to do significantly better with the deductive model than with the inductive model. Though their scores with the inductive model were acceptable, .73, the students with low grades seemed to do a more thorough job with the deductive approach.
Hypothesis 8

H₈: There is no difference in the satisfaction of students with low grades using a deductive decision-making model and students with low grades using an inductive decision-making model.

A chi-square analysis of the student responses indicated no significant difference on the questionnaire reported in Table 15. The largest obtained $X^2$ was 2.135 on question 4. The probability of that score occurring is $p (X^2 = 2.135) = .14$. Therefore, the null hypothesis cannot be rejected at the $p < .05$ level of confidence.
Table 15

Results of Chi-square Analysis Comparing the Satisfaction of Students with Low Grades Using Different Decision-making Models Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Treat.</th>
<th>Satisfaction</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Sad, O.K., Good)</td>
<td>Ind.</td>
<td>2 17 16</td>
<td>.5146</td>
<td>1</td>
<td>.76</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0 17 12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision:</td>
<td>Ind.</td>
<td>2 10 23</td>
<td>.0097</td>
<td>1</td>
<td>.37</td>
</tr>
<tr>
<td>(No, Not Sure, Yes)</td>
<td>Ded.</td>
<td>3 8 18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>0 14 21</td>
<td>.0014</td>
<td>1</td>
<td>.96</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0 14 15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again: (Never, Maybe, Yes)</td>
<td>Ind.</td>
<td>2 18 15</td>
<td>2.135</td>
<td>1</td>
<td>.14</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>3 19 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Ind.</td>
<td>1 16 18</td>
<td>.0531</td>
<td>1</td>
<td>.98</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>1 14 14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>1 11 23</td>
<td>1.657</td>
<td>1</td>
<td>.19</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0 14 15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inferred Results

It seems that there is no difference in the satisfaction of students with low grades using either a deductive or inductive decision-making model.
Hypothesis 9

Decision-making Maturity

\[ H_0: \text{There is no difference between the decision-making scores of decision-mature students using the deductive decision-making model and decision-immature students using the same model.} \]

An analysis of variance between the scores of the two groups yielded an \( F \) ratio of 0.4347. The probability of that score occurring is 0.5125. Therefore, the null hypothesis cannot be rejected at the \( p < 0.05 \) level of confidence.

Table 16

Results of One-factor ANOVA Comparing the Decision-making Skills of Students Using the Deductive Decision-making Model with Different Levels of Decision-maturity

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.0153</td>
<td>0.4347</td>
<td>ns</td>
</tr>
<tr>
<td>Within groups</td>
<td>54</td>
<td>.0352</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Inferred Results

Maturity does not seem to be an important factor in how thoroughly a student can use the deductive model in decision-making. It seems that even when students are not familiar with many of their values, and have not made many decisions, they can still effectively use the deductive model.

Hypothesis 10

H_{10}: There is no difference between the satisfaction of decision-mature students using the deductive decision-making model and decision-immature students using the same model.

A chi-square analysis of the student responses indicated no significant difference on the questionnaire reported in Table 17. The largest obtained \( \chi^2 \) was 2.496 on question 1. The probability of that score occurring is \( p(\chi^2 = 2.496) = .11 \). Therefore, the null hypothesis cannot be rejected at the \( p < .05 \) level of confidence.
Table 17
Results of Chi-square Analysis Comparing the Satisfaction of Students Using the Deductive Decision-making Model with Different Levels of Decision-maturity Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Maturity</th>
<th>Satisfaction</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Bad, O.K., Good)</td>
<td>Imm.</td>
<td>L</td>
<td>1</td>
<td>18</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Mat.</td>
<td>M</td>
<td>0</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision: (No, Not Sure, Yes)</td>
<td>Imm.</td>
<td>L</td>
<td>2</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Mat.</td>
<td>M</td>
<td>3</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again: (No, Maybe, Yes)</td>
<td>Imm.</td>
<td>L</td>
<td>0</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Mat.</td>
<td>M</td>
<td>0</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again: (Never, Maybe, Yes)</td>
<td>Imm.</td>
<td>L</td>
<td>3</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Mat.</td>
<td>M</td>
<td>4</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Imm.</td>
<td>L</td>
<td>1</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Mat.</td>
<td>M</td>
<td>2</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit from This Training: (No, Maybe, Yes)</td>
<td>Imm.</td>
<td>L</td>
<td>0</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Mat.</td>
<td>M</td>
<td>0</td>
<td>10</td>
<td>14</td>
</tr>
</tbody>
</table>
Inferred Results

It appears that there is no difference between the satisfaction of students using the deductive model, regardless of whether or not they have had much experience with decision-making.

The findings would seem to defuse any fear about students not really in touch with their values being frustrated by a decision-making approach that begins with their values.

Hypothesis 11

$H_{11}$: There is no difference between the decision-making skills of decision-mature students using the inductive decision-making model and decision-immature students using the same model.

An analysis of variance between the scores of the two groups yielded an $F$ ratio of 7.349. The probability of that score occurring is 0.0089. Therefore, the null hypothesis can be rejected at the $p < 0.01$ level of confidence.
Table 18

Results of One-factor ANOVA Comparing the Decision-making Skills of Students Using the Inductive Decision-making Model with Different Levels of Decision-maturity

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.1157</td>
<td>7.349</td>
<td>0.0089</td>
</tr>
<tr>
<td>Within groups</td>
<td>57</td>
<td>.01574</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inferred Results

Students without decision-maturity averaged only .68 with the inductive model. Mature students averaged .77 with this model. Therefore, the inductive model should probably not be used with decision-immature students. Perhaps the scientific method of examining each option is tedious or frustrating for the decision-immature student.
Hypothesis 12

H_{12}: There is no difference between the satisfaction of decision-mature students using the inductive model and decision-immature students using the same model.

A chi-square analysis of the student responses indicated no significant difference on the questionnaire reported in Table 19. The largest obtained $\chi^2$ was 1.313 on question 2. The probability of that score occurring is $p(\chi^2 = 1.313) = .38$. Therefore, the null hypothesis cannot be rejected at the $p<.05$ level of confidence.
Table 19
Results of Chi-square Analysis Comparing the Satisfaction of Students Using the Inductive Decision-making Model with Different Levels of Decision-maturity Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Maturity</th>
<th>Satisfaction</th>
<th>$\chi^2$</th>
<th>$d^f$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was:</td>
<td>Imm.</td>
<td>2 14 8</td>
<td>0.0065</td>
<td>1</td>
<td>.93</td>
</tr>
<tr>
<td></td>
<td>Mat.</td>
<td>1 15 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision:</td>
<td>Imm.</td>
<td>2 11 11</td>
<td>1.318</td>
<td>1</td>
<td>.28</td>
</tr>
<tr>
<td></td>
<td>Mat.</td>
<td>3 11 21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again:</td>
<td>Imm.</td>
<td>0 11 13</td>
<td>0.0978</td>
<td>1</td>
<td>.75</td>
</tr>
<tr>
<td></td>
<td>Mat.</td>
<td>1 17 17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again:</td>
<td>Imm.</td>
<td>1 15 8</td>
<td>0.0099</td>
<td>1</td>
<td>.79</td>
</tr>
<tr>
<td></td>
<td>Mat.</td>
<td>3 21 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was:</td>
<td>Imm.</td>
<td>1 13 10</td>
<td>0.0028</td>
<td>1</td>
<td>.92</td>
</tr>
<tr>
<td></td>
<td>Mat.</td>
<td>1 19 15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training:</td>
<td>Imm.</td>
<td>1 9 14</td>
<td>0.0607</td>
<td>1</td>
<td>.80</td>
</tr>
<tr>
<td></td>
<td>Mat.</td>
<td>2 14 17</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Inferred Results

There does not seem to be a difference in satisfaction based on maturity for students using the deductive model of decision-making.

Hypothesis 13

H_{13}: There is no difference between the decision-making skills of decision-mature students using the deductive decision-making model and decision-mature students using the inductive decision-making model.

An analysis of variance between the two groups yielded an $F$ ratio of 4.020. The probability of obtaining that score is 0.0493. Therefore, the null hypothesis can be rejected at the $p<0.05$ level of confidence.
Table 20

Results of One-factor ANOVA Comparing the Decision-making Skills of Decision-mature Students Using Different Decision-making Models

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.1147</td>
<td>4.020</td>
<td>0.0493</td>
</tr>
<tr>
<td>Within groups</td>
<td>62</td>
<td>.0285</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inferred Results

Although the average mean score for both groups was good, .77 on the inductive model and .36 with the deductive, there was still a significant difference between the two groups. It appears that, if everything else were equal, the deductive method might work better with decision-mature students.
Hypothesis 14

$H_{14}$: There is no difference between the satisfaction of decision-mature students using the deductive decision-making model and decision-mature students using the inductive decision-making model.

