AN EVALUATION MODEL
FOR
CAREER INFORMATION DELIVERY SYSTEMS

by

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(ABSTRACT)

No uniform plan has been developed to evaluate career information delivery systems or to collect data from the various systems. Out of this context, a theoretical evaluation model was developed by which internal or external evaluators of career information delivery systems may develop evaluation strategies.

The proposed model offers a comprehensive approach to the study and evaluation of career information delivery systems. A symbolic representation and narrative description of the various aspects of the proposed model are presented. Three groups of data sources have been identified to make significant contributions for immediate and longitudinal studies and include: (1) users (students and clients); (2) user site personnel (staff/counselors); and (3) administrators. The coordinated and interrelated parts of career information delivery systems are identified as (1) the organization and management structure, (2) information development, (3) information delivery, (4) user services, (5) economic efficiency, and (6) user impact. The model is flexible enough to allow for a wide variety of evaluation strategies and can be divided, as appropriate, into several phases.

Furthermore, a sample evaluation study on a major component of the evaluation model, information delivery, was implemented on the 1981 Virginia Career Information Delivery System microfiche. The data for this

study was collected by three methods: (1) a questionnaire to obtain user reactions and demographic information, (2) a questionnaire to obtain site information and, (3) on site interviews with structured questions to gather information in a less formal method.

The purpose of this phase of the study was to illustrate proper application of one phase of the model which addressed the seventeen performance evaluation criteria identified by NOICC and thirteen additional items specific to state data collection identified by this writer.

It is believed that this model will serve as an overall framework for future and more comprehensive studies, and in the end will improve career information delivery systems.

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The author wants to express appreciation to her parents, Mr. and Mrs. Ralph Lee Frost, whose continual devotion and support have been a motivating factor in her life. The major reward of completing an advanced degree is the opportunity to acknowledge that they taught, through example, the true meaning of the words expressed by Robert Kennedy in Promises to Keep . . .

> "If this is the vision of the future-if this is the direction in which we want to move-the next thing we must consider is how we propose to get there, and what obstacles lie in our path. For such a vision is never self-fulfilling. We cannot stand idly by and expect our dreams to come true under their own power. The future is not a gift; it is an achievement."

Finally, the author acknowledges a great debt to her husband, Bob, for his countless sacrifices and excessive burdens along with constant reminders that during the years his wife was absorbed in work and study, her time and laughter were missed.

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CHAPTER I

INTRODUCTION

Since the early 1970's, the United States Department of Labor funded the development of statewide career information systems. The evolution or blossoming of such systems has come with the advent and growth of federally initiated programs. The Education Amendments of 1976 (P. L. 94-482) established the National Occupational Information Coordinating Committee (NOICC) with the expressed purpose to develop and implement an Occupational Information System (OIS) and to improve communication, coordination and cooperation in use of the system through a Career Information Delivery System (CIDS). The creation of career information delivery systems resulted from the need to provide better access to occupational information and computerized delivery. State Occupational Information Coordinating Committees (SOICCs) were also required by this Act. Congress extended the role of both National and State Committees in the Comprehensive Employment and Training Act (CETA) Amendments of 1978 (P. L. 95-524) (National Occupational Information Coordinating Committee, June, 1979). Commercial vendors have also responded to the need for career information delivery (Clyde, 1979). However, the most significant of such system investments, and the ones referred to in this study are the statewide career information delivery systems (CIDS) conducted under NOICC's leadership.

Over $60 million federal dollars were spent on labor market information and activities for statewide programs including career counseling and information in FY 1979 alone (U. S. Department of Labor, 1979). Millions more are spent annually at the local level to create a network of community and school based career information delivery systems through CETA and complementary education legislation such as

the Career Education Incentive Act, the Elementary and Secondary Education Act and the Vocational Education Act.

Career information delivery systems are designed to answer the need for current, comprehensive and standardized occupational information. The overall goal of such systems is to have a positive influence on the process by which people choose jobs and careers by providing them with relevant educational, training and occupational information. Basically, the legislative mandates express a high level of concern for the delivery of educational and labor market information available to youth and adults that is standardized, comprehensive, accurate and relevant to the local, state and national scene.

Most philosophies of career education incorporate the idea that the right to choose an occupation is a basic fundamental right. Obviously, knowledge of career/occupational information is necessary to exercise optimal freedom in choosing an occupation.

Career information has become increasingly vital and is sought in great quantities. Wegmann reports that there are an increasing number of average individuals, as well as special groups of individuals, who need help in coping with varied aspects of career information (Wegmann, 1979). A basic premise is that effective use of career information in personal planning requires quality information and quality services that help clients relate the information to personal needs. Therefore, the importance of improving career information systems and services is continually present. If these systems are to be effective in the long-term in meeting designated goals, it is appropriate to focus attention on the quality of information as well as its effective delivery. Consequently, it is appropriate that such systems be evaluated.

The number of systems, the expenditures for such systems and their components have experienced notable growth. Yet, a major omission exists: there is no comprehensive evaluation model.

State programs for development of Educational Information Centers were studied in 1980 (Franklin & Macy, 1980). It was reported that planning activities of State Occupational Information Coordinating Committees dominated the literature. Of significance to the need for

this proposed study, it was reported that states were minimizing research and evaluation activities in favor of a focus on development and implementation of services. The results of this study led Franklin & Macy to recommend that a greater effort to incorporate evaluation emerge.

The most striking statement of justification came from Wynonia Dunn, NOICC Occupational Information Systems Specialist, during a telephone conversation on January 8, 1982. She stated that even though NOICC policies and standards include evaluation, no uniform bases for submission of information to NOICC exists and no guidelines are provided for evaluating these systems according to a standard format. She reported that of the 57 SOICCs, only ten states have undertaken internal or external evaluations that are available for review.

Throughout the descriptive reports on career information delivery systems, evaluation is an obvious weak link. Since the systems are new, reported efforts to evaluate their effectiveness are limited in quality and quantity. A few exemplary evaluations have been conducted; however, they deal with only one component and do not evaluate the entire system.

Career information delivery systems are prevalent. Fifty-seven states and territories (Flanders, 1980) have developed a variety of career information delivery systems representing millions in state and federal funds. The sheer volume is sufficient to provoke evaluations and behooves educators to proceed.

