

USE OF AND SATISFACTION WITH A  
CAREER INFORMATION ACCESSING STRATEGY

by

Deborah Karen Hedrick

Dissertation submitted to the Faculty of the  
Virginia Polytechnic Institute and State University  
in partial fulfillment of the requirements for the degree of  
DOCTOR OF EDUCATION

in

Counseling and Student Personnel

APPROVED:

---

Carl McDaniels, Chairman

---

Johnnie H. Miles

---

Dennis E. Hinkle

---

Lou Culler Talbutt

---

Dale Furbish

July, 1985

Blacksburg, Virginia

USE OF AND SATISFACTION WITH A  
CAREER INFORMATION ACCESSING STRATEGY

By

Deborah K. Hedrick

(ABSTRACT)

Computer-assisted guidance and information systems have recently gained increased popularity among counselors and students. However, there has been little objective research performed on them. The result has been that counselors are often uncertain about the appropriate usage of these instruments. A popular computer-assisted information system which has received little study is the Virginia VIEW Career Search. The Career Search is an accessing strategy designed to lead the users to access occupational and/or educational information from the Virginia VIEW microfiche. The Career Search was adapted from the Michigan Structured Occupational Search, which was developed using the Department of Labor's (DOL) occupational classification system and the Ohio Vocational Interest Survey's weighting of the DOL's data-people-things classification.

The purpose of this study was to clarify the appropriate usage of the Virginia VIEW Career Search. The study sought information concerning how the Career Search is being used in public schools in Virginia by assessing user satisfaction and determining whether the search does lead the users to access occupational and educational information. Finally, user satisfaction ratings and the results of the Career Search and the Ohio Vocational Interest Survey II (OVIS II) were compared.

The sample consisted of 624 Virginia secondary school students whose school districts use both the Career Search and the OVIS II in their counseling programs. The students completed the Career Search, the OVIS II, and the Student Questionnaire. The Student Questionnaire includes a revision of Zener & Schnuelle's 1972 Feedback Sheet, which had been revised to include a questionnaire which assesses whether users seek occupational/educational information after taking the Career Search. A portion of the Feedback Sheet collected ratings so that satisfaction for the Career Search and OVIS II could be compared. Finally, the results of the Career Search and the OVIS II were compared.

The results of the study indicated that users do access career information after taking the Career Search. One of the most utilized sources of career information is the Virginia VIEW microfiche occupational files. Users were generally satisfied with the Career Search, and felt that it helped them gain insight concerning appropriate careers for themselves, and was a good use of their time. Data was insufficient to make a comparison of the levels of user satisfaction for the Career Search and the OVIS II. The comparison of the results of the two instruments yielded limited data as well. However, approximately fifty percent of the subjects had matched results for the first OVIS II scale on their OVIS II Student Report and one or more occupational titles (viewscripts) generated from using the Career Search.

## ACKNOWLEDGEMENTS

I would like to acknowledge the support and professional guidance of my chair, Dr. Carl McDaniels, without whom this project could not have been completed.

The other members of my committee have been equally helpful and supportive of my efforts in completing the doctoral program. I would like to thank them for believing in me during times when I doubted myself. They are Dr. Dale Furbish, Dr. Dennis Hinkle, Dr. Johnnie Miles, and Dr. Lou Talbutt.

I would also like to thank the staff of Virginia VIEW for their support and help in obtaining information. I would especially thank \_\_\_\_\_, Project Manager, for her continued encouragement and nudges to "get that dissertation done!" Also, without the help of \_\_\_\_\_, who sacrificed lunch hours and evenings typing, this project would not have been completed.

Grateful acknowledgement is also indicated to Appalachia Educational Laboratories for their financial support through a graduate externship.

Lastly, I would like to thank the many overworked counselors, teachers, and administrators around the state who helped collect the data for this study during a very busy time of the school year.

"He who's not busy being born is busy dying."

- Bob Dylan -

I would like to dedicate this dissertation to my parents,  
and the late \_\_\_\_\_, who taught me  
that the world was full of exciting opportunities for those who dare to  
live life to its fullest.

## TABLE OF CONTENTS

	Page
ABSTRACT . . . . .	ii
ACKNOWLEDGEMENTS . . . . .	iv
DEDICATION . . . . .	v
LIST OF TABLES . . . . .	xi
LIST OF FIGURES . . . . .	xii

### Chapter

I. INTRODUCTION . . . . .	1
STATEMENT OF THE PROBLEM . . . . .	4
PURPOSE OF THE STUDY . . . . .	5
SIGNIFICANCE OF THE STUDY . . . . .	5
DEFINITIONS . . . . .	7
ASSUMPTIONS . . . . .	8
LIMITATIONS . . . . .	9
ORGANIZATION OF THE STUDY . . . . .	9
II. REVIEW OF RELATED LITERATURE . . . . .	10
OVERVIEW . . . . .	10
TRAIT-FACTOR CAREER DEVELOPMENT THEORY . . . . .	10

TABLE OF CONTENTS (CONTINUED)

Chapter	Page
	COMPUTER- ASSISTED GUIDANCE AND
	INFORMATION SYSTEMS . . . . . 14
	THE VIRGINIA VIEW CAREER SEARCH . . . . . 20
	INTERESTS INVENTORIES . . . . . 26
	OHIO VOCATIONAL INTEREST SURVEY . . . . . 28
	SUMMARY . . . . . 33
III.	METHODOLOGY . . . . . 35
	OVERVIEW . . . . . 35
	RESEARCH OBJECTIVES . . . . . 35
	RESEARCH METHOD . . . . . 36
	DESCRIPTION OF POPULATION . . . . . 36
	INSTRUMENTATION . . . . . 37
	DATA COLLECTION . . . . . 38
	ANALYSIS PROCEDURES . . . . . 41
IV.	RESULTS OF THE STUDY . . . . . 42
	OVERVIEW . . . . . 42
	INTRODUCTION . . . . . 42
	DESCRIPTION OF SUBJECTS . . . . . 43
	ANALYSIS OF FEEDBACK SHEET RESPONSES . . . . . 48
	Research Question 1 . . . . . 48

TABLE OF CONTENTS (CONTINUED)

Chapter	Page
Research Question 2 . . . . .	53
COMPARISON OF CAREER SEARCH AND OVIS II	
FEEDBACK SHEET RESPONSES AND RESULTS . . . . .	55
Research Question 3 . . . . .	55
Research Question 4 . . . . .	56
SUMMARY OF RESULTS . . . . .	61
V. SUMMARY AND CONCLUSIONS . . . . .	63
OVERVIEW . . . . .	63
PURPOSE OF THE STUDY . . . . .	63
SUMMARY OF RELATED LITERATURE . . . . .	64
METHODOLOGY AND PROCEDURES . . . . .	65
SUMMARY OF FINDINGS . . . . .	67
RECOMMENDATIONS FOR FURTHER STUDY . . . . .	68
VIRGINIA VIEW PROJECT RECOMMENDATIONS . . . . .	70
RECOMMENDATIONS FOR GUIDANCE PROGRAMS . . . . .	71
SUMMARY . . . . .	73
REFERENCES . . . . .	75



TABLE OF CONTENTS (CONTINUED)

	Page
APPENDICES	
APPENDIX A. Commercial Computer-Assisted Information Systems . . . . .	80
APPENDIX B. Career Information Delivery Systems with Full Microcomputer Delivery . . .	83
APPENDIX C. Table 1. OVIS II Occupational Clusters . . . . .	86
Table 2. Means of Four OVIS II Scales by Grade and Sex for the Total Normative Group . . . . .	88
Table 3. Summary of the Internal Consistency Reliability Coefficients of the 23 OVIS II Scales Compared with Those of the 24 OVIS I Scales . . . . .	89
Table 4. Summary of Test-Retest Reliability Coefficients of the 23 OVIS II Scales and the 24 OVIS I Scales for the Grade 8 and Grade 10 Reliability Samples . . .	90
APPENDIX D. Virginia School Systems Using OVIS II . . . . .	91

TABLE OF CONTENTS (CONTINUED)

	Page
APPENDIX E. Student Questionnaires . . . . .	93
APPENDIX F. Administration Instructions . . . . .	.100
APPENDIX G. Letter #1 . . . . .	.102
APPENDIX H. Letter #2 and Postcard . . . . .	.104
APPENDIX I. 1984 VIEW/OVIS II Index . . . . .	.107
VITA . . . . .	.116

LIST OF TABLES

Table	Page
1 Demographic Profile of Virginia VIEW Questionnaire Respondents . . . . .	44
2 Demographic Profile of OVIS II Questionnaire Respondents . . . . .	45
3 How Students Learned About Career Information Resources in Their School . . . . .	47
4 Extent of Usage of Career Information Sources Reported After Taking Virginia VIEW . . . . .	49
5 Usage of Virginia VIEW Microfiche . . . . .	51
6 User Satisfaction with the Career Search . . . . .	54
7 Comparison of Career Search and OVIS II Results: Number of Respondents Per Scale . . . . .	58

LIST OF FIGURES

Figure	Page
1 Developmental Flow Chart of Virginia VIEW Career Search and the OVIS II . . . . .	25
2 Sample of an OVIS II Student Report . . . . .	57
3 Sample of a Virginia VIEW Career Search Worksheet . . . . .	60

CHAPTER 1  
INTRODUCTION

Individual appraisal has historically been a controversial topic. Although assessment has been a fundamental tool of guidance and counseling in the past, it has often been erroneously treated as an annual routine or a preliminary to counseling process without having been integrated into the counseling process. This treatment has led to many counselors and counselees having a negative view of assessment.

Herr (1983) states that a corollary to the common use of assessment devices has been the expansion in the number and complexity of the types of tests available. Super and Crites observed a proliferation of assessment instruments in 1962, and noted some of the problems inherent in this increase in instruments.

The number of tests on the market and the number of publishers distributing them and the volumes of publication concerning tests in the psychological, educational and management journals have multiplied, making more information available but increasing the difficulty of finding the particular information needed to keep posted on existing tests and to learn about new instruments (Super & Crites, 1962, p. ix).

Some interest inventory authors have launched their instruments without validation data and have not followed up sufficiently to make them useful . . . any user of such a relatively untried inventory in counseling or selection operates on

faith alone -- and faith is a poor substitute for facts in psychology (Super & Crites, 1962, p. 417).

Although Herr (1983) and Super and Crites (1962) are addressing tests, the same growth trends are seen in all types of assessment instruments. The number of assessment instruments continues to grow, as do the problems in obtaining information on these instruments. Haring-Hidore (1984) stated that computer-assisted guidance systems have gained considerable acceptance and popularity over the last decade. Due to the increase in the popularity of computer assisted guidance and information systems, a whole new group of appraisal instruments has appeared.

Most computer-assisted information systems have accessing strategies which are methods of approaching the information files. Most of these information systems use structured searches designed primarily as career information retrieval resources. Most of the systems are statewide resources which can be adapted to local needs and conditions (Cairo, 1983, p. 57). Although McKinlay (1984) stated that structured search routines are not assessment devices, they have similar purposes and uses as some assessment tools and can be seen as modified assessment instruments. For example, they have similar purpose statements when compared to interest inventories, as they are designed to assist users with career exploration and educational and vocational planning. The interactive nature of these strategies allows the user to explore and compare job titles stimulating them to think about their motives for choosing occupations. Johnson (1985) stated that this interactive

process also helps users learn career decision making. By increasing their self-awareness and occupational awareness, the user has a broader understanding of the world of work.

Generally, these instruments have lacked empirical data. There have been few attempts to determine when and how these instruments should be used. This proliferation of new instruments and lack of data on them has added to the increased confusion among counselors concerning assessment instruments. Haring-Hidore (1984) reported 1983 findings that there are over thirty projects which have attempted to use computer technology in career guidance. Add to this figure the seventeen systems Shatkin (1980) identified as computer-assisted information systems, and deciding which system to purchase can become be a monumental task for a counselor. Seligman (1980) stresses the importance of the counselor's awareness of what assessment instruments can and cannot do.

In order to select and use instruments appropriately, counselors must have information on available instruments. Information on target populations, suggested usage, time limitations, costs, norm groups, scoring, and outcomes is necessary in order to choose instruments wisely.

This study focuses on the Virginia VIEW (Vital Information for Education and Work) Career Search. The Virginia VIEW Career Search is an information accessing strategy which allows one to develop a profile based on general interests in seven categories selected from Dictionary of Occupational Titles characteristics. The Career Search can be hand scored using the Virginia VIEW Scan Sheet or it can be scored using

microcomputer software. The profile is then used to select a list of occupational titles from Virginia VIEW for career exploration. Although the Career Search has often been described as an interest inventory by numerous counselors using the materials in various settings, no comparison with professionally recognized interest inventories has been done and no claim that it is an interest inventory has been made by Virginia VIEW staff. The Career Search is one of many available exploratory instruments. See Appendix A for a list of commercial computer-assisted information systems and Appendix B for a list of state systems utilizing microcomputer accessing strategies.

#### Statement of the Problem

The Career Search developed by the Michigan Occupational Information System (MOIS) and adapted by Virginia VIEW is used extensively by counselors in educational and agency settings in both Michigan and Virginia. Although many counselors currently think of the Career Search as an interest inventory, both MOIS and Virginia VIEW representatives call the instrument an accessing strategy only. Studies of the Career Search are greatly needed and would be welcomed by professionals in the field currently using the Career Search.



### Purpose of the Study

The purpose of the study is to clarify the appropriate usage of the Career Search. The study will establish information concerning the appropriate usage and outcomes of the Career Search by assessing user satisfaction with the Career Search and determining whether the search leads users to access occupational and educational information from the microfiche. Finally, the results of the Career Search will be compared to those of the OVIS II.

The following research questions will be examined in this study:

- 1.) Does the Career Search lead users to access occupational/educational information?
- 2.) Do users rate the Career Search satisfactorily?
- 3.) Do the ratings of user satisfaction for the Career Search compare to OVIS user ratings?
- 4.) Do the results of the Career Search compare to the results of the Ohio Vocational Interest Inventory OVIS II?

### Significance of the Study

The need for this study arises from the fact that there has been little empirical research done regarding the Career Search. The Career Search is being widely distributed and used. For example, by April 1985, MOIS was already in over 2,300 user sites throughout Michigan. By the end of December 1984, Virginia VIEW was found in over 1,100 sites.

Jack Lawrence (personal communication, June 29, 1984) of the MOIS staff indicated that no comparative studies have been done on the Career Search, nor are they planned. Although Michigan would like for someone to do these studies, their primary goal has been the dissemination of occupational and educational information.

It is the counselor's duty to stay current concerning the availability of assessment instruments and their appropriate usage. The counselors' professional association, American Association for Counseling and Development (AACD, formerly the American Personnel and Guidance Association) maintains that it is up to the counselor to make effective use of tests. Furthermore, guidelines have been established for the selection and usage of tests in Section C of the Ethical Standards of AACD (1981). The following ethical statements concerning use of tests would also apply to other types of assessment instruments.

2. In selecting tests for use in a given situation or with a particular client, the member must consider carefully the specific validity, reliability, and appropriateness of the test(s). General validity, reliability and the like may be questioned legally as well as ethically when tests are used for vocational and educational selection, placement, or counseling.

---

9. The member must be cautious when interpreting the results of research instruments possessing insufficient technical data. The specific purpose for the use of such instruments must be stated explicitly to examinees.

In summation, the effective career counselor is one who knows when and how to use appraisal techniques; when and how to rely primarily on counseling; and when and how to help the counselee engage in activities which will help him to obtain the insights and information needed. As professionals, it is imperative to collect more data on the Career Search so that its specific purpose(s) and use(s) may be better understood by the counselors.

### Definition of Terms

The following are definitions of significant terms used in this study:

Accessing Strategy -- is a method for approaching the information files in an information system. They reduce the full spectrum of occupational titles to a manageable number. In a career information system, computers are often used as they are capable of sorting large amounts of information very quickly. The access strategy usually uses information about the client to sort through the occupations or educational programs and select the ones which match the client's characteristics (NOICC, 1981 and Maze and Cummings, 1982).

Career -- is a sequence of positions occupied over a lifetime; career embraces and interfaces with all other life roles as a total expression of one's pattern of self development (Lancaster & Berne, 1981, p. 2).

Career Counseling -- is the process of working with individuals in examining personal factors affecting their career, focusing on necessary informational factors, and exploring environmental possibilities (Smith and Karpati, 1985).

Career Guidance -- encompasses all the services that aim at helping pupils make occupational and educational plans and decisions, and includes counseling as a specialized service (McDaniels, 1979).

Career Information -- can be broken into three overlapping categories: occupational, educational and personal-social. Information is usually in printed form, but may be in audio, video, computer printouts, or first-hand (Tolbert, 1981).

Interests -- are constellations of likes and dislikes, as 'positive or negative reactions to stimuli' (Super & Crites, 1962). They are manifested through the activities people pursue, the objects they value and their patterns of behavior (Seligman, 1980, p. 97).

Occupation -- is a definable work activity that occurs in many different settings (Virginia Tech, 1982).

### Assumptions

1.) This study assumes that the counselors/teachers administering the assessment instruments will follow all instructions so that the assessing is done in a uniform manner.

2.) This study assumes that the subjects can read and comprehend the Career Search, which is reported to be developed on a seventh grade reading level.

3.) This study assumes that the self-reported measurement of satisfaction with the system was accurate.

4.) This study assumes that subjects conscientiously completed the instruments.

5.) This study assumes that users of the Career Search have the ability to meaningfully select appropriate alternatives.

### Limitations

1.) The population of this study is composed of those school divisions who use both the OVIS II and the Virginia VIEW Career Search in their counseling programs.

2.) The schools which participated were self-selected and volunteered to take part in the study.

3.) The results of this study are limited to Virginia.

### Organization of the Study

Chapter Two presents a review of the literature pertinent to the study. Chapter Three contains the methodology, including a description of the subjects, the setting, data collection and procedure and analysis. The results of the study based on the analysis of the data are reported in Chapter Four, and conclusions and recommendations for future research are discussed in Chapter Five.

