

1983

A study of the effect of the Career Information System of Iowa on the perceived needs of 10th grade students

Stephen Robert Milder
University of Northern Iowa

Let us know how access to this document benefits you

Copyright ©1983 Stephen Robert Milder

Follow this and additional works at: <https://scholarworks.uni.edu/grp>



Part of the [Education Commons](#)

Recommended Citation

Milder, Stephen Robert, "A study of the effect of the Career Information System of Iowa on the perceived needs of 10th grade students" (1983). *Graduate Research Papers*. 2954.

<https://scholarworks.uni.edu/grp/2954>

This Open Access Graduate Research Paper is brought to you for free and open access by the Student Work at UNI ScholarWorks. It has been accepted for inclusion in Graduate Research Papers by an authorized administrator of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

Offensive Materials Statement: Materials located in UNI ScholarWorks come from a broad range of sources and time periods. Some of these materials may contain offensive stereotypes, ideas, visuals, or language.

A study of the effect of the Career Information System of Iowa on the perceived needs of 10th grade students

Abstract

In 1971, the U.S. Commissioner of Education, Sidney P. Marland, announced that a new program sponsored by his department would combine college preparatory, vocational, and general education into one area called career education (Smith, 1975). This announcement marked a new federal push for career development in the nation's public schools. In 1978, Congress assumed an even greater role by passing the Career Education Incentive Act. This act provided matching federal funds to states for systems to teach young people what they need to know to enter careers (Stone, 1978). By 1981, career education had become part of classroom activities in 9,000 of the nation's 16,000 public school districts (Kaercher, 1981). The movement into career education coincided with a movement that questioned educational programs, the accountability movement.

A STUDY OF THE EFFECT OF THE CAREER INFORMATION SYSTEM OF
IOWA ON THE PERCEIVED NEEDS OF 10TH GRADE STUDENTS

A Research Paper
Presented to
the Department of School Administration
and Personnel Services
University of Northern Iowa

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts in Education

by
Stephen Robert Milder

April 1983

This Research Paper by: Stephen Robert Milder

Entitled: A Study of the Effect of the Career Information System of Iowa on the Perceived Needs of 10th Grade Students

has been approved as meeting the research paper requirement for the Degree of Master of Arts in Education.

April 4, 1983
Date Approved

Audrey L. Smith
Director of Research Paper

April 6, 1983
Date Approved

Jack F. Kimball
Second Reader of Research Paper

April 1, 1983
Date Received

Audrey L. Smith
Graduate Faculty Adviser

April 6, 1983
Date Received

Robert J. Krajewski
Head, Department of School Administration and Personnel Services

TABLE OF CONTENTS

	Page
List of Tables	iv
CHAPTER	
1. The Problem	1
Introduction	1
Statement of Problem	3
Importance of the Study	5
Assumptions	7
Limitations of the Study	7
Definition of Terms	8
2. Review of Literature	10
Introduction	10
Historical Data	10
Need for Information	12
Published Sources of Information	15
Information Systems	18
Needs Assessment.	23
Summary	24
3. Design of the Study	26
Introduction	26
Demographics	27
Description of the Instruments	28
Procedures	29

	Page
4. Analysis of the Data	32
The Problem	32
Methods of Gathering Information	32
Career Development Findings	33
Life Skills Findings	40
Knowing Myself Findings	47
5. Discussion of the Findings	52
Introduction	52
The Findings	52
What do the Findings Mean	54
The Relationship to Other Studies	55
6. Summary, Conclusions, and Recommendations	57
Introduction	57
What the Study is About	57
Why the Study is Important	58
The Methods of Research	58
Findings	59
Conclusions	60
Recommendations	60
Bibliography.	62
Appendix A	65
Appendix B	68
Appendix C	72

LIST OF TABLES

Table	Page
1. Equivalence of the Groups	27
2. Weighting of the Student Needs Assessment Survey	33
3. American College Testing Program's Student Needs Assessment Survey: Perceived Career Development Needs of Tenth Grade Students; Items and Means for the Treatment Group, Placebo Group, and Control Group	34
4. American College Testing Program's Student Needs Assessment Survey: Perceived Career Development Needs of Tenth Grade Students; The Means-Difference Correlations for Treatment Group A and Placebo Group B	36
5. American College Testing Program's Student Needs Assessment Survey: Perceived Career Development Needs of Tenth Grade Students; The Means-Difference Correlation for Treatment Group A and Control Group C	37
6. American College Testing Program's Student Needs Assessment Survey: Perceived Career Development Needs of Tenth Grade Students; The Means-Difference Correlation for Placebo Group B and Control Group C	39
7. American College Testing Program's Student Needs Assessment Survey: Perceived Life Skills Needs of Tenth Grade Students; Items and Means for the Treatment Group, Placebo Group and Control Group	41
8. American College Testing Program's Student Needs Assessment Survey: Perceived Life Skills Needs of Tenth Grade Students; The Means-Difference Correlation for Treatment Group A and Placebo Group B	43
9. American College Testing Program's Student Needs Assessment Survey: Perceived Life Skills Needs of Tenth Grade Students; The Means-Difference Correlation for Treatment Group A and Control Group C	44
10. American College Testing Program's Student Needs Assessment Survey: Perceived Life Skills Needs of Tenth Grade Students; The Means-Difference Correlation for Placebo Group B and Control Group C	46

	Page
11. American College Testing Program's Student Needs Assessment Survey: Perceived Knowing Myself Needs of Tenth Grade Students; Items and Means for the Treatment Group, Placebo Group, and Control Group	47
12. American College Testing Program's Student Needs Assessment Survey: Perceived Knowing Myself Needs of Tenth Grade Students; The Means-Difference Correlation for Treatment Group A and Placebo Group B	48
13. American College Testing Program's Student Needs Assessment Survey: Perceived Knowing Myself Needs of Tenth Grade Students; The Means-Difference Correlation for Treatment Group A and Control Group C	49
14. American College Testing Program's Student Needs Assessment Survey: Perceived Knowing Myself Needs of Tenth Grade Students; The Means-Difference Correlation for Placebo Group B and Control Group C.	51

CHAPTER 1

The Problem

Introduction

In 1971, the U.S. Commissioner of Education, Sidney P. Marland, announced that a new program sponsored by his department would combine college preparatory, vocational, and general education into one area called career education (Smith, 1975). This announcement marked a new federal push for career development in the nation's public schools. In 1978, Congress assumed an even greater role by passing the Career Education Incentive Act. This act provided matching federal funds to states for systems to teach young people what they need to know to enter careers (Stone, 1978). By 1981, career education had become part of classroom activities in 9,000 of the nation's 16,000 public school districts (Kaercher, 1981). The movement into career education coincided with a movement that questioned educational programs, the accountability movement.

During the 1970's, the accountability movement seemed to sweep the entire nation. Many people began to question how the schools were being run and how federal dollars were being spent. Some people even questioned why we need career education. In 1971, Marland addressed this issue when he stated: "I support all of us are familiar with the situation of a young person finishing high school or even college with no idea of what kind of work he would like to follow"(p. 25). Marland was pointing to the apparent need for occupational information to solve the problem concerning what career to pursue. The account-

ability movement continued throughout the decade, and school programs were still being questioned.

In 1978, Marvin Stone, editor of U.S. News and World Report, stated:

School counselors obviously are not now providing the needed direction. Fewer than half the 17-year-olds in a survey by the National Assessment of Educational Progress could name more than one skill necessary for their chosen jobs.

At a time of monstrous unemployment for teenagers (1 in 7 jobless among whites and 2 in 5 among blacks) such a handicap is too much, and contributes to a grievous situation (p.76).

In 1976, when the results of the National Assessment of Educational Progress were released, the problem that Marland saw in the early 1970's still appeared to exist. The problem that existed is whether or not occupational information gets to the young people in our nation.

Today our nation is faced with soaring unemployment rates much higher than the "monstrous" unemployment rates referred to by Stone (1978). In 1982, the unemployment rate for white teens was twenty percent with nearly fifty percent unemployment for the black teens ("Jobs", 1982). The sight of young people leaving high school with no idea of what kind of work they wish to follow still appears to exist. It appears that we should examine whether the career education programs have failed to help students meet their perceived needs.

Career education had been the responsibility of local public schools long before the new federal commitment to career education in 1971. The new financial support led the states to develop statewide career education programs. In 1971, the state of Iowa also moved into a new career education program for the schools with the utilization of the IOWAscript and the Computerized Vocational Information System (Leaders' Guide, 1980). In August of 1974, the Career Information System of Iowa was put into

operation by the Guidance Services department of the Department of Public Instruction (DPI). The Career Information System of Iowa (CISI) has provided each school with information and assistance in order that the career education task could be accomplished (Eibert and Crowley, 1975). By 1982, the CISI had been implemented in 97 percent of the school districts in Iowa (Greenwood, 1982). The use of the CISI appears to be growing and 49 percent of the school districts surveyed in the Greenwood (1982) study indicated that they would be using the CISI even more in the future. This growing use of the CISI could indicate that the students in Iowa are receiving occupational information.

The researcher has noticed, in the last ten years as a high school teacher in the Iowa Schools, that quite a few students do take advantage of the CISI. The Leaders' Guide (1980) for the CISI claims that students who take advantage of the CISI do have a better idea of what they are going to do. The Process User's Handbook (1980) for the CISI states that the CISI can help students move through the career decision-making process. If the CISI does meet these claims, why do we still have students leaving school with no idea of what kind of work they will pursue? It is important to find out if the CISI helps to meet the student's perceived career development needs. The CISI, like other occupational information systems, should have a particular use. Research (Drake, 1979; Katz, 1978; McKinnaley, 1971; Rayman, 1978; Ryan, 1978) indicates that other information systems help students in making decisions about careers.

Statement of Problem

The purpose of this study is to determine what effect, if any, use of the Career Information System of Iowa (CISI) has on the immediate, perceived career development needs of tenth grade students. The American

College Testing Program's Student Needs Assessment Survey (SNAS) was selected to measure the student's career development needs following use of the CISI.

The hypothesis is that the Career Information System of Iowa has a positive effect on the immediate, perceived career development needs of tenth grade students. If CISI does have a positive effect on the immediate, perceived career development needs, the following data will be found:

1. Students exposed to the CISI will score lower on the career development portion of the American College Testing Program's Student Needs Assessment Survey than will students in the placebo group or in the developmental reading group.
2. Students exposed to the CISI will score lower on the career development portion of the American College Testing Program's Student Needs Assessment Survey than will students in the control group or in the group that receives no information at all.
3. Students in the placebo group will not score significantly different on the career development portion of the American College Testing Program's Student Needs Assessment Survey than will the control group.

In the study, the researcher will gather data in the life skills and knowing myself portions of the American College Testing Program's Student Needs Assessment Survey. This data will not reveal any significant difference in scores on the SNAS regardless of the comparison of groups. There will be no significant difference in both the life skills and knowing myself portions of the SNAS.

Importance of the Study

The researcher believes that the CISI may meet the perceived career development needs of students. If the CISI does meet those needs, then it could be considered a viable occupational information system in comparison to the other important systems available. In the already cited research, meeting the perceived needs of the students is considered a valuable asset for a program.

The Career Information System of Iowa has been in operation for over eight years and very little has been written on it. One major study (Koranda, 1978) suggests that the CISI has not met its intended goals of identifying training sources, occupation attributes, occupational clusters, intentions of post-secondary planning, entry level salaries, and abilities necessary to find occupational information. However, the fact that a program fails to meet its intended goal does not mean that the program is of no particular use. A program can meet goals that were not originally intended and can have another use.

In examining the Koranda (1978) study, several points of interest related to the size of the exposed group in relation to the unexposed group, the length of time that had lapsed between the exposure and the survey, and the method students were exposed to the CISI, and finally the students' reaction to the CISI were formed. In that study only 69 seniors who replied were completely exposed to the CISI, while over 300 in the survey were unexposed. Koranda (1978) indicated that he believed more than 69 seniors would have been exposed to the CISI (p. 73). The students were not required to say when their exposure to the CISI actually happened. The CISI is not designed to last forever after one exposure. The Leaders' Guide (1980), in referring to the CISI, states: "It is not

a one-time, one-choice binding decision, but a dynamic and vital challenge" (p. 1). The study did not give a prescribed method of exposing students to the CISI. If the student is not taken through a step-by-step procedure, there is a question as to what constitutes exposure. The final point that Koranda's study revealed is the students' reaction to the CISI. Almost 77 percent of the exposed students in that study found the CISI was helpful. These findings of Koranda (1978) might lead one to ask whether the CISI does help to reduce the immediate career development needs of students. The Koranda study would indicate that the CISI apparently does have a particular use despite the failure to meet its intended goal.

Research shows that other systems of occupational information, such as the Oregon based Career Information System (CIS), the Computerized Vocational Information System (CVIS), the Educational and Career Exploration System (ECES), DISCOVER, and the System of Interactive Guidance in Information (SIGI), have been popular with students and have met students' needs (Drake, 1979; Katz, 1978; McKinalley, 1971; Rayman, 1978; Ryan, 1978). In the already cited research, meeting the perceived needs of the students is considered a valuable asset for a program.

According to the Greenwood (1982) study, the usage of the CISI in Iowa has increased during the time period between 1978 and 1981. Some 57 percent of the subscribing schools indicated that they were using the CISI more in 1981 than in 1978. Only five percent indicated that they were using the CISI less in 1981 than in 1978. This study also indicated that 49 percent of the respondents believed they would use the CISI more in the future. The trend toward using the CISI more seems to indicate that possibly students or counselors believe that the CISI is meeting a perceived need.

It is important that programs that are receiving federal and state monies have a particular use. The Career Information System of Iowa appears to be valued. The Koranda (1978) study indicated that students believed that the CISI was helpful although Koranda concluded it missed the mark. The Greenwood (1982) study indicated that the CISI was being used more in the subscriber schools in 1981 than in 1978. Research, already cited, indicates that other information systems appear to be meeting student needs. The researcher intends to investigate a particular use of the Career Information System of Iowa, whether the CISI is helping to reduce the immediate, perceived need for career development information.

Assumptions

The basic assumptions relevant to this study are:

- A. Students who have not been exposed to the CISI at the school in which the study was done have not been exposed elsewhere.
- B. Students have a perception of their needs.
- C. Respondents on the Student Needs Assessment Survey will answer all questions honestly.
- D. Students will not find exposure to the CISI objectionable.
- E. The population sampled is typical of tenth grade students in a rural setting.
- F. Students who score lower on the Student Needs Assessment Survey have a lower perception of help needed.

Limitations of the Study

The study will be limited to one class at West Central High School who had not been exposed to the CISI. The class will be divided into three homerooms of 14, 15, and 16 students.

A second limitation to the study will be the number of days it will take to expose the treatment group of students to the CISI. The school limited the researcher to a ten minute homeroom period in which to conduct the study.

The researcher will use the American College Testing Program's Student Needs Assessment Survey. The researcher could not find an assessment that measured just career development.

The study will be limited to the student perceptions of their needs or the extent to which the program meets their perceived needs. The exposure to the CISI is expected to cause the need for information to decrease, but the exposure could cause just the opposite to happen. The students' appetite for information could be aroused, and the students could desire more information.