A chi-square analysis of the student responses indicated no significant difference on the questionnaire reported in Table 21. The largest obtained $X^2$ was .1956 on question 1. The probability of that score occurring is $p(X^2 = .1956) = .65$. Therefore, the null hypothesis cannot be rejected at the $p<.05$ level of confidence.
Table 21
Results of Chi-square Analysis Comparing the Satisfaction of Decision-mature Students Using Different Decision-making Models Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Treat.</th>
<th>Satisfaction</th>
<th>( X^2 )</th>
<th>df</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Bad, O.K., Good)</td>
<td>Ind.</td>
<td>L 1 M 15 H 19</td>
<td>.1956</td>
<td>1</td>
<td>.65</td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision: (No, Not Sure, Yes)</td>
<td>Ind.</td>
<td>L 3 M 11 H 21</td>
<td>.0763</td>
<td>1</td>
<td>.78</td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>L 1 M 17 H 17</td>
<td>.0000</td>
<td>1</td>
<td>1.00</td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again: (Never, Maybe, Yes)</td>
<td>Ind.</td>
<td>L 3 M 21 H 11</td>
<td>.1679</td>
<td>1</td>
<td>.68</td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Ind.</td>
<td>L 1 M 19 H 15</td>
<td>.1858</td>
<td>1</td>
<td>.66</td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>L 2 M 14 H 19</td>
<td>.0032</td>
<td>1</td>
<td>.95</td>
</tr>
</tbody>
</table>
Inferred Results

There appears to be no difference even approaching significance for mature deciders using different decision-making models.

Hypothesis 15

H$_{15}$: There is no difference between the decision-making skills of the decision-immature student using the deductive decision-making model and the decision-immature student using the inductive decision-making model.

An analysis of variance between the scores of the two groups yielded an $F$ ratio of 12.19. The probability of that score occurring is 0.0010. Therefore, the null hypothesis can be rejected at the $p < 0.01$ level of confidence.

Table 22

Results of One-factor ANOVA Comparing the Decision-making Skills of Decision-immature Students Using Different Decision-making Models

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.2565</td>
<td>12.19</td>
<td>0.0010</td>
</tr>
<tr>
<td>Within groups</td>
<td>49</td>
<td>.0210</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Inferred Results

There seems to be a very significant difference between the scores the students received with the two models. On the deductive model, the average was .82, on the inductive .68. It appears that when working with decision-immature students, that the deductive model would be the best to use.

Hypothesis 16

$H_{16}$: There is no difference between the satisfaction of the decision-immature student using the deductive decision-making model and the decision-immature student using the inductive decision-making model.

A chi-square analysis of the student responses indicated no significant difference on the questionnaire reported in Table 23. The largest obtained $\chi^2$ was 2.091 on question 2. The probability of that score occurring is $p(\chi^2 = 2.091) = .15$. Therefore, the null hypothesis cannot be rejected at the $p<.05$ level of confidence.
Table 23
Results of Chi-square Analysis Comparing the Satisfaction of Decision-immature Students Using Different Decision-making Models Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Treat.</th>
<th>Satisfaction</th>
<th>$\chi^2$</th>
<th>df</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Bad, O.K., Good)</td>
<td>Ind.</td>
<td>2 14 3</td>
<td>.3767</td>
<td>1</td>
<td>.55</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>1 13 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision:</td>
<td>Ind.</td>
<td>2 11 11</td>
<td>2.091</td>
<td>1</td>
<td>.15</td>
</tr>
<tr>
<td>(No, Not Sure, Yes)</td>
<td>Ded.</td>
<td>2 7 17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again:</td>
<td>Ind.</td>
<td>0 11 13</td>
<td>.2784</td>
<td>1</td>
<td>.56</td>
</tr>
<tr>
<td>(No, Maybe, Yes)</td>
<td>Ded.</td>
<td>0 10 16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again:</td>
<td>Ind.</td>
<td>1 15 8</td>
<td>.0000</td>
<td>1</td>
<td>1.000</td>
</tr>
<tr>
<td>(Never, Maybe, Yes)</td>
<td>Ded.</td>
<td>5 15 8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was:</td>
<td>Ind.</td>
<td>1 13 10</td>
<td>.3485</td>
<td>1</td>
<td>.55</td>
</tr>
<tr>
<td>(Hard, O.K., Easy)</td>
<td>Ded.</td>
<td>1 12 13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training:</td>
<td>Ind.</td>
<td>1 9 14</td>
<td>.5828</td>
<td>1</td>
<td>.46</td>
</tr>
<tr>
<td>(No, Maybe, Yes)</td>
<td>Ded.</td>
<td>0 13 13</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inferred Results

There seems to be no difference in the satisfaction of immature students in using either a deductive or an inductive decision-making model.
Hypothesis 17

Gender

H$_{17}$: There is no difference between the decision-making skills of male students using a deductive decision-making model and female students using the same model.

An analysis of variance between the scores of the two groups yielded an $F$ ratio of 0.3804. The probability of this score occurring is 0.5400. Therefore, the null hypothesis cannot be rejected at the $p<.05$ level of confidence.

Table 24

Results of One-factor ANOVA Comparing the Decision-making Skills of Male and Female Students Both Using a Deductive Decision-making Model

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.0134</td>
<td>0.3804</td>
<td>ns</td>
</tr>
<tr>
<td>Within groups</td>
<td>54</td>
<td>.0352</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inferred Results

There was no significant difference between the scores of males and females with the deductive method. Females scored slightly higher with this model, their mean score was .85. The average score on the deductive

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model for males was .32. It seems that an instructor could use the deductive model with both males and females without any hesitation.

Hypothesis 18

\( H_{18} \): There is no difference in the satisfaction of male students using the deductive decision-making model and female students using the same model.

A chi-square analysis of the student responses indicated no significant difference on the questionnaire reported in Table 25. The largest obtained \( \chi^2 \) was 4.777 on question 5 and 4.043 on question 4. The probability of those scores occurring is \( p(\chi^2 4.777) = .02 \) and \( (\chi^2 4.043) = .04 \). Therefore, the null hypothesis can be rejected for items 4 and 5.
Table 25

Results of Chi-square Analysis Comparing the Satisfaction of Male and Female Students Both Using the Deductive Decision-making Model Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Gender</th>
<th>Satisfaction</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Sad, O.K., Good)</td>
<td>Male</td>
<td>16 8 3</td>
<td>.5866</td>
<td>1</td>
<td>.44</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>0 14 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision:</td>
<td>Male</td>
<td>4 10 11</td>
<td>3.616</td>
<td>1</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1 5 19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again: (No, Maybe, Yes)</td>
<td>Male</td>
<td>0 12 13</td>
<td>.08</td>
<td>1</td>
<td>.78</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>0 10 15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again: (Never, Maybe, Yes)</td>
<td>Male</td>
<td>3 17 5</td>
<td>4.043</td>
<td>1</td>
<td>.04*</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>4 10 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Male</td>
<td>2 15 8</td>
<td>4.777</td>
<td>1</td>
<td>.02*</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1 8 16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training: (No, Maybe, Yes)</td>
<td>Male</td>
<td>0 13 12</td>
<td>.72</td>
<td>1</td>
<td>.57</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>0 10 15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*\( p < .05 \)
Inferred Results

There was significant difference between the satisfaction of males and females using the deductive decision-making model; significance was attained on two of the questions.

Question 5 concerned how difficult students thought the deductive model was: 64% of the female students thought it was easy, 32% of the males thought it was easy. The probability on question 5 was $p = .02$.

On question 4, twice as many females indicated they would use the deductive decision-making model again. The probability on question 4 was $p = .04$.

Question 2 approached significance, it was whether students thought they learned a better way to make decisions: 76% of the female students thought they had, 44% of the males thought they had. The probability on question 2 was $p = .05$.

The results were significant, it appears that females were more satisfied with the deductive model.
Hypothesis 19

$H_{19}$: There is no difference in the decision-making skill of males using an inductive decision-making model and females using the same model.

An analysis of variance between the two groups yielded an $F$ ratio of 10.55. The probability of this score occurring is 0.002. Therefore, the null hypothesis can be rejected at the $p < 0.01$ level of confidence.

Table 26

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>$df$</th>
<th>$MS$</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>0.1582</td>
<td>10.55</td>
<td>0.0020</td>
</tr>
<tr>
<td>Within groups</td>
<td>57</td>
<td>0.0150</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inferred Results

The results seem to indicate that females do significantly better than males using the inductive method. It
seems that the inductive model would not be a good choice to work with groups of primarily male students. The average male score on the inductive model was .67. That score is below what would probably be considered an acceptable range.

**Hypothesis 20**

H$_{20}$: There is no difference in the satisfaction of male students using an inductive decision-making model and female students using the same model.