## CHAPTER II

### REVIEW OF RELATED LITERATURE

#### Overview

This literature review will address five main rubrics: the first deals with Trait-Factor Career Development Theory, as it is the foundation of the assessment and information movements; the second discusses computer-assisted information systems; the third covers the Virginia VIEW career information delivery system; the fourth deals with the theoretical concept of interests and the use of interest inventories in counseling; and the fifth deals with the OVIS II. The Career Search is the key instrument in this study. The OVIS II is used only as a basis for comparison due to their similar theoretical and developmental bases.

#### Trait-Factor Career Development Theory

Computer-assisted information accessing strategies have their theoretical foundation in trait-factor theory. As early as 1909, occupational information has been essential to the guidance/career counseling process. Frank Parsons, the "Father of Vocational Guidance", formulated a program of guidance activities which heavily incorporated occupational information in his book, Choosing a Vocation (1909), which was published posthumously. In this book, he outlined three broad factors as being essential in the choice of a vocation. These were:

1. A clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations, and their causes;
2. A knowledge of the requirements and conditions of success, advantages and disadvantages, compensation, opportunities, and prospects in different lines of work; and
3. True reasoning on the relations of these two groups of facts (Parsons, 1909, p. 5).

This was not only the groundwork for a guidance program, but was also the foundation for trait-factor theory. The essential element of this theory is the assumption that individuals have unique patterns of ability or traits that can be objectively measured and correlated with the requirements of various types of jobs. These closely related to what Super described as three basic processes in education and vocational guidance: "1.) supplying the individual with information concerning educational and occupational opportunities and requirements; 2.) helping him to know and to understand his own abilities and interests; and 3.) helping him to see the implications of these situational and personal data for his career" (Super, 1970, p. 11).

The study of job descriptions, job requirements, and job-related traits in order to predict future success led to the 1917 development of the Army Alpha and Beta tests, which were used to screen draftees, and were the forerunners of the General Aptitude Test Battery (GATB) developed by the United States Employment Services in 1947. Osipow (1983) states that the vocational testing movement has grown from this theoretical approach. The first interest questionnaire developed in

1918 by James B. Minor at the Carnegie Institute of Technology was also seen as a product of this movement. Other instruments based on this stream of thought are: The Strong-Campbell Interest Blank (1927); instruments developed by the Minnesota Employment Stability Research Institute (1937); and the Kuder Preference Record developed in the 1930's (Williamson, 1969). In trait-factor counseling, "... the counselor relies upon his or her expertise to make authoritative interpretations of the test results and to draw conclusions and recommendations from them for the client's deliberation" (Crites, 1981, p. 43).

Parson's collection of occupational information led to the more formal collections made by the Department of Labor (DOL). McDaniels (1982) states that for fifty years (1900-1950), reading was the traditional approach to the acquisition of occupational-educational information. One of the first systematic approaches to presenting occupational information was the first edition of the Dictionary of Occupational Titles (DOT), which was published by the Department of Labor in 1939. The DOT has gone through subsequent editions and format changes. Another publication by the Department of Labor to influence subsequent works is the Occupational Outlook Handbook (OOH). McDaniels (1982) also notes that the period between 1950 and 1980 saw a dramatic increase in both quality and quantity of testing, and occupational and educational information materials. An expansion in technology came with this expansion in materials.



This theoretical framework is the foundation for many of the newer career counseling theories. Williamson (1965) points out that various people have followed Parson's line of reasoning, expounding upon his ideas and applying new techniques not available in Parson's life time. When practiced by competent, enlightened professionals, the trait-factor approach is as viable today as it was in the past (Williamson, 1972). One such person who has expounded upon Parson's work is Donald Super.

Donald Super's interest in differential psychology and trait-factor theory is reflected in his multiple approach to career development. He views learning about the world of work as an ongoing process, with trait-factor theory as a medium through which testing instruments and subsequent assessment norms are developed. Osipow (1983) clarifies Super's involvement in trait-factor theory by stating that Super subscribes to the trait-factor approach to vocational choice. "The difference is that Super adds several new ideas to the old ones" (Osipow, 1983, p. 181).

Crites (1981) states that the most widely cited statement on the use of occupational information in trait-factor career counseling is Brayfield's (1950) differentiation of three functions of career information material.

1. Informational The counselor provides a client with information about occupations in order to confirm a choice that has already been made; to resolve indecision between two equally attractive and appropriate options; or, to simply increase the client's knowledge about a choice that is otherwise realistic.

2. Readjustive The counselor introduces occupational information, so that the client has a basis for reality testing an inappropriate choice. ...

3. Motivational The counselor uses occupational information to involve the client actively in the decision-making process; to hold or maintain contact with dependent clients until they assume greater responsibility for their choice; and to maintain motivation for choice when a client's current activities seem irrelevant to long-term career goals (Crites, 1981, p. 44).

#### Computer-Assisted Guidance and Information Systems

The combination of the rapid growth in the quantity of occupational and educational information over the past twenty-five years, the growing responsibilities of counselors, and the rapid technological advances created computer-assisted guidance and information systems in the 1960's. As Myers (1983) has stated, "the initial steps toward development of computer-assisted systems were not motivated by concerns for improving the quality and quantity of career development services. Instead, an interest in applying systems theory to educational settings produced the first notions of how a computer might do some of what counselors were doing" (p. 23). Cogswell, one of the principal proponents of this movement, was interested in exploring the feasibility of transporting systems thinking to the public school in order to improve efficiency and to increase the interaction between counseling

and teaching functions. The work of Cogswell and his colleagues in 1961 provided the stimulus for others to pursue the goal of using a computer-based counseling simulation. By 1966, people were actively engaged in computer-assisted guidance systems development (Myers, 1983).

Based on the findings of researchers of many different computer-based systems over the past fifteen years, Harris-Bowlsbey (1984) compiled a list of seven benefits the students accrue from using computer-based systems.

1. Students will be highly motivated to engage in career planning and guidance because of the high motivational appeal of the computer and its associated technologies. Several studies have indicated that students prefer to acquire information from the computer over books, files, microfiche, and even people resources.

2. Using the computer-based system for some sustained period of time will effect a statistically significant increase in certain factors of vocational maturity, such as awareness of need to plan and knowledge and use of appropriate informational resources.

3. Use of a computer-based system will stimulate students to pursue a variety of exploratory activities after leaving the computer terminals. These activities will include using the career library, writing away for more information, talking to counselors, and talking with parents and other significant adults.

4. Use of a computer-based system will cause more traffic to the counselor's office, not less. Students will come to counselors, however, with a much higher level of specificity of questions and will seek assistance well beyond information.

5. Use of the computer, especially a guidance system, will cause the student to say that he or she knows much more about self in the areas the system deals with - that is, values, interests, and/or abilities.

6. Use of the computer-based system will cause students to have a better cognitive understanding of the way the world of work is organized and of occupational duties, training requirements, employment outlook, and so on for the occupations researched at the computer terminal.

7. Use of the computer-based system will cause students to experience a greater degree of specificity of career plans. In other words, students will move in a positive direction on the continuum from "no idea which occupation to consider" to "a very specific occupational choice" (Harris-Bowlsbey, 1984, pp. 373-374). In addition, she states that counselors will benefit in the following ways from using computer-based systems:

1. Students who use the computer-based system will come to counseling interviews or group sessions much better prepared to deal with the questions at hand. Having already passed the stages of information collection and file searching, they will be ready to ask the counselor for assistance in narrowing choices, making educational plans related to them, or seeking additional input from the counselor. These facts indicate that counselors can have a more productive use of one-to-one or small-group time with students and that the duties performed during that time will be more professional.

2. The computer will provide a wealth of easily accessible and timely information, which the counselor can tap as needed for work with students on a one-to-one or group basis.

3. The counselor's time and effectiveness can be doubled or tripled because part of the work load is being carried by the computer. This means that some students who otherwise would not have received any help at all with career planning will receive at least that which is available by computer. Other students whom the counselor has time to see one-to-one, in small groups, or in career planning classes will make greater progress by far because of the combined treatment than the counselor could have expected to facilitate alone.

4. Career guidance and counseling will take on the level of importance in the student's mind that it richly deserves, because of the student's positive response to the upbeat use of technology. Use of computer-based systems will create an attitudinal awareness of the need to plan on which the counselor can capitalize (Harris-Bowlsbey, 1984, pp. 374-375).

Harris-Bowlsbey (1984) states that the computer-based systems developed over the last fifteen years have a significant variance in purpose, comprehensiveness, life span, and sophistication. She goes on to list and describe five capabilities of the computer that are important to the guidance process.

#### Capability 1: Interactive and Dialogue

The computer and its peripherals are capable of carrying on a structured interview, which is a basic tool of counseling.

#### Capability 2: Storage of Data Files

Sufficient and accurate information is important in assisting in the decision-making process, which is at the core of guidance. The computer can provide massive storage and timely updates.

#### Capability 3: Searching of Data Files

The computer's dynamic capability of allowing the user to generate and explore a variety of options in a low-risk way is a unique tool in counseling.

#### Capability 4: Assessment and Interpretation

The computer can perform another counseling function by administering and interpreting assessment instruments for the user.

#### Capability 5: Individualization of Treatment

The computer can also provide a prescriptive analysis of the user's needs by combining the interactive dialogue and assessment of instruments.

It is important to make a distinction between guidance and information systems. Harris-Bowlsbey (1984) states that because the difference between these two systems is less sharp than it once was, they should be viewed in terms of their position on a continuum between guidance emphasis and information emphasis. A guidance system being defined as one that places emphasis on the assessment of self-variables and the teaching of the decision-making process, while still performing the storage and searching capabilities. Common characteristics of the guidance systems include: assessment instruments designed to increase

user awareness of the relationship between relevant self-variables and occupational choices; focus on teaching the decision-making process; and file searches focusing on the individual. An example of a guidance system with a variety of components is DISCOVER.

In contrast, the information system places primary emphasis on the searching of files, usually by variables that are external to the user and inherent in the work tasks. The common characteristics of information systems are the emphasis placed on file searches and information; the interest in developing accurate, timely, and often localized information; and the absence of didactic material. It has not been necessary for the information systems to subscribe to one elaborate theoretical model, as information is a basic necessity in all guidance and decision-making models.

This study will deal with information systems, as Virginia VIEW is in this category. In a 1980 study of computer-assisted guidance systems, Shatkin identified seventeen systems that can be classified as information systems. Many of these were developed specifically for the state in which they are used, and only four or five are widely disseminated. A 1983 study by Chapman and Katz reported that some kind of computerized occupational information system was found in 24 percent of a 10 percent sample of secondary schools in the United States. However, Virginia VIEW is currently found in 99 percent of the secondary schools and 95 percent of the middle schools and junior high schools in Virginia. As is the case with many other information systems, it is not confined to schools, but is also in postsecondary institutions, adult

education facilities, and offices such as the Employment Services, Vocational Rehabilitation, Social Services, Corrections, and Mental Health (Virginia VIEW, Fall Workshops Report, 1984).

Virginia VIEW utilizes a microcomputer accessing strategy rather than a mainframe computer system. A number of variables were considered in making this decision. These variables included: hardware requirements; communication costs; software costs; and technical assistance (McDaniels, Snipes, & Peevy, 1980). The microcomputer was chosen because of its low cost and accessibility (no down time).

#### The Virginia VIEW Career Search

As the children of the baby boom grew up and became labor market statistics, professionals involved in education, and career planning and placement noted the need for improved coordination and communication among educators, employment and training administrators, planners, researchers and others involved in the problems associated with unemployed youth and adults. Congress responded to this problem by mandating the establishment of the National and State Occupational Information Coordinating Committees (NOICC, SOICC) (Windom, 1982). These committees were established through the Education Amendments of 1976 (PL 94-482).

The Education Amendments of 1976 mandated NOICC to accomplish the following:



1. To improve coordination and cooperation between producers and users of occupational information at the federal, state, and local levels;

2. To develop and implement an occupational information system (OIS) to meet the common occupational information needs of vocational education and employment and training programs at the national, state, and local levels. The OIS should include data on occupational demand and supply based on standardized definitions, establishing procedures, and occupational classifications;

3. To assist State Occupational Information Coordinating Committees established in each state in implementing state occupational information systems to meet the common needs for planning and operation of vocational education, and employment and training programs (Windom, 1982, pp. 42-43).

Subsequent related legislative acts which expanded the initial mandates were:

- 1977 Youth Employment and Demonstration Projects Act (YEDPA)  
(PL 95-93). Gave NOICC the additional responsibilities of attending to labor market needs of youth.
- 1977 Career Education Incentive Act (PL 95-207). Charged NOICC to work with the Commissioner of Education and others in order to determine occupational information needs and to furnish information on federal programs which produce and disseminate occupational and career information.

1978 Comprehensive Employment Training Act (CETA) Amendments (PL 95-524). Which superceded YEDPA legislation and extended the roles of both the NOICC and SOICC in providing services for youth.

These acts charged NOICC with the additional responsibilities of utilizing labor market information and counseling programs to link local employers and employment service programs. NOICC is to also examine occupational information needs of individuals and organizations, and to furnish information on related federal programs (Windom, 1982).

Clyde (1979) stated that "emphasis was also placed on cooperative efforts between state manpower, educational, and other agencies for the provision of local occupational information for career decision-makers" (p. 4).

Virginia Tech was selected to study for VOICC the feasibility of a statewide career information delivery system (CIDS) for the Commonwealth of Virginia (McDaniels, Snipes, & Peevy, 1980). The feasibility study recommended a plan for the statewide CIDS which was adopted and implemented. Thus, the birth of Virginia VIEW. To date, VOICC has awarded a continuing contract to Virginia Tech to develop and disseminate the Career Information Delivery System - Virginia VIEW. "The system was characterized as follows: it would be provided to users at no cost; it would provide state and substate data on outlook, earnings and educational information; it would be updated annually; it would be a multimedia system providing information cost effectively

through a career information hotline (toll-free), printed materials, microfiche, and micro-computers (rather than a mainframe computer)" (Virginia VIEW, 1983, p. 1).

The Michigan Career Information Delivery System (MOIS) serves as the information base for the Virginia VIEW system. Michigan was one of the original eight states to receive a grant to set up a career information system from the Employment and Training Administration, U.S. Department of Labor program in 1975. They were the only one of the eight to design their own system and develop computer software. "Four of the states selected Oregon's delivery system: Colorado, Massachusetts, Minnesota, and Washington. Three states, Wisconsin, Ohio, and Alabama, chose to adapt the Guidance Information System (GIS) to meet their needs" (Clyde, 1979, p. 4). The basic data base of the Virginia VIEW system is the microfiche deck, which contains over six thousand pages of occupational and educational information. The Career Search is an interactive device designed to assist the individual in accessing occupational information from the microfiche.

The Virginia VIEW Career Search was adapted from Michigan's MOIS Direct Search, which was developed as an accessing strategy to the MOIS occupational information. The Career Search, a modified assessment instrument, allows the individual to develop a profile of their interests and career goals in order to be provided a list of occupational titles from the VIEW list for career exploration. The Career Search seven categories (interests, areas of work, physical strengths, physical capabilities, working conditions, education, and

temperaments) were originally selected by MOIS as variables for the Career Search from the Dictionary of Occupational Titles (DOT) characteristics on computer printouts. Supplements of the DOT had published characteristics of individual occupations from the occupational analysis program which was the result of Sidney Fine's work in occupational classification and worker trait group classification. The 1966 edition of Selected Characteristics of Occupations was also used in the development of the Career Search. The Data-People-Things (D-P-T) structures assigned to the occupational titles were a result of the D-P-T ratings developed for the OVIS. As the Department of Labor's classification structures have been refined, the MOIS Structured Search has been revised, which in turn resulted in revisions of the Career Search (Harvey Ollis, personal communication, February 11, 1985). See Figure 1, which shows the developmental flow involved in the creation and subsequent revisions of the Career Search.

The Career Search's purpose is similar to that of other assessment instruments such as interest inventories and occupational card sorts. The Career Search is designed to assist individuals in career exploration and educational and vocational planning. The interactive nature of the Career Search allows the user to explore and compare job titles, think about their motive for pursuing a specific career, and see how certain occupations may fit personal preferences.