The lack of complete evaluation studies and significant results is attributed, by this writer, to the fact that a comprehensive evaluation model has been omitted and that adaptation of existing evaluation models has not been presented in the literature on Career Information Delivery Systems.

It is evident that evaluation of career information delivery systems is a process whose time has come. A theoretical evaluation model for such systems needs to be identified or developed.

PURPOSE OF STUDY

The purpose of this study was to provide a model framework by which internal or external evaluators of career information delivery systems may develop evaluation strategies needed for the appraisal and improvement of such systems.

Restated as study questions, the thrust of this research will be to determine:

1. What evaluation model identifies a comprehensive approach to evaluate statewide career information delivery systems?

2. What is the effectiveness of the information delivery component used to evaluate the Virginia Career Information Delivery System microfiche as determined by implementation of that phase of the model?

3. What further adaptations would be needed for the model to apply to other career information delivery systems?

PROCEDURE FOR THE STUDY

A brief overview of the procedure used in conducting this study follows:

1. Literature on the development of career information delivery systems at the federal and state levels was reviewed, along with literature addressing funding and programmatic activities.

2. Literature on the development and status of the career information delivery system in Virginia was reviewed, along with a description of the four dissemination media.

3. Literature on the status of components and existing career information delivery system evaluations was reviewed.

4. Literature on major evaluation models was reviewed and the application of one model to the current program was outlined.

5. Information from steps one through four were analyzed and organized as the basis for an evaluation model for career information delivery systems.

6. A component of the evaluation model, information delivery, was tested on the Virginia Career Information System 1981 microfiche and the results analyzed.

7. Conclusions were drawn concerning the characteristics of systems for which the model would be appropriate and revisions considered for others.

8. Recommendations for use of the model and for further study in evaluation of such systems were made.

NEED

With the development and implementation of career information delivery systems in the United States, there has been growing emphasis on evaluation of such programs (Snipes & McDaniels, 1981). This need is largely due to the trend toward accountability for use of funds granted for operation of such programs. However, the need is also related to the desire to validate and improve such programs.

As administrations change and funding fluctuates, there are frequently changes in the priority given to education as well. Likewise, changes in educational programs occur. It appears that changes may be made in a career information delivery system without sufficient data on which to base decisions. Therefore, a more systematic method of data collection and evaluation should exist so that such changes will be objectively based as they affect the program and will enhance decision-making and long-range planning (Institute for Development of Educational Activities, Inc., 1974).

It is necessary for users at the local level and administrators at the state level to have established criteria on which to base decisions affecting the program. With the spiraling cost of all services, accountability becomes a natural need. Questions regarding the effectiveness of career information delivery systems result in a variety of efforts to evaluate the effectiveness and efficiency of expensive yet commonly practiced procedures. Therefore, establishment of evaluation procedures for such systems is a practical necessity.

If an appropriate evaluation model can be developed, a report can be made to the National Occupational Information Coordinating Committee and to the United States Congress on the use of federal funds used in these statewide projects. However, if each state is allowed to design independent evaluations to serve local information requirements, the compilation may be useless. At this time, no requirements to use common instruments by which information could be gathered on a uniform basis for submission to the National Occupational Information Coordinating Committee, the United States Departments of Labor or Education and to Congress exist. No national guidelines are provided for evaluating these systems according to a standard format. Some states are designing and conducting evaluations to serve individual needs and there is no prospect of aggregating data across the states to answer questions raised by higher level audiences such as the United States Department of Education, Department of Labor, and Congress. To respond appropriately to these questions regarding the overall effect or national impact of such programs, certain common data elements may be specified and responses to those data elements collected according to uniform procedures and integrated in a national report.

Many frameworks for evaluation that are acceptable for use in the field of education exist. However, these frameworks do not include many of the specific components involved in evaluation of career information delivery systems. There is a lack of specific evaluation procedures which effectively incorporate all program components, user behavior and the interactive processes. In addition, there is a lack of uniformity in programs which hinders the ability to evaluate or even compare career information delivery systems.

In summary, very little has been found in the literature on career information delivery systems that can be identified as comprehensive, meaningful evaluation models. There is a definite need to evaluate career information delivery systems and to be accountable for assuring the public a high level of career information (Snipes & McDaniels, 1981). The present study is in response to this need and will hopefully contribute to reducing the magnitude of problems

related to establishing a standard and comprehensive method of evaluation. Chapter III includes both a comprehensive descriptive model of career information delivery systems for use in evaluation and the CIPP Model, an overall evaluation design matrix. A comprehensive evaluation model is presented in Chapter III and one component was tested. These models are intended to aid efforts to improve career information services. Furthermore, they are intended to provide a framework for collection of common data for satisfying the needs of higher level audiences.

DEFINITION OF TERMS

Accountability. Accountability is a part of a comprehensive evaluation process and is defined as "a set of procedures that collates information about accomplishments and costs to facilitate decision-making" (Krumboltz, 1974).

Career. Career is the totality of a person's work and leisure activities extending throughout a person's lifetime. In the course of a lifetime, a person engages in many work activities, paid and unpaid. These activities may involve the home and family, education and occupations, and civic and community services (Appalachia Educational Laboratory, 1979).

Career Information. Career information is any information related to occupations or careers. It is found in a variety of media ranging from pamphlets through audiovisual materials (U.S. Department of Labor, 1979).

Career Information System. A career information system "consists of more than a compilation of diverse information on the world of work. A system consists of coordinated and interrelated parts." Such systems contain three minimum components: (a) an information component; (b) a delivery component; and (c) a user service component (U.S. Department of Labor, 1979).

Evaluation. In this dissertation, evaluation is referred to as a purposeful set of activities which has as its ultimate objective the

rendering of judgments about the merit or worth of educational programs (Worthen & Sanders, 1973).

Model. A model is an abstract or symbolic representation of the various aspects of a complex event or situation, and their interrelationships. A model is by nature a simplification and thus may or may not include all components. It should include all of those components which the model builder considers important. In this sense, models serve as an aid to understanding the event or situation being studied. The true value of a model lies in the fact that it is an abstraction of reality that can be useful for analytical purposes. In a way, models are analogies which problem-solvers use to clarify their thinking about relatively complex presentation (Lippitt, 1973). A model cannot provide an answer and does not have assessment methods associated with it (Rodgers, 1980).