A chi-square analysis of the student responses indicated no significant difference on the questionnaire reported in Table 27. The largest obtained $X^2$ was 2.822 on question 5. The probability of that score occurring is $p(X^2 = 2.822) = .09$. Therefore, the null hypothesis cannot be rejected at the $p<.05$ level of confidence.
Table 27
Results of Chi-square Analysis Comparing the Satisfaction of Male and Female Students Both Using the Inductive Decision-making Model Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Gender</th>
<th>Satisfaction</th>
<th>$X^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Bad, O.K., Good)</td>
<td>Male</td>
<td>3 15 9</td>
<td>.7744</td>
<td>1</td>
<td>.37</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>0 16 16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision: (No, Not Sure, Yes)</td>
<td>Male</td>
<td>5 10 10</td>
<td>.6011</td>
<td>1</td>
<td>.288</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>0 12 22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again: (No, Maybe, Yes)</td>
<td>Male</td>
<td>1 11 13</td>
<td>.0978</td>
<td>1</td>
<td>.75</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>0 17 17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again: (Never, Maybe, Yes)</td>
<td>Male</td>
<td>2 17 6</td>
<td>1.250</td>
<td>1</td>
<td>.25</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>2 19 15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Male</td>
<td>2 16 7</td>
<td>2.822</td>
<td>1</td>
<td>.09</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>0 16 18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training: (No, Maybe, Yes)</td>
<td>Male</td>
<td>2 12 11</td>
<td>1.387</td>
<td>1</td>
<td>.25</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1 11 22</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Inferred Results

No significant difference between the satisfaction of males and females using the inductive method was found at the $p < 0.05$ level.

However, 65% of the female students felt they learned a better way to make decisions using the inductive method. Only 40% of the male students felt they had learned a better way. Furthermore, 20% of the male students said they had definitely not learned a better way. There were not any negative responses from female students.

One other area that approached significance was question 5 concerning the difficulty of using the inductive model. Females thought it was easy.

There were a large number of negative male responses on item 2. If the low response category had not been collapsed, there would have been significance at the $p < 0.01$ level of confidence on item 2.

Hypothesis 21

$H_{21}$: There is no difference between the decision-making skills of male students using a deductive decision-making model and male students using the inductive decision-making model.
An analysis of variance between the two groups yielded an $F$ ratio of 11.12. The probability of that score occurring is 0.0016. Therefore, the null hypothesis can be rejected at the $p<0.01$ level of confidence.

Table 28

Results of One-factor ANOVA Comparing the Decision-making Skills of Male Students Using Different Decision-making Models

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>$df$</th>
<th>MS</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.2849</td>
<td>11.12</td>
<td>0.0016</td>
</tr>
<tr>
<td>Within groups</td>
<td>49</td>
<td>.02561</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inferred Results

Males did significantly better on the deductive model than they did with the inductive. Their scores on the average were .15 higher with the deductive model. Males averaged only .67 on the inductive model. This score is below a satisfactory level.
Hypothesis 22

$H_{22}$: There is no difference between the satisfaction of male students using a deductive decision-making model and male students using an inductive decision-making model.

A chi-square analysis of the student responses indicated no significant difference on the questionnaire reported in Table 29. The largest obtained $X^2$ was .2827 on question 1. The probability of that score occurring is $p(X^2 .2827) = .59$. Therefore, the null hypothesis cannot be rejected at the $p<.05$ level of confidence.
Table 29
Results of Chi-square Analysis Comparing the Satisfaction of Male Students Using Different Decision-making Models Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Treat.</th>
<th>Satisfaction</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was:</td>
<td>Ind.</td>
<td>3 10 9</td>
<td>.2227</td>
<td>1</td>
<td>.67</td>
</tr>
<tr>
<td>(Bad, O.K., Good)</td>
<td>Ded.</td>
<td>2 16 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision:</td>
<td>Ind.</td>
<td>5 10 0</td>
<td>.0232</td>
<td>1</td>
<td>.87</td>
</tr>
<tr>
<td>(No, Not Sure, Yes)</td>
<td>Ded.</td>
<td>4 10 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again:</td>
<td>Ind.</td>
<td>1 11 13</td>
<td>.0230</td>
<td>1</td>
<td>.86</td>
</tr>
<tr>
<td>(No, Maybe, Yes)</td>
<td>Ded.</td>
<td>0 12 13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again:</td>
<td>Ind.</td>
<td>2 17 6</td>
<td>.0687</td>
<td>1</td>
<td>.79</td>
</tr>
<tr>
<td>(Never, Maybe, Yes)</td>
<td>Ded.</td>
<td>3 17 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was:</td>
<td>Ind.</td>
<td>2 16 7</td>
<td>.0987</td>
<td>1</td>
<td>.75</td>
</tr>
<tr>
<td>(Hard, O.K., Easy)</td>
<td>Ded.</td>
<td>2 15 8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training:</td>
<td>Ind.</td>
<td>2 12 11</td>
<td>.0001</td>
<td>1</td>
<td>.99</td>
</tr>
<tr>
<td>(No, Maybe, Yes)</td>
<td>Ded.</td>
<td>0 13 12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inferred Results**

Males seem to be equally satisfied with both methods of decision-making.
Hypothesis 23

H₂₃: There is no difference between the decision-making skills of female students using the deductive decision-making model and female students using the inductive decision-making model.

An analysis of variance comparing the scores of the two groups yielded an F ratio of 3.77. The probability of that score occurring is .0567. Therefore, the null hypothesis cannot be rejected at the p<.05 level of confidence.

Table 30

Results of One-factor ANOVA Comparing the Decision-making Skills of Female Students Using Different Decision-making Models

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.09152</td>
<td>3.77</td>
<td>ns</td>
</tr>
<tr>
<td>Within groups</td>
<td>62</td>
<td>.02428</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Inferred Results

Female students seem to have done equally well with both models. Female scores on the inductive model averaged .78. Female scores on the deductive model averaged .85. The significance of this result is that the instructor could probably use either model with female students without any apprehension.

Hypothesis 24

H_{24}: There is no difference in the satisfaction of female students using the deductive decision-making model and female students using the inductive decision-making model.

A chi-square analysis of the student responses indicated no significant difference on the questionnaire reported in Table 31. The largest obtained X^2 was 1.092 on question 5. The probability of that score occurring is p(X^2 = 1.092) = .29. Therefore, the null hypothesis cannot be rejected at the p < .05 level of confidence.
Table 31
Results of Chi-square Analysis Comparing the Satisfaction of Female Students Using Different Decision-making Models Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Treat.</th>
<th>Satisfaction</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Bad, O.K., Good)</td>
<td>Ind.</td>
<td>0 16 18</td>
<td>.4608</td>
<td>1</td>
<td>.68</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0 14 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision: (No, Not Sure, Yes)</td>
<td>Ind.</td>
<td>0 12 25</td>
<td>.9742</td>
<td>1</td>
<td>.32</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>1 5 19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>0 17 17</td>
<td>.2474</td>
<td>1</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0 10 15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again: (Never, Maybe, Yes)</td>
<td>Ind.</td>
<td>2 19 15</td>
<td>.7072</td>
<td>1</td>
<td>.40</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>4 10 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Ind.</td>
<td>0 16 18</td>
<td>1.092</td>
<td>1</td>
<td>.29</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>1 3 16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>1 11 22</td>
<td>.2737</td>
<td>1</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0 10 15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inferred Results
There seems to be no difference between the degree of satisfaction female students derive from the two decision-making models.

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Hypothesis 25

Cognitive Style

$H_{25}$: There is no difference between the decision-making skills of students with a deductive cognitive style using the deductive decision-making model and students with an inductive cognitive style using the deductive model.

An analysis of variance between the scores of the two groups yielded an $F$ ratio of 4.522. The probability of that score occurring is 0.0380. Therefore, the null hypothesis can be rejected at the $p < 0.05$ level of confidence.

Table 32

Results of One-factor ANOVA Comparing the Decision-making Skills of Students with Different Cognitive Styles Both Using the Deductive Decision-making Model

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.1483</td>
<td>4.522</td>
<td>0.0380</td>
</tr>
<tr>
<td>Within groups</td>
<td>54</td>
<td>.03279</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inferred Results

Students with a deductive cognitive style scored significantly higher with the deductive model. Their
scores using the deductive model averaged .87. The average score with the inductive model was .73. Therefore, it seems, students that are deductive in cognitive style do 14% better using a congruent decision-making model.

Hypothesis 26

$H_{26}$: There is no difference in the satisfaction of students with a deductive cognitive decision-making style using a deductive model and students with an inductive cognitive style using the deductive decision-making model.