CAREER SEARCH AND OVIS II DEVELOPMENT

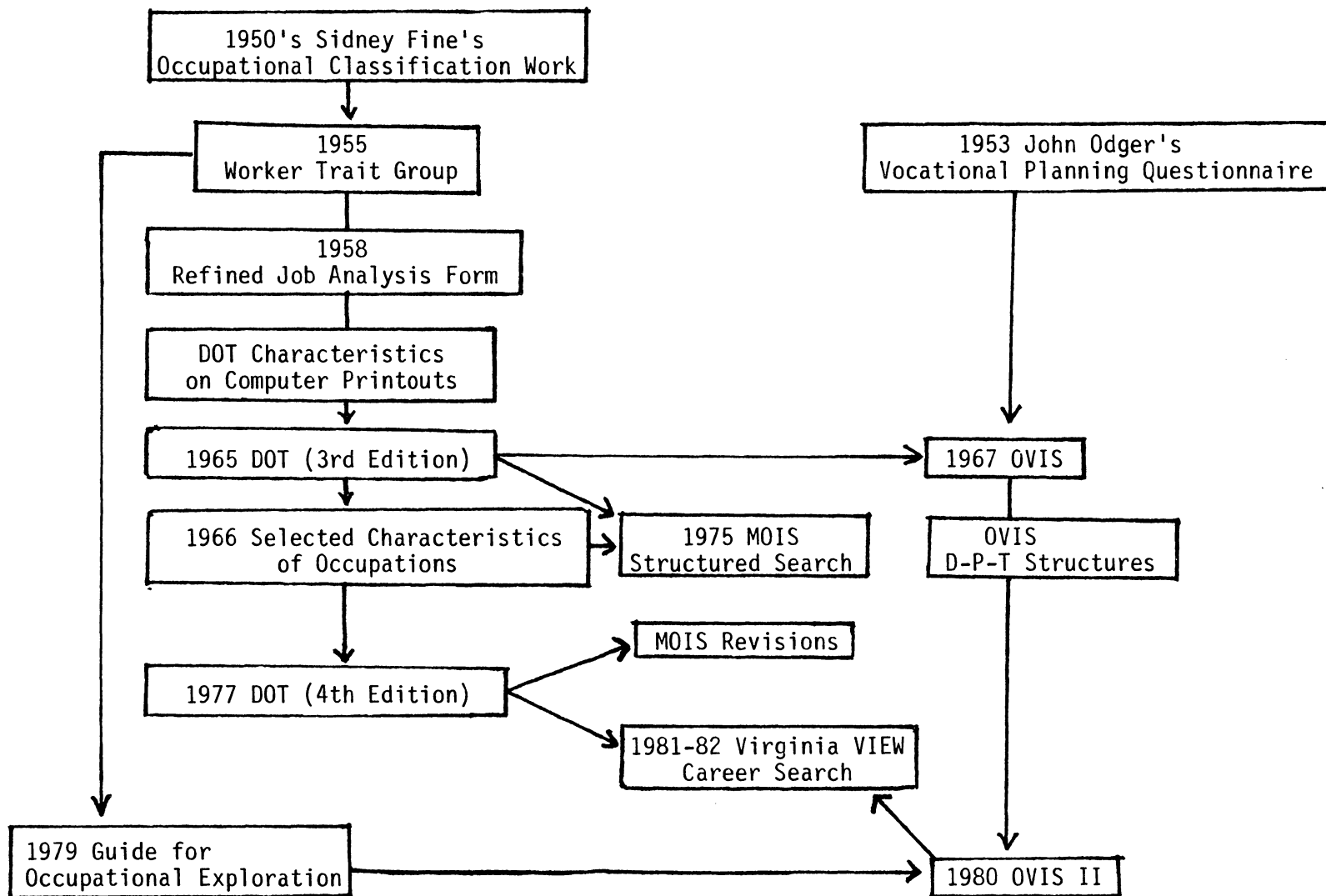


Figure 1

### Interest Inventories

Interests play a large role in an individual's life. They affect educational and vocational decisions, vocational adjustments, interpersonal relations, as well as other major facets of life (Anastasi, 1976). Seligman (1980) cites Scharf (1970) and Thomas, Marrill and Miller (1970), who found interest to be a major determinant of both college major and occupational choice. Holland's work was characterized by the notion that people project their views of themselves and the world of work on to occupational titles (Osipow, 1983). Isaacson (1978) notes that professional literature places considerable emphasis on the area of interests, particularly interest inventories.

In an attempt to clarify the thinking concerning interests, researchers today still use Super's (1957) classification of interests. They are classified in four main categories as follows:

expressed interests - the verbal expressions or claims of specific interest. For example, the individual states that they like ice cream.

manifest interests - the observed behavior expressed through actions and participation. For example, although an adolescent may report that s/he prefers new wave music, s/he instead spends most of his/her time listening to classical music.

tested interests - refers to interests which are manifested under controlled situations, such as interests measured by objective tests as opposed to self-reports. An example of tests of interests is Greene's

Michigan Vocabulary Profile Test (1940), which measures interest through specialization of vocabulary.

inventoried interest - the assessment of interest through self-reported likes and dislikes, such as interest in groups of activities or groups of people in occupational fields. The Strong-Campbell Interest Inventory is an example of a well-known interest inventory.

Super and Crites (1962) suggest that the most productive work in the measurement of interests has been done with the inventory technique. Isaacson (1978) notes that most of the recent literature on interests has dealt with interest inventories. Although Dolliner & Nelson (1975) found expressed interests more frequently accurate, Clemons (1980) emphasizes that interest inventories should be used with secondary students to increase their awareness of interest areas that the students overlook or do not clearly identify on simple personal reflection. Interest inventories provide a way of organizing occupations into groupings so that they can be considered systematically. Many students have some difficulty identifying and prioritizing their interests relative to career planning. Furthermore, some students will not have matured sufficiently to produce a reliable or functional interest profile.

Campbell and Hansen (1981) list the following uses of interest inventories: an aid in making educational and occupational choices; a vehicle in discussions between student and counselor; a catalyst in discussions between student and parent; a selection device for those who must make employment decisions; and a tool in helping people understand their job dissatisfaction.

The OVIS II, an interest inventory, will be used as a basis of comparison in this study. The following section will discuss the OVIS II.

### The Ohio Vocational Interest Survey

The Ohio Vocational Interest Survey (OVIS) II was developed as an instrument to assist students in gaining an understanding of their interests and how these interests relate to the world of work. The OVIS II is not a predictive instrument. OVIS is an outgrowth of the Vocational Planning Questionnaire developed in 1953 by John G. Odgers, the Supervisor of the Guidance Services Section of the Ohio Department of Education. Primarily, the Planning Questionnaire was used by school administrators to determine the need for curriculum expansion in the area of vocational education. In 1966, the questionnaire was revised in order to broaden its usefulness for guidance purposes by incorporating a cubistic theory of vocational interests (Winefordner, 1983). The label cubistic does not imply an exact cube, but is used to loosely convey the three-dimensional idea of data, people and things. Although these are the basic elements, the term cubistic is not intended to mean that data, people, and things are the only three elements at work. It is possible that there are other specific elements involved. "The basic elements together with the specific ones, would then allow a mathematical representation of the world of work" (D'Costa & Winefordner, 1969, p. 244).



From these early efforts, five experimental editions of the OVIS emerged which were administered to over 12,000 secondary students in 35 school systems in Ohio and Florida. At each developmental stage, the reliability, validity, and scale homogeneity of the instrument were carefully studied and appropriate changes and refinements were made. During February 1969, OVIS was administered to approximately 47,000 students in school systems carefully selected for the national standardization program (D'Costa, et al., 1972).

Two surveys were conducted by the authors and publisher of OVIS in 1975 and 1976. The Ohio State Office of Education personnel and OVIS users were surveyed in order to obtain information that would aid in the revision of the instrument. The focus of the State Office of Education survey was possible changes in the Student Information Questionnaire and the user questionnaire covered the spectrum of OVIS materials and services. With the publication of a new Dictionary of Occupational Titles (DOT) and the Guide for Occupational Exploration (GOE), the entire OVIS structure had to be reexamined. The result was a research edition of the OVIS with 368 items, 16 for each scale. About one-fourth of these items came from the original scale.

The research edition of OVIS II was administered to approximately 16,000 students in grades 7 through 12 from 25 school systems during the spring of 1980. Then the same edition was given to an additional 2,800 freshmen and sophomore college students at 17 colleges the following fall (Winefordner, 1983).

The OVIS was designed as a tool to help students gain an understanding of their interests and how their interests relate to the world of work. It is designed to help students: gain a greater understanding of themselves; develop an awareness of careers; explore educational and occupational alternatives; and plan and make decisions about their future careers. In the OVIS II, the information about students and information about occupations are based on a common set of dimensions.

A major premise of both the OVIS II and the DOT is that every occupation requires some degree of interaction with data, people (or animals), and things. D'Costa and Winefordner (1969) stated that the various levels of involvement can serve as the basis for grouping occupations into clusters that lend themselves to career orientation and exploration.

When data, people, and things are considered to be the basic dimensions of work, and occupations are grouped according to their similarities on those dimensions, the resulting occupational clusters tend to be homogenous, not only with respect to data-people-things levels, but also with respect to other work characteristics, such as aptitudes, training time, work settings, and physical demands. The 23 OVIS II clusters resulted from grouping occupations in such a way (Winefordner, 1983, p. 2).

The twenty-three OVIS II occupational clusters (see Appendix C, Table 1) represent the world of work, while the twenty-three OVIS II

corresponding interest scales represent the clusters. Each interest scale consists of 11 items chosen to measure interest in the corresponding cluster. An OVIS II Interest Score represents the strength of a student's liking for the job activities that make up a scale.

National norms were based on standardized samples and are reported separately for each grade and sex (see Appendix C, Table 2). Local percentile ranks and stanine norms are available upon request.

The content validity of the OVIS II is a matter of how well it represents the world of work. The sample of occupations on which the work activity items are based appear to be highly representative of sample occupations as the pool of occupations used to develop OVIS II was refined to eliminate occupations with data-people-things levels inconsistent with the levels of their assigned clusters. Items were then further reduced and analyzed before completion of the development of the instrument.

The work activity statements were taken directly from occupational descriptions in the DOT. It should be noted, however, that while a given activity represents a particular occupation for classification purposes, the activity is typically representative of job tasks in other closely related occupations (Winefordner, 1983, p. 78).

Isaacson (1978) states that one of the major advantages of the OVIS is that it is built on the data-people-things relationship that is included in the DOT and in the Cubistic Classification System.

The construct validity of the OVIS II has to do with how it defines the construct of vocational interests. Because the OVIS II defines the domain of vocational interests as a set of 23 occupational clusters, represented by 23 scales, with 253 items used to assess interest in those scales, its construct validity rests on the ability of the items to provide a valid measure of the scales and on the ability of the scales to provide an accurate measure of the overall construct. Winefordner (1983) cites eleven studies which demonstrated the use of interests to differentiate between groups of individuals, as well as eleven other studies which provided additional evidence to support the construct validity of the OVIS I. Anastasi (1976) noted that the OVIS scales represented homogeneous clusters of jobs, with construct validation for all 24 scales obtained through item-scale correlation matrices.

While item-scale correlations indicate the strength of the relationship between each item and its assigned scale, internal consistency reliability coefficients indicate the strength of the relationships between the items themselves. Internal consistency reliability coefficients were computed by means of Cronbach's coefficient alpha procedure for a 25% sample of the standardization group for grades 7 through 12 and for the entire college sample (Winefordner, 1983, p. 80).

All of the reliability coefficients were .83 or higher, with median coefficients between .88 and .90, indicating the highly homogeneous

nature of the items making up each scale (see Appendix C, Table 3). The OVIS I reported comparable internal consistency coefficients. The short-term stability of student's Interest Scores was investigated by having 564 eighth-grade and 318 tenth-grade students take OVIS II on two occasions four weeks apart. The test-retest reliability coefficients obtained were generally higher than .80, with only a few falling below .74 (see Appendix C, Table 4). These figures are comparable to the OVIS I data. Furthermore, these reliability coefficients are particularly relevant because they indicate the stability of the scales over a period that is typical of the time between when the interest inventory is administered and the time when the machine-scored results were received (Winefordner, 1983).

### Summary

Computer-assisted systems can be studied in a variety of ways. In comparing systems, it is helpful to place them along a continuum reflecting their purpose and usage. Guidance systems are placed on one end, as their emphasis is didactic and/or oriented toward self-assessment. On the other end are the information systems, such as Virginia VIEW, which deal only with providing information. In studying the appropriate use of the Virginia VIEW Career Search, it is important to see how the Career Search is used and how satisfied the user is with the Search. Most of the research on computer-assisted systems has dealt with guidance systems which were an integral part of a guidance program.

Other studies were done by the developer(s) of the system, using relatively small samples. Because of the assumption in the field that the Virginia VIEW Career Search is an interest inventory, a comparison of the Career Search to an interest inventory (OVIS II) is attempted. As in studying computer-assisted systems, it is helpful to use the continuum analogy. Interest instruments can be placed along a continuum reflecting their purpose, usage, and technical stability. On one end of the continuum are the fully descriptive instruments such as the Strong-Campbell Interest Inventory. On the other end are simple instruments which match individuals to occupations using variables external to the user and inherent in the work tasks, such as the preference to work indoors rather than outdoors.

## CHAPTER III

### METHODOLOGY

#### Overview

The purpose of this chapter is to describe the methodology and procedures of this study. The following six topics will be discussed in this chapter: 1) a statement of the research; 2) the research method used; 3) a description of the population; 4) the instrumentation; 5) a description of the procedures used in collecting data; and 6) the analysis procedures.

#### Research Objectives

The purpose of this study was to clarify the appropriate usage of the Virginia VIEW Career Search. Specifically, the objectives of the study were to determine:

1. To what extent the Virginia VIEW Career Search leads users to access occupational/educational information?
2. Do users rate the Career Search as a satisfactory experience?
3. Do the ratings of user satisfaction for the Career Search compare to OVIS II user ratings?
4. Do the results of the Career Search compare to the results of the OVIS II?

### Research Method

As the purpose of this study was to obtain information concerning the current status of the phenomena (the use of the Career Search), descriptive survey method was used. Best (1970) stated that descriptive research is "concerned with conditions or relationships that exist; practices that prevail; beliefs, points of view, or attitudes that are held; processes that are on going; effects that are being felt; or trends that are developing" (Best, p. 114). According to Ary, Jacobs, and Razavieh (1972), descriptive research studies are designed to obtain information concerning the current status of phenomena, with their aim to describe "what exists". Kerlinger (1973) and Ary, Jacobs, and Razavieh (1972) describe survey research as appropriate for analyzing psychological and sociological variables. Surveys can provide information on both tangible and intangible variables. Tangible variables include such things as the types of career information utilized by students, and intangible variables include such things as opinions of assessment instruments.

### Description of Population

The subjects of this study were high school students in grades nine through twelve attending secondary schools in Virginia from school systems identified as using both the Virginia VIEW Career Search and the OVIS II in their career counseling/guidance programs. A list of



school systems (Appendix D) using the OVIS II was obtained from the Virginia Department of Education. This list was compared to the Virginia VIEW mailing list in order to select schools which also used the Virginia VIEW Career Search. The level of Career Search usage was measured by the number of Career Search worksheet pads ordered by the schools in the 1984-85 school year. The Career Search was found in all of the thirty-six school systems reportedly using the OVIS II.

### Instrumentation

Three instruments were used in this study: the Virginia VIEW Career Search, the OVIS II, and the Student Questionnaire. The results of the Career Search and the OVIS II were compared in order to determine whether students received similar lists of occupational groups or titles for career exploration from both instruments. The Student Questionnaire (Appendix E) was developed by revising the Feedback Sheet developed by Zener and Schnuelle (1972) and revised by Cooper (1976). The original Feedback Sheet consists of nine Likert-type items which elicit information on variables related to satisfaction with career exploration treatments. Satisfaction is defined by composite score, as well as by each item score by Zener and Schnuelle (1972) and Cooper (1976). The items form a scale of moderately high internal consistency ( $r = .83$ ) (Reardon, Bonnell, & Huddleston, 1982; Talbot & Birk, 1979). After revisions, the first page of the questionnaire is designed to collect demographic data on the subjects. The second page uses eleven Likert-

type items to elicit feedback from the subjects concerning their attitudes toward the assessment instruments, and the third page elicits information concerning the types of career information resources used by the students and the extent of their usage.

Pilot Career Search questionnaires were administered on March 28, 1985 to ten ninth graders at Shawsville High School, Shawsville, Virginia. The students had recently completed a career exploration unit in which they were required to do the Career Search as a group and then accessed occupational information from the Virginia VIEW microfiche in order to complete a written assignment. The counselor who administered the questionnaires was asked to report any ambiguity in directions, questions, or format. As a result of the piloting, the questionnaire was not changed. However, instructions for counselors administering the questionnaire were developed to indicate portions of the questionnaire which might be ambiguous to the students (See Appendix F). For example, students often had difficulty remembering what the Career Search was, unless they saw the orange workbook. They also often failed to report having used the microfiche, even though they were required to use it in order to complete an assignment.

#### Data Collection

After the comparison of Department of Education and Virginia VIEW lists, guidance coordinators for the school systems and/or schools which appeared to be the largest users of the Virginia VIEW Career

Search were contacted by telephone on March 18 and March 19, 1985. On March 25, 1985, Dr. Charles Waring of the Institutional Review Board on Research Involving Human Subjects Responsibilities and Procedures of Virginia Tech was contacted in order to initiate the appropriate paperwork necessary for receipt of certification of exemption as the human subjects in the study were at no risk. The study was certified as exempt.

Three high schools were identified as possible participants in the Richmond City School System. The Richmond City School's Department of Planning and Development was contacted in order to obtain necessary approval to collect data from their schools. Consequently, one school did participate in the study. Schools from Tazewell County, Botetourt County, and Montgomery County school systems also agreed to provide data. Prince William County, Henrico County, Bath County, Scott County, and Virginia Beach City schools were unable to provide data necessary for the study.

As the response from the initial telephone calls yielded a smaller number of subjects than originally anticipated, a mass mailing to guidance coordinators in fifty-eight high schools from the remaining twenty-eight school systems was conducted on April 9, 1985. A copy of this letter is found in Appendix G. From this mailing, seventeen high schools responded as having not used the OVIS II recently, or having never used the OVIS II. Although Appalachia High School was not using the OVIS II, they volunteered to have students complete the Virginia VIEW questionnaires. Galax City High School and Halifax Senior High

School volunteered to obtain all types of data needed for the study from approximately twenty and fifty students, respectively. Buckingham County High School volunteered to have all tenth graders complete the OVIS II questionnaires, but could not provide the necessary Virginia VIEW data due to time and equipment constraints. By May 1, 1985, three schools had called to report that they were unable to obtain the data which they had originally volunteered to supply.

When so many high schools responded that they do not use the OVIS II, a follow-up letter and return postcard was sent to the remainder of the schools in order to estimate the population for the study, as previous estimates were inflated. Thirty-four follow-up letters with self-addressed and stamped postcards (see Appendix H) were sent on May 7, 1985 to the remainder of the schools which had not responded to the mailing on April 9, 1985. Thirty schools responded. Many counselors stated that they had discontinued using the OVIS II because they now used the Career Search. They had been using the OVIS II in career exploration activities.