Definition of Terms

Career Information System of Iowa: An occupational information system that is made available to students through a manual system or a computer system. Both of these delivery systems are designed for individual operation by students. The occupational information provided by both delivery modes is continuously updated and new materials are distributed to the user schools.

Career Development: The process by which a person's gradual unfolding and growth toward vocational maturity occurs through a sequence of goal-directed experiences implemented in occupational roles.

Need: The discrepancy between a current status and a desired status.

Exposed Student: Student who has been through the step-by-step program, Career Information System of Iowa, within the past year.

Unexposed Student: Student who has not been through the step-by-step program, Career Information System of Iowa, within the past year.

Positive Effect: A reduction in the desire for help as measured by the Student Needs Assessment Survey.

Treatment: Taking an individual through the ten step Process User's Handbook for the Career Information System of Iowa as described in the Leaders' Guide.

CHAPTER 2

Review of Literature

Introduction

The researcher has identified the problem as what effect, if any, the Career Information System of Iowa (CISI) has on the immediate, perceived career development needs of tenth grade students. The career development needs will be measured by the American College Testing Program's Student Needs Assessment Survey (SNAS). In this chapter, the literature is reviewed in the following areas: historical data, need for information, published information, information systems, and needs assessment.

Historical Data

For centuries, man's work was predominantly farming. Then the Industrial Revolution in the second half of the eighteenth century brought change in the nature of work. Young men left the farms and villages to seek careers in the urban centers. This change facilitated the call for vocational guidance. Frank Parsons is called the "father of the guidance movement" (Calhoun, 1976, p. 183) because of the posthumously published Choosing a Vocation (1909). This is the first published work on the concept of vocational guidance. Parsons was the first to echo vocational choice, an idea that has since been labeled trait-and-factor theory (Calhoun, 1976).

The research (Calhoun, 1976; Calkins, 1973; Venn, 1964) indicates that the next major achievement in vocational guidance didn't occur until 1917 with the passage of the Smith-Hughes Act. This landmark act called for student preparation in vocational areas which previously had been excluded from school curriculums. Schools could offer courses in agriculture, trade, industry, and home economics (Calhoun, 1976; Venn, 1964). The federal government's role was established as a financier of vocational education.

The role of the federal government in the vocational education program grew in the fifty years following the passage of the Smith-Hughes Act, as the government continued to increase its support of vocational education. The main acts of this period were the George-Reed Act (1929), The George-Ellzey Act (1934), the Georege-Dean Act (1936), and the George-Barden Acts of 1946 and 1956. These acts led to the further expansion of the vocational education program to cover teacher training and nurse training (Calhoun, 1976; Calkins, 1973; Venn, 1964). The expansion also called for more money to be allotted for these new programs.

In 1962, the Manpower Development and Training Act (MDTA) was passed to help reduce the unemployment problem. According to Venn (1964), the purpose of the MDTA was the "establishment of training programs for the unemployed and the underemployed persons who are working below their occupational potential" (p. 119).

A huge financial commitment to vocational education occurred in 1963, with the enactment of the Vocational Education Act. According to the research (Calhoun, 1976; Venn, 1964), the federal government spent \$60 million in 1964 on vocational education. This expenditure

soared to \$225 million in 1967. The original Smith-Hughes Act called for the government to spend only 1.5 million (Calhoun, 1976). The government's role as the financier of vocational education had grown substantially.

When U.S. Commissioner of Education, Sidney Marland (1971), announced the new curriculum of career education, we moved into the latest phase in the vocational education movement. According to Clements (1977), career education expanded the vocational concept to all students rather than those just interested in a particular job. Career education expanded the coverage of occupations to provide information to the student so the career decision could be made.

Need for Information

Over a decade has passed since the decree of Marland in 1971, and career education has spread across the entire nation (Kaercher, 1981). Many programs have been designed to meet students' needs. This portion of the chapter will address the problem of needs, career development, and the need for occupational information.

Abraham Maslow (1954) developed a theory of basic human needs that provides an instructive insight for understanding the purpose of education. Maslow identified the basic human needs and placed them in a hierarchy in the order in which an individual strives to achieve them. Isaacson (1977) briefly states the hierarchial order to be:

1. The physiological needs
2. The safety needs
3. The need for belonging and love
4. The need for importance, respect, and self-esteem

5. The need for information
6. The need for understanding
7. The need for beauty
8. The need for self-actualization (p. 32).

The occupation an individual chooses will affect the ability to provide for that individual's physiological and safety needs. The need for importance, respect, and self-esteem is directly related to the occupation an individual chooses. Based on Maslow's theory, a person's need for good occupational information is very strong.

Career development theories have appeared in the hope of meeting the students' needs. Isaacson (1977) states: "The writings of Hoppock, Holland, and Roe tend to follow the first approach; those of the Ginzberg group, Super, and Tiedeman tend to stress ideas related to self-concept" (p. 32). The first approach that Isaacson refers to is the psychological needs approach echoed by Maslow (1954). The researcher selected one theorist from each camp to represent that particular approach.

In the early 1950's, the idea of a program for career development was echoed by Donald Super (1953). He proposed the concept of career development as a lifelong process which is concerned with the factors of values, attitudes, knowledge and skills, and their relationship to occupational roles. The person is the key element in the career guidance program. Ryan (1978) stated the following five assumptions "that every individual:

1. Has the right to and capacity for developing risk-taking, value clarification, decision-making, and for becoming a fully functioning person.
2. Has the need for and potential for synthesizing knowledge about self and aspirations into a realistic positive self-concept.

3. Has the right to and capacity for gaining a thorough understanding about careers.
4. Deserves an opportunity to and can benefit from exploring a variety of career options.
5. Has the right to and the potential for developing career skills (p. 434).

If the individual is to grow and develop into a fully functioning person, he/she must become aware of self and environment. The assumption can be made that there must be exploration of career information. Super's theory does relate the needs of individuals to the decision-making function that individuals must perform.

The second theory selected was that of Robert Hoppock. In Hoppock's (1967) Occupational Information, he listed the ten postulates of his basic composite theory. The first point Hoppock stressed is accepted by other theorists and researchers (Jorgenson, 1981), "Occupations are chosen to meet needs" (p. 111). The rest of the ten points all tie the relationship of occupations to needs. Jorgenson (1981), referring to Hoppock's theory concluded: "It is a needs theory and places much emphasis upon the role of good occupational information" (p. 25).

The need for occupational information seems apparent. All individuals have a need to know. Shartle (1959) defined occupational information as:

... essentially a description of man's work and its related conditions. It is not primarily a study of the characteristics of man himself, but of his environment. Occupational information is not merely an aid in counseling and decision-making at a particular time; it represents information that is relevant to the vocational development of the person and his adjustment through the life span (p. 2).

It can be seen in our current unemployment dilemma that many individuals have not received adequate occupational information. This occupational information can come in many forms; published sources and systems are

the most common. Other ways to obtain this information are through professional groups, private companies, and interviews.

The U.S. Department of Labor (1976) has predicted that 114 million persons will be in the labor force by 1990; that is nearly a 22 million increase over 1975. The primary reasons for this increase are that a large number of women are projected to enter the work force and the entire World War II baby boom will have entered the labor force by 1980 (Ryan, 1978). These estimates seem to emphasize the importance for good occupational information.

The public schools implemented programs that deliver career information through information services. Ryan (1978) stated that: "through the information services students are provided with the information they need for effective decision-making" (p. 187). The three types of information provided through the school guidance program are educational information, occupational information, and personal development information (Ryan, 1978).

Published Sources of Information

The need for occupational information has been stressed throughout the review of literature. This portion of the chapter will address the published sources that are of great importance in the school setting in supplying occupational information. The sources of the published works are the federal government, insurance companies, commercial publishing companies, and the state government.

The U.S. Department of Labor is the leading producer of occupational information. The Department of Labor produces the Dictionary of Occupational Titles (DOT), the Occupational Outlook Handbook (OOH), and the

Occupational Outlook Quarterly. According to research (Hoppock, 1976; Isaacson, 1977; Jorgenson, 1981; Ryan, 1978) the sources already cited are the best of those produced by the Department of Labor. Ryan (1978) identifies ten other sources of information put out by the department besides the numerous leaflets, bulletins, and reports.

The Dictionary of Occupational Titles (1965) was first published in 1939. The DOT is a two-volume work that organizes some 35,000 separate occupations alphabetically with a job description (Hoppock, 1967). Each occupation carries a six-digit code number that helps to identify occupational category and its complexity. The second volume is concerned with both occupational and educational placement.

Research (Hoppock, 1967; Isaacson, 1977; Jorgenson, 1981) indicates that the DOT is of great value. Isaacson (1977) claims: "Of all the publications related to counseling and teaching about occupations, the DOT has been the most widely used" (p. 202). In a study (Jorgenson, 1981) it was found that the DOT was the third most widely used publication. The Dictionary of Occupational Titles is a viable choice for published occupational information.

The Occupational Outlook Handbook (1980) describes workers activities on the job, their training and education, their earnings, their working conditions, and the expected job prospects for hundreds of occupations. According to the Occupational Outlook Handbook (1980), the OOH was first utilized with the returning soldiers at the end of World War II. The OOH is revised every two years. Research (Hoppock, 1976; Isaacson, 1977) indicates that the OOH is one of the best sources of published occupational information, if not the best. Hoppock (1967) states: Perhaps the most widely used of all sources of occupational information is the

Occupational Outlook Handbook" (p. 29). In a study (Jorgenson, 1981), the Occupational Outlook Handbook was the most widely used and highly rated work.

The Occupational Outlook Quarterly was the second most widely used source of information in the same study (Jorgenson, 1981). The Occupational Outlook Quarterly is published four times a year to update the OOH. It furnishes subscribers with the most up-to-date written source of information (Ryan, 1978).

A second major source of occupational information has been insurance companies. New York Life Insurance Company has published a series of pamphlets called Careers for a Changing World (1976). These pamphlets help students look at the growth rate of their desired occupations and the training that is available in those areas. The pamphlets contain interviews with people who are currently employed in the occupation. Other insurance companies that produce leaflets on occupations are Prudential, Metropolitan Life, Sun Life, Equitable Life, and John Hancock Life (Ryan, 1978).

In many high school libraries an individual can find career related books. The researcher found that the J.G. Ferguson Company publishes several different series that were referred to in other works (Hoppock, 1967; Ryan, 1978). The Encyclopedia of Careers and Vocational Guidance (1972) is a work of over 1500 pages that identifies 650 careers and gives an extensive description of the requirements as well as the nature of that work. A second series published by the Ferguson Company is the Career Opportunities for Technicians and Specialists (1970). This is a five-volume work, with information related to skilled occupations. The information included the job description, working conditions, requirements, earnings, and information on the future.

States also have produced occupational information in written form for their students. In 1982, the Iowa State Occupational Information Coordinating Committee produced The Source: Jobs & Careers in Iowa. In 1982, Governor Robert Ray stated in a letter in The Source, that it "... has the most up-to-date information on jobs and training in Iowa" (p. 2). The Source is designed to provide usable and readable information on occupations and the labor market.

Another state publication is the Occupational Outlook to 1985; published by Job Service of Iowa. This publication projects industry and occupational growth in our economy.

The amount of information on occupations in print is great, but all sources are not equal in quality of information. The publications selected in this review appear most frequently in the literature examined.

Information Systems

Another popular way of receiving occupational information is through the use of a delivery system. Information System refers to a standardized procedure for obtaining, filing, retrieving, and disseminating information. Ryan (1978) identified the three main types of occupational information systems as the computer system, semi-automatic system, and the manual system.

In 1970, Chick indicated that there were already twenty information systems in use, and those were before the new government push. In 1978, Rayman claimed that ten computer-based systems had appeared in the last twenty years. The move to systems to dispense occupational information has grown and today it is the main method that schools use to match students with occupations. Experts (Katz, 1978; McKinaley, 1971) don't

agree on one best system, but they do give a lot of support for computerized, occupational information systems.

The researcher has selected four of the apparent better delivery systems, as determined by the research (Drake, 1979; Katz, 1978; Isaacson, 1977; McKinnaley, 1971; Ryan, 1978). The Career Information System of Iowa will also be reviewed as it would be desirable for the CISI to be considered at least in the same light as the other major systems.

The Career Information System of Iowa (CISI) was developed in August of 1974 as a replacement for the IOWAscript and CVIS, after funding for a three-year demonstration period ended. The key element to the program is the PROCESS, the junior/senior portion of the CISI. In the fall of 1977, CISI expanded to include AWARE, the elementary portion of the CISI (Leaders' Guide, 1980).

The Career Information System of Iowa has two basic systems: a manual system called the needle-sort, and the computerized system. In both systems, the student works his/her way through the Process User's Handbook (1981). The handbook was developed to assist persons in career decision-making. The researcher has briefly summarized the ten steps in the PROCESS approach as explained in the Handbook. The ten steps are:

1. Self exploration helps the individual to know and understand some things about himself. The user will look at himself/herself in terms of abilities, qualifications, approaches to work, life, and to others, and personal feelings about a lot of situations.
2. World of Work exploration helps the student to get a grasp of the more than 20,000 occupations and place them into one of 15 clusters.
3. Exploring Self in Relation to World of Work helps the individual to look at the numerous occupational attributes or characteristics in relation to self. Some jobs are more appealing than others.

4. Quest is a tool for finding occupations that match preferences and abilities with occupations that use them.
5. Sorting the Occupations is accomplished through the manual method, the needle-sort, or the computerized delivery.
6. Exploring the Occupations directs the student in further job exploration. The user must look at the occupations he/she has identified.
7. Exploring Occupations in Relation to Self is the step in which the user gathers information and direction needed for a realistic career choice.
8. Options vs. Values helps the user to determine the importance in his/her life of aspects of security, recognition, influence, success, wealth, etc.
9. Make a Decision draws together all the information of the first eight steps and weighs the information to make a choice.
10. Plan of Action calls the user to develop a plan so the decision can become a reality.

After the student has moved through the ten-step PROCESS it is believed that the student will be better prepared to make a career decision (Leaders' Guide, 1980).

The researcher found only two major studies on the CISI; Greenwood (1982) and Koranda (1978). The success of the Career Information System of Iowa could be called questionable based on the findings of the Greenwood (1982) and Koranda (1978) studies.

According to the Leaders' Guide (1980), the CISI commitment casts two elements together; to continually expand and improve service to the schools, and to "insure the positive career development of each student.." (Leaders' Guide, 1980, p. 1). The Greenwood study (1982) revealed that 97 percent of the schools in Iowa were subscribing to the CISI. The study also gave the indication that the use of the CISI was increasing, and research shows that the trend should continue. The Greenwood (1982)

study supports the commitment statement of the CISI. The subscribing schools are apparently being served well.

The Koranda study (1978) reveals that the CISI has not met its intended goals. This study found that only 38 percent of the students in the study had been exposed to the CISI. Those findings cast doubt if the CISI is meeting the second part of the commitment statement. It would be questionable, based on the Koranda study (1978), that each student is finding positive career development information. The findings of the two studies already completed on the CISI would raise some doubt whether the CISI is meeting its own commitment statement.

Four information systems that appear to be meeting the needs of their subscribing schools' students have been selected for review. The four systems selected are the Computerized Vocational Information System (CVIS), the Educational and Career Exploration System (ECES), the System of Interactive Guidance in Information (SIGI), and the Oregon Career Information System (CIS).