A chi-square analysis of the student responses indicated no significant difference on the questionnaire reported in Table 33. The largest obtained $X^2$ was 1.639 on question 4. The probability of that score occurring is $p (X^2 = 1.639) = .20$. Therefore, the null hypothesis cannot be rejected at the $p < .05$ level of confidence.
Table 33
Results of Chi-square Analysis Comparing the Satisfaction of Students with Different Cognitive Styles Both Using the Deductive Decision-making Model Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Cognitive Style</th>
<th>Satisfaction</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Bad, O.K., Good)</td>
<td>Ind.</td>
<td>0 3 3</td>
<td>.7905</td>
<td>1</td>
<td>.37</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>1 22 16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision: (No, Not Sure, Yes)</td>
<td>Ind.</td>
<td>0 5 6</td>
<td>.9625</td>
<td>1</td>
<td>.32</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>5 10 24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>0 5 6</td>
<td>.0121</td>
<td>1</td>
<td>.91</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0 17 22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again: (Never, Maybe, Yes)</td>
<td>Ind.</td>
<td>2 4 5</td>
<td>1.639</td>
<td>1</td>
<td>.20</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>5 23 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Ind.</td>
<td>1 5 5</td>
<td>.005</td>
<td>1</td>
<td>.93</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>2 18 19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>0 6 5</td>
<td>.4145</td>
<td>1</td>
<td>.65</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0 17 22</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Inferred Results

Despite a difference in cognitive style, there does not appear to be any difference in the degree of satisfaction between the two groups of students when using the deductive decision-making model.

Hypothesis 27

H_{27}: There is no difference between the decision-making skills of students with a deductive cognitive style using the inductive model and students with an inductive cognitive style using the inductive decision-making model.

An analysis of variance between the scores of the two groups yielded an $F$ ratio of 0.1558. The probability of that score occurring is 0.69. Therefore, the null hypothesis cannot be rejected at the $p<0.05$ level of confidence.

Table 34

Results of One-factor ANOVA Comparing the Decision-making Skills of Students with Different Cognitive Styles Using the Inductive Decision-making Model

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>0.00276</td>
<td>0.1558</td>
<td>ns</td>
</tr>
<tr>
<td>Within groups</td>
<td>57</td>
<td>0.01772</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Inferred Results

It appears that, regardless of cognitive style, students do much the same on the inductive model. Students with an inductive style did slightly better, their score average was .75. The average of the deductive style students was .73 using the inductive method.

Hypothesis 28

H$_{28}$: There is no difference in the satisfaction of students with the deductive cognitive style using the inductive decision-making model and students with an inductive cognitive style using the inductive model.

A chi-square analysis of the student responses indicated significant difference on the questionnaire reported in Table 35. The largest obtained $\chi^2$ was 5.756 on question 2. The probability of that score occurring is $p (\chi^2 5.756) = .01$. Therefore, the null hypothesis can be rejected at the $p < .05$ level of confidence for item 2.
Table 35
Results of Chi-square Analysis Comparing the Satisfaction of Students with Different Cognitive Styles Both Using the Inductive Decision-making Model Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Cognitive Style</th>
<th>Satisfaction</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ind.</td>
<td>L  M  H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Bad, O.K., Good)</td>
<td>Ind.</td>
<td>1  6  7</td>
<td>.2150</td>
<td>1</td>
<td>.64</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>2  25  20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision: (No, Not Sure, Yes)</td>
<td>Ind.</td>
<td>1  9  4</td>
<td>5.755</td>
<td>1</td>
<td>.01*</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>4  13  28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>1  6  7</td>
<td>.0302</td>
<td>1</td>
<td>.86</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0  22  23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again: (Never, Maybe, Yes)</td>
<td>Ind.</td>
<td>1  8  5</td>
<td>1154</td>
<td>1</td>
<td>.73</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>3  28  14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Ind.</td>
<td>0  8  6</td>
<td>.0075</td>
<td>1</td>
<td>.93</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>2  24  19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>1  4  9</td>
<td>.7424</td>
<td>1</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>2  19  24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

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Inferred Results

Sixty-two percent of the students with a deductive cognitive style thought they learned a better way to make decisions using the inductive model ($p = .01$). Only 40% of the inductive cognitive style students said they would use the inductive model again.

These results are surprising in light of the low skill scores of the deductive style students using the inductive model.

**Hypothesis 29**

$H_{29}$: There is no difference in the decision-making skills of students with a deductive decision-making style using the deductive model and students with a deductive style using the inductive decision-making model.

An analysis of variance between the scores of the two groups yielded an $F$ ratio of 20.91. The probability of that large a score occurring is .000. Therefore, the null hypothesis can be rejected at the $p < .01$ level of confidence.
Table 36

Results of One-factor ANOVA Comparing the Decision-making Skills of Students with a Deductive Cognitive Style Using Different Decision-making Models

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.4142</td>
<td>20.91</td>
<td>0.0000</td>
</tr>
<tr>
<td>Within groups</td>
<td>37</td>
<td>.0198</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inferred Results**

Students with a deductive decision-making style did .14 better using the deductive decision-making model. The score that the students with a deductive cognitive style received, .87, was the highest score achieved by any groups in this study.
Hypothesis 30

H₃₀: There is no difference between the satisfaction of students with a deductive cognitive style using the deductive decision-making model and students with a deductive cognitive style using the inductive decision-making model.

A chi-square analysis of the student responses indicated no significant difference on the questionnaire reported in Table 37. The largest obtained $\chi^2$ was .4094 on question 5. The probability of that score occurring is $p(\chi^2 = .4094) = .67$. Therefore, the null hypothesis cannot be rejected at the $p < .05$ level of confidence.
Table 37
Results of Chi-square Analysis Comparing the Satisfaction of Students with a Deductive Cognitive Style Using Different Decision-making Models Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Treat.</th>
<th>Satisfaction</th>
<th>X^2</th>
<th>df</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought Decision-making Training Was: (Bad, O.K., Good)</td>
<td>Ind.</td>
<td>2 23 20</td>
<td>.556</td>
<td>1</td>
<td>.26</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ded.</td>
<td>1 22 16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Learned How to Make a Better Decision: (No, Not Sure, Yes)</td>
<td>Ind.</td>
<td>4 13 26</td>
<td>.0450</td>
<td>1</td>
<td>.83</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ded.</td>
<td>5 10 24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Could Use This Method Again: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>0 22 23</td>
<td>.2358</td>
<td>1</td>
<td>.79</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ded.</td>
<td>0 17 22</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought They Would Use This Method Again: (Never, Maybe, Yes)</td>
<td>Ind.</td>
<td>3 28 14</td>
<td>.0081</td>
<td>1</td>
<td>.92</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ded.</td>
<td>5 23 11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Ind.</td>
<td>2 24 19</td>
<td>.4094</td>
<td>1</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ded.</td>
<td>2 18 19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Other Students Would Benefit From This Training: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>2 19 24</td>
<td>.0029</td>
<td>1</td>
<td>.95</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ded.</td>
<td>0 17 22</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inferred Results
There appears to be no difference in satisfaction for the deductive cognitive style student using different decision-making models.

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Hypothesis 31

\( H_{31} \): There is no difference between the decision-making skills of students with an inductive cognitive style using the inductive method and students with an inductive cognitive style using the deductive decision-making model.

An analysis of variance between the score of the two groups yielded an \( F \) ratio of 0.0371. The probability of that score occurring is 0.9519. Therefore, the null hypothesis cannot be rejected at the \( p < 0.05 \) level of confidence.

Table 38
Results of One-factor ANOVA Comparing the Decision-making Skills of Students with an Inductive Cognitive Style Using Different Decision-making Models

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>.00016</td>
<td>0.0371</td>
<td>ns</td>
</tr>
<tr>
<td>Within groups</td>
<td>24</td>
<td>.04405</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Inferred Results

There appears to be no difference in the scores between the groups. Inductive cognitive style students did equally well with both methods. They did slightly better with the inductive method .75 as compared to the deductive method, .74. This was the first time in the study that the group using the inductive method had a higher average score than the group using the deductive model.

Hypothesis 32

H₃₂: There is no difference in the satisfaction of students with an inductive cognitive style using a deductive decision-making model and students with an inductive cognitive style using the inductive decision-making model.