As the questions concerning the usage of the Career Search are the main focus of this study, Heritage High School in Lynchburg, Virginia was contacted on May 15, 1985 in order to obtain additional Virginia VIEW questionnaires. In the final analysis, 72% of the Virginia VIEW and 42% of the OVIS II questionnaires originally mailed were returned.

### Analysis Procedures

Descriptive statistics were used to analyze the data. Data were reported by means, frequencies, standard deviations, and percentages. Responses to these items were analyzed using SPSS<sup>X</sup> (1983) computer analysis system.

Research question one was analyzed by computing the percentages of affirmative responses on items 12 and 13 of the Feedback Sheet portion of the Virginia VIEW questionnaire.

Research question two was analyzed by computing the mean scores for each of items 1 through 11 on the Feedback Sheet portion of the Virginia VIEW questionnaire.

Research question three was analyzed by comparing item mean scores for items 1 through 11 on the two different versions of the Feedback Sheet portion of the questionnaires.

Research question four was analyzed by tabulating the percentage of positive matches for the students' results on the OVIS II and the Career Search. The 1984 VIEW/OVIS II Index was used to convert OVIS II scales to occupational titles for comparison (see Appendix I).

Tables were constructed to display the data collected and are presented in Chapter IV with comments and discussion.

CHAPTER IV  
RESULTS OF THE STUDY

Overview

This chapter reports the results of the student questionnaires and the comparison of students' Virginia VIEW Career Search and OVIS II results. This chapter is divided into five sections: (1) Introduction; (2) Description of subjects; (3) Analysis of Career Search Feedback Sheet responses; (4) Comparison of Career Search and OVIS II Feedback Sheet responses and results; and (5) Summary of results.

Introduction

Questionnaires designed to elicit information on students' satisfaction with career exploration activities, and types and frequencies of subsequent career exploration resources utilized, were distributed to high school counselors who volunteered to administer the questionnaires and provide Career Search and OVIS II results. The subjects of the study were 624 Virginia high school students in grades nine through twelve attending schools identified as using both the Career Search and the OVIS II. There were 471 Virginia VIEW Career Search questionnaire respondents, 214 OVIS II questionnaire respondents, and 104 students whose Career Search and OVIS II results could be compared.

### Description of Subjects

Table 1 provides demographic data regarding the 471 subjects who responded to the Virginia VIEW Student Questionnaire. As shown in this table, there were 52 percent males and 48 percent females in the sample. The respondents' ages ranged from 14 to 20, with 24.4 percent of the respondents fifteen years of age and 20.4 percent eighteen years of age. Only 1.9 percent of the respondents failed to report their ages. The majority of the respondents were in the ninth grade (29.3 percent) and twelfth grade (29.1 percent). The remaining respondents were fairly evenly distributed between the tenth and eleventh grades, at 20.4 percent and 19.1 percent respectively. Approximately 2 percent of the respondents failed to report their grade level. The largest percentage of the Virginia VIEW respondents were from Heritage High School, Lynchburg, Virginia (46.3 percent). The remaining eight schools had relatively small percentages of representation.

Demographic data for the 214 students who responded to the OVIS II Student Questionnaire are provided in Table 2. As shown in this table, there were 52.8 percent males and 47.2 percent females. The respondents' ages ranged from 15 to 19; with 35 percent who were sixteen years of age; 23.4 percent were seventeen years of age; and 21.5 percent were fifteen years of age. Only 4.2 percent of the respondents failed to report their ages. The majority of the respondents were in the tenth grade (67.8 percent). The remaining respondents were in the eleventh grade (22.4 percent) and the twelfth grade (9.3 percent). One person

Table 1  
Demographic Profile of Virginia VIEW  
Questionnaire Respondents

	Variable	Frequency	Percent
Sex:	Male	245	52.0
	Female	226	48.0
Age:	14	53	11.3
	15	115	24.4
	16	77	16.3
	17	92	19.5
	18	96	20.4
	19	26	5.5
	20	3	.6
	No response	9	1.9
Grade:	9	138	29.3
	10	96	20.4
	11	90	19.1
	12	137	29.1
	No response	10	2.1
	High School:	Galax City	17
George Wythe (Richmond City)		45	9.6
James River (Botetourt County)		15	3.2
Blacksburg		4	.8
Richlands		47	10.0
Fries		42	8.9
Halifax		46	9.8
Appalachia		37	7.9
Heritage (Lynchburg City)		218	46.3



Table 2  
Demographic Profile of OVIS II  
Questionnaire Respondents

	Variable	Frequency	Percent
Sex:	Male	113	52.8
	Female	101	47.2
Age:	15	46	21.5
	16	75	35.0
	17	50	23.4
	18	26	12.1
	19	8	3.7
	No response	9	4.2
Grade:	10	145	67.8
	11	48	22.4
	12	20	9.3
	No response	1	.5
High School:	Galax City	18	8.4
	George Wythe (Richmond City)	45	21.0
	James River (Botetourt County)	15	7.0
	Blacksburg	8	3.7
	Buckingham	128	59.8

failed to report his/her grade level. The majority of the OVIS II respondents were from Buckingham County High School, Buckingham, Virginia (59.8 percent). The next largest percentage of respondents were from George Wythe High School, Richmond, Virginia (21 percent).

The respondents of both questionnaires were fairly evenly distributed by sex and grade. Most of the respondents were divided between the ages of 15 and 18 years of age. The geographic distribution of the students was fairly evenly divided between students attending schools in rural areas (41 percent) and urban areas (59 percent).

Other information obtained from the first page of the questionnaire concerned how students learned about career information resources in their schools. The majority of students responded that they were either told about career information resources by their counselors (68 percent) or by their teachers (59 percent) (see Table 3). The counselors responded that many students failed to note that they had made appointments with or had talked with their counselors, when sometimes they had literally spent hours making them aware of career information resources and discussing the students' career objectives and plans. Counselors also reported that students would often tell them that other students had recommended the Career Search or microfiche to them as useful resources. Approximately 12 percent (11.9%) of the students responded that they had learned about career information resources in their school from another student or friend.

Table 3  
How Students Learned About Career Information  
Resources in Their School

Source	Frequency	Percentage
Counselor	320	67.9
Teacher	279	59
Discovered by self	64	13.6
Another student/friend	56	11.9
Librarian	27	5.7
Other*	27	5.7
Poster	7	1.5
Newspaper article/ad	6	1.3
Principal	2	.4
Bookmark/calendar card	0	0

\*Other generally included parents, siblings, and other relatives.

Information for questions 1 through 4 regarding parents' occupations and students' occupational choice was not tabulated as a majority of the students failed to complete this section or responded inappropriately.

### Analysis of Career Search Feedback Sheet Response

#### Research Question 1: To What Extent Does the Virginia VIEW Career Search Lead Users to Access Occupational/Educational Information?

The purpose of Research Question 1 was to determine whether the Career Search really does what it was designed to do (i.e., lead users to access career information). Table 4 provides the frequency and percentage of users of different career information resources. The subjects were asked to respond as to whether they had utilized the thirteen sources of occupational/educational information after taking the Career Search by placing a check (✓) under yes or under no beside each resource. If the response was positive, the subject was then asked to estimate the number of times they had used the information source. The highest number of students responding positively were for the following two sources: 83.9 percent responded that they had talked with their parents about themselves and their career opportunities; and 82.8 percent responded that they had used the Virginia VIEW microfiche. The high percentage of students responding that they had discussed career opportunities with their parents supports findings of past studies which indicated that students often seek advice and information concerning careers from their parents.

Table 4  
Extent of Usage of Career Information Sources  
Reported After Taking Virginia VIEW

Variable	Frequency	Percentage
Talked with parents	395	83.9
Virginia VIEW microfiche	390	82.8
Talked with other students	302	64.1
Mass media presentations	300	63.7
Talked with counselor	211	44.8
Occupational/Educational visits	176	37.4
Read or sent for brochures or books on educational or training information	164	34.8
Read or sent for brochures or books on occupational information	156	33.1
Made an appointment with counselor	119	25.3
Talked with teacher	44	9.3
Virginia VIEW Career Information Hotline	21	4.5
Talked with librarian	11	2.3
Talked with principal	4	.8

The information sources reported as being used least often were school principals, librarians, the Virginia VIEW Career Information Hotline, and teachers. The percentages of nonuse were 99.2, 97.7, 95.5, and 90.7 respectively. The large percentages of nonuse for the four previously mentioned sources is not surprising. It is not a major responsibility of principals, librarians and teachers to supply career information. However, there is an increased awareness and increased activity in this area among librarians and teachers. Other education professionals besides counselors are expected by the Virginia General Assembly and the Board of Education to "take part in providing experiences infused into the elementary and secondary curriculums which give students awareness and/or knowledge of careers (Career Education)" (Department of Education, 1984). Also, the limited use of the Hotline by these students is normal, as they have access to the Virginia VIEW microfiche, other career information resources, and counselors in their schools. The majority of Hotline users are non-high school age individuals who have limited access to career information resources and/or counseling services. As the public becomes aware of the availability of career information resources in schools, public libraries, and agencies, the use of the Hotline will probably decrease.

When asked which portions of the microfiche were used, the majority (70.1 percent) reported having used the occupational files (viewscripts). The rest of the microfiche sections used less frequently. The frequencies and percentages of subjects using the various microfiche sections are reported in Table 5. The frequency for number of times students reported using each information source are not

Table 5  
Usage of Virginia VIEW Microfiche

Variable	Frequency	Percentage
Occupational file (viewscripts)	330	70.1
School subject file	65	13.8
Additional training	55	11.7
Military training file	35	7.4
Financial aid file	32	6.8
Apprenticeship file	25	5.3
Postsecondary school file	25	5.3
Postsecondary program file	18	3.8

reported, as the data received was inaccurate and not quantifiable. Students appeared to have difficulty responding to this question, as they often failed to respond to this question, or responded with vague terms such as "a few", "many", and "all the time", rather than responding with a number as they were asked to do.

In follow up conversations, many of the counselors who administered the questionnaires reported that students failed to respond positively on items 12 and 13 of the Feedback Sheet when the counselors knew that the students had utilized the resources and sections of the microfiche listed. They generally responded that there was an under reporting in this area. The same tendency to under report was observed by this researcher at Blacksburg High School. When shown the Virginia VIEW Career Search booklets and worksheets, students would respond that they had done the Career Search, and would remember occupational titles they had received in their list, but few remembered having used the microfiche, although their counselors reported that they observed the students using the information. Several counselors stated that they felt that the students found the amount of information in the microfiche overwhelming. They found the experience to be more successful and viewed more positively by the students when specific short exercises or specific sections of information were requested of the students.

As a majority of the respondents reported discussing their career opportunities with their parents, and using the Virginia VIEW microfiche after taking the Career Search, this researcher concluded that the use of the Career Search does lead the user to access career information.



## Research Question 2: Do Users Rate the Career Search as a Satisfactory Experience?

The purpose of Research Question 2 was to determine the extent of user satisfaction with the Virginia VIEW Career Search. Table 6 provides the means ( $\bar{X}$ ) and standard deviations (SD) for each item one through eleven on the Feedback Sheet portion of the Career Search Student Questionnaire. The subjects were asked to respond on a Likert-scale from a value of six for strongly agree to a value of one for strongly disagree to eleven statements designed to measure satisfaction with the Career Search as a career exploration activity. Satisfaction is measured by the means of the responses for each individual item. Any score above a 3 was considered a positive response, as this was a six item Likert scale, forcing the respondent to make a negative or a positive response. All items received positive responses. Eight of the eleven items had mean scores over 4.1. The highest mean score was 4.833 for item number 3, in which the student states that s/he did learn something about careers for themselves after completing the Career Search. The lowest mean being 3.275 on item number 7 of the Feedback Sheet which asks if the student had recommended the experience to a friend. The researcher was surprised by the low response on question number 7, as so many counselors had indicated that the traffic using the Career Search and microfiche at their sites was largely due to student referral or word-of-mouth. The same phenomena was observed by this researcher at Blacksburg High School. Additional students volunteered to take part in the study, or requested assistance after seeing friends participate or having talked with other students who participated.

Table 6  
User Satisfaction with the Career Search

Item	$\bar{X}$	SD
1. I would strongly consider some of the careers listed.	4.685	1.327
2. I now have a clearer idea about possible careers.	4.629	1.361
3. I did learn something about careers for myself.	4.833	1.239
4. I now have some better ideas about unsuitable careers.	4.275	1.345
5. I learned some things about myself through this experience.	4.197	1.447
6. The Career Search was a good use of my time.	4.672	1.443
7. I have recommended this experience to a friend.	3.275	1.757
8. This career exploration experience has encouraged me to seek information about careers.	4.442	1.433
9. The results of this experience were satisfactory.	4.518	1.284
10. Taking the Career Search helped me make a career decision.	3.820	1.580
11. I sought career information on my own, rather than by teacher's/counselor's suggestion.	3.443	1.785

In summation, the high individual mean scores for each of items one through eleven on the Feedback Sheet indicate that the users were satisfied with the Career Search experience.

### Comparison of Career Search and OVIS II

#### Feedback Sheet Responses and Results

#### Research Question 3: To What Extent Do the Ratings of User Satisfaction for the Career Search Compare to User Ratings for the OVIS II?

Research Question 3 was designed to compare user satisfaction ratings for the Career Search and the OVIS II. Research question number three did not yield useful results as so few OVIS II questionnaires were returned (214) and a majority of those which were completed were not valid. Over half of the respondents in this portion of the sample put exactly the same answers on both questionnaires. Upon questioning these results, counselors reported that many students had stated that they were confused. In some cases the students failed to discriminate between the two different questionnaires even though they were different colors (the OVIS II was green and the Career Search was blue), and asked specifically for the student to respond in regard to the particular instrument. Furthermore, some students had difficulty responding as it had been one or more years since they had taken the OVIS II. Therefore, a valid comparison of user ratings for the two instruments cannot be made.

Research Question 4: Do the Results of the Career Search Compare to the Results of the OVIS II?

The purpose of Question 4 is to compare the results (lists of occupational titles) students obtained after taking the Career Search to the results (occupational groupings) obtained after taking the OVIS II. In other words, do users receive similar occupational groupings or titles for exploration from both instruments? The first section of the OVIS II Student Report (Figure 2) contains a rank order list of the students' interest scales by Interest Score and separates the scales into high, average, and low interest categories. An interest scale is a title representing an occupational cluster. The first five OVIS interest scales on each OVIS Student Report were compared to the list of viewscripts obtained from the administration of the Career Search for each of the 104 individuals. The 1984 VIEW/OVIS II Index (See Appendix I) was used to convert the viewscript titles to OVIS II interest scales. One viewscript (Career Search occupational title) per OVIS II interest scale was considered a match. Most of the subjects had more than one matching viewscript for the scales. Table 7 reports the frequencies and percentages of respondents who had matched results on the two instruments. The largest percentage of matched responses were found for the first scale listed on the OVIS students' report (49 percent). The third scale yielded the lowest percentage of subjects with like responses. The number of interest scales appearing in the first section representing a high interest score varies. The first two scales were always related to a high score, the remaining three varied from high to

Educational Aspirations: Bruce W.

**OHIO VOCATIONAL INTEREST SURVEY**  
REVISED EDITION

VIS II

DATE: 7/28/82

Student Report for  
**BRUCE W.**

Sex: M  
Code: 2

INTEREST SCALES (in Interest Score order)	L A L H	INTEREST SCORE	INTEREST PROFILE				ALL SCALE	WEIGHTED AVERAGE	PERCENTILE RANK	
			ARTISAN INTEREST	GENERAL INTEREST	TECHNICAL INTEREST	SCIENTIFIC INTEREST			MALE	FEMALE
7 Crafts and Precise Operations	A L H	43					M 4 5 3 4 4 4 4 4 3 4	95	99	
3 Machine Operation	L L A	42					M 3 4 4 4 4 4 4 4 3 4	94	99	
15 Engineering and Physical Sciences	H L H	37					H 2 4 3 3 4 4 3 4 3 3	63	89	
16 Agriculture and Life Sciences	H L H	33					H 2 4 3 3 3 3 3 3 3 3	55	67	
4 Quality Control	A L L	32					M 2 2 3 4 3 3 3 3 3 3	68	91	
14 Visual Arts	H L H	31					H 2 3 3 3 3 3 3 3 2	45	40	
21 Management	H L H	31					H 3 3 3 3 3 3 3 3 3	30	40	
13 Numerical	H L L	29					F 1 2 2 3 4 3 4 4 2 2	42	68	
17 Music	H A L	29					H 3 3 4 2 2 2 3 3 2 2	40	38	
22 Education and Social Work	H H L	29					H 3 3 3 4 2 2 2 3 2 2	31	16	
1 Manual Work	L L L	27					M 3 3 2 2 3 2 2 2 3 2	70	85	
11 Regulations Enforcement	H L L	27					F 2 2 4 3 2 2 2 2 2 1	22	34	
8 Skilled Personnel Services	A L H	28					H 3 2 2 3 3 2 2 2 3 2	62	52	
9 Sports and Recreation	A A L	25					M 1 2 3 1 3 4 2 2 2 2	12	14	
10 Customer Services	A A L	25					M 1 2 3 1 3 4 2 2 2 2	44	36	
19 Marketing	H A L	25					H 2 2 3 2 3 2 3 2 2	20	27	
12 Communications	H L L	24					H 3 3 2 3 2 2 2 2 2 2	18	19	
23 Medical Services	H H L	24					H 2 2 2 2 2 2 2 2 2 2	36	38	
7 Basic Services	L L L	23					H 1 2 2 2 2 2 2 2 3	37	28	
6 Health Services	A L L	23					H 2 2 2 2 2 2 2 2 2 2	28	25	
18 Performing Arts	H A L	22					H 2 2 2 2 2 2 2 2 2 2	20	15	
20 Legal Services	H H L	20					H 1 2 2 2 2 2 2 2 2 2	7	12	
5 Clerical	A L L	19					H 1 2 1 2 3 1 3 1 2 2	18	26	

In addition to your interest in the activities that make up Scales 7 and 3, you have shown a preference for a number of other activities. The Work Characteristic Analysis and Summary on page 2 of your Report are based on the 34 activities to which you responded "Like" or "Like very Much." The characteristics associated with those activities are described below.