The Computerized Vocational Information System (CVIS) was developed in Illinois in 1967. According to Ryan (1978), the CVIS stresses the importance of having students explore occupational clusters rather than specific jobs. There are two data-banks, one providing occupational information and the other, student data. Isaacson (1977) states: "...CVIS is a sophisticated information retrieval system that can deliver a large amount of valuable data to the user..." (p. 392). The CVIS has been very popular with students and has been successful in helping students to identify the six major personality types as they are related to work (Wilhelm, 1978).

The Educational and Career Exploration System (ECES) was developed by IBM in 1966. Isaacson (1977) in describing the ECES claimed: "This system attempts to relate understanding of self to understanding of the external environment" (p. 399). The basic purpose is to help students investigate occupational alternatives and educational programs as the person plans his/her future (Ryan, 1978). In one study, Drake (1979) found that students exposed to the ECES were judged more mature than those not exposed.

The System of Interactive Guidance in Information (SIGI) was developed by the Educational Testing Service. SIGI is designed to improve career guidance for junior and community colleges by emphasizing decision-making in addition to occupational information (Isaacson, 1977). SIGI has a carefully analyzed store of occupational information. Those students who used SIGI in an experiment by Katz (1978) experienced significant growth in Vocational Maturity.

The Career Information System (CIS) was developed in the late 1960's. The CIS is the original model for the Career Information System of Iowa. By the middle 1970's, the CIS had been expanded into a total of eight state models. The CIS helps to assess the student need for information on the world of work. According to McKinaley (1971), 84 percent of the students who were exposed to the CIS were satisfied with it, and 77 percent said they would recommend it to their friends. Isaacson (1977) identified problems of the implementation of the CIS as overcoming counselor resistance to using the system and being sure that the CIS is being administered properly.

Other systems that appear less frequently in the literature are the Guidance Information System (GIS), Vocational Guidance in Education

(VOGUE), DISCOVER, Information System for Vocational Decision (ISVD), and AUTOCOUN. These systems also provide computerized occupational information.

The data presented on the information systems indicate that career information systems appear to help students. These exposed students showed movement toward vocational maturity, and the students expressed satisfaction with the system. This endorsement from students could signal that students' needs are being met. If the other systems are meeting the career development needs, then, it seems reasonable to assume that the CISI could meet those needs also. The growth in vocational maturity could indicate that the need for career information might have changed. Sampson (1979) stated: "Many have found that students who use computer-assisted career guidance systems experience significant growth in vocational maturity" (p. 93). Since the CISI is a computer-assisted system, a reduction in the perceived career development need should not be a surprise.

Needs Assessment

One goal of the guidance department in schools has been to enhance the students' self and career development within the total environment. The guidance department has the responsibility to assess the needs of students. Need Assessments allow the schools to find what the perceived needs of the students are and then develop a plan to meet those needs. Need assessments can be used to measure the effect of intervention, which is planned to reduce needs, because the needs assessment describes conditions that existed initially (Calhoun, 1976). Need assessments will determine the direction in which an education system wishes to move and not a problem-solving device.

The general educational needs assessments are the most widespread. A few of the better known assessments include the Phi Delta Kappan Needs Assessment Handbook, the School-Community Climate Survey, and the Educational Needs Assessment Handbook. All three of the general assessments are school-wide assessments; the questions are normally generalized in such a way that students, parents, and the business community can answer them.

Ryan in 1978 made the reference that, to measure specific objectives, the assessment should be more specific. In this study, career development needs, as perceived by tenth grade students, are under study. To be specific, the assessment should measure the perceived needs of tenth grade students. The Student Needs Assessment Survey by the American College Testing Program is directed at students in grades nine to twelve (High School, 1980). The SNAS is the result of several years of development and refinement by ACT. A copy of the Student Needs Assessment Survey can be found in Appendix B. If the needs that the guidance department wants to assess deal only with high school aged individuals, then the SNAS would be appropriate.

The West Central Needs Assessment (WCNA) is another specific needs assessment for secondary students. This instrument was developed by the researcher for a graduate class at the University of Northern Iowa. A copy of the West Central Needs Assessment Survey can be found in Appendix A.

Summary

There appears to be plenty of occupational information available in both the published form and the systems form. The literature lends itself to the belief that students who prevail themselves of an occupational information system will, regardless of the system, make gains

(Drake, 1979; McKinaley, 1971; Rayman, 1978; Wilhelm, 1978). The research indicated vocational maturity and student satisfaction with the various systems. If the user finds the system to his liking and utilizes it, the student will make gains (Drake, 1979).

The success of other computer-based systems lends support to the possibility that the CISI will meet the immediate, perceived career development needs as assessed by the SNAS. Considering the fact that the federal government has provided monies for the earlier vocational education programs, and more recently has invested in the career education movement, it seems important that the programs that have been produced have a particular use. One use the CISI can perform is to reduce the perceived career development needs as established by the SNAS.

CHAPTER 3

Design of the Study

Introduction

The problem of students leaving high school unprepared to enter the labor force has led many to call for the incorporation of occupational information systems in our schools (Marland, 1971; Stone, 1978). Several occupational information systems have received credit for meeting student needs (Drake, 1979; Katz, 1978; McKinaley, 1971; Rayman, 1978; Ryan, 1978). The Career Information System of Iowa (CISI) is an occupational information system. The purpose of this study is to determine what effect, if any, the CISI has on the immediate, perceived career development needs of tenth grade students. This chapter will establish the demographics, the description of the instruments, and the structure used in the study.

In the study, the null hypothesis was that the Career Information System of Iowa has no effect on the immediate, perceived career development needs of tenth grade students as measured by the Student Needs Assessment Survey. If the CISI has no effect on the career development needs, then the researcher will find the following:

1. Students exposed to the CISI will not score significantly different on the career development portion of the American College Testing Program's Student Needs Assessment Survey from students in the Placebo Group B or the Control Group C.
2. Students exposed to the CISI will not score significantly different on the life skills portion of the American College Testing Program's Student Needs Assessment Survey from students in the Placebo Group B or the Control Group C.
3. Students exposed to the CISI will not score significantly different on the knowing myself portion of the American College Testing Program's Student Needs Assessment Survey from students in the Placebo Group B or the Control Group C.

Demographics

An assessment of student needs was conducted by the researcher to determine the effect of the CISI on the immediate perceived career development needs. The study was conducted in late October and early November of 1982, at a rural, midwestern high school. The sophomore class of 45 students was selected to participate in the study, and they were divided into three groups, the Treatment Group A, the Placebo (unrelated treatment) Group B, and the Control Group C. The use of the CISI had been monitored, no sophomore had been exposed in more than a year, and as a group they had never been exposed. The Student Needs Assessment Survey (SNAS) was chosen to determine the perceived needs of the participating students.

Data on the groups were gathered in the areas of size of the home-rooms, the ratio of male to female students, the mean grade point average for the group and a mean score from the career development portion of the West Central Needs Assessment. Significant data related to the three groups can be found in Table 1. Based on the results, the three groups

Table 1
Equivalence of the Groups

Criteria	Group A	Group B	Group C
Number of students	14	16	15
Male/Female.	7/7	8/8	9/6
Mean grade point average	2.52	2.61	2.53
Mean score on career development part of the West Central Needs Assessment	3.86	3.83	3.84

appear to be equivalent in terms of number of students, male and female, the mean grade point average, and the score on the career development

portion of the West Central Needs Assessment. The West Central Needs Assessment served to establish the equivalence of the three groups; the means of 3.86, 3.83, and 3.84 respectively represent the equality of the groups.

Description of the Instruments

In this study, the researcher decided to use two different assessments. The pre-test was the West Central Needs Assessment. The post-test was the Student Needs Assessment Survey. A different post-test was selected to eliminate the variables of memorization and boredom which might be associated with taking the same test twice in a month period. The study is not designed to measure gain, and, therefore, the selection of a post-test that was different from the pre-test was not expected to damage the results. In this portion of the chapter, these two instruments will be examined.

The West Central Needs Assessment Survey was constructed by the researcher for a graduate class at the University of Northern Iowa. The WCNA consists of five sections: career development, home and family, peers, knowing self, and life skills. In this study the only portion of the instrument that was used was the career development section. The mean scores for all of the students from each homeroom were calculated and can be found in Table 1. The career development portion consisted of ten items out of the 60 items on the WCNA. A Likert scale was utilized and students could express the level of help desired. The WCNA was presented to five local counselors who expressed that it appeared to be a valid instrument. The WCNA has face validity, and it appears to have content validity also. The reliability for a needs assessment is impossible to establish since the needs of an individual can change after

exposure to any new information. A copy of the WCNA can be found in Appendix A.

The American College Testing Program's Student Needs Assessment Survey was used for the post-test. The SNAS meets the following criteria: "The wording is acceptable for all grades in high school, it is flexible so items can be added, administration is simple, data can be compiled as a mean score, it's a low cost test, and takes little time to administer" (High School, 1980, p. 18). All students in the three groups took the SNAS. A Likert scale allowed students to select the appropriate level of need.

The researcher selected the American College Testing Program's Student Needs Assessment Survey (SNAS) because it was divided into five separate sections: career development, life skills, knowing myself, educational planning, and getting along with others. The division of items by sections allowed the researcher to utilize the portions of the SNAS that pertained to this study. It was decided that the first three sections of the SNAS would be used.

The instrument has content validity, based on both the face validity and sample validity. The SNAS appeared to have content validity, since it was examined by members of the counseling profession. No reliability coefficient was given for the SNAS. A copy of the SNAS can be found in Appendix B.

Procedures

The researcher used a quasi-experimental design consisting of a pre-test, treatment, placebo, and a post-test. The researcher could not randomize because he was limited to the existing three groups of tenth grade students.

In this study the independent variable was the Career Information System of Iowa. The PROCESS portion of the CISI was referred to as the treatment. The dependent variable was the career development needs. The needs were determined through the testing of all students using the Student Needs Assessment Survey. The limiting of the study to tenth grade students serves as a control variable.

The researcher selected Group A to be the treatment group. The treatment consisted of exposing Group A to the ten-step PROCESS portion of the Career Information System of Iowa. The researcher followed the directions found in the Leaders' Guide (1980) of the CISI for presenting the program. The treatment began ten days after the pre-test had been administered. The treatment lasted eight homeroom periods of ten minutes each per day.

The researcher selected Group B to be the placebo group. The placebo treatment consisted of a reading development program. Students in this group were required to read during the homeroom period from a selection of their choice. The placebo treatment began on the same day as did the real treatment, and ended on the same day.

The Placebo Group B was used to measure for a Hawthorne effect. The students knew that the researcher was a graduate student, and a check had to be built in the design. If the placebo treatment affected the career development needs, then the research could be subject to a Hawthorne effect.

The members of the Control Group C met as usual in their homeroom for the entire treatment period with no knowledge being given to them about the treatment. They did socialize with members of the treatment and placebo groups and knew something was happening in the other home-

rooms which was different from what was occurring in their homeroom. Throughout the entire study the students were not informed about the nature of the study.

Ten days after the treatment period ended, the researcher administered the American College Testing Program's Student Needs Assessment Survey to determine what the perceived needs were for each group at the end of the study. The individual scores for each item can be found in Appendix C.

The researcher, taking threats of validity into account, took the following precautions:

1. A time period was selected when few outside activities were scheduled at school.
2. The total time between the pre-test and post-test was one month, so different instruments were selected.
3. The entire tenth grade class was used.
4. An assessment that measured five areas was used rather than an instrument concerning only career development.

CHAPTER 4

Analysis of the Data

The Problem

The researcher has identified the problem as what effect, if any, the Career Information System of Iowa (CISI) has on the immediate, perceived career development needs of tenth grade students. The perceived career development needs were measured by the American College Testing Program's Student Needs Assessment Survey. In this chapter, the researcher explains the methods used to gather the data and presents the finding in each of these areas of the SNAS: career development, life skills, and knowing myself.

Methods of Gathering Information

Since this study is a cause-effect study, the researcher elected to do a means-difference type of research with the t-ratio score indicating whether or not the means are significantly different. This type of analysis was believed to be the most appropriate method of determining whether or not the treatment had an effect on the population being studied. The three groups in this study are composed of: Treatment Group A, identified by a subscript number one; the Placebo Group B, identified by a subscript number two; and the Control Group C, identified by a subscript number three.

In Table 2, the assigned values for each of the five possible responses on the SNAS are given. The SNAS allows the student to choose the most appropriate response. By weighting the response from the most

important to least important, a mean score can be calculated for that item. The scores of each individual on every item can be found in Appendix C.

Table 2
Weighting of the Student Needs Assessment Survey

Weighting	Response
1 point	This item is not important to me
2 points	This item is important but I need no further assistance
3 points	I would like a little assistance
4 points	I would like a medium amount of assistance
5 points	I would like a lot of assistance

Career Development Findings

The first section in the Student Needs Assessment Survey is the career development portion (items 1 to 17). Scores were obtained from all 45 students in the sophomore class and a mean score for each group on each item was calculated. The seventeen items are stated in Table 3, with the appropriate mean score for the groups on each individual item.

When one scans the three columns of mean scores in Table 3, it appears that the Treatment Group A is lower than the other two groups, the Placebo Group B and the Control Group C. Items six and seven are the only two items in which the three groups appear to be about the same. These two items are related to activities that normally follow the exposure to the CISI.

The data that are found in Table 3 are of little use as shown. The researcher used the data (means) in Table 3 and calculated the correlation between two of the groups to find whether a significant difference exists.

Table 3
 AMERICAN COLLEGE TESTING PROGRAM'S STUDENT NEEDS ASSESSMENT SURVEY:
 Perceived Career Development Needs of Tenth Grade Students
 Items and Means for the Treatment Group, Placebo Group, and Control Group*

Statements	Group A Treatment	Group B Placebo	Group C Control
1. To explore how various jobs could affect my life style	2.71	3.38	4.07
2. To become more aware of my career interest areas	2.93	3.69	4.00
3. To know more about job opportunities in my career interest areas	2.79	3.81	4.00
4. To know more about training requirements for jobs I might like	2.65	4.06	3.60
5. To become aware of training offered in my career interest areas.	3.00	3.69	4.20
6. To talk with people employed in my career interest areas	3.36	3.63	3.40
7. To get some job experience in my career interest areas	3.57	3.44	3.87
8. To know how the courses I am taking relate to jobs in my career interest areas	2.93	3.63	3.67
9. To understand the changing patterns of careers for both men and women	2.43	2.63	2.73
10. To explore in detail careers I might like	3.36	3.56	3.53
11. To understand how my values relate to my career plans	2.71	3.31	3.33
12. To have counseling about my career plans	2.79	3.81	3.46
13. To have help to obtain part-time and/or summer work	2.79	3.63	3.80
14. To know what jobs are available locally	3.00	4.13	4.07
15. To know how to apply for a job	3.43	3.88	3.87
16. To know how to interview for a job	3.36	4.00	3.93
17. To get my parents interested in my career planning	2.65	3.06	2.80

* These are student perceived needs for 45 sophomore students divided into groups of 14 in Group A, 16 in Group B, and 15 in Group C. The actual scores can be found in Appendix C.