A chi-square analysis of the student responses indicated no difference on the questionnaire reported in Table 39. The largest obtained $\chi^2$ was 1.731 on question 1. The probability of that score occurring is $p (\chi^2 1.731) = .18$. Therefore, the null hypothesis cannot be rejected at the $p<.05$ level of confidence.
Table 39
Results of Chi-square Analysis Comparing the Satisfaction of Students with an Inductive Cognitive Style Using Different Decision-making Models Answering a 6 Item Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Treat.</th>
<th>Satisfaction</th>
<th>( \chi^2 )</th>
<th>( df )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If Students Thought They learned How to Make a Better Decision: (No, Not Sure, Yes)</td>
<td>Ind.</td>
<td>1 6 7</td>
<td>1.751</td>
<td>1</td>
<td>.18</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0 3 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If Students Thought They Could Use This Method Again: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>1 9 4</td>
<td>1.385</td>
<td>1</td>
<td>.24</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0 5 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If Students Thought They Would Use This Method Again: (Never, Maybe, Yes)</td>
<td>Ind.</td>
<td>1 6 7</td>
<td>.001</td>
<td>1</td>
<td>.97</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0 5 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. If Students Thought This Method of Making Decisions Was: (Hard, O.K., Easy)</td>
<td>Ind.</td>
<td>1 3 5</td>
<td>.6267</td>
<td>1</td>
<td>.43</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>2 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If Students Thought Other Students Would Benefit From This Training: (No, Maybe, Yes)</td>
<td>Ind.</td>
<td>0 8 6</td>
<td>.1198</td>
<td>1</td>
<td>.72</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>1 5 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If Students Thought Ind. Decision-making Training Yes: (Bad, O.K., Good)</td>
<td>Ind.</td>
<td>1 4 9</td>
<td>1.385</td>
<td>1</td>
<td>.23</td>
</tr>
<tr>
<td></td>
<td>Ded.</td>
<td>0 6 5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inferred Results
There appears to be no difference in the satisfaction of the inductive style student using different models.
Chapter IV has been a presentation of the results of this study. The skills scores were compared using a one-factor ANOVA. Satisfaction scores were compared by using chi-square analysis. There is a difference between members of the groups, especially concerning the inductive cognitive style group. Because of the difference in the cell sizes, the results must be carefully interpreted. Future replication studies would be useful for verification of these findings. The level of significance was set at $p < 0.05$. Below, is a review of significant differences.

Many of the chi-square analysis had response ratio less than 5; therefore, the two areas of statistical significance should be carefully interpreted. Further studies are needed to substantiate these findings.

**Grades**

$H_4$: There is a significant difference in the satisfaction of students with high grades and low grades using the inductive model. Students with low grades were more satisfied with the inductive model.

$H_5$: There was a difference in how students with high grades learned decision-making skills with two different models. They did better with the deductive model.
H₆: There was a difference in the satisfaction of students with high grades using two different decision-making models. The students were more satisfied with the deductive model.

H₇: There was a difference in the skills of students with low grades using the two different decision-making models. They did better with the deductive model.

**Decision-maturity**

H₁₁: There was a difference in how well students did using the inductive model when they had different levels of decision-maturity. Decision-immature students did poorly, .68.

H₁₃: There was a difference in how well decision-mature students did using the two different models. The mature students did better using the deductive model.

H₁₅: There was a difference in how well decision-immature students did using the two different models. The decision-immature student did better using the deductive model.

**Gender**

H₁₈: There was a difference between the satisfaction of males and females using the deductive decision-making model. Females were more satisfied.

H₁₉: There was a difference between the scores of
males and females using the inductive decision-making model. Females did better using the model.

$H_{20}$: There was a difference in how satisfied males and females were with the inductive model. Females were more satisfied.

$H_{21}$: There was a difference in the skills of males using different decision-making models. Males did $.15$ better using the deductive model.

**Cognitive Style**

$H_{25}$: There was a difference in the skills of students with different cognitive styles using the deductive model. Students with a deductive cognitive style did $.13$ better.

$H_{28}$: There was a difference between the satisfaction of students with different cognitive styles using the deductive decision-making model. Deductive cognitive style students were more satisfied.

$H_{29}$: There was a difference in the scores of students with a deductive cognitive style using different decision-making models. Students did $.14$ better with the deductive model.
CHAPTER V

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Introduction

This chapter is the summary, discussion, and recommendations for each of the four individual differences considered in this study on the decision-making of teenagers. The individual differences were: grades, decision-maturity, gender, and cognitive style. The final section is a generalization of the results.

Grades

Summary

Skills. There was no significant difference found between the decision-making skill scores of students with high or low grades, regardless of whether an inductive or deductive model was used. The average score on both models was only two to three percent higher for students with high grades.

Both students with high and with low grades seemed to do better on the deductive model. The students did, on the average, .11 better with the deductive decision-making model.
Satisfaction. Satisfaction was the only area under the heading of grades where a significant difference was detected. It appears that students with high grades are more satisfied with the deductive model. Specifically, 42% indicated they would use it again. Conversely, 75% of the students with high grades were unsure as to whether they would use the inductive model again.

Significance was approached for students with low grades using different models. Of these students, 42% indicated they would use the inductive model again. Sixty-six percent of the students with low grades said they were unsure about using the deductive model again. For students with low grades, the probability was $p = .03$.

Discussion

The results on this study appear to conflict with the Egner-Jackson (1978) study cited in the review of literature. They found the difference between achievement of "academic" vs. "nonacademic" significant at the .01 level. Perhaps their criteria for the groups was different. A significant factor in this study may have been the inclusion of C students in the low grade group. Because of the nature of the population, exclusion of C students was not very plausible for this reason. Higher performance by students with the deductive model supports the research done by Murdock (1971).
If an instructor were just using grades as a criterion for decision-making model selection, it appears that the deductive model would be the better choice since students on the average scored .11 higher with that model. However, this conclusion must be considered tentative inasmuch as the .73 average on the inductive model is still satisfactory. Students with high grades seem more satisfied with the deductive model. Students with low grades were more satisfied with the inductive model. Since user satisfaction is so important more research is needed to substantiate these findings. Perhaps differential decision-making training based on grades is warranted.

Recommendations

Further research is needed to confirm the superiority of the deductive model over the inductive model for students. If more research were done using grades as a variable, it might be prudent to eliminate the group of C average grades from the study, even though that might result in a small N.

Decision-maturity

Summary

Skills. There seems to be no difference between the
scores of mature and immature deciders using the deductive model. However, decision-maturity does seem to be a factor when using the inductive decision-making model inasmuch mature deciders did significantly better with this model. Immature deciders averaged only .68 on this model which, perhaps, would not be acceptable to someone selecting a model for a group of inexperienced deciders.

The students constituting the population for this study scored about .11 higher on the deductive model irrespective of their maturity level.

**Satisfaction.** There was no difference in satisfaction for any of the possible group combinations in the hypotheses. The satisfaction for all groups was around .80 which is acceptable for selection purposes.

**Discussion**

All students seemed to do better with the deductive model. This fact seems surprising since the deductive model requires the student to start with an in-depth understanding of their values. The inductive method on the other hand, takes them in search of their values. The immature students definitely did not like the search, or at least must have become weary along the way. These findings would tend to be in keeping with the work by Harren, Koos, Tinsley and Moreland (1978) that maturity
has some influence on the process of deciding.

**Recommendations**

More research is needed in the area of decision-making skills to confirm the findings reported here. The role of immaturity's influence on the inductive model is worth researching. If the findings here are replicated, it would appear that the deductive model would be a preferable mode with which to teach decision-making. The deductive model does not have the limitation of immaturity of the students to contend with. Unless the instructor is in a position to measure the maturity of students, the inductive model might prove to be an unwise choice.

**Gender**

**Summary**

Skills. Female students did significantly better than males using the inductive model. The male scores were .67. The female scores of .77 are the highest scores of any group using the inductive model in this study.

There were no differences between the female scores on either model. Males scored significantly higher on the deductive model than they did on the inductive model. Males did .15 higher with the deductive model.

Male and female scores on the deductive model were about equal. Females scored only .03 higher.
Satisfaction. Females were significantly more satisfied with the inductive model than were their male counterparts. Female students were more satisfied with the deductive model also.

Discussion

Female students were more satisfied with the inductive model than were male students. Sixty-five percent of the females thought they had learned a better way to make decisions. With results that are significant, female students also thought they learned to make a better decision with the deductive model than did male students ($p = .02$).

There was much conflicting evidence in the literature review on the difference between males and females when it comes to decision-making. The results on this study seems to add fuel to the fire. The fact that females did very well on the inductive method and the males did poorly, and were not satisfied with it, begs the question. Is it possible that males are more philosophical in their decision-making and females more scientific? It might be that female students just did a more thorough job on the decisions with the inductive model than did the male students.

At any rate, it appears that females did better at decision-making in this study than did male students.
The success of female students in this study would support the findings of Egner and Jackson (1978).

The deductive model seems that it may be the better model to use for a mixed group of male and female students. If the instructor were in a position of doing differential counseling there is probably no problem using the inductive model with a group of female students, or individual female students.

Recommendations

It seems that females value decision-making training more than male students. The instructor working with male students will probably have to convince them of the merits of decision-making models.

Cognitive Style

Summary

Skills. Students with a deductive cognitive style did significantly better using the deductive model than the inductive model. In fact, deductive students using the deductive model had the highest decision-making score average on the study.

Students with an inductive cognitive style did .01 better using an inductive model than they did using the deductive model. This is interesting to note, as it is
the only time in this study that a group scored higher with the inductive model than with the deductive model.

**Satisfaction.** The deductive style students were more satisfied with the inductive model than were the inductive style students.

**Discussion**

It appears that cognitive style really does make a difference. However, it is important to remember that there were only a small number of students with an inductive cognitive decision-making style.