System. A system is a bounded collection of interdependent parts classified or arranged in a regular, orderly form so as to show a logical plan linking the various parts (Miles, 1964).

LIMITATIONS OF THE STUDY

Evaluation is an essential element of all educational programs. Most authors of evaluation literature indicate that evaluation is a continuous process because its findings can serve to modify goals and provide information to redesign certain aspects of the program. They also indicate that the task of determining the effectiveness of an entire program is very difficult. The problems of evaluation become more complex as the complexity of the program grows (Suchman, 1967). This is applicable to the current evaluation problem.

Evaluation has been treated somewhat superficially in career information systems literature. Contracts have been made with project staffs and others to state goals, assess needs, design and implement appropriate programs. However, few have offered specific concrete suggestions for implementing evaluations, solving evaluation problems, or for designing new, comprehensive evaluation strategies. While standards and guidelines for accreditation of computer-based systems for

career information state that evaluation should be a component, methods for conducting evaluations are not included and are not readily available (Association of Computer-Based Systems for Career Information, 1979). Evaluation remains an important, but vague concept in many ways with few guidelines for implementation.

Evaluation of career information delivery systems is further complicated, since career exploration and development is a process which involves personal assessment, human variables must be considered. Successful career decisions require integrating cognitive and affective components and developing analytical skills. Obvicusly, good information by itself is not enough.

The lack of a uniform model for evaluation has been identified. The overall purpose of this study is to provide a comprehensive evaluation model for career information delivery systems. Only one component of the model will be implemented. The methodology, procedures, data collection instruments and measurement of all other identified components will remain to be solved.

In summary, the major limitations of this study are the complexity of the systems approach and the lack of adaptation of evaluation models to comprehensive career information systems. Furthermore, even though a comprehensive evaluation model will be presented, a complete evaluation plan will not be developed nor implemented.

ORGANIZATION OF THE STUDY

This dissertation will introduce readers to educational and occupational information systems and services through a study of their origin and development, review major evaluation models, present an evaluation model for career information delivery systems, and use the model for purposes of evaluating one component of career information delivery systems.

Chapter I provides a general introduction to the study; states the purpose; states the study procedures; establishes the need for

the study; defines terms used in the study; reviews the major limitations, and; concludes with an overview of the organization of the study.

In Chapter II, a review of the professional literature relating to the historical perspectives of career information delivery systems will be presented. In the first section, the federal role in the development of such systems will be traced. The second section will identify the dissemination media of career information delivery systems. The third section will identify major components of the Virginia statewide system and focus on current trends in the delivery system established by the State Occupational Information Coordinating Committees.

Chapter III will present a review of literature related to evaluation; it will consist of four sections. The first section will report the status of career information delivery system evaluations which have been undertaken. The second section will discuss the major evaluation models. The next section will present a comprehensive evaluation model for career information delivery systems. The final section will identify an adaptation plan for evaluating career information delivery systems using a major evaluation model.

Chapter IV will present the methodology used in applying a major component of the evaluation guide, information delivery, to the Virginia Career Information Delivery System microfiche. Details of the research methods and procedures, the instruments, sample population, data collection and an analysis of the data will be included.

Chapter V will contain the presentation of the results of the study including questionnaire response rates, discussion of findings, summary of recommendations, and report of on-site visitations.

Chapter VI will present an overall summary. General conclusions will be drawn from the data relative to the purposes of the study. Recommendations for application and implementation of further evaluation of career information delivery systems will be presented along with suggestions for further study.

The bibliography includes references to works cited in the study.

The appendices contain copies of all instruments used in the study.

CHAPTER II

HISTORICAL PERSPECTIVES OF CAREER INFORMATION DELIVERY SYSTEMS

The review of literature related to the historical perspectives of statewide career information delivery systems that follows includes information on three areas which help to form an understanding of their current status. The federal role including legislative action will be presented first. The second section will review the dissemination media of statewide career information delivery systems in other states. The final section of this chapter will present a brief overview of Virginia's career information delivery system.

THE FEDERAL ROLE

An unprecedented demand for career information has emerged in the dynamic, moving, changing American job market (Lathrop, 1978). There are numerous articles, studies and examples of personal problems which indicate the need for individuals to receive assistance in acquiring occupational information and developing career plans along with job-finding skills (Wegmann, 1979).

Awareness of the need for improved career guidance and occupational information systems has grown in recent years. The economic disorder and labor market imbalances of the 1970s brought attention, at the national level, to this profound need. Subsequently, the United States Congress responded to this need with legislative mandates and partial funding. The unique evolution of the federal role in the statewide systems that exist today will be outlined in this section.

LEGISLATION

The goal of vocational education, established when Congress passed the Smith-Hughes Act in 1917, is to prepare students for work (U.S. Congress, 1917). Since that time, efforts toward training have

attempted to develop skills required in the occupations. The plan is to prepare vocational program participants for eventual job opportunities which specifies the need for accurate and timely occupational information. However, in the past, occupational information has often been tossed together in hit-and-miss fashion (Udell, 1966). More recent Federal legislation has encouraged national, State and local level standardization of occupational information.

Vocational guidance and provisions for funding fully functioning career guidance programs were emphasis of the Educational Amendments of 1968 (U.S. Congress, 1968).

The Office of Career Education was established by the Career Educational Demonstration Act in 1974 and has distributed millions of dollars for career education activities (U.S. Congress, 1974).

The Employment and Training Administration (ETA), of the Department of Labor provided funding, in Fiscal Year 1974, through a competitive grants program for development and implementation of eight Statewide career information systems. This action resulted from a model pilot project funded and conducted in Oregon. The eight States that were recipients of grants were Alabama, Colorado, Massachusetts, Michigan, Minnesota, Ohio, Washington and Wisconsin (Clyde, 1979). The Oregon Career Information System was set up as a public consortium. An advisory board and staff was established with expertise in the development of occupational and educational information, user services, data processing, and management (McKinlay, 1974). Colorado, Massachusetts, Minnesota, and Washington followed Oregon's delivery system. Wisconson, Ohio, and Alabama adapted the Guidance Information System (Clyde, 1979). One state, Michigan, designed its own system and developed computer software (Parish, Rosenberg & Wilkerson, 1979). The NOICC initiated a second round of competitive grants available in mid-1979 to provide incentive for the implementation of additional Statewide career information delivery systems (Clyde, 1979).