The first correlation in the career development area is the Treatment Group A relationship to Placebo Group B. In this correlation, the researcher has arranged the mean scores from highest to lowest, calculated deviation and deviation squared scores and shown the t-ratio calculation; Table 4 presents these calculations. The mean score for the Treatment Group A was calculated as 2.97, and the mean for the Placebo Group B was calculated as 3.61. The sum of the deviation squared for the groups is 1.864 for the Treatment Group A and 2.228 for the Placebo Group B. The number of items is seventeen. From that data the researcher was able to calculate the t-ratio score of a negative 5.224. The Critical Value of t Table (Tuckman, 1972, p. 370) lists the score for a two-tailed test at a .05 level at 32 degrees of freedom as 2.042.

Based on the findings, the researcher rejects the null hypothesis that the Career Information System of Iowa has no effect on the immediate perceived career-development needs of tenth grade students as measured by the Student Needs Assessment Survey. The researcher may reject the null hypothesis because the Critical Value of t Table score (2.042) was lower than the t-ratio score (5.224) found in the correlation between the Treatment Group A and the Placebo Group B. Since the sum of the mean for the Treatment Group A is first in the equation, the negative number would indicate a possible reduction in the need for assistance for that group.

The second correlation in the career development area is the Treatment Group A relationship to the Control Group C. In this correlation, the researcher has arranged the mean scores from highest to lowest, calculated deviation and deviation squared scores, and shown the t-ratio calculations all in Table 5. The mean for the Treatment Group A is 2.97,

Table 4
 AMERICAN COLLEGE TESTING PROGRAM'S STUDENT NEEDS ASSESSMENT SURVEY:
 Perceived Career Development Needs of Tenth Grade Students
 The Means-Difference Correlation for Treatment Group A and Placebo Group B

GROUP A TREATMENT			GROUP B PLACEBO		
SCORE	$*X_1^1$	X_1^2	SCORE	$*X_1^1$	X_1^2
3.57	.6	.36	4.13	.52	.27
3.43	.46	.212	4.06	.45	.203
3.36	.39	.152	4.0	.39	.152
3.36	.39	.152	3.88	.27	.073
3.36	.39	.152	3.81	.2	.04
3.0	.03	.001	3.81	.2	.04
3.0	.03	.001	3.69	.08	.006
2.39	-.04	.002	3.69	.08	.006
2.39	-.04	.002	3.63	.02	.000
2.79	-.18	.032	3.63	.02	.000
2.79	-.18	.32	3.63	.02	.000
2.79	-.18	.032	3.56	-.05	.003
2.71	-.26	.068	3.44	-.17	.029
2.71	-.26	.068	3.38	-.23	.053
2.65	-.32	.102	3.31	-.3	.09
2.65	-.32	.102	3.06	-.55	.303
<u>2.43</u>	<u>-.54</u>	<u>.292</u>	<u>2.63</u>	<u>-.98</u>	<u>.96</u>
$\xi_1 = 50.5$	$\xi X_1^2 = 1.864$		$\xi_2 = 61.34$	$\xi X_1^2 = 2.228$	
$\bar{X}_1 = 2.97$	$N = 17$		$\bar{X}_2 = 3.61$	$N = 17$	

$$t = \frac{2.97 - 3.61}{\sqrt{\frac{1.864}{17} = \frac{2.228}{15} \left(\frac{2}{17}\right)}} = \frac{-.64}{\sqrt{\frac{4.092}{32} \left(\frac{2}{17}\right)}} = \frac{-.64}{\sqrt{(.1279)(.1176)}} = \frac{-.64}{\sqrt{.015}} = \frac{-.64}{.1225} = -5.224$$

*The deviation scores are the difference between the mean of the Group and the individual scores in the group.

Table 5
 AMERICAN COLLEGE TESTING PROGRAM'S STUDENT NEEDS ASSESSMENT SURVEY:
 Perceived Career Development Needs of Tenth Grade Students
 The Means-Difference Correlation for Treatment Group A and Control Group C

GROUP A TREATMENT			GROUP C CONTROL		
SCORE	$*X_1^1$	X_1^2	SCORE	$*X_3^1$	X_3^2
3.57	.6	.36	4.2	.53	.281
3.43	.46	.212	4.07	.4	.16
3.36	.39	.152	4.07	.4	.16
3.36	.39	.152	4.07	.33	.109
3.36	.39	.152	4.0	.33	.109
3.0	.03	.001	3.93	.26	.068
3.0	.03	.001	3.87	.2	.04
2.93	-.04	.002	3.87	.2	.04
2.93	-.04	.002	3.8	.13	.017
2.79	-.18	.032	3.67	.0	.0
2.79	-.18	.032	3.60	-.07	.005
2.79	-.18	.032	3.53	-.14	.02
2.71	-.26	.068	3.46	-.21	.044
2.71	-.26	.068	3.4	-.27	.073
2.65	-.32	.102	3.33	-.34	.116
2.65	-.32	.102	2.80	-.87	.757
<u>2.43</u>	<u>-.54</u>	<u>.292</u>	<u>2.73</u>	<u>-.94</u>	<u>.884</u>
$\Sigma_1 = 50.5$	$\Sigma X_1^2 = 1.864$		$\Sigma_3 = 62.33$	$\Sigma X_3^2 = 2.883$	
$\bar{X}_1 = 2.97$	$N = 17$		$\bar{X}_3 = 3.67$	$N = 17$	

$$t = \frac{2.97 - 3.67}{\sqrt{\frac{1.864 + 2.883(2)}{17}}} = \frac{-0.7}{\sqrt{\frac{4.747(2)}{32}}} = \frac{-0.7}{\sqrt{\frac{.1483(.1174)}{.0174}}} = \frac{-0.7}{.132} = -5.3$$

* The deviation scores are the difference between the mean of the Group and the individual scores in the group.

and 3.67 is the mean for the Control Group C. The sum of the deviation squared is 1.864 for the Treatment Group A and 2.883 for the Control Group C. The number of items in the career development portion is 17. From the data gathered, the researcher was able to calculate the t-ratio score of a negative 5.3. The Critical Value of t Table (Tuckman, 1972, p. 370) lists the score for a two-tailed test at a .15 level at 32 degrees of freedom as 2.042.

Based on the findings, the researcher rejects the null hypothesis that the Career Information System of Iowa has no effect on the immediate, perceived career development needs of tenth grade students as measured by the Student Needs Assessment Survey. The researcher may reject the null hypothesis because the Critical Value of t Table score (2.042) was lower than the t-ratio score (5.3) found in the correlation between the Treatment Group A and the Control Group C. Since the sum of the means for the Treatment Group A is first in the equation, the negative number would indicate a possible reduction in the need for assistance for that group.

The last correlation in the career development area is the Placebo Group B relationship to the Control Group C. In this correlation, the researcher has arranged the mean scores from highest to lowest, calculated deviation and deviation squared scores, and shown the t-ratio calculations in Table 6. The mean for the Placebo Group B is 3.61 and for the Control Group C, 3.67. The sum of the deviation squared for the Placebo Group B is 2.228 and 2.883 for the Control Group C. The number of items is seventeen. From that data the researcher was able to calculate the t-ratio score of .438. The Critical Value of t Table (Tuckman, 1972, p. 370) lists the score for a two-tailed test at a .05 level at 32 degrees of freedom as 2.042.

Table 6
 AMERICAN COLLEGE TESTING PROGRAM'S STUDENT NEEDS ASSESSMENT SURVEY:
 Perceived Career Development Needs of Tenth Grade Students
 The Means-Difference Correlation for Placebo Group B and Control Group C

GROUP B PLACEBO			GROUP C CONTROL		
SCORE	ΣX_2^1	X_2^2	SCORE	ΣX_3^1	X_3^2
4.13	.52	.27	4.2	.53	.281
4.06	.45	.203	4.07	.4	.16
4.0	.39	.152	4.07	.4	.16
3.88	.27	.073	4.0	.33	.109
3.81	.2	.04	4.0	.33	.109
3.81	.2	.04	3.93	.26	.068
3.69	.08	.006	3.87	.2	.04
3.69	.08	.006	3.87	.2	.04
3.63	.02	.000	3.8	.13	.017
3.63	.02	.000	3.67	.0	.017
3.63	.02	.000	3.6	-.07	.005
3.56	-.05	.003	3.53	-.14	.02
3.44	-.17	.029	3.46	-.21	.044
3.38	-.23	.053	3.40	-.27	.073
3.31	-.3	.09	3.33	-.34	.116
3.06	-.55	.303	2.80	-.87	.757
<u>2.63</u>	<u>-.98</u>	<u>.96</u>	<u>2.73</u>	<u>-.94</u>	<u>.884</u>
$\Sigma_2 = 61.34$	$\Sigma X_2^2 = 2.228$		$\Sigma_1 = 62.33$	$\Sigma X_3^2 = 2.883$	
$\bar{X}_2 = 3.61$	$N = 17$		$\bar{X}_3 = 3.67$	$N = 17$	

$$t = \frac{3.61 - 3.67}{\sqrt{\frac{2.228 + 2.883}{17 + 15} \left(\frac{2}{17}\right)}} = \frac{-.06}{\sqrt{\frac{5.111}{32} \left(\frac{2}{17}\right)}} = \frac{-.06}{\sqrt{.1597(.1176)}} = \frac{-.06}{\sqrt{.0188}} = \frac{-.06}{.137} = -.438$$

*The deviation scores are the difference between the mean of the group and the individual scores in the group.

Based on the findings, the researcher accepts the null hypothesis that the Career Information System of Iowa has no effect on the immediate, perceived career development needs of tenth grade students as measured by the Student Needs Assessment Survey. The researcher accepted the null hypothesis because the Critical Value of t Table score (2.042) is higher than the t-ratio score (.438) found in the correlation between the Placebo Group B and the Control Group C.

In the career development area, the researcher rejected the null hypothesis for both correlations that involved the Treatment Group A. This may indicate that the CISI could be reducing the need for career development information. In the next section of this chapter, the life skills section of the SNAS is examined in the same manner that the career development has been treated.

Life Skills Findings

The second section in the Student Needs Assessment Survey is the life skills portion (items 18 to 36). Scores were obtained from all 45 students in the sophomore class and a mean score for each group on each item was calculated. The nineteen items are stated in Table 7, with the appropriate mean score for the groups on each individual item.

When one scans the scores in Table 7, it does not appear that any one group is significantly different from the others. The data in Table 7 was used to calculate the correlation between two of the groups to find whether a significant difference exists.

The first correlation in the life skills area is the Treatment Group A relationship to Placebo Group B. In this correlation, the reearcher has arranged the mean scores from highest to lowest, calculated deviation and deviation squared scores, and shown the t-ratio calculations in Table 8.

Table 7
 AMERICAN COLLEGE TESTING PROGRAM'S STUDENT NEEDS ASSESSMENT SURVEY:
 Perceived Life Skills Needs of Tenth Grade Students
 Items and Means for the Treatment Group, Placebo Group, and Control Group*

Statements	Group A Treatment	Group B Placebo	Group C Control
18. To increase my skills in mathematics	3.29	3.50	3.40
19. To improve my writing skills	3.50	3.69	3.6
20. To develop my speaking skills	3.36	3.69	3.27
21. To improve my reading comprehension	3.29	3.44	3.13
22. To learn how to read faster	3.14	3.31	2.87
23. To improve my study skills and habits	3.57	3.69	3.53
24. To develop my test-taking skills	3.79	3.5	3.20
25. To learn how to handle pressure from friends, teachers, family, or myself	3.17	3.0	2.6
26. To learn how to make decisions and solve problems	3.21	2.62	2.93
27. To learn how to set goals in my life	2.86	2.81	3.27
28. To learn how to manage my time better	3.14	3.31	3.47
29. To learn how to spend money more wisely	3.29	3.13	3.4
30. To learn how to stay healthy, both mentally and physically	2.5	2.81	2.73
31. To understand better the effects of alcohol, drugs, and medicines	2.21	2.38	2.6
32. To learn how to deal with community problems	2.64	2.38	2.27
33. To learn how to participate in government	2.29	2.19	2.07
34. To learn how to get more out of my life through leisure time activities	3.07	3.06	3.13
35. To become more self-sufficient	2.86	3.0	2.93
36. To understand my rights and responsibilities as a consumer	2.93	2.69	2.73

*These are student perceived needs for 45 students divided into groups of 14 in Group A, 16 in Group B, and 15 in Group C. The actual scores can be found in Appendix C.

The mean score for the Treatment Group A is 3.05, and for the Placebo Group B it is 3.9. The sum of the deviation squared is 3.177 for the Treatment Group A and is 4.299 for the Placebo Group B. The number of items in the life skills area is nineteen. From that data the researcher was able to calculate the t-ratio score of a negative .27. The Critical Value of t Table (Tuckman, 1972, p. 370) lists the score for a two-tailed at a .05 level at 36 degrees of freedom as 2.021.

Based on the findings, the researcher accepts the null hypothesis that the Career Information System of Iowa has no effect on the immediate, perceived life skills needs of tenth grade students as measured by the Student Needs Assessment Survey. The researcher accepted the null hypothesis because the Critical Value of t Table score (2.021) is higher than the t-ratio score (.27) found in the correlation between the Treatment Group A and the Placebo Group B.

The second correlation in the life skills area is the Treatment Group relationship to the Control Group C. In this correlation, the researcher has arranged the mean scores from highest to lowest, calculated deviation and deviation squared scores, and shown the t-ratio calculations in Table 9. The mean for the Treatment Group A is 3.05 and is 3.01 for the Control Group C. The sum of the deviation squared is 3.173 for the Treatment Group A and 3.292 for the Control Group C. The number of items is nineteen. From the data gathered, the researcher was able to calculate the t-ratio of .19. The Critical Value of t Table (Tuckman, 1972, p. 370) lists the score for a two-tailed test at a .05 level at 36 degrees of freedom as 2.021.