It was interesting that the factor of cognitive style generated the highest decision-making averages when deductive style students used the deductive model. When inductive style students used the inductive model it was the only time the inductive scores were higher than the deductive.

The results would have been even more impressive if the satisfaction scores had shown the same significance.

If the sample from the eleven high schools is representative of student populations in high school, then only one out of four students would be inductive. That is still .25 of the population which may be a good argument for differential training in decision-making.

If a sample survey reported in Chapter III from the junior

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high school is representative, then half of the population there would benefit from the inductive model. If the adult population surveyed in Chapter III is representative, then the deductive model is clearly to be preferred when working with adults.

The observations in this section are all speculative, and more research is clearly needed.

**Recommendations**

A larger sample of inductive cognitive style deciders should be used in future studies. The study probably should take place in a junior high school or middle school where the population seems to be more evenly divided between the two different cognitive styles.

**Overall Summary, Discussion, and Recommendations**

There needs to be more research on decision-making. The results presented in this study need verification and validation. This study was a start.

The purpose of this study was to see if individual differences were really significant factors in comparing the results of decision-making with two different approaches. In many ways, more questions are raised than answered.

To try to tie this study all together in a useful and hopefully usable conclusion, this researcher would
make the following recommendations:

1. If selecting a decision-making model for high school students, it appears that the deductive model would be the best choice.

2. If selecting a decision-making model for junior high, probably either model would work.

3. If selecting a decision-making model for female students, either model would work. Female students showed a slight preference for the inductive model.

4. If selecting a decision-making model for a group made up of primarily male students, a deductive decision-making model seems the best choice.

5. If selecting a decision-making model for students who either lack much decision-making experience, or are not in touch with many of their values, it would probably be better to select a deductive decision-making model.

6. If selecting a decision-making model for students with low grades, either model would probably work. However, students with low grades showed a satisfaction preference for the inductive model.

7. If selecting a model for students with high grades, the deductive model should probably be used. Students with high grades were significantly more satisfied with the deductive model.

8. If in a position to determine students' cognitive style, then the selection of a model should be compatible with that style.

9. If selecting a model for male students, a model with many motivators should probably be sought out, as males were not very satisfied with either method in general.

The suggestions listed are by no means final; they are impressions from the findings in this study. The
nine examples are intended as cautions used by the individuals training groups of students in the art of decision-making. The person working with the student on an individual basis should select a model that best suits the needs of that person.

More research is needed to substantiate or refute these findings, and the work here is presented as merely a strong possibility.
APPENDIX A
DECISION-MAKING QUESTIONNAIRE

NAME________________ GRADE: 9 10 11 12 SEX: M F (Circle One)

MY GRADE AVERAGE IS: A B C D E

PLEASE ANSWER THE FOLLOWING QUESTIONS BY CIRCLING "Y" IF THE ANSWER THAT BEST DESCRIBES YOU IS YES. CIRCLE "N" IF THE ANSWER THAT BEST DESCRIBES YOU IS NO.

1. I usually pick out my own clothes. Y N
2. I usually set up my own schedule (Homework, work, dates) Y N
3. I usually do not have trouble selecting friends. Y N
4. My parents encourage and let me make my own decisions. Y N
5. I usually like to make decisions. Y N

CIRCLE THE DESCRIPTION THAT SOUNDS LIKE YOU.

1. I hardly ever make decisions.
   I make a lot of decisions.
   I make some decisions.

2. My parents make most of my decisions.
   My parents make some of my decisions.
   My parents make hardly any of my decisions.

3. Many of my decisions are poor ones.
   My decisions are probably 50/50-good/bad.
   Most of my decisions are pretty good ones.

4. My decision making is mostly guesswork.
   I have a good way to make simple decisions.
   I have a good plan I can use for all decisions.
THE FOLLOWING PARAGRAPHS ARE DESCRIPTIONS OF HOW TWO DIFFERENT PEOPLE GO ABOUT MAKING DECISIONS. YOU MAY NEVER HAVE BOUGHT A DRESS, BUT IF YOU DID, WHICH METHOD SOUNDS MOST LIKE YOUR APPROACH TO THE PROBLEM?

A. Sarah had to choose between two outfits for school. She thought, "How much the clothes cost is most important to me. The next most important factor is how stylish they are, because I do not want to wear out-of-date clothes! Finally, I do not want colors that are too loud, because I do not want to stick out like a sore thumb." After she thought all this out, she went to the store and found an outfit that met her needs.

B. Mary was not exactly sure what she wanted, but as she looked at two possibilities, she noticed one was red and the other yellow. She thought, "I prefer the color red to yellow." The yellow dress had buttons while the red dress had a zipper. Mary thought, "I really prefer buttons to a zipper." The yellow dress was five dollars cheaper. Mary thought to herself, "That does it, I will take the yellow dress."

I MAKE DECISIONS MORE THE WAY SARAH DID. A (Circle One)
I MAKE DECISIONS MORE THE WAY MARY DID. B
STUDENT COUNCIL ELECTION

ROXIE DUGOOD VERSUS DOUG DOUGHERPER

PROFILES:

ROXIE

She is seventeen years old. She has been on the student council for two years. She has a B+ average. She was on the prom committee. She was a pitcher on the softball team. She worked on the school paper. She has had a paper route for five years and uses the money to buy her clothes.

DOUG

He is eighteen. He has been on the student council for one year. He is very popular with students, especially girls. He is mostly a C student. He has worked for the Stop n Throw for two years and is saving for a new stereo. He has been on the wrestling and football team.

Below, please show me how you would choose between them. Note! I am interested in HOW you would decide, not WHO you would select.
Sometimes you can identify your values that influence your choice. Usually you can do this after you have made a certain kind of decision a lot of different times. For example, if I have bought a lot of cars and most of them broke down on me, after a few miles, one of my values in choosing a car would certainly be RELIABILITY. I would not want to pick another car that was going to break down on me!

SEE IF YOU CAN LIST SOME OF YOUR VALUES (AS MANY AS YOU CAN) FOR THE FOLLOWING KINDS OF DECISIONS.

WHEN IT COMES TO CHOOSING A MEAL, MY FOOD VALUES ARE: (EXAMPLE: TASTE)
1. ____________ 2. ____________ 3. ____________
4. ____________ 5. ____________ 6. ____________
7. ____________ 8. ____________ 9. ____________

WHEN IT COMES TO DECIDING WHO TO GO OUT WITH, MY DATING VALUES ARE: (EXAMPLE: GOOD PERSONALITY)
1. ____________ 2. ____________ 3. ____________
4. ____________ 5. ____________ 6. ____________
7. ____________ 8. ____________ 9. ____________

WHEN IT COMES TO CHOOSING A CAR, MY VALUES ARE: (EXAMPLE: RELIABILITY)
1. ____________ 2. ____________ 3. ____________
4. ____________ 5. ____________ 6. ____________
7. ____________ 8. ____________ 9. ____________

WHEN IT COMES TO PICKING A HOUSE, MY VALUES ARE: (EXAMPLE: COST)
1. ____________ 2. ____________ 3. ____________
4. ____________ 5. ____________ 6. ____________
7. ____________ 8. ____________ 9. ____________

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WHEN IT COMES TO CHOOSING A PRESIDENT, MY VALUES ARE:
(EXAMPLE: HONESTY)

1. ______________ 2. ______________ 3. ______________
4. ______________ 5. ______________ 6. ______________
7. ______________ 8. ______________ 9. ______________
DEDUCTIVE LESSON

Review

There are many ways to make decisions. Some of the ways people do it is to:

1. Flip a coin.
2. Ask someone else such as parents, friends or teacher.
3. Consult horoscope or tea leaves.

You have already filled out a questionnaire that helped me see where you were at in your decision-making. Today I am going to try to teach you a useful method to help you make decisions.

This method will help you make both easy as well as hard decisions.
OVERVIEW

1. Identify values related to choice.
2. Define values.
3. Rank values.
4. Identify information.
5. Compare values to option.
6. Rate options.
7. Add total.
8. Compute percentages.

PRESENT

TELL  SHOW  DO

If you were choosing between two classes to take, you would need to look at what's important to you in a class. A couple of my values are:

1. Will I learn something worthwhile.
2. The grading system.

1. Now list 3 of your values for choosing a class.

2. The next step is to define those values in terms of what is good, o.k. or bad.

For me, in terms of learning something worthwhile:
3 = good = something interesting I'd like and would be able to use frequently
2 = o.k. = __________
1 = bad = __________

Write my two values on board.

Write: 3 = good = __________
2 = o.k. = __________
1 = bad = __________
on board.

Class lists 3 values.

Write it on board.

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**TELL**

1 = o.k. = something I will use once in awhile.
2 = bad = something I will probably never use.

Now try and define your values.

3. I knew these values are important to me, but now I need to think about which one is more important to me.

Worthwhile is, so I'll give that a two and give grading system a one.