The Educational Amendments of 1976 established the Educational Information Centers Program to provide educational information guidance,

counseling, and referral services. These services are to be available to all individuals in a state through centers located within a reasonable distance of all state residents (U.S. Congress, 1976).

As previously stated in the introduction, the Education Amendments of 1976, P. L. 94-482, Title II, Vocational Education, Section 161, established the National Occupational Information Coordinating Committee (NOICC) with the expressed purpose to develop and implement an Occupational Information System (OIS) and to improve communication, coordination and cooperation in use of the system (U.S. Congress, 1976). It was designated that the system include data on occupational demand and supply based on uniform definitions, standardized estimating procedures, and standardized occupational classifications (NOICC, June, 1979). A focus on providing better access to occupational information and computerized delivery systems was created. This involved an interagency agreement between the Employment and Training Administration (ETA), the Bureau of Labor Statistics, the U.S. Office of Education, and the National Center for Educational Statistics (NOICC, February, 1978).

State Occupational Information Coordinating Committees (SOICCs) were also required by the same section of the Act and NOICC was charged to assist them. Establishment of a SOICC is complete when there is: a signed State interagency agreement; a signed State (SOICC) and Federal (NOICC) agreement; an annual SOICC plan of activities; and a program budget request (NOICC, October, 1979).

The responsibilities of the national and state committees involved improving the quality and delivery of data to be used for vocational education and CETA program planning in addition to implementing an Occupational Information System (OIS).

Section 161(b)(1) of P. L. 94-482 states that a primary purpose of NOICC shall be:

> "To develop and implement an occupational information system to meet the common occupational information needs of vocational education programs and employment and training programs at the national, State, and local levels, which system shall include data on occupational demand and supply based on uniform definitions, standardized estimating procedures,

and standardized occupational classifications" (U.S. Congress, 1976, p. 2198).

It was reported that this legislation was created as a result of two significant studies. The first study had been conducted in 1974 by the General Accounting Office and concluded that vocational education administrators had not given adequate consideration to labor market factors when making decisions regarding vocational program offerings. The other was conducted in 1975 by the Center for Occupational Information at the North Carolina State University and reported that of the 10 States studied, there was little linkage between instructional programs being offered and the occupations that manpower data indicated would be in future demand (NOICC, May, 1979).

The NOICC's initial policies were:

"A. NOICC will not be a primary data collection agency but shall coordinate such efforts principally among its member agencies.

B. NOICC adopts the standard occupational classification system of the Office of Federal Statistical Policy and Standards, U.S. Department of Commerce, as a standard overall classification system.

C. NOICC adopts the occupational employment statistics program of the Department of Labor as the standard principal source of current and projected occupational employment data at the local, State, and national level.

D. NOICC, in development of the occupational supply model of the OIS, will utilize data and information available from the following sources:

1. Employment and Training Administration's data reporting systems, e.g., State and National Apprenticeship System (SNAPS) and Employment Security Automated Reporting System (ESARS).
2. State Employment Security Agency programs, i.e., Employment Service (ES) and Unemployment Insurance Service (UIS).
3. Rehabilitation Services Administration's Case Service Report System (CSRS).
4. National Center for Education Statistics' data reporting systems, i.e., Higher Education General Information Survey (HEGIS), Vocational Education Data System (VEDS), and Non-collegiate Postsecondary School Survey (NPSS).

E. NOICC encourages the implementation of Statewide career information systems for the delivery of occupational and educational information used for career choice and

job search purposes. The information used in these systems should be obtained from the OIS to the maximum possible extent. NOICC's concept for the development of these systems is based on the career information system determination program of the Department of Labor.

F. NOICC adopts the labor market area concept, as defined by the Department of Labor, as the basic geographic subdivision for the development and use of occupational information" (NOICC, December, 1979, p. 72067).

The NOICC's initial mandates were expanded with the passage of three subsequent and related legislative acts. The Youth Employment and Demonstration Projects Act (YEDPA) of 1977 (PL 95-93) (U.S. Congress, 1979) directed NOICC to respond to the occupational information needs of unemployed youth. This legislation has been superseded by the Comprehensive Employment and Training Act (CETA) Amendments of 1978 in which Congress extended the role of both National and State Committees (U.S. Congress, 1978). The NOICC mandate was broadened to "give special attention to the labor market information needs of youth, including activities such as, but not limited to:

1. assisting and encouraging local areas to adopt methods of translating national aggregate occupational outlook data into local terms;
2. providing technical assistance for programs of computer on-line terminals and other facilities to utilize and implement occupational and career outlook information supplied by State employment security agencies and to improve the match of youth career desires with available and anticipated labor demand;
3. assisting and encouraging the development of State occupational information systems, accessible to local schools, including pilot programs in the use of computers to facilitate such access; and
4. in cooperation with State and local correctional agencies, encouraging programs of counseling and employment services for youth in correctional institutions; and
5. in cooperation with State and local educational agencies, and other appropriate persons and organizations, encouraging programs to make available employment and career counseling to postsecondary youth; and
6. providing technical assistance for programs designed to encourage public and private employers to list all available job opportunities for youth with the appropriate eligible applicants, employers, and offices" (U.S. Congress, 1978, p 1972-1973).

Therefore, the legislative mandate in the CETA Amendments encouraged the expansion of employment counseling services and assisted the development of computerized guidance systems. The purpose was to improve the coordination of youth career desires and anticipated labor market demand (NOICC, October, 1979).

The Career Education Incentives Act of 1977 has provided additional millions for career education demonstration projects. A portion of this financial support for career education has flowed directly and indirectly into effective delivery systems of career guidance and information (Clyde, 1979). The Act charges the Commissioner of Education with cooperating and consulting with the NOICC in examining the "occupational information needs of individuals and organizations eligible for participation in programs assisted by this Act" and to "furnish information to interested parties on Federal programs which gather, analyze, and disseminate occupational and career information" (U.S. Congress, 1977).

In review, three broad interrelated mandates surface from the legislation: to improve communication and coordination; to develop and implement an Occupational Information System (OIS); and to give special attention to the problems of unemployed youths and to assist in the development of and encourage the use of occupational information for career decision-making. The end result should be a broad-base Occupational Information System (OIS) in each state which includes career and specific occupational as well as job information for the entire spectrum of users which includes direct participants in the labor market as well as labor market intermediaries.