Based on the findings, the researcher accepts the null hypothesis, that the Career Information System of Iowa has no effect on the immediate

Table 8
 AMERICAN COLLEGE TESTING PROGRAM'S STUDENT NEEDS ASSESSMENT SURVEY
 Perceived Life Skills Needs of Tenth Grade Students
 The Means-Difference Correlation for Treatment Group A and Placebo Group B

GROUP A TREATMENT			GROUP B PLACEBO		
SCORE	X_1^1	X_1^2	SCORE	X_2^1	X_2^2
3.79	.74	.548	3.69	.6	.36
3.57	.52	.27	3.69	.6	.36
3.5	.45	.202	3.69	.6	.36
3.36	.31	.097	3.63	.54	.292
3.29	.24	.058	3.5	.41	.168
3.79	.24	.058	3.5	.41	.168
3.79	.24	.058	3.44	.35	.123
3.21	.16	.026	3.31	.22	.048
3.14	.09	.008	3.31	.22	.048
3.14	.09	.008	3.06	-.03	.001
3.07	.02	.000	3.00	-.09	.008
3.07	.02	.000	3.00	-.09	.008
2.92	-.13	.017	2.81	-.28	.078
2.86	-.19	.036	2.81	-.28	.078
2.86	-.19	.036	2.69	-.4	.16
2.64	-.41	.168	2.62	-.47	.221
2.5	-.55	.303	2.38	-.71	.504
2.29	-.76	.578	2.38	-.71	.504
<u>2.21</u>	<u>-.84</u>	<u>.706</u>	<u>2.19</u>	<u>-.9</u>	<u>.81</u>

$$\sum_1 = 58.0$$

$$\sum X_1^2 = 3.177$$

$$\sum_2 = 58.7$$

$$\sum X_2^2 = 4.299$$

$$\bar{X}_1 = 3.05 \quad N = 19$$

$$\bar{X}_2 = 3.09 \quad N = 19$$

$$t = \frac{3.05 - 3.09}{\frac{\sqrt{3.177 + 4.299(2)}}{19 + 17}} = \frac{-.04}{\frac{\sqrt{7.476(2)}}{36}} = \frac{-.04}{\sqrt{.2077(.1053)}} = \frac{-.04}{\sqrt{.0219}} = \frac{-.04}{.1479} = -.27$$

Table 9
 AMERICAN COLLEGE TESTING PROGRAM'S STUDENT NEEDS ASSESSMENT SURVEY:
 Perceived Life Skills Needs of Tenth Grade Students
 The Means-Difference Correlation for Treatment Group A and Control Group C

GROUP A TREATMENT			GROUP C CONTROL		
SCORE	X_1^1	X_1^2	SCORE	X_3^1	X_3^2
3.79	.74	.548	3.60	.59	.348
3.57	.52	.27	3.53	.52	.27
3.5	.45	.202	3.47	.46	.212
3.36	.31	.097	3.4	.39	.152
3.29	.24	.058	3.4	.39	.152
3.29	.24	.058	3.27	.26	.068
3.29	.24	.058	3.27	.26	.068
3.21	.16	.026	3.20	.19	.036
3.14	.09	.008	3.13	.12	.014
3.14	.09	.008	3.13	.12	.014
3.07	.02	.000	2.93	-.08	.006
3.07	.02	.000	2.93	-.08	.006
2.92	-.13	.017	2.87	-.14	.02
2.86	-.19	.036	2.73	-.28	.078
2.86	-.19	.036	2.73	-.28	.078
2.64	-.41	.168	2.6	-.41	.168
2.5	-.55	.303	2.6	-.41	.168
2.29	-.76	.578	2.27	-.74	.55
<u>2.21</u>	<u>-.84</u>	<u>.706</u>	<u>2.07</u>	<u>-.94</u>	<u>.884</u>
$\xi_1 = 58.0$	$\xi_1^2 = 3.177$	$\xi_3 = 57.13$	$\xi_3^2 = 3.292$		
$\bar{X}_1 = 3.05$	$N = 19$	$\bar{X}_3 = 3.01$	$N = 19$		

$$t = \frac{3.05 - 3.01}{\frac{\sqrt{3.177 + 3.292 \left(\frac{2}{19}\right)}}{19 + 17}} = \frac{.04}{\frac{\sqrt{6.469 \left(\frac{2}{19}\right)}}{36}} = \frac{.04}{\frac{\sqrt{(.1797) \cdot 1053}}{36}} = \frac{.04}{\frac{\sqrt{.0189}}{.1376}} = \frac{.04}{.1376} = .29$$

perceived life skills needs of tenth grade students as measured by the Student Needs Assessment Survey. The researcher accepted the null hypothesis because the Critical Value of t Table score (2.021) is higher than the t-ratio score (.19) found in the correlation between the Treatment Group A and the Control Group C.

The last correlation in the life skills area is the Placebo Group B relationship to the Control Group C. In this correlation, the researcher has arranged the mean scores from highest to lowest, calculated deviation and deviation squared scores, and shown the t-ratio calculations in Table 10. The mean for the Placebo Group B is 3.09 and for the Control Group C, 3.01. The sum of the deviation squared is 4.299 for the Placebo Group B and 3.292 for the Control Group C. The number of items is 19. From the data the researcher was able to calculate the t-ratio score of .537. The Critical Value of t Table (Tuckman, 1972, p. 370) lists the score for a two-tailed test at a .05 level at 36 degrees of freedom as 2.042.

Based on the findings, the researcher accepts the null hypothesis, that the Career Information System of Iowa has no effect on the immediate, perceived, life skills needs of tenth grade students as measured by the Student Needs Assessment Survey. The researcher accepted the null hypothesis because the Critical Value of t Table score (2.042) is higher than the t-ratio score (.537) found in the correlation between the Placebo Group B and the Control Group C.

In the life skills portion of the Student Needs Assessment Survey, the researcher accepted the null hypothesis of no effect in all three of the correlations performed. The possibility of socialization or the Hawthorne effect has been greatly reduced by these findings. In the next part of this chapter, the knowing myself section of the SNAS is examined to further check the possibility of socialization in the study.

Table 10
 AMERICAN COLLEGE TESTING PROGRAM'S STUDENT NEEDS ASSESSMENT SURVEY:
 Perceived Life Skills Needs of Tenth Grade Students
 The Means-Difference Correlation for Placebo Group B and Control Group C

GROUP B PLACEBO			GROUP C CONTROL		
SCORE	χ_2^1	χ_2^2	SCORE	χ_3^1	χ_3^2
3.69	.6	.36	3.6	.59	.348
3.69	.6	.36	3.53	.52	.27
3.69	.6	.36	3.47	.46	.212
3.63	.54	.292	3.4	.39	.152
3.5	.41	.168	3.4	.39	.152
3.5	.41	.168	3.27	.26	.068
3.44	.35	.123	3.27	.26	.068
3.31	.22	.048	3.20	.19	.036
3.31	.22	.048	3.13	.12	.014
3.06	-.03	.001	3.13	.12	.014
3.0	-.09	.008	2.93	-.08	.006
3.0	-.09	.008	2.93	-.08	.006
2.81	-.28	.078	2.87	-.14	.02
2.81	-.28	.078	2.73	-.28	.078
2.69	-.40	.16	2.73	-.28	.078
2.62	-.47	.221	2.6	-.41	.168
2.38	-.71	.504	2.6	-.41	.168
2.28	-.71	.504	2.27	-.74	.55
<u>2.19</u>	<u>-.9</u>	<u>.81</u>	<u>2.07</u>	<u>-.94</u>	<u>.884</u>
$\sum_2 = 58.7$	$\sum \chi_2^2 = 4.299$		$\sum_3 = 57.13$	$\sum \chi_3^2 = 3.292$	
$\bar{X}_2 = 3.09$	$N = 19$		$\bar{X}_3 = 3.01$	$N = 19$	

$$t = \frac{3.09 - 3.01}{\sqrt{\frac{4.299 + 3.292(2)}{19 + 17} \left(\frac{2}{19} \right) \sqrt{7.591 \left(\frac{2}{36} \right) \sqrt{.2109(.1053)} \sqrt{.0222} \cdot .149}} = \frac{.08}{.149} = \frac{.08}{.149} = .537$$

Knowing Myself Findings

The third section in the Student Needs Assessment Survey is the knowing myself portion (item 37 to 43). The researcher received scores from all 45 students in the sophomore class and calculated a mean score for each group on each item. The seven items are stated in Table 11, with the appropriate mean score for the groups on each individual item.

Table 11
AMERICAN COLLEGE TESTING PROGRAM'S STUDENT NEEDS ASSESSMENT SURVEY:
Perceived Knowing Myself Needs of Tenth Grade Students
Items and Means for the Treatment Group, Placebo Group, Control Group

Statements	Group A Treatment	Group B Placebo	Group C Control
37. To identify my strengths and abilities	3.43	3.69	3.40
38. To develop more confidence in myself	4.00	3.75	3.66
39. To understand my personal value	3.29	3.25	3.00
40. To know how to stay in shape	3.07	3.25	3.33
41. To understand my achievement and ability test scores better	3.57	3.38	3.73
42. To know how to handle things that worry me.	3.71	3.75	3.53
43. To learn more about grooming and personal care	2.29	2.56	2.33

If one scans the scores in Table 11, it does not appear that any one group is significantly different from the others. The data in Table 11 was used to calculate the correlation between two of the groups to find whether a significant difference exists.

The first correlation in the knowing myself area is the Treatment Group A relationship to Placebo Group B. Calculations for this correlation can be found in Table 12. The mean score for the Treatment Group A is 3.34, and for the Placebo Group B the mean is 3.38. The sum of the

deviation squared is 1.868 for the Treatment Group A and 1.076 for the Placebo Group B. The number of items in the knowing myself area is seven. From that data, the researcher was able to calculate the t-ratio score of a negative .15. The Critical Value of t Table (Tuckman, 1972, p. 370) lists the score for a two-tailed test at a .05 level at 12 degrees of freedom as 2.179.

Table 12
AMERICAN COLLEGE TESTING PROGRAM'S STUDENT NEEDS ASSESSMENT SURVEY:
Perceived Knowing Myself Needs of Tenth Grade Students
The Means-Difference Correlation for Treatment Group A and Placebo B

SCORE	GROUP A TREATMENT		SCORE	GROUP B PLACEBO	
	χ_1^1	χ_1^2		χ_2^1	χ_2^2
4.0	.66	.436	3.75	.37	.137
3.71	.37	.137	3.75	.37	.137
3.57	.23	.053	3.69	.31	.096
3.43	.09	.008	3.38	.000	.000
3.29	-.05	.003	3.25	-.13	.017
3.07	-.27	.073	3.25	-.13	.017
<u>2.29</u>	-1.05	<u>1.158</u>	<u>2.56</u>	-.82	<u>.672</u>
$\Sigma_1 = 23.36$		$\Sigma \chi_1^2 = 1,868$	$\Sigma_2 = 23.63$		$\Sigma \chi_2^2 = 1.076$
$\bar{X}_1 = 3.34$	$N = 7$		$\bar{X}_2 = 3.38$	$N = 7$	
$t = \frac{3.34 - 3.38}{\sqrt{\frac{1.868 + 1.076}{7 + 5}}} = \frac{-.04}{\frac{2}{7}\sqrt{\frac{2.944}{12}}} = \frac{-.04}{\frac{2}{7}\sqrt{.2453(.2857)}} = \frac{-.04}{\sqrt{.0701}} = \frac{-.04}{.2647} = -.15$					

Based on the findings, the researcher accepts the null hypothesis, that the Career Information System of Iowa has no effect on the immediate, perceived knowing myself needs as measured by the SNAS. The researcher accepted the null hypothesis because the Critical Value of t Table score (2.179) is higher than the t-ratio score (.15) found in the correlation

between the Treatment Group A and the Placebo Group B.

The second correlation in the knowing myself area is the Treatment Group A relationship to the Control Group C. In this correlation, the researcher has arranged the mean scores from the highest to the lowest, calculated the deviation and deviation squared scores, and shown the t-ratio calculations in Table 13

Table 13
AMERICAN COLLEGE TESTING PROGRAM'S STUDENT NEEDS ASSESSMENT SURVEY:
Perceived Knowing Myself Needs of Tenth Grade Students
The Means-Difference Correlations for Treatment Group A and Control Group C

GROUP A TREATMENT			GROUP C CONTROL		
SCORE	X_1^1	X_1^2	SCORE	X_3^1	X_3^2
4.0	.66	.436	3.73	.45	.203
3.71	.37	.137	3.66	.38	.144
3.57	.23	.053	3.53	.25	.063
3.43	.09	.008	3.4	.12	.014
3.29	-.05	.003	3.33	.05	.003
3.07	-.27	.073	3.0	-.28	.078
$\sum_1 = \frac{2.29}{23.36}$	-1.05	$\sum X_1^2 = \frac{1.158}{1.868}$	$\sum_3 = \frac{2.33}{22.98}$	-.95	$\sum X_3^2 = \frac{.903}{1.408}$
$\bar{X}_1 = 3.34$			$\bar{X}_3 = 3.28$		
$t = \frac{3.34 - 3.28}{\sqrt{\frac{1.868 + 1.408}{7 + 5} \cdot \frac{2}{7}}} = \frac{.06}{\sqrt{\frac{3.276}{12} \cdot \frac{2}{7}}} = \frac{.06}{\sqrt{.273(.2857)}} = \frac{.06}{\sqrt{.078}} = \frac{.06}{.2793} = .21$					

The mean for the Treatment Group A is 3.34, and for the Control Group C it is 3.28. The sum of the deviation squared is 1.868 for the Treatment Group A and 1.408 for the Control Group C. The number of items is seven. From the data, the researcher was able to calculate the t-ratio score of .21. The Critical Value of t Table (Tuckman, 1972, p. 370) lists the score for a two-tailed test at a .05 level at 36 degrees of freedom as 2.179.

Based on the findings, the researcher accepts the null hypothesis, that the Career Information System of Iowa has no effect on the immediate, perceived knowing myself needs as measured by the Student Needs Assessment Survey. The researcher accepted the null hypothesis because the Critical Value of t Table score (2.179) is higher than the t-ratio score (.21) found in the correlation between the Treatment Group A and the Placebo Group B.

The third correlation in the knowing myself area is the Placebo Group B and the Control Group C. In this correlation, the researcher has arranged the mean scores from highest to lowest, calculated the deviation and deviation squared scores, and shown the t-ratio calculations in Table 14.

The mean score for the Placebo Group B is 3.38, and the Control Group C the mean is 3.28. The sum of the deviation squared is 1.076 for the Placebo Group B and 1.408 for the Control Group C. The number of items is seven. From that data, the researcher was able to calculate the t-ratio score of .41. The Critical Value of t Table (Tuckman, 1972, p. 370) lists the score for a two-tailed test at a .05 level at 12 degrees of freedom as 2.179.

Based on the findings, the researcher accepts the null hypothesis, that the Career Information System of Iowa has no effect on the immediate, perceived knowing myself needs of tenth grade students as measured by the

Student Needs Assessment Survey. The researcher accepted the null hypothesis because the Critical Value of t Table score (2.179) was higher than the t-ratio score (.41) found in the correlation between the Placebo Group B and Control Group C.

Table 14

AMERICAN COLLEGE TESTING PROGRAM'S STUDENT NEEDS ASSESSMENT SURVEY:
Perceived Knowing Myself Needs of Tenth Grade Students
The Means-Difference Correlation for Placebo Group B and Control Group C

GROUP B PLACEBO			GROUP C CONTROL		
SCORE	χ_2^1	χ_2^2	SCORE	χ_3^1	χ_3^2
3.75	.37	.137	3.73	.45	.203
3.75	.37	.137	3.66	.38	.144
3.69	.31	.096	3.53	.25	.063
3.38	.000	.000	3.4	.12	.014
3.25	-.13	.017	3.33	.05	.003
3.25	-.13	.017	3.0	-.28	.078
<u>2.56</u>	-.82	<u>.672</u>	<u>2.33</u>	-.95	<u>.903</u>
$\sum_2 = 23.63$		$\sum \chi_2^2 = 1.076$	$\sum_3 = 22.98$		$\sum \chi_3^2 = 1.408$
$\bar{X}_2 = 3.38$		N = 7	$\bar{X}_3 = 3.28$		N = 7

$$t = \frac{3.38 - 3.28}{\frac{\sqrt{1.076 + 1.408}}{7 + 5} \cdot \frac{2}{7}} = \frac{.1}{\frac{\sqrt{2.484}}{12} \cdot \frac{2}{7}} = \frac{.1}{\sqrt{.207(.2858)}} = \frac{.1}{\sqrt{.05914}} = \frac{.1}{.2432} = .41$$

In the knowing myself portion of the Student Needs Assessment Survey, the researcher accepted the null hypothesis of no effect in all three of the correlations performed. The possibility of socialization and the Hawthorne effect have been greatly reduced by these findings.