Now, you rank yours. You have three so give the most important value a 3, next most important a 2 and least important a 1.

Now we need to get information about the options so that we can compare our values to them. Who or what can we get information about classes.

Give class description of two classes.

(Attached)

Now I can compare my values in terms of worthwhile. I'd give Art a 3, I need a good hobby.

A. I'd give Auto a 3 because it's important too, to keep my car running.

**SHOW**

Do same for two values (on board)

good = grade myself
o.k. = 2 objective tests
bad = subjective teacher rating system

On Board

(2) Worthwhile

(1) Grading System

Class ranks three values.

Write:

- Counselor
- Course Description
- Friends
- Teacher

Class lists information sources.

Class reads.

**DO**

Do on board.

<table>
<thead>
<tr>
<th>Art</th>
<th>Auto</th>
</tr>
</thead>
</table>
| Worth-while | 3 | 3 |}

Grades

Class does their first value.

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B. The rank of worth was 2 so if I multiply 3 x 2 I get a 6 for both.

C. For grades I could give Art a 3 because there are no grades. I'd give Auto a 2 because it's based on skills.

They are pretty close. I should probably look at some other values.

To get an idea of how they compare to perfect, I can divide each of them by the perfect score.

We can do the same thing for other decisions. Let's pick a movie.

List 3 values that are important to you in choosing a movie.

Now define what's good = ______  o.k. = ______  bad = ______ for each.

Now rank values.

Here are the descriptions of 2 movies. (give handout)

<table>
<thead>
<tr>
<th></th>
<th>Art</th>
<th>Auto</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worth</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>while</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

| Grades | 3  | 2  |

Total | 9  | 3  |

Perfect Rank
2 x 3 = 6
1 x 3 = 3

Art \( \frac{3}{6} = 50\% \)
Auto \( \frac{2}{6} = 33\% \)

Class does.

Class does.

Class does.

Class lists.

Class defines 3 values.

Class reads.
Once you have listed the many items for both options then you can rate them.

a. give a - to items that sound good.
b. give a 0 to items you’re not sure of.
c. give a minus to items that are disliked by you.

The next step is to try and identify why you liked or disliked various items.

Beside a - item, write feeling word for why you liked it.
Do same for 0's.

Now, we total the scores.

Add +’s
Add 0’s
Add -’s
Write totals on board.

Finally, divide each score by total number.

This division shows us how satisfactorily each choice item is.

It’s up to you, but probably it should be at least 70%.

Class rates their items.

Class does for all - and 0 items.
Do same for 0.

Class does.

Class does.

Class does.
TELL
Now rate each movie based on your values.
Multiply score by rank.
Add totals.
Divide by perfect score.

SHOW

DO
Class does.
Class does.
Class does.
Class does.

EXERCISE
Students do decision-making package.

SUMMARY
You have a good method now, for making decisions rather than just guessing or going with impulses.

To get score feedback, I would like you to fill out this questionnaire.
CREATIVE ART - learn how to make pottery, paint pictures and write stories - taught by famous artist Jon Granzz. This is a fun and interesting class. People really enjoy this class. No grades, just enjoy the art work.

AUTO MECHANICS - this course is a basic course in how to do repairs to your car. You learn to:

1. Change oil
2. Change spark plugs
3. Set timing

You are graded on your skills.
INDUCTIVE LESSON

Review

There are many ways to make decisions. Some of the ways people do it is to:

1. Flip a coin.
2. Ask someone else such as parents, friends or teacher.
3. Consult horoscope or tea leaves.

You have already filled out a questionnaire that helped me see where you were at in your decision-making. Today I am going to try to teach you a useful method to help you make decisions.

This method will help you make both easy as well as hard decisions.
OVERVIEW

There are six steps in making decisions.

1. Identify problem
2. Identify information sources
3. Find critical items
4. Rate items
5. Attach values
6. Compute scores
7. Figure percentages

PRESENT

<table>
<thead>
<tr>
<th>TELL</th>
<th>SHOW</th>
<th>DO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The first step is to identify what the problem area is. What if we were choosing what class to take at high school. Our problem statement is, &quot;Do I want class A or B?&quot;</td>
<td>On board write A or B.</td>
<td>Class identifies info. sources; counselors, teachers, friends.</td>
</tr>
<tr>
<td>2. What things do I need to know to help me make that choice?</td>
<td>Write on board.</td>
<td>Write items down.</td>
</tr>
<tr>
<td>Help class develop list. -teachers -content -delivery -grading system -time -class make up etc.</td>
<td></td>
<td>Class writes list.</td>
</tr>
<tr>
<td>3. Write a list for yourself.</td>
<td>Write items down. -grading system -class size -subject etc.</td>
<td></td>
</tr>
</tbody>
</table>

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4. Once you have listed the many items for both options then you can rate them.
   a. give a + to items that sound good.
   b. give a 0 to items you're not sure of.
   c. give a minus to items that are disliked by you.

5. The next step is to try and identify why you liked or disliked various items.

6. Now, we total the scores.

7. Finally, divide each score by total number.

   This division shows us how satisfactorily each choice item is.

   It's up to you, but probably it should be at least 70%.

   Class does.

   Class does for all + and - items.

   Class does.

   Class does.

   Class does.

   Class does.

   Class rates their items.

   Class rates their items.
Repeat

Now let's try it again. This time on your own.

Try to choose which of these movies you would like to see.

(Handout description)

To class:

1. You should read the description.
2. Make a list of critical items.
3. Rate list.
4. List reasons.
5. Add totals.
6. Compute percentages.

MOVIE A

It Came From Beneath The School

The most terrifying tale of terror ever seen. See high school students struggling against a fiendish monster. Suspense at its peak, scarier than Halloween.

MOVIE B

It's A Mad Mad Mad School

Comedy situations with romance and all. The setting is a high school in California with students going surfing and disco roller skating.

EXERCISE

(for both lessons)

Applications.

Students do decision making package.

SUMMARY

You have a good method now for making decisions rather than just guessing or going with impulses. To get some feedback, I would like you to fill out this questionnaire.
## FOOD AT BIG BOISE RESTAURANT

<table>
<thead>
<tr>
<th>ITEM A - COCOA BIN</th>
<th>ITEM B - BEEF AU JAWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fried Chicken</td>
<td>1. Roast Beef</td>
</tr>
<tr>
<td>2. Mashed Potatoes</td>
<td>2. Baked Potatoes</td>
</tr>
<tr>
<td>3. Homemade Gravy</td>
<td>3. Sour Cream</td>
</tr>
<tr>
<td>4. Fresh Vegetables</td>
<td>4. Tossed Salad</td>
</tr>
<tr>
<td>5. Home Baked Rolls</td>
<td>5. Homemade Bread</td>
</tr>
<tr>
<td>6. Beverage Included</td>
<td>6. Hot Fudge Sundae Dessert</td>
</tr>
<tr>
<td>7. Strawberry Shortcake Dessert</td>
<td>7. Beverage Extra</td>
</tr>
<tr>
<td>8. $5.65</td>
<td>8. $9.50</td>
</tr>
</tbody>
</table>

**DESCRIPTION:**

**ITEM A**

You do not have to be chicken about our delicious cocoa bin. This meal is a favorite from coast to coast. Every item is fresh and our strawberry shortcake is made from just picked berries.

**ITEM B**

Our beef is the best in the midwest. Our delicious baked potato with sour cream is unbeatable. People come from miles around for this incredible deal of a meal.
### Dating Game