STRUCTURE

The NOICC is composed of four statutory members which are the operating heads of: the Office of Education (OE); the National Center for Educational Statistics (NCES); the Bureau of Labor Statistics (BLS); and the Employment and Training Administration (ETA). These members signed an interagency agreement between the Department of Labor (DOL)

and the Department of Health, Education, and Welfare (DHEW) which specifies the organizational purpose and active working arrangements for the National Occupational Information Coordinating Committee. This agreement was published in the Federal Register on February 7, 1978 (NOICC, 1978). Therefore, an important commitment to interagency cooperation was established.

Designees of these statutory members form a Technical Steering Group (TSG). An invitation was extended to the Commissioner of the Rehabilitation Services Administration to designate a representative to work with the TSG. They are responsible for "establishing and implementing NOICC policy, for approving the allocation and disbursement of funds in accordance with NOICC goals and objectives, and for reviewing NOICC staffing requirements" (NOICC, May, 1979, p. 10).

In May of 1979, the actual operating staff of NOICC consisted of 11 positions, 7 of which were classified as professional. The Executive Director manages operations and is responsible for policy formulation with approval of the TSG. The Executive Director is the overall supervisor of the NOICC programs and personnel. Two organizational units exist which are an Occupational Information System Development section and a State and Interagency Network section. Each unit has a Coordinator. An Occupational Specialist and a Management Specialist have been retained as part-time contract employees (NOICC, May, 1979).

The structure of a SOICC is similar to the NOICC and the creation requires a NOICC/SOICC Agreement and an Interagency Agreement. The first document establishes the basic relationship and provides for funding. This agreement requires the SOICC to fulfill the legislative mandates and to designate a SOICC fiscal agent. The Interagency Agreement must be negotiated among the State board administering vocational education, the State Employment Security Agency, the State Employment and Training Council, and the State agency administering the vocational rehabilitation program. The SOICC purpose, SOICC agency membership, the SOICC fiscal agent, SOICC staffing provisions and general procedures for SOICC operations are included in this agreement (NOICC, Feb., 1978).

The NOICC/SOICC network is composed of all 50 States, American Samoa, the District of Columbia, Guam, the Northern Marianan Islands, Puerto Rico, the Trust Territories, and the Virgin Islands. Each has specific arrangements for operating within their State, District, or Commonwealth governments. It is noteworthy that two areas operate the same way for all SOICCs. NOICC funds two authorized staff positions: a SOICC director and one SOICC support staff person. And details on SOICC funding and the ways a SOICC can utilize funds to achieve its operational goals are provided (NOICC, May, 1979).

Figure 1 represents the NOICC/SOICC organizational interrelations and linkages extending across Federal and State agency boundaries (NOICC, May, 1979, p. 13).

NOICC/SOICC FUNDING

The legislation that created and expanded the role of the NOICC partially provided for its funding. The report of the House of Representatives Committee on Education and Labor specified that the funds provided to the NOICC were for:

> "...improving coordination between vocational educators and manpower administrators, developing a national Occupational Information System, and assisting the States in using the data gained from the system" (NOICC, May, 1979, p. 2).

NOICC is jointly funded by the Department of Labor and the Department of Health, Education, and Welfare. The Education Amendments of 1976 and the CETA Amendments of 1978 require the Commissioner of Education and the Secretary of Labor, respectively, to transfer funds to the NOICC. The amount is designated as no less than $3 million and no more than $5 million each fiscal year. Therefore, the total funding available to NOICC for any one fiscal year is between $6 and $10 million (NOICC, December, 1979). The funding cycle began in fiscal year 1978 and the NOICC received $8 million. Because SOICCs were not established as quickly as anticipated, funds were carried over for use in the following year (NOICC, May, 1979).