Activity	Like	Like very Much
1. Manual Work		
2. Skilled Personnel Services		
3. Machine Operation		
4. Quality Control		
5. Clerical		
6. Health Services		
7. Basic Services		
8. Skilled Personnel Services		
9. Sports and Recreation		
10. Customer Services		
11. Regulations Enforcement		
12. Communications		
13. Numerical		
14. Visual Arts		
15. Engineering and Physical Sciences		
16. Agriculture and Life Sciences		
17. Music		
18. Performing Arts		
19. Marketing		
20. Legal Services		
21. Management		
22. Education and Social Work		
23. Medical Services		

**Work Characteristic Summary**

BRUCE W.

D. P. F.	JOB PREF.	APTITUDES	WORK PREFERENCES	WORK ENVIRONMENTS	PHYS. DEM.

**WORK CHARACTERISTIC ANALYSIS**

**Data, people, and things levels** provide clues about the complexity of work and the amount of ability and education required to gain at the higher the level, the more preparation is required. The following levels are associated with the job activities you liked. The greater the number of activities you liked that are associated with a particular level, the stronger the association.

**Data:** information such as ideas, concepts, words, numbers, or other symbols.  
**People:** human beings and animals dealt with as individuals.  
**Things:** machines, tools, materials, and products.

**Vocational preparation:** the time it takes to learn how to do a job. This includes time for related education, on-the-job training, and experience in other jobs. The activities you liked are associated with the following preparation times:  
**Strongly associated:** one to four years

**Abilities:** are special talents or abilities. They make it easier for you to learn some things than others. The following abilities are associated with many of the activities you liked. The greater the number of activities you liked that are associated with an ability, the stronger the association.  
**Very strongly associated:** Spatial (visualizing in three dimensions)  
**Strongly associated:** General Ability (reasoning)  
**Moderately associated:** Manual Dexterity (using hands skillfully to pick and turn objects)  
**Moderately associated:** Numerical (doing arithmetic)  
**Weakly associated:** Form Perception (seeing small differences in hours and lines)

**There are many ways of describing interests. The OVIS II scales provide one way. Another is to look at work preferences.** The following work preferences are common to many of the activities you liked:  
**Very strongly associated:** Technology (dealing with machines)  
**Strongly associated:** Objects (dealing with things)  
**Moderately associated:** Scientific (scientific activities)  
**Product (producing tangible products)**

**Work environments** are situations in which workers must adjust. The following work environments are associated with many of the activities you liked.  
**Very strongly associated:** Standards (making decisions on facts)  
**Strongly associated:** Judgment (making decisions on judgment)  
**Detail (working precisely)**  
**Moderately associated:** Variety (variety and change)

Most of the activities you liked are associated with **light physical demands**; however, at least one-third of them require heavier physical work. If you have the strength to handle objects up to 100 pounds and you do not mind a lot of standing and walking, you may wish to expand your job search beyond jobs with light physical demands.

Most of the activities you liked are associated with **inside work settings** but at least one-third of them involve outside work. Thus, you might wish to consider jobs which involve some of both.

**ENTER YOUR RESPONSES TO THE CAREER PLANNING QUESTIONNAIRE**

A. What subjects do you like best?  
 1st choice \_\_\_\_\_  
 2nd choice \_\_\_\_\_

B. What educational program are you taking now or plan to take?  
 \_\_\_\_\_

C. What further education or training do you plan to take?  
 \_\_\_\_\_

D. Are you interested in a business or vocational program?  
 \_\_\_\_\_

E. If you answered yes to question D, what program would you take?  
 1st choice \_\_\_\_\_  
 2nd choice \_\_\_\_\_

F. What kinds of work would you most like to do?  
 1st choice \_\_\_\_\_  
 2nd choice \_\_\_\_\_

Figure 2

Table 7  
Comparison of Career Search and OVIS II Results:  
Number of Respondents Matching Per Scale

Scale	Frequency	Percent
First scale appearing in OVIS II Student Report	51	49%
Second scale appearing in OVIS II Student Report	49	47%
Third scale appearing in OVIS II Student Report	33	32%
Fourth scale appearing in OVIS II Student Report	35	34%
Fifth scale appearing in OVIS II Student Report	38	37%

medium interest scores. Therefore, the percentage of matches for the first scale is more relevant than for the last three as these vary in degree of interest.

When matching results obtained from the OVIS II and the Career Search, this researcher observed that the majority of the results obtained by assessment administered by the researcher yielded matched results. A lower percentage of matched occupational titles and interest scales for the whole sample was possibly due to the nature of the data obtained. The Career Search results were received in various forms.

Approximately 36% of the sample had only submitted the Career Search worksheet (Figure 3). The student's worksheet list of viewscripts to be explored often failed to correspond to the list of viewscripts received when the researcher entered the preferences in the microcomputer to get the corresponding viewscript list. The obtained viewscript list failed to have a key occupational title, yet that title would often appear in the list written by the student as an occupational title to be explored. Because of the interactive nature of the Career Search, the students probably changed variables without indicating that they did so on the worksheet. This would explain the difference in the obtained results.

Furthermore, counselors reported that students generally reported that the Career Search generated occupational titles that they were considering. If occupational titles they were considering were not on their original list, they could compare the profiles of the missing occupational titles to the profile on their worksheet in order to

# Virginia VIEW CAREER SEARCH WORKSHEET

Name \_\_\_\_\_ Date \_\_\_\_\_

### Directions (Micro-Computer)

After recording your answers to the Virginia VIEW *Career Search* questions, take this worksheet to a micro-computer that accesses the Virginia VIEW Program. Follow the instructions presented by the micro-computer.

### Directions (Scan Sheet)

After recording your answers to the Virginia VIEW *Career Search* questions, place this worksheet on the Virginia VIEW *Scan Sheet*, lining up the heavy black lines.

1. While sliding the worksheet down:

- A. Match *only* the areas that you marked with an X in row 2. \_\_\_\_\_
- B. Only 1 letter need be common to both the scan sheet and worksheet for a match in each area marked with an X.
- C. In section "C", *all* areas that you selected must appear on the scan sheet.
- D. Record as you go numbers and titles for any VIEWSCRIPTS that match in all areas that you marked with an X. \_\_\_\_\_

2. To access occupational and educational information for any of these VIEWSCRIPTS, go to the microfiche indicated on the Virginia VIEW *Scan Sheet* or refer to the Virginia VIEW *Microfiche/Micro-computer Index*.

1	2	3	4	5	6	7
I	A	S	C	W	E	T
Interests	Areas of Work	Physical Strengths	Physical Capabilities	Working Conditions	Educational Levels	Temperaments

Row 1 Record your Virginia VIEW Search choices here.

Row 2 Mark with an X your most important choices here.

Record information about VIEWSCRIPTS HERE:

VIEW #	VIEWSCRIPT TITLE	FICHE #

Record education and training information on the back that you find on the Virginia VIEW Microfiche.

Figure 3



determine what variables were different. Counselors report this interactive feature to be one of the most important facets of the Career Search as an exploratory instrument.

When comparing the users' first interest scale on the OVIS II Student Report to their list of occupational titles from the Career Search, there is a 49% match. In considering the 49% match and the discrepancies in 36% of the sample which indicates an under reporting of matches, this researcher concludes that there is a similarity in the results of the two instruments.

### Summary of Results

A summary of the findings are as follows:

- 1.) A majority of the respondents reported that after taking the Career Search, they discussed themselves and their career opportunities with their parents, and used the Virginia VIEW microfiche. Most of the microfiche users utilized the occupational file (viewscripts), while the remaining files were less frequently used. Therefore, it is concluded that users do access career information after using the Career Search.
- 2.) The respondents were satisfied with the Career Search. They generally agreed that they had learned more about careers appropriate for themselves, and that the experience was a good use of their time. Although counselors reported that students often did tell their friends about the Career Search, scores indicating that they had recommended the experience to a friend were not as high as expected.

3.) The outcomes did not yield useful data in order to make comparisons of satisfaction scores for the Career Search and the OVIS II.

4.) Approximately half of the respondents had matching Virginia VIEW occupational titles for the first OVIS scale on their OVIS II Student Report. This fact plus the observation that the percentage of matches may have been lower due to the nature of the data received, indicates that students receive similar results from the OVIS II and the Career Search.

CHAPTER V  
SUMMARY AND CONCLUSIONS

Overview

This final chapter summarizes the following: purpose, objectives and justification for the study; the related literature; the methodology and procedures; and the research findings and conclusions. In addition, recommendations for further study and for guidance programs will be included.

Purpose of the Study

The purpose of this study was to clarify the usage of the Virginia VIEW Career Search. The study investigated how the Career Search was being used in public schools in Virginia by accessing user satisfaction and determining whether the Career Search does lead users to access occupational and educational information. Finally, user satisfaction ratings and results of the Career Search and the OVIS II were compared. Specifically, the objectives of this study were to determine:

- 1.) To what extent does the Virginia VIEW Career Search lead users to access occupational/educational information?
- 2.) Do users rate the Career Search as a satisfactory experience?
- 3.) To what extent do the ratings of user satisfaction for the Career Search compare to user ratings for the OVIS II?
- 4.) Do the results of the Career Search compare to the results of the OVIS II?

The need for this study arose from the fact that the Career Search was widely used in Virginia and Michigan, although there has been little research done regarding its usage. As its usage continues to grow and other states adapt it as well, it becomes increasingly important that information be available concerning whether or not it did what it was designed to do (i.e., lead users to access career information), and to what extent users were satisfied with the Career Search as an exploratory experience. The results of this study should prove valuable as it will provide information related to: (1) how people access career information; (2) the study of career information systems and their utilization; and (3) how a career accessing strategy relates to an interest inventory.

#### Summary of Selected Related Literature

The literature search revealed that most of the research on computer-assisted systems has dealt with the guidance systems which were an integral part of a guidance program. In contrast, little research has been done on information systems. Computer-assisted systems can be studied in a variety of ways. In comparing systems, it is helpful to place them along a continuum reflecting their purpose and usage as systems vary significantly. Computer-assisted guidance systems are placed on one end, as their emphasis is didactic and/or self-assessment oriented; and computer-assisted information systems are on the other end, as they deal only with the accessing of information. Additionally,

many information accessing strategies, such as the Career Search, also have alternate means of sorting the variables in order to access the information. For example, the Career Search can be scored by hand using a Scan Sheet, as well as by microcomputer, which exposes the user to over 350 occupational titles.

The similarities in the development and theoretical basis of the Career Search and the OVIS II were also revealed in the literature review. Because of these similarities and the assumption in the field that the Career Search is an interest inventory, it is important to look at the usage of the Career Search, and to compare it to the OVIS II. As in studying computer-assisted systems, it is helpful to use the continuum analogy when looking at assessment instruments. On one end of the continuum are fully predictive instruments, while on the other are simple instruments which match individuals to occupations using external variables.

### Methodology and Procedures

A descriptive survey method was used to obtain information concerning the use of the Career Search. The subjects were 676 high school students attending secondary schools in Virginia who use both the Career Search and the OVIS II in their career counseling/guidance program.

Three instruments were utilized the Virginia VIEW Career Search, the OVIS II, and Student Questionnaires. Results of the Career Search

and OVIS II were obtained from the counselors who also administered the Student Questionnaires.

The sample was obtained by first comparing a list of OVIS II users supplied by the Virginia State Department of Education to the Virginia VIEW mailing list. Guidance coordinators and counselors were contacted in order to obtain volunteers.

A pilot study was conducted in March 1985 at Shawsville High School. Ten ninth grade students completed the Career Search questionnaires. The counselor administering the questionnaires was asked to report any ambiguities in the questionnaire or the process. As a result of the pilot study, counselor directions were developed indicating potential problem areas.

The questionnaires were sent to counselor coordinators or counselors in nine schools. After being notified that several schools were not going to be able to supply the promised data, other schools were added and eventually the study yielded 471 Career Search Student Questionnaires (72%); 214 OVIS Student Questionnaires (42%), and paired instruments (Career Search and OVIS) for 104 subjects.

Descriptive statistics were used to analyze the data. Responses to the items on the questionnaire were analyzed using the SPSS<sup>X</sup> computer analysis system. Results on the Career Search and OVIS II were matched using the 1984 VIEW/OVIS II Index. Data were reported by frequencies, percentages, means and standard deviations.

### Summary of Findings

The purpose of this study was to clarify the usage of the Virginia VIEW Career Search. Four research objectives were designed to accomplish this purpose.

Clinical observations were included in the results of the study due to the proliferation of similar feedback from most of the cooperating counselors. The summarized reporting of the research findings follow.

Research Question 1 was designed to determine whether the Career Search leads users to access career information. A majority of the respondents reported accessing career information after taking the Career Search. The Virginia VIEW microfiche occupational files were the source most often used. Many students also reported discussing themselves and their career opportunities with their parents after taking the Career Search.

The findings of this study indicate that users do access career information after completing the Career Search. Although the Virginia VIEW microfiche were one of the most heavily utilized career information resources, the occupational files are the sections utilized. The remaining files of information in the system were not used extensively. However, the counselor reports indicate that the use of the Virginia VIEW microfiche was probably under reported. Activities designed to focus the student's attention on specific areas of the microfiche to break the task down for the students, so that using the microfiche is no longer an overwhelming experience, are beneficial in assisting the student to use the microfiche.

Research Question 2 was to determine the level of user satisfaction with the Career Search. The respondents' mean scores indicated that they were satisfied with the Career Search. The respondents generally agreed that as a result of having used the Career Search that they had learned more about careers appropriate for themselves and that the experience was a good use of their time. Results were mixed concerning student referral. Feedback sheet scores indicated that students were tentative as to whether they would recommend the experience to a friend, while, in contrast, counselors reported that students often referred others to the Career Search.

Research Question 3 was designed to compare user satisfaction with the Career Search and the OVIS II. This question failed to yield meaningful results. Therefore, no comparisons with the Career Search and the OVIS II could be made due to the limitations in the data received.

Research Question 4 compared the results of the Career Search to the results of the OVIS II. Approximately half of the respondents had matching responses on the first OVIS II scale. This plus observations indicate that users receive similar results from the OVIS II and the Career Search.

### Recommendations for Further Study

Recommendations for further research include the following:

1. If someone were to replicate this study, it would be beneficial to use fewer schools and to try to coordinate the testing and



completion of the Career Search and questionnaires so that the questionnaires followed sequentially a short time after the instruments were administered. A project of this nature would probably need to be longitudinal in nature with scheduling at least one or two years before data collection began. Also, step-by-step detailed instructions for administration and data collection, with on-site supervision by the researcher might yield more detailed information.

2. A smaller sample utilizing face-to-face student interviews and case studies would possibly yield more accurate, complete data on students' career exploration behaviors.

3. There are so many variables which may effect the access of career information that an in-depth study of this one facet of career exploration would also yield useful information. It would be beneficial to know why students choose to use one source of information over others.

4. Comparative studies of different guidance plans and procedures would yield information on successful approaches to having students access and utilize career information. Knowing in what order activities occurred, as well as more detailed information on the activities utilized and their administration, would also yield interesting information.

5. As this study did not yield sufficient data in order to answer research question number three concerning the comparison of user satisfaction with the OVIS II and the Career Search, one might do an evaluation of the various types of career exploration activities in a guidance program in order to obtain information on user satisfaction for

various components. A study of this nature would result in valuable information concerning the users' perceived value of various career counseling activities.

6. Other studies might focus on the design of the structured search. Computers use several rules in searching through their set of occupations. The computer may search for occupations having the preference selected, or for occupations which do not have that preference. Comparing searches with different sets of computer search rules would be helpful for the counselor in determining which search best fit his/her philosophy of guidance.

#### Virginia VIEW Project Recommendations

1. As counselors noted that the more successful results with the system utilized activities to break the information down into manageable units, this researcher would encourage the VIEW staff to continue to have counselors share activities and programs that work in a more formalized manner. The project might compile some of the hand-outs and activities from successful projects for distribution to the other counselors in the state. The project might also consider developing or adapting a handbook of activities similar to the one developed by Michigan for counselors to use in utilizing MOIS in their guidance programs.

2. This researcher would also recommend that Virginia and the other states continue to work closely with NOICC in order to develop an integrated national system, or network, of information. A prototype

might be the current work which is being done with military career information. A national information system which could be adapted by all states with state components added, would not only provide a uniform, integrated system for all, but would also be a cost effective way to provide a uniform product for all states. With the cooperation of the states, educational information could be shared resulting in a current file on all of the postsecondary training opportunities in the nation. The sharing of salary and employment outlook information which would result would also be valuable for students planning careers and for agencies who provide job placement assistance. The uses and possibilities of such a system are limitless.

#### Recommendations for Guidance Programs

1. As noted earlier, programs which successfully used the Virginia VIEW microfiche used activities to break down the information into manageable portions. When counselors refer students to the microfiche, they should be as specific as possible in their referral, taking into consideration the student's developmental stage, reading level, and information needs. As time is always a limited commodity in the school day, utilizing specific activities will also make the task more time efficient.

2. Because a large percentage of students reported that they discuss their career plans with their parents, it would be beneficial for counselors to develop programs for parents to increase their awareness of career information and career opportunities. Then when the

students go to their parents for advice, they can give them accurate information or assist them in locating needed information. Parents can be worked with through parent-teacher associations, during parent conference days, or through contact with civic organizations.

3. Many schools are opting to work with parents and students together. This can be managed through associations and organizations mentioned above, or by having times at night or on weekends that the public can utilize the school's career education resources.

4. As so many counselors stated that a lot of their students came to them through student referrals, one way to increase utilization of career information resources is to utilize peer counselors. Students are less reluctant to ask their peers how to utilize computer programs, where to find information, or what information is good.