CHAPTER 5

Discussion of the Findings

Introduction

The researcher has identified the problem as what effect, if any, does the Career Information System of Iowa (CISI) have on the immediate, perceived career development needs of tenth grade students. The career development needs will be measured by the American College Testing Program's Student Needs Assessment Survey (SNAS). In this chapter, the findings of this study will be discussed and compared with findings of other studies.

The Findings

In Chapter 4, findings from the first three sections of the Student Needs Assessment Survey: career development, life skills, and knowing myself were reported. In each of these portions, three correlational calculations were conducted in order to determine what effect the CISI had on each portion of the SNAS. The correlations are listed below with a brief statement of the findings.

1. CAREER DEVELOPMENT: Treatment Group A compared to Placebo Group B

The researcher was able to reject the null hypothesis, that the CISI has no effect on the immediate, perceived career development needs as measured by the SNAS. The Critical Value of t Table score (2.042) was lower than the t-ratio score (5.224). Thus the researcher may reject the null hypothesis.

2. CAREER DEVELOPMENT: Treatment Group A compared to Control Group C

The researcher was able to reject the null hypothesis, that the CISI has no effect on the immediate, perceived career development needs as measured by the SNAS. The Critical

Value of t Table score (2.042) was lower than the t-ratio score (5.3). Thus, the researcher may reject the null hypothesis.

3. CAREER DEVELOPMENT: Placebo Group B compared to Control Group C

The researcher accepted the null hypothesis, that the CISI has no effect on the immediate, perceived career development needs as measured by the SNAS. The Critical Value of t Table score (2.042) was higher than the t-ratio score (.438). Thus, the researcher had to accept the null hypothesis.

4. LIFE SKILLS: Treatment Group A compared to Placebo Group B

The researcher accepted the null hypothesis, that the CISI has no effect on the immediate, perceived life skills needs as measured by the SNAS. The Critical Value of t Table score (2.021) was higher than the t-ratio score (.27). Thus, the researcher had to accept the null hypothesis.

5. LIFE SKILLS: Treatment Group A compared to Control Group C

The researcher accepted the null hypothesis, that the CISI has no effect on the immediate, perceived life skills needs as measured by the SNAS. The Critical Value of t Table score (2.021) was higher than the t-ratio score (.19). Thus, the researcher had to accept the null hypothesis.

6. LIFE SKILLS: Placebo Group A compared to Control Group C

The researcher accepted the null hypothesis, that the CISI has no effect on the immediate, perceived life skills needs as measured by the SNAS. The Critical Value of t Table score (2.021) was higher than the t-ratio score (.537). Thus, the researcher had to accept the null hypothesis.

7. KNOWING MYSELF: Treatment Group A compared to Placebo Group B

The researcher accepted the null hypothesis, that the CISI has no effect on the immediate, perceived knowing myself needs as measured by the SNAS. The Critical Value of t Table score (2.179) was higher than the t-ratio (.15). Thus, the researcher had to accept the null hypothesis.

8. KNOWING MYSELF: Treatment Group A compared to Control Group C

The researcher accepted the null hypothesis, that the CISI has no effect on the immediate, perceived, knowing myself needs as measured by the SNAS. The Critical Value of t Table score (2.179) was higher than the t-ratio score (.21). Thus, the researcher had to accept the null hypothesis.

9. KNOWING MYSELF: Placebo Group B compared to Control Group C

The researcher accepted the null hypothesis, that the CISI has no effect on the immediate, perceived knowing myself needs as measured by the SNAS. The Critical Value of t Table score (2.179) was higher than the t-ratio score (.41). Thus, the researcher had to accept the null hypothesis.

What Do the Findings Mean

The present study appears to lend support to the idea that the Career Information System does have a positive effect on the immediate, perceived career development needs of tenth grade students. This idea is based on the fact that the null hypothesis was rejected in both career development comparisons that included the treatment. The t-ratio scores of negative 5.224 and negative 5.3 were much higher than the required 2.042 for the rejection.

The negative numbers in both of the Treatment Group A comparisons (Placebo Group B and Control Group C) seem to indicate a reduction in the perceived need for career information by the students in the treatment group. This idea comes from the fact that the mean score for the Treatment Group A was much lower than the mean scores of the Placebo Group B or the Control Group C.

The Placebo Group B, an unrelated treatment, results appear to be not significantly different from the results of the Control Group C. This idea is drawn from the three acceptances of the null hypothesis, when correlations were calculated for the Placebo Group B relationship to the Control Group C. This may be interpreted to show that the study was free from threats of socialization and of the Hawthorne effect.

The acceptance of the null hypothesis in every instance in the life skills and knowing myself areas adds to the validity of this study. The Treatment Group A, the group exposed to the CISI, rejected the null

hypothesis in both correlations in the career development portion of the SNAS. In every other instance concerning the Treatment Group A, the researcher accepted the null hypothesis, as did he for the Placebo Group B and the Control Group C. These facts further support the idea that socialization, the Hawthorne effect, and other variables did not seem to alter the findings.

The Relationship to Other Studies

In the Introduction to this study and in Chapter 2, the researcher has tried to show the importance of this study. The results indicate that students who use the CISI could expect a reduction in their perceived need for career development information. This result supports an observation of the Koranda study, the results of other studies on information systems, and an assumption of the Greenwood study.

The Koranda study revealed that the CISI apparently was not meeting the intended goals of the program. But, Koranda (1978) found that almost 77 percent of the exposed students to the CISI thought it was helpful.

Koranda went a step further when he concluded:

Perhaps it should not be overlooked, that this high percentage of exposed students thought the CISI was helpful. If the students felt that the program was helpful, perhaps the CISI is accomplishing something worthwhile that was not measured in this (p. 73).

The findings of this study support the observation of Koranda. The CISI was found to be helpful in reducing the perceived need for occupational information.

In studies earlier cited, (Ryan, 1978; Drake, 1979; Katz, 1978; McKinaley, 1971; Rayman, 1978) students exposed to other computerized, occupational systems had expressed that their system had been helpful for them. In this study, students' perceived needs were measured by the

Student Needs Assessment Survey, and the results indicated a reduction in the need for occupational information.

The results indicate that the CISI is comparable to other occupational information systems. Other studies (Katz, 1978; Rayman, 1978; Sampson, 1979) indicate students who have expressed satisfaction with their occupational information system have made a significant movement toward vocational maturity. The results show a reduction in perceived need for information; this may be interpreted as movement toward vocational maturity.

Greenwood (1982) reported that 97 percent of the schools in Iowa had the CISI, and a majority of those schools were using the CISI more in 1981 than they had in 1978. This study supports an assumption of the Greenwood study, that a rise in the use of the CISI indicated satisfaction with the system. Likewise, a reduction in the need for information could be the reason why more students are currently using the CISI, and that would probably indicate satisfaction as well.

CHAPTER 6

Summary, Conclusions, and Recommendations

Introduction

The problem has been identified as, what effect, if any, the Career Information System of Iowa (CISI) has on the immediate, perceived career development needs of tenth grade students. The career development needs have been measured by the American College Testing Program's Student Needs Assessment Survey. In this chapter, the researcher will review the nature of the study, the methods of research used, and the findings. He will draw conclusions based on the study and will make recommendations.

What the Study is About

The Career Information System of Iowa, like other occupational information systems, should have a particular use. Research (Drake, 1979; Katz, 1978; Rayman, 1978; Ryan, 1978) indicates that other occupational information systems help students in making decisions about careers. The purpose of this study was to determine the effect of the Career Information System of Iowa on the immediate, perceived career development needs of tenth grade students.

The hypothesis was that the Career Information System of Iowa has a positive effect on the immediate, perceived career development needs of tenth grade students. It appears that the CISI does have a positive effect on the immediate, perceived career development needs; the researcher found lower scores for those students exposed to the CISI on the SNAS.

Why This Study is Important

It is important that programs that are receiving federal and state monies have a particular use. The Career Information System of Iowa appears to be valued. The Koranda (1978) study indicated that students believed that the CISI was helpful. The Greenwood (1982) study indicated that the CISI was being used more in the schools in 1981 than in 1978. However, these two studies (Koranda, 1978; Greenwood, 1982) fail to show how the CISI is of value. The Koranda study revealed that the CISI had not met its intended goals. This study was designed to investigate a particular use of the CISI, reducing students' perceived need for information.

The Methods of Research

An assessment of student needs was conducted by the researcher to determine the effects of the CISI on the immediate, perceived career development needs. The study was conducted by the researcher in late October and early November of 1982, at a rural, midwestern high school. The sophomore class was selected to participate in the study and was divided into three groups: The Treatment Group A, the Placebo (unrelated treatment) Group B, and the Control Group C. The Student Needs Assessment Survey was selected to measure the perceived needs of the students.

The treatment consisted of exposing Group A to the ten-step PROCESS portion of the Career Information System of Iowa. The treatment began ten days after the pre-test had been administered. The treatment lasted eight homeroom periods of ten minutes each per day.

The placebo treatment was a reading development program. The students in the placebo group were required to read during the homeroom period from

a selection of their choice. The placebo treatment began and ended on the same day as the treatment.

The members of the Control Group C met as always in their homeroom for the entire treatment period with no knowledge of the treatment being given to them by the researcher. Members of this group did socialize with members of the Treatment Group A and the Placebo Group B but no information about the study was given out by the researcher to any of the groups used in the study.

Findings

The researcher utilized the first three sections of the Student Needs Assessment Survey: career development, life skills, and knowing myself. In each of these portions, three correlation calculations were conducted to find what effect the CISI had on student perceptions.

The findings indicated that the Treatment Group A was significantly different from the Placebo Group B and the Control Group C. This idea is based on the findings that the t-ratio scores of 5.224 for the Treatment Group A compared to the Placebo Group B and of 5.3 for the Treatment Group A compared to the Control Group C. The researcher rejected the null hypothesis since those scores (5.224 and 5.3) were much higher than the Critical Value or t Table score (2.042).

In all other correlations, the researcher accepted the null hypothesis because the correlation scores were much lower in all the cases. This acceptance supports the idea that the study was not altered by socialization or the Hawthorne effect.

The Career Information System of Iowa has a positive effect on the immediate, perceived career development needs of tenth grade students.

The Students Needs Assessment Survey indicates a reduction in the need for information related to careers for students who have been exposed to the Career Information System of Iowa.

Conclusions

The following conclusions can be drawn from the findings of this study:

1. Students who utilize the Career Information System of Iowa can be expected to experience a reduction in the perceived need for career development information.
2. The Career Information System of Iowa does have a particular use; it helps to reduce the perceived need for career information.
3. Students who utilize the Career Information System of Iowa can be expected to have a better idea of what occupation they will pursue in the future.
4. The Career Information System of Iowa is of value to school guidance counselors by helping students meet their perceived career development needs.
5. The Career Information System of Iowa is meeting its commitment statement of supplying update occupational information that can be utilized by students.

Recommendations

The recommendations for further study of the Career Information System of Iowa appear to be of importance.

1. It is recommended that research be conducted to update the findings of the Koranda study (1978). Since data compiled in that study was gathered in 1977, when the Career Information

System of Iowa was still in its infancy, it is important to determine if the CISI is meeting its stated objectives in 1983 as defined in the Koranda study (1978).

2. It is recommended that a study be done to determine if the Career Information System of Iowa is meeting the perceived, career development needs of junior high students.
3. It is recommended that a study be done to determine if the Career Information System of Iowa helps students move toward vocational maturity.
4. It is recommended that a study be done to determine the principal method of delivering the Career Information System of Iowa (Computerized or Needle-sort).
5. It is recommended that a study be done to determine the perceived career development needs for students operating from each delivery system (Computerized and Needle-sort).
6. It is recommended that a study be done to determine the impact of the Career Information System of Iowa on meeting the needs of special need students.

BIBLIOGRAPHY

- Calhoun, C.C., and Finch, A.V. Vocational and Career Education: Concepts and Operations. Belmont, California: Wadsworth Publishing, 1976.
- Calkins, Hugh. "Breaking Down the Fiscal Barriers to Career Education." Essays on Career Education. Portland, Oregon: Northwest Regional Educational Laboratory, 1973.
- Careers for a Changing World. New York: New York Life Insurance Company, 1976.
- Chick, Joyce M. Innovations in the Use of Career Information. Boston: Houghton Mifflin, 1970.
- Clements, Irene. Career Education and Vocational Education. Washington, D.C.: National Education Association, 1977.
- Drake, J.W. "The Effects of a Computer-assisted Career Guidance Support System Upon the Vocational Maturity of High School Sophomores." Dissertation Abstracts International, April 1979, 5947.
- Eilbert, Jacque, and Ed R. Crowley. "C.I.S.I.--The Alpha and the Omega." D.P.I. Dispatch, January, 1975.
- High School Student Services: A Conceptual Model. Iowa City: American College Testing Program, 1979.
- Hoppock, Robert. Occupational Information: Where to Get It and How to Use It in Counseling and Teaching. New York: McGraw-Hill, 1967.
- Isaacson, L.E. Career Information in Counseling and Teaching. Boston: Allyn and Bacon, 1977.
- Iowa Department of Job Service. Occupational Outlook to 1985. 1977.
- Iowa Department of Public Instruction, Career Education Division. C.I.S.I. Leaders' Guide. 1980.
- Iowa Department of Public Instruction, Career Education Division. C.I.S.I. PROCESS User's Handbook. 1981.
- Iowa State Occupational Information Coordinating Committee. The Source. 1982.
- "Jobs: Putting America back to work." Newsweek, Oct. 18, 1982, 78-84.
- Jorgenson, Donald. Career Development. Oshkosh, Wisconsin: University of Wisconsin-Oshkosh, 1981.

- Kaercher, Dan. "Career Education." Better Homes and Gardens, 59, No. 2, February, 1981, 22-31.
- Katz, M.R. and Chapmen, W. "SIGI: An Example of Computer-assisted Guidance." Educational Technology, 18, No. 4, 1978, 57-59.
- Koranda, R.N. "An Evaluation of the Accomplishment of the Objectives of the Career Information System of Iowa." (A thesis submitted in partial fulfillment of the Doctor of Philosophy in Education in the Graduate College of the University of Iowa, May 1978), Microfilm LC-72, University of Northern Iowa Library.
- "Marland on Career Education." American Education, November 1971, 25.
- Maslow, A.H. Motivation and Personality. Boston: Harper and Row, 1954.
- McKinale, B. and Adams, D. Evaluation of the Occupational Information Access System as Used at Churchill High School. Bureau of Government Research and Service, 1971.
- Parson, Frank. Choosing a Vocation. Boston: Houghton Mifflin, 1909.
- Peitrofesa, J.J. and Spieta, H. Career Development Theory and Research. New York: Grune and Stratton Inc., 1975.
- Rayman, J.R. and Others. "The Field Trial of Discover: A New Computer-ized Interaction Guidance System." The Vocational Guidance Quarterly, June 1978, 349-359.
- Ryan, C.W. and Others. "Guidance Information System: An Analysis of the Impact on School Counseling." The School Counselor, Nov. 1980, 93-97.
- Ryan, T.A. Guidance Services. Danville, Illinois: The Interstate Printers and Publishers, 1978.
- Sampson, J.P. "Counselor Intervention with Computer-assisted Career Guidance." Dissertation Abstracts International, December 1978, 3297.
- Shartle, Carroll L. Occupational Information: Its Development and Application. Englewood Cliffs, N.J.: Prentice-Hall, 1959.
- Smith, Glen. "Career Education in Perspective." Journal of Career Education, Winter 1975, 20-23.
- Stone, Marvin. "Putting Youth on Course." U.S. News and World Report, Feb. 1978, 76.
- Super, D.E. "A Theory of Vocational Development." American Psychology, 1953, 8, 185-190.