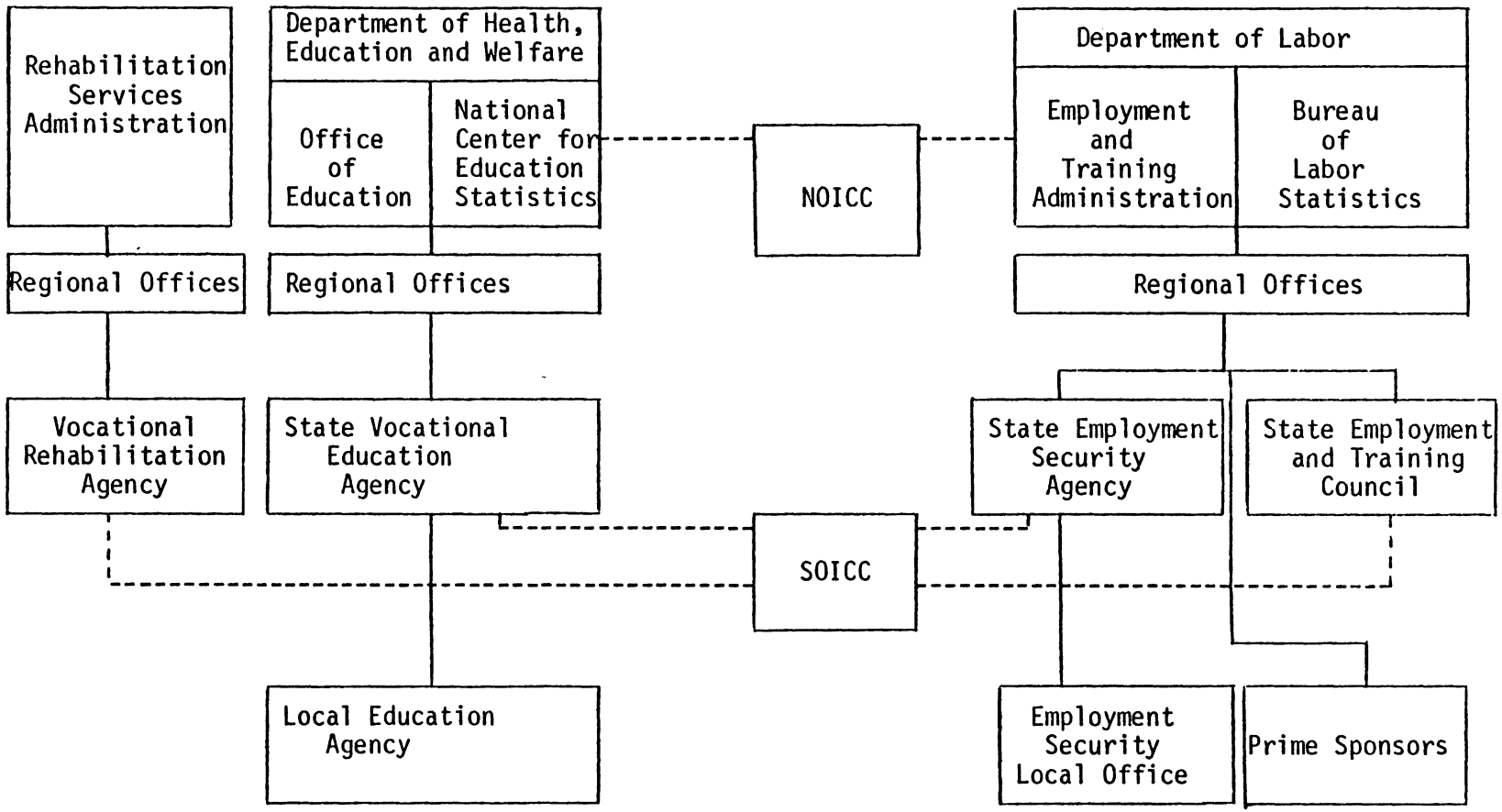


FIGURE 1. NOICC/SOICC ORGANIZATIONAL INTERRELATIONSHIPS

The highest priority in the beginning was to fund each State committee as quickly as the two required documents were executed and, therefore, establish the NOICC/SOICC network. In August of 1977, the NOICC presented a series of five two-day regional workshops to promote SOICC formation. In 1978, 87% of the available funds used went to SOICC in the form of assistance grants. The second priority was to implement the three mandated areas: (1) OIS development and implementation, (2) communication and coordination, and (3) attention to the labor market information needs of youth. Of course, the NOICC had to reserve funds for operation. During its initial phase of development in fiscal year 1978, $94,000 was used to establish the NOICC. In 1979, it was projected that 5% of total planned expenditures would be used for administration and management. The Interagency Agreement makes the following operating arrangements for logistics. The Office of Education provides supplies and office space and the Employment and Training Administration serves as the NOICC's fiscal agent and processes personnel actions. Member agencies provide temporary staff support and technical assistance (NOICC, May, 1979).

Assistance Grants and Special Purpose (Competitive) Grants are the two principal mechanisms NOICC uses to provide funds to the SOICCs and are used to monitor the progress and status of each SOICC during the fiscal year. A Quarterly Financial Status Report and a Quarterly Progress Report submitted by each SOICC allows the NOICC to monitor the actual expenditure or obligation of SOICC funds and assess the SOICC's progress in implementing activities outlined in the Annual Program Plan. The SOICC Assistance Grant is composed of two parts: Part A, leadership funds; and Part B, discretionary funds. A maximum of $70,000 per SOICC in leadership funds are provided for basic staff and overhead items. The discretionary funds are to be used for development, implementation, and training activities related to the legislative mandates. The Special Purpose Grant allows the NOICC to fund projects to accomplish specific objectives. The NOICC has issued a Request for Grant Proposal soliciting SOICCs to submit proposals which are selected for grant award on a competitive basis (NOICC, May, 1979).

SOICCs are also encouraged to seek funding from other sources such as the Governors' discretionary funds and the private sector. Other suggested ways of maximizing the use of existing funds are through co-operative ventures and the provision of personnel, space, materials, and supplies by member agencies or organizations (NOICC, May, 1979).

By the summer of 1980, 57 SOICCs were funded and functioning (Flanders, 1980). The legislation determined the SOICC usage of Federal funds. In addition, SOICCs may pursue other objectives and expand their roles within their States. Examples of activities initiated by the SOICCs to implement the three broad mandated areas will follow in another section of this chapter. SOICCs are not limited to any specific mechanism for disbursing their funds and the use of grants, contracts, interagency cooperative efforts, and in-house efforts are appropriate. The only restrictions are that they conform to Federal regulations and are auditable (NOICC, October, 1979). It is anticipated that increased support for SOICCs will come from the State level in the future. Although part of a national network, SOICCs are basically "State organizations, responsive to State needs, and performing their activities in the context of State-oriented priorities" (NOICC, May, 1979).

PROGRAMMATIC ACTIVITIES

Prior to the OIS development, the NOICC conducted a study of the States to become knowledgeable of existing programs and projects and to understand problems encountered in developing or utilizing occupational information. A summary and outline of the questionnaire, the personal interview approach, interview methodology, structuring, schedule of interviews and how the information was compiled are reviewed in A Study of State Occupational Information Development and Utilization Efforts (NOICC, July, 1978). Nineteen people from NOICC signatory agencies were selected and trained to conduct personal interviews in each State. They were particularly interested in programs or system features potentially valuable in the development of a nationwide OIS or useful to States in their development efforts. The methodology used in this study

did not have a specific mechanism built in to assign and substantiate the value of the information. The report writers relied on input from the interviewers to identify efforts that could be innovative. However, the definition of "innovative" and the tone and focus of the summaries varied among interviewers. The major value of the survey was an overview of the current status of Occupational Information System (OIS) development by the State while in the beginning stages. The focus of the survey was on the development and utilization of occupational information within the States. The objective was not to evaluate State efforts. Instead, the objective was to "identify how States are developing, disseminating, and using occupational information and to document the findings in a report designed to summarize and inform (NOICC, July, 1978, Appendix A (1)).

The specific purposes hoped to be achieved by this NOICC project (July, 1978) included:

> "Identification of unique, exemplary, and/or innovative methodologies, practices, systems, publications, and approaches to the development and utilization of occupational information;
>
> Identification of methodologies or systems that could potentially be transferred to other States;
>
> Identification of common problems States have with regard to either developing or utilizing occupational information;
>
> Identification of areas that should be pursued by NOICC in further study;
>
> Facilitation of interstate sharing of methodologies, approaches, and other information;
>
> Assistance to SOICC Directors in becoming familiar with occupational information development and utilization efforts within his/her State" (NOICC, July, 1978, Appendix A (1)).