<table>
<thead>
<tr>
<th><strong>A Guy</strong></th>
<th><strong>B Guy</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 6' tall</td>
<td>1. 5' 9&quot; tall</td>
</tr>
<tr>
<td>2. Blonde hair</td>
<td>2. Dark hair</td>
</tr>
<tr>
<td>4. Athletic</td>
<td>4. Friendly</td>
</tr>
<tr>
<td>5. Likes disco music</td>
<td>5. Likes animals</td>
</tr>
<tr>
<td>6. Good dancer</td>
<td>6. Good student</td>
</tr>
<tr>
<td>7. On football team</td>
<td>7. On student council</td>
</tr>
<tr>
<td>8. On swimming team</td>
<td>8. Likes rock n roll and folk music</td>
</tr>
<tr>
<td>9. Has own car</td>
<td>9. Plays guitar</td>
</tr>
<tr>
<td>10. Plans to go to college</td>
<td>10. Plays chess</td>
</tr>
<tr>
<td>11. Likes horses</td>
<td>11. Very active</td>
</tr>
<tr>
<td>12. Likes to be outdoors</td>
<td>12. Enjoys tennis</td>
</tr>
<tr>
<td>13. Wants to go into medicine</td>
<td>13. Likes photography</td>
</tr>
<tr>
<td>14. Likes quiet places</td>
<td>14. Plans to go to work after high school</td>
</tr>
<tr>
<td>15. Outgoing</td>
<td>15. Editor of school paper</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>A Girl</strong></th>
<th><strong>B Girl</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 5' 2&quot; tall</td>
<td>1. 5' 7&quot; tall</td>
</tr>
<tr>
<td>2. Rich</td>
<td>2. Middle income family</td>
</tr>
<tr>
<td>3. Blonde hair</td>
<td>3. Dark hair</td>
</tr>
<tr>
<td>4. Outgoing</td>
<td>4. Quiet</td>
</tr>
<tr>
<td>5. Cheerleader</td>
<td>5. On girl's B-ball team</td>
</tr>
<tr>
<td>7. Plans to go to college</td>
<td>7. Plans to go to work after grad.</td>
</tr>
<tr>
<td>8. Likes to be outdoors</td>
<td>8. Likes rock concerts</td>
</tr>
<tr>
<td>9. 16 years old</td>
<td>9. 18 years old</td>
</tr>
<tr>
<td>10. Unfriendly dad</td>
<td>10. Friendly dad</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th><strong>Fact Sheet:</strong></th>
<th><strong>SCANTERO</strong></th>
<th><strong>BULLDURUM</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maker:</strong></td>
<td>GM</td>
<td>Masda</td>
</tr>
<tr>
<td><strong>Horsepower:</strong></td>
<td>290</td>
<td>350</td>
</tr>
<tr>
<td><strong>Cylinders:</strong></td>
<td>V-6</td>
<td>V-8</td>
</tr>
<tr>
<td><strong>Transmission:</strong></td>
<td>Automatic</td>
<td>3 Speed; 4 Speed</td>
</tr>
<tr>
<td><strong>Cost:</strong></td>
<td>$7,500</td>
<td>$9,700</td>
</tr>
<tr>
<td><strong>Colors:</strong></td>
<td>Red, Yellow, Black</td>
<td>Red, White, Blue</td>
</tr>
<tr>
<td><strong>Interiors:</strong></td>
<td>Crushed Velvet</td>
<td>Vinyl</td>
</tr>
<tr>
<td><strong>Options:</strong></td>
<td>Sunroof</td>
<td>Power windows</td>
</tr>
<tr>
<td></td>
<td>Window defogger</td>
<td>am-fm stereo</td>
</tr>
<tr>
<td></td>
<td>Wire wheel rims</td>
<td>Tinted windows</td>
</tr>
<tr>
<td><strong>Speed:</strong></td>
<td>0-70 ten seconds</td>
<td>0-70 5.1 seconds</td>
</tr>
<tr>
<td><strong>Mileage:</strong></td>
<td>20-25 city</td>
<td></td>
</tr>
<tr>
<td></td>
<td>24-28 highway</td>
<td>15-20 city</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22-25 highway</td>
</tr>
<tr>
<td><strong>Weight:</strong></td>
<td>2,000 lbs.</td>
<td>2,000 lbs.</td>
</tr>
</tbody>
</table>
WHICH CAR DO YOU WANT?

SCANTERO

The 1980 Scantero is a no nonsense car of the future. It is compact yet gutsy. It has great E.P.A. mileage. This car is automatic so there's never any trouble driving this beauty. The interior is a beautiful crushed velvet in your choice of exciting colors. It is also finished nicely in authentic corinthian leather. This car is great for a young couple as it is as practical as it is sporty.

BULLDURUM

This hot foreign number is fresh from successes on the European racing scene. This car is almost too hot to handle. It hugs the road and corners unbelievably well. This car will turn heads as you drive by. This car has more sex appeal than any other car on the road.
HOUSE A

This is a beautiful house in the country. It is located on five acres. The house has three bedrooms, central air conditioning, gas heat, two fireplaces and a finished recreation room. The house is ranch style. The price is $62,000, with an assumable mortgage at 91/4%.

HOUSE B

This house is located at the best part of the fun city of Oz. It is a huge colonial with beautiful woodwork. It is on a double lot with huge trees. In addition to gas heat, it also has a woodstove to help keep those heat bills down. It has a beautiful huge kitchen and a formal dining room. It has four bedrooms.
PRESIDENTIAL ELECTION

There are two candidates running for president. Elliot Rosewater, known to his friends as Rosie and Matilda Finsterwald known to her constituents as Matilda Finsterwald.

The main issues in this election (as in most) are Civil Rights, Taxes, Big Business vs. Little Guy and Law and Order and how to deal with the rest of the world.

Here are their voting records in Congress.

<table>
<thead>
<tr>
<th>Article</th>
<th>Rosie</th>
<th>Matilda</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>yea</td>
<td>nay</td>
</tr>
<tr>
<td>2</td>
<td>nay</td>
<td>nay</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a</td>
<td>yea</td>
<td>yea</td>
</tr>
<tr>
<td>3b</td>
<td>nay</td>
<td>yea</td>
</tr>
<tr>
<td>3c</td>
<td>nay</td>
<td>yea</td>
</tr>
<tr>
<td>1c</td>
<td>yea</td>
<td>nay</td>
</tr>
</tbody>
</table>

You need to select a candidate!

ON THE NEXT PAGE IS THE CIVIC FLASHLIGHT, IT TELLS YOU WHAT ALL OF THE ARTICLES ARE!
Article 1

This is a bill that if enforced, would turn over the Wayland Canal to Canada and rename Niagara Falls to Maple Leaf Falls.

Article 3A

Allow non-native Laminites to occupy unoccupied HUD homes in urban slum areas.

Article 3B

Allow Russian Fishermen to have no size limit on red herring caught in the United States coastal waters.

Article 3C

Prevent discrimination against lefthanders in the classroom and mandate that in the future there are left-handed desks and pencil sharpeners.

Article 1C

There will be an 8% drop in taxes on gas, food and clothing.

Article 2

Independent businesses of a net worth of under $1,000,000 will get a tax break of 3% for the next five years.

PLEASE PICK YOUR CANDIDATE.
<table>
<thead>
<tr>
<th>DECISION AREA</th>
<th>VALUES</th>
<th>WEIGHT</th>
<th>STANDARDS FOR ACCEPTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.</td>
<td></td>
<td>GOOD 3.__________________</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>O.K. 2.__________________</td>
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<td></td>
<td>BAD 1.__________________</td>
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<td>2.</td>
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<td>GOOD 3.__________________</td>
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<tr>
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<td></td>
<td>O.K. 2.__________________</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>BAD 1.__________________</td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td></td>
<td>GOOD 3.__________________</td>
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<tr>
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<td></td>
<td></td>
<td>O.K. 2.__________________</td>
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<td></td>
<td>BAD 1.__________________</td>
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<td>4.</td>
<td></td>
<td>GOOD 3.__________________</td>
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<tr>
<td></td>
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<td></td>
<td>O.K. 2.__________________</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>BAD 1.__________________</td>
</tr>
<tr>
<td>VALUES</td>
<td>WEIGHT</td>
<td>STANDARD SCORE</td>
<td>STANDARD SCORE</td>
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</tbody>
</table>

**TOTALS**

**PERCENTAGE** = Score

Perfect score

**DECISION**: 1. 2. neither
<table>
<thead>
<tr>
<th>FACTORS</th>
<th>RATING</th>
<th>REASON</th>
<th>FACTORS</th>
<th>RATING</th>
<th>REASON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**TALLY**

\[
\begin{align*}
+ & S = \_ \quad \text{total} = \_ & + & S = \_ \quad \text{total} = \_ \\
0 & S = \_ \quad \text{total} = \_ & 0 & S = \_ \quad \text{total} = \_ \\
- & S = \_ \quad \text{total} = \_ & - & S = \_ \quad \text{total} = \_ \\
\end{align*}
\]

**MY CHOICE IS:** 1. 2. Neither  Either
# DECISION MAKING SATISFACTION SURVEY

**PLEASE CIRCLE THE WORD THAT BEST DESCRIBES YOUR OPINION!**

| **1.** The decision making training was | good | o.k. | bad |
| **2.** I learned how to make better decisions | yes | not sure | no |
| **3.** I will be able to use this approach to decision making again (could you use this method again on your own?) | yes | maybe | no |
| **4.** I will use this method again | definitely | maybe | never |
| **5.** This method of making decisions is | easy | o.k. | hard |
| **6.** Other students would benefit from this training | yes | maybe | no |

**ADDITIONAL COMMENTS:**

______________________________

______________________________

______________________________

______________________________
Dear

Thank you for filling out the Decision Making Questionnaire a few weeks ago in your program. The surveys have now been tabulated. Based on those results, I would like to personally invite you to take part in a Decision Making Class next Monday and Wednesday in the North Cafeteria of the Skills Center.

This class will last for approximately two hours. The class will involve students from many different programs. I think you will enjoy this class and you will, also, learn something that you can use again.

The class will start promptly at 9:00 a.m. and 12:30 p.m. I have let your instructor know that you have been invited to participate. Please let them know you intend to go.

I really hope you can make it!

John Chapman, Counselor V.B.S.C.