5. Because of Virginia Department of Education Standards of Quality stating that career education should be infused into the classroom, inservice programs for teachers on classroom infusion of career information are helpful. Keeping communications open and stressing their availability as a resource will help counselors bring teachers to utilize career information resources more often. Also, by incorporating career education activities into academics, this may solve the time constraints dilemma that many counselors face.

6. In-house evaluations of materials and services can also help the counselor develop programs which will be successful with their specific population.

7. As time is often the biggest constraint to getting students to utilize career information resources, counselors need to develop

creative ways of presenting and promoting their services. Materials are often put in cafeterias, halls, libraries and other places that students may congregate when they have a few free minutes. Many counselors around the state are doing career information sessions using Virginia VIEW and other materials at shopping centers, fairs, church groups, and civic organizations, such as Boy Scouts and 4-H. Many adult civic organizations such as Kiwanis and Ruritans also request these programs.

### Summary

Several important uses can be made of the results of this study. First, counselors can get a better understanding of the students' use of different types of career information resources so that they can plan their career exploration and development programs better. Second, the results confirm that the Virginia VIEW Career Search and microfiche are being extensively used and are seen as positive experiences by users. Furthermore, by knowing which sections are being neglected in the microfiche, programs can be planned to increase the usage of all the information in the system. Third, the data suggests that even though the Career Search is seen as a worthwhile experience by the user, it does not yield the exact same results as the OVIS II. Counselors should be encouraged to use the Career Search as it was designed to be used (i.e., as an exploratory tool). It can enhance the career planning program, but counselors should be cautioned against using it to replace interest inventories in their assessment plan, as it is unclear as to how different its processes and results are from other assessment tools.

In addition, the fact that so many students reported talking about themselves and their career opportunities with their parents indicates that parents still play a major role in the student's occupational development. Knowing this, counselors might plan more activities which involve parents. For example, activities planned to inform them of occupational and educational materials available to their children and educate them concerning the world of work and nontraditional career options for their children.

## REFERENCES

- AACD. Ethical Standards. American Personnel and Guidance Association. January 17, 1981.
- Anastasi, A. (1976). Psychological testing (4th edition). New York: Macmillan Publishing Co., Inc.
- Ary, D., Jacobs, L.C., & Razavieh, A. (1972). Introduction to Research in Education. New York: Holt, Rinehart & Winston, Inc.
- Best, J.W. (1970). Research in Education (2nd edition). Englewood Cliffs, New Jersey: Prentice-Hall.
- Cairo, P.C. (1983). Evaluating the effects of computer-assisted counseling systems: A selective review. The Counseling Psychologist, 11, (4), 55-59.
- Campbell, D. P. and Hansen, J. C. (1981). Manual for the SVIB-SCII. Stanford, CA: Stanford University Press.
- Chapman, W. and Katz, M. R. (1983). Career information systems in secondary schools: A survey and assessment. Vocational Guidance Quarterly, 31, 165-177.
- Clemons, D. B. (1980). A user's guide to vocational interest inventories. The School Guidance Worker, 35, (4), 28-32.
- Clyde, J. S. (1979). Computerized career information and guidance systems. Columbus, Ohio: ERIC Clearinghouse on Adult, Career, and Vocational Education (ERIC #179 764).
- Cooper, J. F. (1976). Comparative impact of the SCII and the Vocational Card Sort on career salience and career exploration of women. Journal of Counseling Psychology, 23, 348-352.

- Crites, J. O. (1981). Career counseling: Models, methods, and materials. New York: McGraw-Hill Book Company.
- D'Costa, A. and Winefordner, D. E. (1969). A cubistic model of vocational interests. Vocational Guidance Quarterly, 17, 242-249.
- Department of Education (1984). Standards of quality for public schools in Virginia. Richmond, VA: Commonwealth of Virginia Department of Education.
- Dolliver, R. H. and Nelson, R. E. (1975). Assumptions regarding vocational counseling. Vocational Guidance Quarterly, 24, (1), 12-19.
- Haring-Hidore, M. (1984). In pursuit of students who do not use computers for career guidance. Journal of Counseling and Development, 63, (3), 139-140.
- Harris, J. (1974). The computer: Guidance tool of the future. Journal of Counseling Psychology, 21, (4), 331-339.
- Harris-Bowlsbey, J. (1984). The computer and career development. Journal of Counseling and Development, 63, (3), 145-148.
- Herr, E. L. (1983). Forward. In Kapes, J.T. & Mastie, M. M. (Eds.), A counselor's guide to vocational guidance instruments. Falls Church, VA: National Vocational Guidance Association.
- Isaacson, L. E. (1978). Career information in counseling and teaching (3rd edition). Boston, MA: Allyn and Bacon, Inc.
- Johnson, R.G. (1985). Microcomputer-assisted career exploration. The Vocational Guidance Quarterly, 33, (4), 296-304.



- Kerlinger, F. N. (1973). Foundations of behavioral research (2nd edition). New York: Holt, Rinehart & Winston, Inc.
- Kuder, G. F. (1969). A note on the comparability of occupational scores from different interest inventories. Measurement and Evaluation in Guidance, 2, 94-100.
- Lancaster and Berne (1982) in Imel, Knowdell and Lancaster. Career development in the work place: A guide for program developers. Columbus, OH: National Center for Research in Vocational Education. ERIC monograph (ERIC 220 729).
- Maze, M., and Cummings, R. (1982). How to select a computer-assisted career guidance system. Madison, WI: Wisconsin Vocational Studies Center.
- McDaniels, C. (1982). Comprehensive career information systems for the 1980's. Vocational Guidance Quarterly, 30, 344-350.
- McDaniels, C. (1979). Career education: Current Status. In Hunt, T.C. (Ed.), Society, culture and schools: The American approach. Garrett Park, MD: Garrett Park Press.
- McDaniels, C., Snipes, J. and Peevy, E. (1980). A feasibility study for a career information delivery system for Virginia. Blacksburg, VA: Virginia Tech.
- McKinlay, B. (1984). Standards of quality in systems of career information. Journal of Counseling and Development, 63, (3), 149-152.
- MOIS (1980, March). Michigan occupational information system: Final evaluation Report. Berkley, MI: Instructional Development and Evaluation Associates, Inc.

- Myers, R. A. (1983). Computerized approaches to facilitating career development. In Harmon, L.W. (ed.) Using information in career development: From cognitions to computers. Columbia, Ohio: ERIC Clearinghouse on Adult, Career, and Vocational Education. (Information series number 262).
- NOICC (1981). Classification structures for career information: Technical information. Washington, DC: NOICC.
- Osipow, S. H. (1983). Theories of career development. (3rd edition) Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Parsons, F. (1909). Choosing a vocation. New York: Agathon Press, Inc.
- Reardon, R. C., Bonnell, R. O. and Huddleston, M. R. (1982). A comparison of CHOICES and the self-directed search. Journal of Vocational Behavior, 20, 22-30.
- Seligman, R. (1980). Assessment in Developmental Career Counseling. Cranston, RI: The Carrol Press.
- Shatkin, L. (1980). Computer-assisted guidance: Descriptions of Systems. Princeton, NJ: Educational Testing Service.
- Smith, R.L. & Karpati, F.S. (1985). Credentialing career counselors. Journal of Counseling and Development, 63, (10), 611.
- SPSS Inc. (1983). SPSS<sup>X</sup>: User's Guide. New York: McGraw-Hill Book Company.
- Super, D. E. (1957). The Psychology of Careers. New York: Harper & Row Publishers.

- Super, D. E. and Crites, J. O. (1962). Appraising Vocational Fitness. New York: Harper & Row Publishers.
- Super, D. E. (1970). Using computers in guidance: an experiment in secondary school. Conseiller Cavadien, 4, (1), 11-21.
- Talbot, D. B. and Birk, J. M. (1979). Does the vocational exploration and insight kit equal the sum of its parts? A comparative study. Journal of Counseling Psychology, 26, (4), 359-362.
- Tolbert, E. L. (1981). Counseling for career development. (2nd edition). Boston, MA: Houghton-Mifflin Company.
- Virginia Tech. (1982, February). Some Definitions: Career Counseling/ Student Personnel. Blacksburg, VA: Virginia Tech.
- Williamson, E. G. (1965). Vocational counseling: Some historical, philosophical, and theoretical perspectives. New York: McGraw-Hill Book Company.
- Williamson, E.G. (1972). Trait-and-factor theory and individual differences. In Stefflre, B. & Grant, W.H. (Eds.) Theories of counseling. (2nd ed.). New York: McGraw-Hill.
- Windom, J. A. (1982). SOICC: What it is and what it does. Virginia Personnel and Guidance Journal, 10, 42-47.
- Winefordner, D. W. (1983). OVIS II: Ohio Vocational Interest Survey - Manual for Interpreting (2nd edition). Harcourt Brace Jovanovich Publishers.
- Zener, T. B. and Schnuelle, L. (1972). An evaluation of the self-directed search (Research Report 124). Baltimore, MD: Johns Hopkins University Center for Social Organization of Schools, [ERIC Document Reproduction Service No. ED 061 458].

APPENDIX A

## Commercial Computer-Assisted Interest Systems

"Career Exploration" part of the  
Self-Exploration Series  
Educational Media Corporation  
Box 21311  
Minneapolis, MN 55421

Career Planning System (CPS) Interest Sort  
developed by The National Center for Research in  
Vocational Education at Ohio State University  
The Conover Company, Ltd.  
P.O. Box 155  
Omro, WI 54963

Career Scan IV  
National Educational Software Services  
1879 Locust Drive  
Verona, WI 53593

Careerwise:  
National Computer Systems  
Professional Assessment Services  
P.O. Box 1416  
Minneapolis, MN 55440

CHOICES  
277 South Washington Street  
Suite 209  
Alexandria, VA 23314

C-LECT Occupational Investigation  
Chronicle Guidance Publications, Inc.  
Aurora Street  
Moravia, NY 13118

Career Information System Career Directions  
Occupational Interest Matching  
Career Assessment Planning  
Available from: Career Aids, Inc.  
8950 Lurline Avenue  
Chatsworth, CA 91311

COIN  
Occupational Information System  
1546 Dartford Road  
Maumee, OH 43537

COCIS - Colorado Career Information System  
Microsort = Quest Inventory + COCIS  
830 South Lincoln  
Longmont, CO 80501

Computerized Career Assessment & Planning Program (CCAPP)  
Jefferson Software  
Systems Software Associates, Inc.  
723 Kanawha Blvd., East  
Charleston, WV 25301

Computerized Career Information System (CCIS)  
Random House  
2970 Brandywine Road  
Suite 201  
Atlanta, GA 30341

Discover Foundation, Inc.  
(Discover II)  
P.O. Box 363  
Westminster, MD 21157

Guidance Information System (GIS)  
TSC/Houghton Mifflin  
Box 683  
Hanover, NH 03755

Job-0  
CFRK Career Materials, Inc.  
P.O. Box 437  
Meadow Vista, CA 95722

Occupational Interest Matching  
Career Research  
65 West Gordon Drive  
Salt Lake City, UT 84107

SIGI Office (SIGI)  
Educational Testing Services  
Princeton, NJ 08541

Wisconsin Career Information System  
Vocational Studies Center  
School of Education  
University of Wisconsin  
Madison, WI

## APPENDIX B

Career Information Delivery Systems  
With Full Microcomputer Delivery

Florida	Louisiana
Georgia	Nebraska
Hawaii	North Dakota
Indiana	Oklahoma
Iowa	Puerto Rico
Kansas	Utah
Kentucky	Wisconsin

Career Information Delivery Systems With  
Microcomputer Search and Fiche

Arizona	Michigan
Arkansas	North Dakota
Florida	Virginia
Maryland	



## APPENDIX C

TABLE 1

## OVIS II Occupational Clusters

- 
1. Manual Work - Using hands and hand tools to do physically active and routine work.

---

  2. Basic Services - Protecting or caring for people or animals.

---

  3. Machine Operation - Driving vehicles, operating heavy equipment, and using machines to make products.

---

  4. Quality Control - Checking the quality of products, materials, and services.

---

  5. Clerical - Typing, filing, recording, key punching, scheduling, and doing other related work.

---

  6. Health Services - Providing nursing and related health services to the ill, injured, or handicapped.

---

  7. Crafts and Precise Operations - Doing highly skilled hand and machine work.

---

  8. Skilled Personal Services - Sewing, tailoring, cooking, and cutting and styling hair.

---

  9. Sports and Recreation - Competing and officiating in professional sports and helping to entertain people in their leisure time.

---

  10. Customer Services - Selling products and services, making reservations, and giving information.

---

  11. Regulations Enforcement - Enforcing laws and regulations to protect health, safety, and property.

---

  12. Communications - Writing, editing, reporting, conducting research, and organizing and retrieving information.

---

  13. Numerical - Using mathematics in accounting, banking, data processing, and research.

---

  14. Visual Arts - Creating art through painting, drawing, photography, and other forms.

---

  15. Agriculture and Life Sciences - Conducting research and applying knowledge of the life sciences to raising crops and training animals.

---

TABLE 1

## OVIS II Occupational Clusters (continued)

- 
16. Engineering and Physical Sciences - Conducting research and applying knowledge of the physical sciences to construction and manufacturing.
- 
17. Music - Singing, playing an instrument, composing, arranging, teaching, and directing musical groups.
- 
18. Performing Arts - Entertaining an audience through dancing, acting, or announcing, and teaching and directing these activities.
- 
19. Marketing - Advertising, demonstrating, and buying and selling complex products and services.
- 
20. Legal Services - Applying knowledge of the law to preparing contracts and settling disputes.
- 
21. Management - Directing, planning, and managing the major activities of private and government organizations.
- 
22. Education and Social Work - Teaching, counseling, and providing other social services.
- 
23. Medical Services - Preventing or diagnosing and treating diseases and injuries of people and animals.
- 

(Winefordner, 1983)

TABLE 2

Means of Four OVIS II Scales by Grade and Sex for the Total Normative Group

Sample	Scale 1 Manual Work		Scale 5 Clerical		Scale 20 Legal Services		Scale 23 Medical Services	
	Male	Female	Male	Female	Male	Female	Male	Female
Grade 7	24.6	22.3	25.2	27.3	28.1	27.0	27.0	29.6
Grade 8	24.8	22.2	25.4	28.6	28.6	29.3	26.8	28.8
Grade 9	24.3	20.9	24.5	27.5	28.5	29.3	25.9	28.6
Grades 7-9	24.6	21.9	25.2	27.8	28.4	28.4	26.7	29.1
Grade 10	25.0	22.8	24.4	30.2	27.4	28.8	24.3	27.6
Grade 11	23.7	21.4	25.3	29.4	29.9	29.7	25.5	26.5
Grade 12	24.8	22.3	25.3	29.7	29.8	30.3	25.3	26.5
Grades 10-12	24.5	22.2	24.9	29.8	28.8	29.4	24.9	27.0
Two-Yr. Coll.	23.5	20.4	27.1	29.7	33.8	31.2	27.7	29.8
Four-Yr. Coll.	23.2	20.1	26.6	27.5	34.4	31.2	28.9	28.8
Total College	23.3	20.2	26.8	28.2	34.2	31.2	28.5	29.1
Range	23.2-25.0	20.1-22.8	24.4-27.1	27.3-30.2	27.4-34.4	27.0-31.2	24.3-28.9	26.5-29.8

(Winefordner, 1983)

TABLE 3  
 Summary of the Internal Consistency Reliability Coefficients of the 23 OVIS II  
 Scales Compared with Those of the 24 OVIS I Scales

Sample	N	Reliability Coefficients	
		Range	Median
OVIS II			
Grades 7-9			
Males	1019-1058 <sup>a</sup>	.84-.93	.88
Females	1041-1086 <sup>a</sup>	.85-.94	.89
Grades 10-12			
Males	722-745 <sup>a</sup>	.86-.95	.90
Females	757-776 <sup>a</sup>	.84-.95	.89
College			
Males	1048-1055	.83-.95	.90
Females	1724-1737	.83-.95	.89
OVIS I			
Grade 8			
Males	983-1014 <sup>b</sup>	.84-.93	.89
Females	962-986 <sup>b</sup>	.80-.94	.89
Grade 10			
Males	900-922 <sup>b</sup>	.83-.94	.90
Females	878-900 <sup>b</sup>	.81-.94	.90

(Winefordner, 1983)

<sup>a</sup>N's represent a 25% sample of the standardization group.

<sup>b</sup>N's represent every fifth male and every fifth female of the standardization group.