Examples of NOICC programmatic activities which developed related to the legislative mandates are categorized into three areas and summarized in <u>The Status of NOICC/SOICC Network</u> (1979).

1. Development and Implementation of an OIS

   Principal methods the NOICC utilized to develop an OIS follow:

"The NOICC will coordinate among its member agencies the adoption of OIS standards and encourage the development, improvement, and expansion of these programs to meet OIS needs.
The NOICC will provide Special Purpose Grants to SOICCs for developmental work on various aspects and elements of the OIS" (NOICC, May, 1979, p. 19).

NOICC activities undertaken related to the OIS development process follow (NOICC, May, 1979):

- Statement of OIS Policies
- Study of State OIS Efforts
- A Framework For Developing An OIS
- SOICC Assistance Funding
- Special Purpose Grants Program
- Development of a "Glossary of Terms and Definitions Used in an Occupational Information Program"
- National Center for Education Statistics Placement Project
- Program Descriptors For New OE Vocational Program Codes
- Occupational and Educational Code Crosswalk

2. Improving Communication and Coordination

NOICC activities initiated to improve communication and coordination among the numerous organizations involved in the collection, analysis, and/or use of occupational information includes those listed below (NOICC, May, 1979):

- Study to Enhance the Standard Occupational Classification
- Arrangements for Obtaining State-Specific Data on Noncollegiate, Public and Private Postsecondary Schools and Students
- Symposium Series to Improve Awareness Among Representatives of Federal Agencies Regarding Current Programs and Other Activities in the Field of Occupational Information
- Preparation of "A Handbook for State Occupational Information Coordinating Committees"
- A Review of Federal Programs Conducting NOICC-Related Activities
- NOICC Newsletter
- Conferences of SOICC Directors
- SOICC Directors Resources Task Forces
- Training on the Vocational Education Data System (VEDS)
- NOICC Communication Network Plan
- Analysis of NOICC/SOICC Reporting Requirements
- Memorandum Series
- Presentations at Conferences and Workshops

3. Attention to the Labor Market Information Needs of Youth

Major projects initiated by the NOICC related to the labor market information needs of youth are (NOICC, May, 1979):

- -Provision of Labor Market Information to Philadelphia's Inner-City Youth
- -National Institute of Education Two-Phased Study of Career Guidance Information
- -Assistance in the Establishment of Career Information Systems

AN OVERVIEW OF FEDERAL INVOLVEMENT

The NOICC has begun to fulfill the requirements of the legislation that created it. However, the job is not complete. The complex program that has begun calls for long-range planning, including the "establishment of research priorities; careful coordination with representatives of programs that produce needed information; and the preparation of technical training materials for use by SOICC directors" (NOICC, May, 1979, p. 32).

An internal management system has been developed to facilitate Annual Program Plan submissions from the SOICCs, to monitor the Annual Program Plans, to prepare activity and fiscal reports, and to establish uniform reporting procedures for SOICC use in preparing Annual Program Plans and Quarterly Progress Reports (NOICC, May, 1979).

In addition to the continuation of programmatic activities previously listed, NOICC has initiated several others, including (NOICC, May, 1979):

- -Documentation of the Occupational Information Needs of User Groups
- -OIS Handbook
- -Public Information Materials
- -OIS Training Materials
- -CIDS Grants Program

The NOICC seeks to avoid duplication and integrate existing and developed systems of information so that they become component parts of the OIS. As stated by Russell Flanders, the Executive Director of NOICC, in a recent issue of the Occupational Outlook Quarterly (1980), "NOICC is not trying to reinvent the wheel... Rather, it will coordinate the efforts of Federal and State agencies that already collect, analyze, and publish the kind of data needed for an OIS" (p. 23). It is vital that these efforts be comparable and compatible. Therefore,

the terminology and methods of data collection must be uniform; the results of data analysis must be shared to avoid duplication of work; and the dissemination of information must be efficient, timely, and applicable to user needs.

It appears that the accomplishments which have and will be made possible are the results of the Federal and State agencies involved working together to achieve common goals.

CAREER INFORMATION DELIVERY SYSTEMS DISSEMINATION MEDIA

The inception of career information delivery systems and their subsequent development has resulted in a variety of dissemination components. The broad guidelines established for State Occupational Information Coordinating Committees identified the goals of career information delivery systems; however, the methods used to reach these goals were not specified. The states and territories proceeded to fulfill their responsibilities.

The primary modes of dissemination are the computer, microfiche, needlesort, print media and toll-free hotline. Table 1 provides a summary of the dissemination media selected by the career information delivery systems that are currently under development with NOICC grant funds (Dunn, 1982).

Most career information delivery systems use a combination of delivery media. In summary, all thirty states have selected a computer phase. Ten states have microfiche systems and ten states have needlesorts. Three states have print media and four states have selected to operate toll-free hotlines.

THE CAREER INFORMATION DELIVERY SYSTEM IN VIRGINIA

Following the passage of legislation reviewed earlier in this chapter, each state proceeded to fulfill its related responsibilities. Efforts to accomplish the stated goals began in 1978 and are currently

TABLE I

STATE SYSTEM DISSEMINATION MEDIA

	COMPUTER/ MICROCOMPUTER	MICROFICHE	TOLL-FREE HOTLINE	PRINT MEDIA	NEEDLE-SORT
ALABAMA	*	*	*		
ALASKA	*				*
ARIZONA	*	*			
COLORADO	*				*
CONNECTICUT	*				
DELAWARE	*				
FLORIDA	*	*	*		
GEORGIA	*				*
HAWAII	*				
IDAHO	*				*
IOWA	*				*
KANSAS	*				
MAINE	*	*			
MARYLAND	*	*			
MASSACHUSETTS	*	*			
MICHIGAN	*	*			
MINNESOTA	*				
MONTANA	*				*
NEBRASKA	*				*
NEW JERSEY	*		*	*	
NEW YORK	*				
NORTH CAROLINA	*				
OHIO	*	*			
OREGON	*				*
SOUTH CAROLINA	*	*			
VERMONT	*				
VIRGINIA	*	*	*	*	
WASHINGTON	*				*
WISCONSIN	*				
WYOMING	*			*	*

continuing. This section will review the progress in Virginia by reviewing the structure and purpose of the Virginia Occupational Information Coordinating Committee, identifying the two systems approach, sharing highlights of the Virginia Career Information Delivery System Feasibility Study and discussing the four dissemination media used for the Virginia Career Information Delivery System (VCIDS).