- Tuckman, Bruce. Conducting Educational Research. New York: Harcourt, Brace, Javanovich, 1972.
- U.S. Department of Labor. Dictionary of Occupational Titles. Washington, D.C.: Government Printing Office, 1965.
- U.S. Department of Labor. Occupational Outlook Handbook. Washington, D.C.: Government Printing Office, 1980.
- Venn, Grant. Man, Education, and Work. Washington, D.C.: American Council on Education, 1964.
- Weinrach, S.G. Career Counseling. New York: McGraw-Hill Book Company, 1979.
- Wilhelm, S. "Computer-based Guidance Systems: Are They Worth it?" Journal of College Placement, Winter 1978, 65-69.

APPENDIX A

Directions:

Please place a check () mark on the appropriate blanks

_____ Female _____ 9th Grade _____ 11th Grade
 _____ Male _____ 10th Grade _____ 12th Grade

Please circle the response that you feel best expresses your need

<u>Level wanted</u>					<u>I need:</u>
Low				High	
1	2	3	4	5	1. to take courses that will help me in my future
1	2	3	4	5	2. to know education options after high school
1	2	3	4	5	3. to know how classes now relate to career plans
1	2	3	4	5	4. to know more about financing my education after high school
1	2	3	4	5	5. to know about career training programs
1	2	3	4	5	6. to develop a game plan for a career
1	2	3	4	5	7. to know what things might affect my career choice
1	2	3	4	5	8. to have on the job training
1	2	3	4	5	9. to interview people in my interest area
1	2	3	4	5	10. to know the requirements to get into college
1	2	3	4	5	11. to get along with my parents
1	2	3	4	5	12. to get along with my brothers and sisters
1	2	3	4	5	13. to have my parents help in choosing a career
1	2	3	4	5	14. to gain a better understanding of my religion
1	2	3	4	5	15. to understand the needs of other family members
1	2	3	4	5	16. to talk with my parents about their problems
1	2	3	4	5	17. to deal with my parents new boy/girl friend
1	2	3	4	5	18. to deal with my parents working and being gone alot
1	2	3	4	5	19. to be trusted by my parents
1	2	3	4	5	20. to understand elderly people like my grandparents
1	2	3	4	5	21. to become more accepting of others
1	2	3	4	5	22. to have a real close friend
1	2	3	4	5	23. to have someone to talk with
1	2	3	4	5	24. to get along with members of the opposite sex
1	2	3	4	5	25. to have a steady boy/girl friend
1	2	3	4	5	26. to listen to my classmates opinions
1	2	3	4	5	27. to tell people how I really feel
1	2	3	4	5	28. to deal with peer pressure
1	2	3	4	5	29. to deal with my shyness
1	2	3	4	5	30. to know how far I'll go to be popular with my group
1	2	3	4	5	31. to understand my interests and abilities
1	2	3	4	5	32. to like myself better
1	2	3	4	5	33. to develop confidence in myself
1	2	3	4	5	34. to accept my appearance
1	2	3	4	5	35. to lose/gain weight

<u>Level wanted</u>					<u>I need:</u>
Low		High			
1	2	3	4	5	36. to set goals in my life
1	2	3	4	5	37. to develop listening skills
1	2	3	4	5	38. to ask more questions in class
1	2	3	4	5	39. to learn how to be more assertive
1	2	3	4	5	40. to control my temper
1	2	3	4	5	41. to learn how to handle responsibility
1	2	3	4	5	42. to reduce my dependence on tobacco
1	2	3	4	5	43. to know the relationship between my values and alcohol
1	2	3	4	5	44. to know the relationship between my values and drugs
1	2	3	4	5	45. to know the relationship between my values and sexual activity
1	2	3	4	5	46. to select more classes by myself
1	2	3	4	5	47. to know the graduation requirements
1	2	3	4	5	48. to know how to get my GED
1	2	3	4	5	49. to know how to apply and interview for a job
1	2	3	4	5	50. to know where to go when looking for a job
1	2	3	4	5	51. to know how to get a summer job or a part time job
1	2	3	4	5	52. to know the counselor better
1	2	3	4	5	53. to learn how to study
1	2	3	4	5	54. to assess my talents
1	2	3	4	5	55. to learn how to make decisions
1	2	3	4	5	56. to know my capabilities in school
1	2	3	4	5	57. to know how to manage money
1	2	3	4	5	58. to build my skills in math
1	2	3	4	5	59. to build my reading and writing skills
1	2	3	4	5	60. to build test-taking skills

The purpose of this survey has been to identify those needs that you have that are not being met. The Counseling Office would like to provide you with an opportunity to meet some of these needs. Your signature below will indicate to us that you would be interested in discussing some of your needs on a more individual basis. Thanks you for your continued support and cooperation.

Your signature (optional)

APPENDIX B

STUDENT NEEDS ASSESSMENT SURVEY

00 11

PAGE 1 USE A SOFT LEAD PENCIL ONLY

A

Name (Optional) _____

School _____

Date _____

B	C	D	E
SEX	GRADE LEVEL	IDENTIFICATION NUMBER	OVERALL HIGH SCHOOL GRADE AVERAGE
<input type="radio"/> Male <input type="radio"/> Female	<input type="radio"/> Freshman <input type="radio"/> Sophomore <input type="radio"/> Junior <input type="radio"/> Senior <input type="radio"/> Other	[10 columns of circles for ID number]	<input type="radio"/> D- to D (70-79) <input type="radio"/> D to C- (60-69) <input type="radio"/> C to B (50-59) <input type="radio"/> B to B- (40-49) <input type="radio"/> B to B+ (30-39) <input type="radio"/> A- to A (20-29)

F	G	H																																																																																					
SCHOOL CODE NUMBER	TYPE OF EDUCATIONAL PLANS	LOCAL QUESTIONS																																																																																					
[5 columns of circles for school code]	<input type="radio"/> Vocational or technical program (less than 2 years) <input type="radio"/> Two-year college degree <input type="radio"/> Bachelor's degree <input type="radio"/> One or 2 years of graduate study (MA, MEd, etc.) <input type="radio"/> Professional level degree (PhD, MD, LLB, JD, etc.) <input type="radio"/> No educational plans after high school <input type="radio"/> Other	<table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> <tr><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td><td>[circle]</td></tr> </tbody> </table>	A	B	C	D	E	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]	[circle]
A	B	C	D	E																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			
[circle]	[circle]	[circle]	[circle]	[circle]																																																																																			

I	J
RACIAL/ETHNIC GROUP	HIGH SCHOOL COMPLETION PLANS
<input type="radio"/> All-American/Black <input type="radio"/> American Indian, Alaska Native <input type="radio"/> Caucasian American/White <input type="radio"/> Mexican American/Chicano <input type="radio"/> Asian American, Oriental, Pacific Islander <input type="radio"/> Puerto Rican, Cuban, Other Hispanic Origin <input type="radio"/> Other <input type="radio"/> Prefer not to Respond	<input type="radio"/> I plan to graduate early <input type="radio"/> I plan to graduate on schedule <input type="radio"/> I plan to graduate late <input type="radio"/> I have doubts if I will finish high school

NO EXPERIENCE WITH THIS CHARACTERISTIC OF SCHOOL

SATISFIED, no change desired

NO STRONG FEELINGS one way or the other

DISSATISFIED, improvement desired

EXAMPLES	1	2	3	4	5
1 The adequacy of the food in the cafeteria	[circle]	[circle]	[circle]	[circle]	[circle]
2 Space for parking student cars	[circle]	[circle]	[circle]	[circle]	[circle]
3 The number of school dances	[circle]	[circle]	[circle]	[circle]	[circle]

NO EXPERIENCE WITH THIS CHARACTERISTIC OF SCHOOL

SATISFIED, no change desired

NO STRONG FEELINGS one way or the other

DISSATISFIED, improvement desired

EVALUATION OF HIGH SCHOOL EXPERIENCE	1	2	3	4	5
1 Classroom instruction	[circle]	[circle]	[circle]	[circle]	[circle]
2 Number and variety of course offerings	[circle]	[circle]	[circle]	[circle]	[circle]
3 Grading practices and policies	[circle]	[circle]	[circle]	[circle]	[circle]
4 Number and kinds of tests given	[circle]	[circle]	[circle]	[circle]	[circle]
5 School rules, regulations, and policies	[circle]	[circle]	[circle]	[circle]	[circle]
6 Library/learning center facilities	[circle]	[circle]	[circle]	[circle]	[circle]
7 Laboratory facilities	[circle]	[circle]	[circle]	[circle]	[circle]
8 Provision for students needing special assistance in reading, math, etc.	[circle]	[circle]	[circle]	[circle]	[circle]
9 Provision for academically outstanding students (honors programs, accelerated courses, etc.)	[circle]	[circle]	[circle]	[circle]	[circle]
10 Adequacy of programs in career education and planning	[circle]	[circle]	[circle]	[circle]	[circle]
11 Out-of-class availability of teachers	[circle]	[circle]	[circle]	[circle]	[circle]
12 Racial harmony in this school	[circle]	[circle]	[circle]	[circle]	[circle]
13 Student government	[circle]	[circle]	[circle]	[circle]	[circle]
14 Attitude of care and concern about each student's personal needs	[circle]	[circle]	[circle]	[circle]	[circle]
15 Classroom facilities	[circle]	[circle]	[circle]	[circle]	[circle]
16 Job placement assistance	[circle]	[circle]	[circle]	[circle]	[circle]
17 Opportunities for participation in extracurricular activities	[circle]	[circle]	[circle]	[circle]	[circle]
18	[circle]	[circle]	[circle]	[circle]	[circle]
19	[circle]	[circle]	[circle]	[circle]	[circle]
20	[circle]	[circle]	[circle]	[circle]	[circle]

PAGE 2

	This item is NOT IMPORTANT to me					
	This item IS IMPORTANT but I need no further assistance					
	I would like a LITTLE assistance					
	I would like a MEDIUM amount of assistance					
	I would like a LOT of assistance					
EXAMPLES	0	0	0	0	0	1 To learn how to develop independence
	0	0	0	0	0	2 To breathe cleaner air
	0	0	0	0	0	3 To be able to concentrate better
	0	0	0	0	0	4 To get out of bed earlier in the morning

DO NOT TEAR STAPLE THIS FORM

	This item is NOT IMPORTANT to me					
	This item IS IMPORTANT but I need no further assistance					
	I would like a LITTLE assistance					
	I would like a MEDIUM amount of assistance					
	I would like a LOT of assistance					
CAREER DEVELOPMENT (EXPLORING, PLANNING, WORKING)	0	0	0	0	0	1 To explore how various jobs could affect my life style
	0	0	0	0	0	2 To become more aware of my career interest areas
	0	0	0	0	0	3 To know more about job opportunities in my career interest areas
	0	0	0	0	0	4 To know more about training requirements for jobs I might like
	0	0	0	0	0	5 To become aware of training offered in my career interest areas
	0	0	0	0	0	6 To talk with people employed in my career interest areas
	0	0	0	0	0	7 To get some job experience in my career interest areas
	0	0	0	0	0	8 To know how the courses I am taking relate to jobs in my career interest areas
	0	0	0	0	0	9 To understand the changing patterns of careers for both men and women
	0	0	0	0	0	10 To explore in detail careers I might like
	0	0	0	0	0	11 To understand how my values relate to my career plans
	0	0	0	0	0	12 To have counseling about my career plans
	0	0	0	0	0	13 To have help to obtain part-time and/or summer work
	0	0	0	0	0	14 To know what jobs are available locally
	0	0	0	0	0	15 To know how to apply for a job
	0	0	0	0	0	16 To know how to interview for a job
	0	0	0	0	0	17 To get my parents interested in my career/planning

	This item is NOT IMPORTANT to me						
	This item IS IMPORTANT but I need no further assistance						
	I would like a LITTLE assistance						
	I would like a MEDIUM amount of assistance						
	I would like a LOT of assistance						
LIFE SKILLS DEVELOPMENT	0	0	0	0	0	18 To increase my skills in mathematics	
	0	0	0	0	0	19 To improve my writing skills	
	0	0	0	0	0	20 To develop my speaking skills	
	0	0	0	0	0	21 To improve my reading comprehension	
	0	0	0	0	0	22 To learn how to read faster	
	0	0	0	0	0	23 To improve my study skills and habits	
	0	0	0	0	0	24 To develop my test-taking skills	
	0	0	0	0	0	25 To learn how to handle pressure from friends, teachers, family, or myself	
	0	0	0	0	0	26 To learn how to make decisions and solve problems	
	0	0	0	0	0	27 To learn how to set goals in my life	
	0	0	0	0	0	28 To learn how to manage my time better	
	0	0	0	0	0	29 To learn how to spend money more wisely	
	0	0	0	0	0	30 To learn how to stay healthy, both mentally and physically	
	0	0	0	0	0	31 To understand better the effects of alcohol, drugs, and medicines	
	0	0	0	0	0	32 To learn how to deal with community problems	
	0	0	0	0	0	33 To learn how to participate in government	
	0	0	0	0	0	34 To learn how to get more out of my life through leisure time activities	
	0	0	0	0	0	35 To become more self-sufficient (cooking, sewing, fixing things, etc.)	
	KNOWING MYSELF	0	0	0	0	0	36 To understand my rights and responsibilities as a consumer
		0	0	0	0	0	37 To identify my strengths and abilities
		0	0	0	0	0	38 To develop more confidence in myself
		0	0	0	0	0	39 To understand my personal values
0		0	0	0	0	40 To know how to stay in shape	
0		0	0	0	0	41 To understand my achievement and ability test scores better	
0		0	0	0	0	42 To know how to handle things that worry me	
0	0	0	0	0	43 To learn more about grooming and personal care		