TABLE 4

Summary of the Test-Retest Reliability Coefficients of the 23 OVIS II Scales and the 24 OVIS I Scales for the Grade 8 and Grade 10 Reliability Samples

Sample	N	Reliability Coefficients	
		Range	Median
OVIS II			
Grade 8			
Males	250-277	.70-.80	.76
Females	271-287	.74-.87	.79
Grade 10			
Males	149-153	.69-.83	.77
Females	157-165	.79-.91	.82
OVIS I			
Grade 8			
Males	644-652	.73-.82	.785
Females	593-599	.72-.84	.775
Grade 10			
Males	566-570	.75-.88	.817
Females	535-538	.74-.90	.848

(Winefordner, 1983)

APPENDIX D

## School Divisions Using the Ohio Vocational Interest Survey II

Alleghany Highlands School	Prince William County Schools
Bath County Schools	Richmond County Schools
Botetourt County Schools	Rockingham County Schools
Buchanan County Schools	Russell County Schools
Buckingham County Schools	Scott County Schools
Essex County Schools	Smyth County Schools
Fluvanna County Schools	Surry County Schools
Grayson County Schools	Tazewell County Schools
Halifax County Schools	Westmoreland County Schools
Henrico County Schools	Wise County Schools
Isle of Wight County Schools	Galax Public Schools
Montgomery County Schools	Manassas Park Public Schools
New Kent County Schools	Martinsville Public Schools
Nottoway County Schools	Petersburg Public Schools
Orange County Schools	Richmond City Public Schools
Page County Schools	Suffolk Public Schools
Pittsylvania County Schools	Virginia Beach Public Schools
Prince George County Schools	Waynesboro Public Schools



## APPENDIX E

## STUDENT QUESTIONNAIRE

\_\_\_\_\_ male                      \_\_\_\_\_ female

\_\_\_\_\_ age                        \_\_\_\_\_ grade

School \_\_\_\_\_

1. What is your father's occupation? \_\_\_\_\_
2. What is your mother's occupation? \_\_\_\_\_
3. List the top three (3) occupations you are considering:
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
4. Which is your first choice? (If undecided, write "undecided")
  - \_\_\_\_\_
5. The Virginia VIEW Career Search was done
  - \_\_\_\_\_ individually
  - \_\_\_\_\_ in a group or class
6. Virginia VIEW was scored by (check one)
  - \_\_\_\_\_ hand
  - \_\_\_\_\_ microcomputer
  - \_\_\_\_\_ batch (the teacher took the worksheets and gave a list of results at a later date)
7. How did you learn about the career information resources in your school?
  - ( ) teacher
  - ( ) counselor
  - ( ) another student/friend
  - ( ) principal
  - ( ) librarian
  - ( ) discovered by myself
  - ( ) poster
  - ( ) bookmark/calendar card
  - ( ) newspaper article/ad (which newspaper? \_\_\_\_\_)
  - ( ) other (Please be specific \_\_\_\_\_)

## FEEDBACK SHEET

After having taken the Virginia VIEW Career Search, please complete the following questions indicating how you feel about each of the statements. You are asked to CIRCLE a number which best corresponds with how you feel about the statement.

1. I would strongly consider some of the careers listed.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
2. I now have a clearer idea about possible careers.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
3. I did learn something about careers for myself.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
4. I now have some better ideas about unsuitable careers.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
5. I learned some things about myself through this experience.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
6. The Career Search was a good use of my time.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
7. I have recommended this experience to a friend.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
8. This career exploration experience has encouraged me to seek information about careers.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
9. The results of this experience were satisfactory.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
10. Taking the Virginia VIEW Career Search helped me make a career decision.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
11. I sought career information on my own, rather than by teacher's/counselor's suggestion.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------

12. The following sources of occupational/educational information were used after taking the Career Search. Answer the following questions by checking "Yes" or "No." Then, if you check "Yes," answer "How Many Times?"

Example: Have you applied for a job within the past three weeks?

YES	NO	How Many Times?
✓		1

- A. Have you talked with other students about yourself and your career opportunities?
- B. Have you talked with your parents about yourself and your career opportunities?
- C. Have you talked with your counselor, teacher, principal or librarian about yourself and your career opportunities? (If "Yes", which one? \_\_\_\_\_)
- D. Have you read or sent for brochures or books on jobs or occupations?
- E. Have you read or sent for brochures or catalogues for college or other training programs?
- F. Have you visited or made plans to visit colleges, training institutions, or places of employment?
- G. Have you watched any TV programs, seen exhibits, shows, or radio programs with information relevant to occupations or educational opportunities?
- H. Have you made an appointment to see a counselor?
- I. Have you used the toll-free Career Information Hotline to obtain occupational/educational information?
- J. Have you used the Virginia VIEW microfiche to obtain information on occupations or postsecondary educational opportunities? (If yes, answer question 13)

13. Sections (check appropriate spaces) of the Virginia VIEW microfiche that I used were:

- \_\_\_\_\_ Occupational File (viewscripts)      \_\_\_\_\_ Postsecondary School
- \_\_\_\_\_ Postsecondary Program File      \_\_\_\_\_ Financial Aid
- \_\_\_\_\_ Apprenticeship File      \_\_\_\_\_ School Subject
- \_\_\_\_\_ Military Training File      \_\_\_\_\_ Additional Training

## STUDENT QUESTIONNAIRE

\_\_\_\_\_ male                      \_\_\_\_\_ female  
 \_\_\_\_\_ age                      \_\_\_\_\_ grade

School \_\_\_\_\_

1. What is your father's occupation? \_\_\_\_\_

2. What is your mother's occupation? \_\_\_\_\_

3. List the top three (3) occupations you are considering:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

4. Which is your first choice? (If undecided, write "undecided")

\_\_\_\_\_

5. The OVIS II was done

\_\_\_\_\_ individually

\_\_\_\_\_ in a group or class

6. OVIS II was scored by (check one)

\_\_\_\_\_ microcomputer

\_\_\_\_\_ machine (the tests were taken up and the results were distributed at a later date)

7. How did you learn about the career information resources in your school?

( ) teacher

( ) counselor

( ) another student/friend

( ) principal

( ) librarian

( ) discovered by myself

( ) poster

( ) bookmark/calendar card

( ) newspaper article/ad (which newspaper? \_\_\_\_\_)

( ) other (Please be specific \_\_\_\_\_)

## FEEDBACK SHEET

After having taken the OVIS II, please complete the following questions indicating how you feel about each of the statements. You are asked to CIRCLE a number which best corresponds with how you feel about the statement.

1. I would strongly consider some of the careers listed.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
2. I now have a clearer idea about possible careers.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
3. I did learn something about careers for myself.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
4. I now have some better ideas about unsuitable careers.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
5. I learned some things about myself through this experience.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
6. The OVIS II was a good use of my time.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
7. I have recommended this experience to a friend.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
8. This career exploration experience has encouraged me to seek information about careers.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
9. The results of this experience were satisfactory.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
10. Taking the OVIS II helped me make a career decision.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------
11. I sought career information on my own, rather than by teacher's/counselor's suggestion.  

strongly agree	6	5	4	3	2	1	strongly disagree
----------------	---	---	---	---	---	---	-------------------

12. The following sources of occupational/educational information were used after taking the OVIS II. Answer the following questions by checking "Yes" or "No." Then, if you check "Yes," answer "How Many Times?"

Example: Have you applied for a job within the past three weeks?

- A. Have you talked with other students about yourself and your career opportunities?
- B. Have you talked with your parents about yourself and your career opportunities?
- C. Have you talked with your counselor, teacher, principal or librarian about yourself and your career opportunities? (If "Yes", which one? \_\_\_\_\_)
- D. Have you read or sent for brochures or books on jobs or occupations?
- E. Have you read or sent for brochures or catalogues for college or other training programs?
- F. Have you visited or made plans to visit colleges, training institutions, or places of employment?
- G. Have you watched any TV programs, seen exhibits, shows, or radio programs with information relevant to occupations or educational opportunities?
- H. Have you made an appointment to see a counselor?
- I. Have you used the toll-free Career Information Hotline to obtain occupational/educational information?
- J. Have you used the Virginia VIEW microfiche to obtain information on occupations or postsecondary educational opportunities? (If yes, answer question 13)

YES	NO	How Many Times?
✓		1

13. Sections (check appropriate spaces) of the Virginia VIEW microfiche that I used were:

- \_\_\_\_\_ Occupational File (viewscripts)      \_\_\_\_\_ Postsecondary School
- \_\_\_\_\_ Postsecondary Program File      \_\_\_\_\_ Financial Aid
- \_\_\_\_\_ Apprenticeship File      \_\_\_\_\_ School Subject
- \_\_\_\_\_ Military Training File      \_\_\_\_\_ Additional Training

## APPENDIX F



## ADMINISTRATION OF QUESTIONNAIRES

1. The findings of the pilot study indicated that students may need clarification on the following questions.

- a. p. 1, #5 - If the students did not do the Career Search as a group or in a class, they should mark "Individually". For example, some schools allow the students to "individually" use the Career Lab during their Study Halls.
- b. p. 1, #6 - If the students used the Virginia VIEW Career Search Scan Sheets (pale blue booklets) to obtain their list of occupational titles (viewscripts), the Career Search was "Hand" scored. It may help to show the students the Scan Sheet.

2. When you return the questionnaires and test results, please indicate:

- a. Length of time between the OVIS and the Career Search. Example: Some schools give the OVIS in the 8th grade and then the students do the Career Search in the 10th. The time between would be two years.
- b. Length of time between taking the OVIS or Career Search and completing the Questionnaires. Example: The students may have done the Career Search in a class in October, but then did the Questionnaire in May 1985. The length of time between activities would be approximately seven months.

3. Any additional comments are welcome!

4. Please do not hesitate to contact me if you have any questions or concerns. My telephone numbers are:

office -  
hotline -

Thank you,

Deborah K. Hedrick  
User Services Specialist

April 1, 1985

APPENDIX G

Virginia VIEW

April 9, 1985

Dear

I am doing a study of the Virginia VIEW Career Search. I plan to compare the results of the Ohio Vocational Interest Inventory Survey II (OVIS II) to the results of the Career Search. I also have a questionnaire designed to compare the students' attitudes toward these instruments and to determine whether the use of these instruments leads the students to seek career information.

Your school system is listed by the Virginia State Department of Education as using the OVIS II. If you are one of the schools which uses the OVIS II (or have used it in the past and have results in the students' files), I would like to discuss with you the possibility of obtaining data from your school. I do not need the names of students who participate in the study. I am also willing to pay for copies of test results. Enclosed is a description of the proposed dissertation research.

You may contact me by calling the Virginia VIEW Career Information Hotline from 8:00 a.m. to noon and from 1:00 p.m. to 5:00 p.m. on week days. Your cooperation is greatly appreciated.

Sincerely,

Deborah K. Hedrick  
User Services Specialist

Carl McDaniels  
Project Director

APPENDIX H

Virginia VIEW

May 7, 1985

Dear

As a follow-up to my letter of April 9, 1985, I am trying to get more information on the usage of the OVIS II and the Virginia VIEW Career Search. Even though you may not have the original data needed for my research, you can help me by completing and returning the enclosed postcard by May 15, 1985.

Your cooperation is greatly appreciated.

Sincerely,

Deborah K. Hedrick  
User Services Specialist

The following information was included on the postcard enclosed in the May 7, 1985 letter:

PLEASE CHECK THE APPROPRIATE BOXES AND FILL IN THE BLANKS!

We do not use the OVIS II.

We use the OVIS II with (#) \_\_\_\_\_ students in grade(s) \_\_\_\_\_

OVIS II results are kept in the students' permanent record.

We do not use the Virginia VIEW Career Search.

We use the Career Search with (#) \_\_\_\_\_ students in grade(s) \_\_\_\_\_.

Career Search results are kept in the permanent record.

Students are required to use the Virginia VIEW microfiche.

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## APPENDIX I

1984

## VIEW/OVIS II INDEX

INTRODUCTION

In this Index, 360 VIEWSCRIPT titles have been cross-referenced with the 23 Ohio Vocational Interest Survey (OVIS) II Scales. This index can be a useful tool if you have already identified an OVIS II Scale of Interest and wish to further explore those related occupations within the VIEW Microfiche. The 23 OVIS II Interest Scales are:

- |                                  |                                       |
|----------------------------------|---------------------------------------|
| 1. Manual Work                   | 13. Numerical                         |
| 2. Basic Services                | 14. Visual Arts                       |
| 3. Machine Operation             | 15. Agriculture and Life Sciences     |
| 4. Quality Control               | 16. Engineering and Physical Sciences |
| 5. Clerical                      | 17. Music                             |
| 6. Health Services               | 18. Performing Arts                   |
| 7. Crafts and Precise Operations | 19. Marketing                         |
| 8. Skilled Personal Services     | 20. Legal Services                    |
| 9. Sports and Recreation         | 21. Management                        |
| 10. Customer Services            | 22. Education and Social Work         |
| 11. Regulations Enforcement      | 23. Medical Services                  |
| 12. Communications               |                                       |

HOW TO USE THE VIEW/OVIS II INDEX

1. Identify an OVIS II Scale of Interest from the OVIS II answer sheet.
2. Find the VIEWSCRIPTS related to your OVIS II Scale.
  - a. The related VIEWSCRIPTS are listed alphabetically within each of the 23 OVIS II SCALES.
  - b. The VIEWSCRIPTS are identified by computer number, title, and fiche location.
3. Find the information by selecting and reading the designated microfiche.

## VIEW/OVIS II INDEX

OVIS II SCALE 1  
MANUAL WORK

Micro Computer Access Number	Occupation Title	Microfiche Location Code	Micro Computer Access Number	Occupation Title	Microfiche Location Code
1	ASSEMBLY LINE		72	CLOTHING PRESSER	T4
	WORKER	T4	119	CONSTRUCTION LABORER	T5
204	BOTTLING & CANNING MACHINE OPERATOR	T4	76	DISHWASHER	T5
206	CALENDER OPERATOR	T4	308	DISPENSING OPTICIAN	DPT48
227	CEMENT MANUFACTURING WORKER	T4	251	DRY-WALL INSTALLER	T5
			222	DUPLICATING MACHINE OPERATOR	T5



Micro Computer Access Number	Occupation Title	Microfiche Location Code	Micro Computer Access Number	Occupation Title	Microfiche Location Code
77	EQUIPMENT & VEHICLE CLEANER	T5		OVIS II SCALE 2 BASIC SERVICES	
82	EXECUTIVE HOUSEKEEPER	DP38			
197	FARM WORKER	T5	229	ANIMAL CARETAKER	PT32
78	FIRE FIGHTER	DT19	68	BARTENDER	PT32
207	FORGE & HAMMER OPERATOR	DT20	230	BELLHOP & BAGGAGE PORTER	PT32
134	FREIGHT & MATERIAL HANDLER	T6	70	CHILD CARE WORKER	PT32
6	FURNACE TENDER	T6	74	COSMETOLOGIST	DPT48
199	GROUNDSKEEPER	T6	133	FLIGHT ATTENDANT	DPT49
69	HOUSE & BUILDING INTERIOR CLEANER	T6	79	FOOD COUNTER WORKER	PT32
160	HOUSEHOLD APPLIANCE INSTALLER & REPR.	DT21	238	FOOD PREPARATION WORKER	T6
259	INDUSTRIAL SANDBLASTER	T7	81	GUARD	P3
124	IND. TRUCK OPERATOR	T7	276	HOME HEALTH AIDE	P3
249	INSULATION WORKER	T7	332	MODEL	P3
200	LOGGING WORKER	T7	89	POLICE OFFICER & DETECTIVE	DPT52
10	MACHINE OILER	T8	110	SERVICE STATION ATTENDANT	PT33
232	MEATWRAPPER	T8	92	SHERIFF & BAILIFF	DPT53
3	METAL CUTTING MACHINE OPERATOR	T8	239	USHER	P3
16	METAL PLATER	DT23	317	VETERINARY ASST.	PT33
19	PACKER & WRAPPER	T9	95	WAITER/WAITRESS	PT33
236	PEST CONTROLLER	DT26		OVIS II SCALE 3 MACHINE OPERATION	
216	PLASTIC PRODUCTS MFG. WORKER	T9			
22	POLISHER & BUFFER	T9	1	ASSEMBLY LINE WORKER	T4
342	PRODUCE GRADER & PACKER	T10	201	BLACKSMITH	DT14
91	REFUSE COLLECTOR	T10	203	BOOKBINDER	T4
258	RIVETER & FASTENER	T10	114	BORING MACHINE & DRILL PRESS OPR.	T4
271	SAILOR & DECKHAND	DT28	130	BUS DRIVER	DPT47
110	SERVICE STATION ATTENDANT	PT33	206	CALENDER OPERATOR	T4
93	STOCK HANDLER	DT30	227	CEMENT MANUFACTURING WORKER	T4
163	TELEPHONE INSTALLER & REPAIRER	DT30	121	CRANE, DERRICK, & HOIST OPERATOR	T5
205	TIRE BUILDER	T11	222	DUPLICATING MACHINE OPERATOR	T5
240	WEIGHER	DT31	252	EARTH DRILLER	DT18
			197	FARM WORKER	T5
			207	FORGE & HAMMER OPR.	DT20
			340	GRAIN & FEED MILLER	T6
			7	GRINDING MACH. OPR.	DT21
			8	HEAT TREATER	DT21
			114	HEAVY EQUIPMENT OPERATOR	T6
			9	INDUSTRIAL SEWING MACHINE OPERATOR	T7

Micro Computer Access Number	Occupation Title	Microfiche Location Code	Micro Computer Access Number	Occupational Title	Microfiche Location Code
124	INDUSTRIAL TRUCK OPERATOR	T7		OVIS II SCALE 5 CLERICAL	
255	LATHER	T7			
85	LAUNDRY & DRY CLEANING WORKER	T7	219	BILL & ACCOUNT COLLECTOR	DP35
266	LOCOMOTIVE ENGINEER	DT22	32	BILLING CLERK	DT13
200	LOGGING WORKER	T7	33	BOOKKEEPER	DT14
267	LONGSHORE WORKER/ STEVEDORE	T8	34	BOOKKEEPING & BILLING MACH. OPR.	DT14
3	METAL CUTTING MACHINE OPERATOR	T8	37	CALCULATING MACHINE OPERATOR	DT15
214	METAL ROLLER & FINISHER	DT24	40	COMPUTER OPERATOR	DT16
351	MINER	T8	220	COPYREADER & PROOF- READER	D1
64	MOBILE HOME INSTALLER & REPAIRER	DT24	43	COUNTER CLERK	DP37
15	MOLD MAKER & CORE- MAKER	T8	352	COURT REPORTER	DT17
213	NUMERICAL CONTROL TOOL OPERATOR	DT25	50	DATA ENTRY EQUIPMENT OPERATOR	DT17
52	OFFICE MACHINE OPR.	T9	132	DISPATCHER	DP37
96	PAPER MANUFACTURING MACHINE OPERATOR	DT25	46	FILE CLERK	D1
256	PAPERHANGER	T9	337	GENERAL CLERK	DP38
236	PEST CONTROLLER	DT26	357	MAIL CARRIER	D2
216	PLASTIC PRODUCTS MFG. WORKER	T9	87	MAIL CLERK	D2
22	POLISHER & BUFFER	T9	234	METER READER	D2
23	PRINTING PRESS OPR.	DT27	54	PAYROLL CLERK	DT26
24	PUNCH & STAMPING PRESS OPERATOR	T10	60	SECRETARY	DPT53
258	RIVETER & FASTENER	T10	61	SHIPPING & RECEIVING CLERK	DT28
271	SAILOR & DECKHAND	DT28	62	STATISTICAL CLERK	DT29
215	SAWYER	T10	225	STENOGRAPHER	DT29
25	STATIONARY ENGINEER	DT29	63	STOCK CLERK	DT29
135	TAXICAB DRIVER	DPT54	65	TYPIST	DT30
392	TEXTILE PRODUCTION WORKER	T10	240	WEIGHER	DT31
260	TILE SETTER	T11		OVIS II SCALE 6 HEALTH SERVICES	
137	TRUCK DRIVER	T11	390	ART THERAPIST	DP35
27	UPHOLSTERER	T11	391	ATHLETIC TRAINER	DP35
217	WATER TREATMENT PLANT OPERATOR	DT31	165	DENTAL ASSISTANT	DPT48
28	WELDER	T11	166	DENTAL HYGIENIST	DPT48
	OVIS II SCALE 4 QUALITY CONTROL		304	ELECTROCARDIOGRAPH TECHNICIAN	DPT49
			305	ELECTROENCEPHALOGRAPH TECHNICIAN	DPT49
290	AIRCRAFT MECHANIC	DT12	170	EMERGENCY MEDICAL TECHNICIAN	DPT49
342	PRODUCE GRADER & PACKER	T10	374	INDUSTRIAL HYGIENIST	PT32
			172	LICENSED PRACTICAL NURSE	DPT50

Micro Computer Access Number	Occupation Title	Microfiche Location Code	Micro Computer Access Number	Occupation Title	Microfiche Location Code
173	MEDICAL RECORDS PERSONNEL	DP41	157	COMPUTER SERVICE TECHNICIAN	DT17
306	NUCLEAR MEDICAL TECHNOLOGIST	DPT50	120	CONSTRUCTION PAINTER	DT17
174	NURSE AIDE/ORDERLY	PT32	167	DENTAL LABORATORY TECHNICIAN	DT18
307	NURSE ANESTHETIST	DPT50	397	DIESEL MECHANIC	DT18
175	OCCUPATIONAL THERAPY PERSONNEL	DPT51	292	ELECTRIC SIGN INSTAL- LER & REPAIRER	DT18
309	OPTOMETRIC ASSISTANT	DPT51	122	ELECTRICIAN	DT19
311	ORTHOTIST & PROSTHETIST	DPT51	253	ELEVATOR CONSTRUCTOR	DT19
177	PHYSICAL THERAPY PERSONNEL	DPT52	158	FARM IMPLEMENT REPAIRER	DT19
312	PHYSICIAN'S ASST.	DPT52	207	FORGE & HAMMER OPR.	DT20
314	PSYCHIATRIC AIDE & TECHNICIAN	PT33	208	FURNITURE & WOOD FINISHER	DT20
179	RADIOLOGIC TECHNOLOGIST	DPT52	125	GLAZIER	DT20
180	REGISTERED NURSE	DPT53	7	GRINDING MACHINE OPERATOR	DT21
181	RESPIRATORY THERAPIST & TECHNICIAN	DPT53	159	HEAVY EQUIPMENT MEC.	DT21
316	SURGICAL TECHNICIAN	DPT53	160	HOUSEHOLD APPLIANCE INSTALLER & REPR.	DT21
287	ULTRASOUND TECHNOLOGIST	DPT54	375	INSTRUMENT REPAIRER	DT21
	OVIS II SCALE 7 CRAFTS AND PRECISE OPERATIONS		294	JEWELER & WATCHMAKER	DT21
395	AIR-CONDITIONING, HEATING & REFRIG- ERATION MECHANIC	DT12	17	LATHE OPERATOR	DT22
290	AIRCRAFT MECHANIC	DT12	295	LOCKSMITH	DT22
263	AIRCRAFT PILOT	DT12	266	LOCOMOTIVE ENGINEER	DT22
376	ALARM SYSTEM INSTALLER & REPAIRER	DT12	11	MACHINIST	DT22
154	AUTO BODY REPAIRER	DT13	396	MAINTENANCE MECHANIC	DT22
155	AUTO MECHANIC	DT13	232	MEATWRAPPER	T8
365	BIOMEDICAL EQUIPMENT TECHNICIAN	DT14	14	METAL JOB & DIE SETTER	DT23
201	BLACKSMITH	DT14	16	METAL PLATER	DT23
202	BOILERMAKER	DT14	291	MILLING & PLANING MACHINE OPERATOR	DT24
113	BRICKMASON & STONE- MASON	DT14	18	MILLWRIGHT	DT24
84	BUILDING MAINTENANCE WORKER	DT15	351	MINER	T8
115	CABINETMAKER	DT15	64	MOBILE HOME INSTALLER & REPAIRER	DT24
116	CARPENTER	DT15	15	MOLD MAKER & CORE- MAKER	T8
117	CARPET INSTALLER	DT15	210	MOTION PICTURE PROJECTIONIST	DT25
118	CEMENT MASON	DT15	296	OFFICE MACHINE REPR.	DT25
2	COMPOSITOR & TYPE- SETTER	DT16	379	OPTICAL LABORATORY TECHNICIAN	DT25
			311	ORTHOTIST & PROSTHETIST	DPT51
			20	PATTERNMAKER & MODEL MAKER	DT26
			194	PHOTO PROCESS WORKER	T9

Micro Computer Access Number	Occupation Title	Microfiche Location Code	Micro Computer Access Number	Occupation Title	Microfiche Location Code
21	PHOTOENGRAVER & LITHOGRAPHER	DT26		OVIS II SCALE 9 SPORTS AND RECREATION	
297	PIANO & ORGAN TUNER	DT26			
257	PLASTERER	T9			
126	PLUMBER & PIPE FITTER	DT27	322	RECREATION WORKER	DP43
212	POWER STATION OPR.	DT27	183	SPORTS PROFESSIONAL	DP45
162	RADIO & TELEVISION INSTALLER & REPR.	DT27		OVIS II SCALE 10 CUSTOMER SERVICES	
286	RADIO OPERATOR	DT27			
298	RAILWAY EQUIPMENT REPAIRER	DT27	245	AUTO PARTS SERVICE CLERK	DP35
127	ROOFER	DT28	246	AUTO SALESPERSON	DP35
110	SERVICE STATION ATTENDANT	PT33	31	BANK TELLER	DPT47
128	SHEET METAL WORKER	DT28	219	BILL & ACCOUNT COLLECTOR	DP35
394	SHIPWRIGHT	T10	38	CASHIER	DPT47
300	SMALL ENGINE REPR.	DT29	43	COUNTER CLERK	DP37
262	SOLAR-ENERGY-SYSTEMS INSTALLER	DT29	131	DELIVERY/ROUTE DRIVER	DPT48
25	STATIONARY ENGINEER	DT29	132	DISPATCHER	DP37
129	STRUCTURAL IRON WKR.	DT30	233	MESSENGER	P3
163	TELEPHONE INSTALLER & REPAIRER	DT30	235	PARKING LOT ATTEND.	DT25
26	TOOL & DIE MAKER	DT30	90	POSTAL CLERK	DPT52
27	UPHOLSTERER	T11	106	REAL ESTATE AGENT	DP43
161	UTILITIES LINEPERSON	DT31	59	RECEPTIONIST	DP43
302	VENDING MACHINE MECHANIC	DT31	108	RETAIL SALESPERSON	DP44
28	WELDER	T11	94	TELEPHONE OPERATOR	PT33
354	WORD PROCESSOR	DT31	136	TICKET AGENT	DP45
			226	TRAVEL AGENT	DP45
			112	WHOLESALE SALES REP.	DP46
	OVIS II SCALE 8 SKILLED PERSONAL SERVICES			OVIS II SCALE 11 REGULATIONS ENFORCEMENT	
66	BAKER	DT13	250	CONSTRUCTION INSPECTOR	DP36
67	BARBER	DPT47			
203	BOOKBINDER	T4	297	CORRECTIONS OFFICER	P3
73	COOK/CHEF	DT17	355	F.B.I. AGENT	DP38
74	COSMETOLOGIST	DPT48	78	FIRE FIGHTER	DT19
71	CUSTOM CLOTHING MAKER	DT17	385	FISH & GAME WARDEN	DP38
169	DIETITIAN	DT18	356	FORENSIC POLYGRAPH EXAMINER	DP38
88	MEAT CUTTER	T8	83	INSPECTOR	DP39
231	MORTICIAN	DPT50	48	INSURANCE ADJUSTOR	DP39
299	SHOE REPAIRER	DT29	89	POLICE OFFICER & DETECTIVE	DPT52
27	UPHOLSTERER	T11	371	PRIVATE INVESTIGATOR	DP42
			318	PROBATION & PAROLE OFFICER	DP42

Micro Computer Access Number	Occupation Title	Microfiche Location Code	Micro Computer Access Number	Occupation Title	Microfiche Location Code
	OVIS II SCALE 12 COMMUNICATIONS		288	STATISTICIAN	D2
			289	SURVEYOR HELPER	DT30
				OVIS II SCALE 14 VISUAL ARTS	
30	ADVERTISING AGENT	DP34	327	COMMERCIAL ARTIST	DPT48
342	ADVERTISING COPY- WRITER	DP34	369	FLORIST	DT20
344	ANTHROPOLOGIST	DP34	329	INDUSTRIAL DESIGNER	DPT49
345	ARCHEOLOGIST	DP34	190	INTERIOR DESIGNER	DPT49
42	COMPUTER SYSTEMS ANALYST	DP36	189	MERCHANDISE DIS- PLAYER	DT23
220	COPYREADER & PROOF- READER	D1	193	PAINTER & SCULPTOR	DPT51
44	ECONOMIST	DP37	195	PHOTOGRAPHER	DPT51
347	GEOGRAPHER	DP39			
348	HISTORIAN	DP39		OVIS II SCALE 15 AGRICULTURE AND LIFE SCIENCES	
330	INTERPRETER & TRANSLATOR	DP40	273	AGRICULTURAL SCIENTIST	DT12
191	JOURNALIST	DP40			
99	LIBRARIAN	DP40	380	BIOCHEMIST	DT13
100	LIBRARY TECHNICIAN & ASSISTANT	DP40	138	BIOLOGICAL SCIENTIST	DT13
55	PERSONNEL WORKER	DP41	274	BOTANIST	DT14
349	POLITICAL SCIENTIST	DP41	164	CLINICAL LAB. WORKER	DT16
186	PSYCHOLOGIST	DP42	389	CYTOTECHNOLOGIST	DT17
57	PUBLIC RELATIONS SPECIALIST	DP42	169	DIETITIAN	DT18
350	SOCIOLOGIST	DP44	388	ECOLOGIST	DT18
335	TECHNICAL WRITER	D2	198	FARMER & FARM MGR.	DPT49
196	URBAN & REGIONAL PLANNER	DP45	338	FORESTER	DT20
			339	FORESTRY TECHNICIAN	DP38
			199	GROUNDSKEEPER	T6
			280	MARINE SCIENTIST	DT23
	OVIS II SCALE 13 NUMERICAL		396	MEDICAL LAB ASST.	DT23
29	ACCOUNTANT	D1	343	RANGE MANAGER	DT27
359	ACTUARY	D1			
218	ASSESSOR, CONTROLLER & TREASURER (GOV'T)	DP35		OVIS II SCALE 16 ENGINEERING AND PHYSICAL SCIENCES	
41	COMPUTER PROGRAMMER	D1	272	AERONAUTICAL & ASTRO- NAUTICAL ENGINEER	DT12
42	COMPUTER SYSTEMS ANALYST	DP36	360	AGRICULTURAL ENGR.	DT12
44	ECONOMIST	DP37	188	ARCHITECT	DPT47
45	ESTIMATOR	D1	361	ASTRONOMER	D1
83	INSPECTOR	DP39	373	BIOMEDICAL ENGINEER	DT13
148	MATHEMATICIAN	DPT50	275	BROADCAST TECHNICIAN	DT15
211	NUMERICAL CONTROL TOOL PROGRAMMER	DT25	139	CHEMICAL ENGINEER	DT16
58	PURCHASING AGENT	DP42	140	CHEMICAL TECHNICIAN	DT16
224	REAL ESTATE APPRAISER	DT28	141	CHEMIST	DT16
			142	CIVIL ENGINEER	DT16
			42	COMPUTER SYSTEMS ANALYST	DP36

Micro Computer Access Number	Occupation Title	Microfiche Location Code	Micro Computer Access Number	Occupation Title	Microfiche Location Code
250	CONSTRUCTION				
	INSPECTOR	DP36		OVIS II SCALE 19	
143	DRAFTER	DT18		MARKETING	
388	ECOLOGIST	DT18			
144	ELECTRICAL & ELECTRONICS ENGR.	DT19	30	ADVERTISING AGENT	DP34
145	ELECTRICAL & ELECTRONICS TECH.	DT19	342	ADVERTISING COPY- WRITER	DP34
387	ENERGY EFFICIENCY TECHNICIAN	DT19	308	DISPENSING OPTICIAN	DPT48
278	GEOLOGIST	DT20	104	INSURANCE AGENT	DP39
277	GEOPHYSICIST	DT20	57	PUBLIC RELATIONS SPECIALIST	DP42
146	INDUSTRIAL ENGINEER	DT21	36	RETAIL BUYER	DPT53
331	LANDSCAPE ARCHITECT	DPT50	111	STOCKBROKER	DP45
362	LASER TECHNICIAN	DT22	112	WHOLESALE SALES REPRESENTATIVE	DP46
388	MARINE ENGINEER & ARCHITECT	DT22		OVIS II SCALE 20	
280	MARINE SCIENTIST	DT23		LEGAL SERVICES	
148	MATHEMATICIAN	DPT50			
149	MECHANICAL ENGR.	DT23	49	JUDGE	DP40
150	MECHANICAL EN- GINEERING TECH.	DT23	51	LAWYER	DP40
281	METALLURGICAL ENGR.	DT24	370	LEGAL ASSISTANT	DP40
283	METEROLOGIST	DT24	58	PURCHASING AGENT	DP42
284	MINING ENGINEER	DT24		OVIS II SCALE 21	
363	NUCLEAR ENGINEER	DT25		MANAGEMENT	
364	PETROLEUM ENGINEER	DT26			
176	PHARMACIST	DPT51	261	AIR-TRAFFIC CONTROLLER	DPT47
151	PHYSICIST	DT26	358	AIRPORT MANAGER	DP34
53	ROBOTICS TECHNICIAN	DT28	35	BUILDING MANAGER	DP35
393	SAFETY ENGINEER	DT28	319	CITY MANAGER	DP36
153	SURVEYOR	DT30	198	FARMER & FARM MANAGER	DPT49
	OVIS II SCALE 17		80	FOOD SERVICE MANAGER	DP38
	MUSIC		171	HEALTH ADMINISTRATOR	DP39
192	MUSICIAN & COMPOSER	DP21	223	HOTEL/MOTEL MANAGER	DP39
	OVIS II SCALE 18		191	JOURNALIST	DP40
	PERFORMING ARTS		173	MEDICAL RECORDS PERSONNEL	DP41
325	ACTOR/ACTRESS	DP34	268	MERCHANT MARINE OFFICER	DPT50
328	DANCER	DP37	377	NURSING HOME ADMIN.	DP41
333	RADIO & TELEVISION ANNOUNCER	DT43	55	PERSONNEL WORKER	DP41
			237	POSTMASTER & MAIL SUPERVISOR	DP42
			58	PURCHASING AGENT	DP42
			270	RAILROAD CONDUCTOR	DP43
			109	RETAIL SALES MANAGER	DP43
			221	CREDIT & COLLECTION MANAGER	DP37

Micro Computer Access Number	Occupation Title	Microfiche Location Code	Micro Computer Access Number	Occupation Title	Microfiche Location Code
OVIS II SCALE 22 EDUCATION AND SOCIAL WORK					
346	ARCHIVIST & CURATOR	DP34			
184	CLERGY	DP36			
241	COLLEGE ADMIN.	DP36			
97	COLLEGE INSTRUCTOR	DP36			
336	COOPERATIVE EXTENSION SERVICE WORKER	DP36			
185	COUNSELOR	DP37			
98	ELEMENTARY SCHOOL TEACHER	DP37			
368	MARRIAGE COUNSELOR	DP41			
353	PLACEMENT SPECIALIST	DP41			
318	PROBATION & PAROLE OFFICER	DP42			
186	PSYCHOLOGIST	DP42			
323	RELIGIOUS WORKER	DP43			
102	SCHOOL ADMINISTRATOR	DP44			
103	SECONDARY SCHOOL TEACHER	DP44			
324	SOCIAL SERVICE AIDE	DP44			
187	SOCIAL WORKER	DP44			
242	SPECIAL ED. TEACHER	DP44			
183	SPORTS PROFESSIONAL	DP45			
399	PRESCHOOL TEACHER	DP42			
101	TEACHER AIDE	DP45			
243	VOCATIONAL EDUCATION TEACHER	DP45			
244	VOCATIONAL REHABIL- ITATION COUNSELOR	DP46			
OVIS II SCALE 23 MEDICAL SERVICES					
303	CHIROPRACTOR	DPT47			
168	DENTIST	DPT48			
310	OPTOMETRIST	DPT51			
178	PHYSICIAN	DPT52			
313	PODIATRIST	DPT52			
315	SPEECH-LANGUAGE PATHOLOGIST & AUDIOLOGIST	DPT53			
182	VETERINARIAN	DPT54			

**The two page vita has been  
removed from the scanned  
document. Page 1 of 2**



**The two page vita has been  
removed from the scanned  
document. Page 2 of 2**