PAGE 3
USE A SOFT LEAD PENCIL ONLY

This item is NOT IMPORTANT to me					This item IS IMPORTANT but I need no further assistance					I would like a LITTLE assistance					I would like a MEDIUM amount of assistance					I would like a LOT of assistance					
0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
EDUCATIONAL PLANNING																									
0	0	0	0	0	0	44	To understand the importance of graduating from high school																		
0	0	0	0	0	0	45	To know more about high school graduation requirements																		
0	0	0	0	0	0	46	To get help in selecting the right courses for me																		
0	0	0	0	0	0	47	To become more aware of my educational options after high school (college, voc-tech, military, etc.)																		
0	0	0	0	0	0	48	To know more about financial aid available for continuing my education after high school																		
0	0	0	0	0	0	49	To learn how to evaluate and choose an educational or training program that will be right for me																		
0	0	0	0	0	0	50	To learn more about college entrance requirements																		
0	0	0	0	0	0	51	To know how and when to select a college major																		
0	0	0	0	0	0	52	To know how to earn college credit without taking a particular course																		
0	0	0	0	0	0	53	To have counseling about my educational planning																		
0	0	0	0	0	0	54	To be able to get along better with teachers																		
0	0	0	0	0	0	55	To be able to get along better with other students																		
0	0	0	0	0	0	56	To know how to work with my counselor/advisor																		
0	0	0	0	0	0	57	To be able to get along better with my parents																		
0	0	0	0	0	0	58	To be able to get along better with my brothers and sisters																		
0	0	0	0	0	0	59	To learn how to make more friends of my own sex																		
0	0	0	0	0	0	60	To learn how to make more friends of the other sex																		
0	0	0	0	0	0	61	To understand more about love and sex																		
0	0	0	0	0	0	62	To learn more about marriage and family living																		
0	0	0	0	0	0	63	To understand the changing roles of men and women in today's society																		
0	0	0	0	0	0	64	To gain a better understanding of people of different races and cultural backgrounds																		
0	0	0	0	0	0	65	To know about places in my school and community where I can get help with my problems																		
0	0	0	0	0	0	66	To understand the needs of elderly people																		
0	0	0	0	0	0	67	To accept people who feel or think differently from me																		
0	0	0	0	0	0	68	To have someone listen to me when I have problems																		
0	0	0	0	0	0	69	To be able to tell others how I feel																		
0	0	0	0	0	0	70	To learn to get along better with my job supervisor																		
GETTING ALONG WITH OTHERS																									

This item is NOT IMPORTANT to me					This item IS IMPORTANT but I need no further assistance					I would like a LITTLE assistance					I would like a MEDIUM amount of assistance					I would like a LOT of assistance					
0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
PERSONAL QUESTIONS																									
0	0	0	0	0	0	71																			
0	0	0	0	0	0	72																			
0	0	0	0	0	0	73																			
0	0	0	0	0	0	74																			
0	0	0	0	0	0	75																			
0	0	0	0	0	0	76																			
0	0	0	0	0	0	77																			
0	0	0	0	0	0	78																			
0	0	0	0	0	0	79																			
0	0	0	0	0	0	80																			
0	0	0	0	0	0	81																			
0	0	0	0	0	0	82																			
0	0	0	0	0	0	83																			
0	0	0	0	0	0	84																			
0	0	0	0	0	0	85																			
0	0	0	0	0	0	86																			
0	0	0	0	0	0	87																			
0	0	0	0	0	0	88																			
0	0	0	0	0	0	89																			
0	0	0	0	0	0	90																			
0	0	0	0	0	0	91																			

Name: _____

Grade Level: _____

Sex: _____

APPENDIX C

TABULATION SHEET GROUP-A

ITEM NUMBER	Pupil Number																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	2	2	3	1	2	4	3	2	2	3	1	3	2	4	4	3	2
2	4	3	3	2	2	4	4	3	3	4	3	3	4	4	3	3	2
3	3	3	3	4	4	4	4	3	1	2	3	3	2	1	5	4	2
4	4	4	2	4	3	4	5	4	3	3	1	2	2	3	3	3	4
5	3	4	2	2	3	4	4	3	2	3	4	2	3	1	4	3	3
6	3	4	2	4	3	4	5	3	3	5	4	3	4	5	3	3	2
7	2	2	1	1	3	1	2	2	3	3	3	2	2	2	2	3	5
8	2	3	4	2	2	4	3	4	4	4	3	4	3	4	4	5	3
9	3	3	4	3	3	3	4	3	2	5	4	3	2	2	3	3	2
10	3	2	3	4	4	3	2	3	2	2	1	4	3	4	3	3	2
11	2	3	3	3	3	2	3	2	2	2	3	2	2	2	2	2	2
12	4	4	3	4	4	4	5	4	3	4	4	4	4	5	5	5	3
13	2	2	3	2	3	4	4	2	1	4	2	1	4	2	3	4	2
14	1	2	3	1	3	2	2	3	3	3	2	3	2	3	4	2	2
TOTAL	→ 38	41	39	37	42	47	50	41	34	47	38	39	39	42	48	47	37
MEAN	→ 2.71	2.93	2.79	2.65	3.0	3.36	3.57	2.93	2.43	3.36	2.71	2.79	2.79	3.0	3.43	3.36	2.65

TABULATION SHEET GROUP-A

ITEM NUMBER	Pupil Number	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	1	4	2	3	4	3	5	4	3	4	2	2	1	2	1	2	2	2	2	2	3	4	2	3	3	4	2
2	2	4	4	3	2	3	3	4	3	2	3	5	4	2	2	2	1	3	3	3	4	4	3	3	4	4	2
3	3	3	2	3	2	2	3	3	2	2	2	2	3	4	2	4	5	3	2	4	5	5	4	5	5	5	2
4	4	3	3	4	3	4	3	4	3	3	3	3	2	3	2	3	1	3	4	3	4	4	4	4	3	4	3
5	5	3	4	4	3	2	3	5	3	3	3	3	4	2	2	3	1	3	2	3	2	3	3	3	3	3	1
6	6	4	4	4	4	3	4	4	3	3	3	4	4	3	2	2	3	3	3	3	3	4	3	3	2	3	2
7	7	5	5	2	5	5	5	5	4	5	4	4	4	3	3	4	3	4	3	3	4	5	5	4	5	4	4
8	8	3	5	5	5	4	4	4	4	3	3	4	4	2	2	3	2	4	4	3	5	4	3	3	4	4	2
9	9	3	2	3	2	2	3	2	3	3	3	3	4	3	1	2	3	3	3	3	2	3	4	3	2	3	2
10	10	2	3	2	2	2	2	3	2	3	2	2	2	3	2	3	2	3	3	2	2	2	3	2	3	2	3
11	11	3	4	3	4	4	2	2	4	3	2	4	3	2	3	1	1	2	3	3	4	5	3	2	3	3	2
12	12	3	5	5	4	4	5	5	5	4	5	5	5	1	4	4	3	5	4	4	4	5	4	3	5	5	3
13	13	2	3	3	2	3	3	4	2	4	3	2	3	2	3	2	4	3	2	3	2	4	3	2	4	5	2
14	14	4	3	3	4	3	5	4	2	3	2	1	2	3	1	2	1	2	2	2	4	4	2	3	4	3	2
TOTAL	→	46	49	47	46	44	50	53	43	45	40	44	46	35	31	37	32	43	40	41	48	56	46	43	50	52	32
MEAN	→	3.29	3.5	3.36	3.29	3.14	3.57	3.79	3.07	3.21	2.86	3.14	3.29	2.5	2.21	2.64	2.29	3.07	2.86	2.93	3.43	4.0	3.29	3.07	3.57	3.71	2.29

TABULATION SHEET GROUP-B

ITEM NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
15	4	5	4	5	4	5	3	5	2	5	5	4	5	5	4	4	2	
16	3	3	4	4	3	4	4	3	3	3	3	4	4	3	3	3	3	
17	3	4	3	5	2	4	2	3	3	2	3	2	3	5	3	3	4	
18	2	2	4	5	4	4	3	5	2	4	1	5	5	5	5	5	4	
19	3	4	4	5	5	4	5	4	3	5	3	5	5	5	4	5	4	
20	4	4	4	5	4	3	4	5	4	3	3	4	3	2	3	4	3	
21	3	3	4	4	3	5	5	5	3	4	5	3	4	3	4	5	1	
22	2	3	2	1	2	2	2	2	2	2	2	2	2	2	2	3	2	
23	4	3	4	5	4	2	3	4	1	2	1	3	2	2	4	4	2	
24	4	5	5	4	5	3	3	5	1	4	3	4	3	4	5	5	2	
25	5	5	4	5	5	4	5	4	5	5	5	5	5	5	5	4	4	
26	4	3	3	3	4	4	4	3	4	3	3	4	2	4	4	4	3	
27	2	2	3	3	2	1	2	3	1	3	2	3	4	3	4	4	2	
28	4	4	4	4	4	4	3	3	3	3	3	4	3	3	4	4	5	
29	4	4	5	5	5	4	3	5	3	4	2	4	3	4	4	3	3	
30	3	4	4	2	3	5	4	5	2	5	5	5	5	3	4	4	5	
TOTAL	→	54	59	61	65	59	58	55	58	58	57	53	61	58	66	62	64	49
MEAN	→	3.30	3.69	3.81	4.06	3.64	3.63	3.44	3.63	3.63	3.56	3.31	3.81	3.63	4.13	3.93	4.00	3.06

TABULATION SHEET GROUP-B

ITEM NUMBER	Pupil Number	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
		15	3	5	4	4	3	5	4	5	4	5	4	5	5	3	4	1	4	3	4	3	5	4	5	4	5
16	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3	1	3	3	3	3	3	4	4	3	3	4	3
17	5	4	4	4	2	4	4	4	3	4	3	5	4	3	4	1	3	4	4	5	4	3	5	5	4	3	3
18	4	3	4	4	5	5	4	4	3	5	5	5	4	1	3	2	5	5	2	5	5	5	4	4	5	4	4
19	4	5	5	4	5	4	4	4	4	4	4	5	4	3	5	3	3	3	4	3	4	4	4	4	4	5	4
20	4	3	3	3	2	4	2	2	2	2	3	2	2	1	1	2	2	3	3	2	2	2	2	2	2	3	2
21	4	5	5	3	2	4	4	3	2	3	4	4	3	3	3	4	4	2	3	4	4	3	2	3	4	2	2
22	2	3	2	3	3	2	2	2	2	2	2	2	2	2	2	3	3	2	2	3	2	2	2	3	2	3	2
23	2	3	3	2	3	2	2	3	2	3	2	2	2	2	3	3	1	3	3	3	2	3	2	2	3	3	2
24	3	5	5	4	5	3	3	3	4	2	4	5	5	3	3	3	2	2	3	5	4	4	5	2	5	3	3
25	3	3	3	4	3	3	3	1	2	2	3	4	1	2	1	3	3	3	1	3	4	3	1	4	2	1	1
26	4	4	4	4	4	3	4	3	2	2	3	4	2	2	2	3	1	3	3	5	5	5	3	4	4	2	2
27	3	4	4	2	3	3	4	2	2	2	2	4	3	2	2	3	2	2	3	2	3	2	2	3	2	2	2
28	3	2	4	5	5	5	5	3	3	2	3	3	3	1	1	1	3	1	2	3	3	3	4	4	3	3	3
29	4	3	3	2	2	3	2	3	3	4	4	4	2	3	2	2	3	3	4	5	3	3	3	3	3	3	2
30	4	3	2	3	3	5	5	3	2	2	4	2	2	1	2	2	4	5	1	5	5	3	4	5	5	2	2
TOTAL	→	56	59	59	55	53	59	56	48	42	45	53	50	35	49	48	43	59	60	43	59	60	52	52	54	60	41
MEAN	→	3.5	3.69	3.69	3.44	3.31	3.69	3.5	3.0	2.62	2.81	3.31	3.63	2.19	3.06	3.0	2.69	2.69	2.75	2.69	3.18	3.75	3.25	3.25	3.32	3.75	2.56

TABULATION SHEET GROUP-C

ITEM NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
31	5	2	5	4	5	5	5	3	2	2	3	4	5	5	4	5	2
32	4	3	4	3	5	4	4	4	1	2	3	4	4	5	5	5	4
33	4	4	4	4	4	3	4	3	3	4	4	4	4	4	4	4	3
34	5	5	3	3	3	3	3	3	4	3	3	4	3	3	4	4	3
35	3	4	3	1	3	2	2	1	1	3	1	1	2	2	3	3	2
36	3	3	3	2	2	1	3	2	1	3	3	3	4	4	3	3	1
37	4	4	5	4	4	3	5	4	2	4	3	3	5	4	3	3	3
38	4	5	5	4	5	4	4	5	3	4	4	4	3	5	4	4	1
39	3	5	4	3	5	3	4	4	3	4	4	3	4	2	4	4	2
40	5	5	5	5	5	4	4	4	5	5	4	4	5	5	4	5	5
41	4	3	3	4	3	4	3	4	3	3	4	4	4	4	4	4	5
42	4	3	3	3	4	3	3	3	1	3	3	3	3	4	3	3	1
43	4	5	4	5	5	4	5	5	4	4	5	4	3	5	4	4	3
44	5	4	5	5	5	5	5	5	5	5	3	4	4	5	5	4	4
45	4	5	4	4	5	3	4	5	3	4	3	3	4	4	4	4	3
TOTAL	→ 61	60	60	59	63	51	58	55	41	53	50	52	57	61	58	59	42
MEAN	→ 4.07	4.0	4.0	3.6	4.2	3.4	3.87	3.67	2.73	3.53	3.33	3.47	3.8	4.07	3.87	3.93	2.8

TABULATION SHEET GROUP-C

ITEM NUMBER	↓ ↓	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
31		1	2	3	2	3	3	3	3	3	2	3	4	2	5	4	2	5	3	4	3	3	2	2	2	3	2
32		4	3	4	3	2	5	4	2	3	4	3	4	2	2	3	3	4	2	2	4	4	3	5	4	3	2
33		3	4	4	3	3	4	3	3	3	3	4	4	4	3	3	1	3	4	3	4	3	4	4	4	4	3
34		2	3	2	3	1	3	3	2	2	3	2	2	4	3	1	1	3	2	3	3	3	3	3	3	4	2
35		2	4	2	2	1	2	2	2	3	3	4	2	2	3	1	1	2	3	1	2	5	3	4	4	3	2
36		4	3	3	3	3	5	3	1	2	3	3	2	3	1	1	2	3	3	3	3	3	3	3	5	2	3
37		3	2	4	3	3	5	4	3	3	4	3	5	3	1	2	2	3	1	4	2	3	3	4	4	3	3
38		5	4	3	4	4	3	4	2	4	4	3	2	3	2	3	2	2	2	3	3	4	3	3	4	4	2
39		2	3	3	5	4	2	3	3	2	2	4	2	3	4	2	3	2	3	3	5	5	3	3	3	3	2
40		3	5	4	3	3	4	3	3	3	2	4	5	3	2	3	3	4	4	2	5	5	2	4	5	5	4
41		3	5	4	4	4	4	4	3	3	4	3	4	3	2	3	3	3	2	3	3	3	3	2	3	3	2
42		4	4	3	3	2	3	3	3	3	3	3	4	2	3	3	3	3	3	3	3	3	2	3	3	3	2
43		5	4	3	3	2	5	3	2	4	3	5	5	2	4	3	3	3	5	3	3	4	4	3	4	3	2
44		5	4	4	3	4	2	3	3	3	4	4	3	2	2	1	1	4	3	3	3	3	3	3	4	5	2
45		5	4	3	3	4	3	3	4	3	5	4	3	3	2	1	1	3	4	1	5	4	4	4	4	4	2
TOTAL	→	51	54	49	47	43	53	48	39	44	49	52	51	41	39	34	31	47	44	41	51	55	45	50	56	53	35
MEAN	→	3.4	3.6	3.27	3.13	2.87	3.53	3.2	2.6	2.93	3.27	3.47	3.4	2.73	2.6	2.27	2.07	3.13	2.93	2.73	3.4	3.67	3.0	3.33	3.73	3.53	2.33