STRUCTURE AND PURPOSE OF THE VIRGINIA OCCUPATIONAL INFORMATION COORDINATING COMMITTEE

The Virginia Occupational Information Coordinating Committee (VOICC) was established in 1978. However, the staffed operation did not begin until September of 1979 when Mr. Jeffrey Windom was employed as the executive director. The Executive Committee of the Virginia Occupational Coordinating Committee has representatives from four agencies: the Virginia Department of Rehabilitative Services, the Virginia Department of Education, the Governor's Employment and Training Council and the Virginia Employment Commission. These agencies have joined hands in an attempt to provide for the career information needs of youth and adults in the Commonwealth. Therefore, VOICC is an inter-agency effort and not a new state agency. Figure 2 describes the organizational setting of the Virginia Occupational Information Coordinating Committee (Windom, 1980).

The chairman of the committee is Dr. Melvin H. Garner, administrative director of Vocational and Adult Education. George Meeks represents the Department of Rehabilitative Services; George Scherer represents the Governor's Council, and Kenneth Moore represents the Virginia Employment Commission. These four representatives of the statutory agencies form the VOICC Executive Committee, and are responsible for policy and fiscal decision.

The VOICC has an Advisory Committee composed of representatives from other state and local institutions associated with human resource development. The Virginia Association of Private Career Schools, a local CETA prime sponsor, the Community College System, and the Department of Corrections are included. The Advisory Committee meets

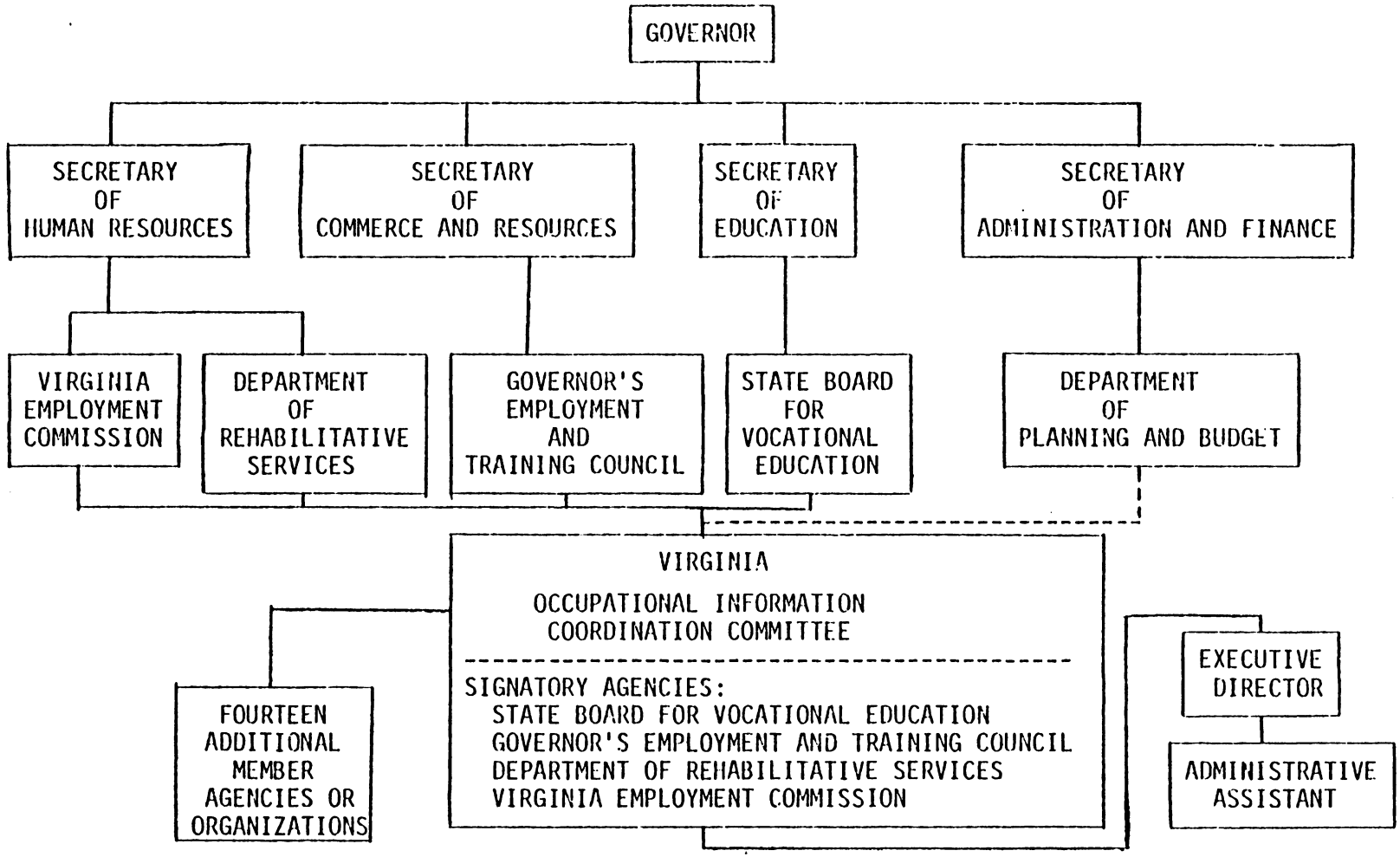


FIGURE 2. ORGANIZATIONAL SETTING OF THE VIRGINIA OCCUPATIONAL INFORMATION COORDINATING COMMITTEE

quarterly and provides guidance and advocacy for VOICC activities.

Congress mandated three goals that the occupational information coordinating committee in every state must address. They were presented in the first section of this chapter and will be repeated below (NOICC, May, 1979):

> To improve coordination between and communication among vocational education and employment and training program administrators, planners, researchers, and others in the use of program data and employment data.
>
> To develop and implement an occupational information system which will meet the common occupational information and data needs of the vocational education programs and employment and training programs at State and local level.
>
> To pay special attention to the problems of unemployed youth, and assist and encourage the use of occupational information by promoting its use in career decision making.

THE TWO SYSTEM APPROACH

It was decided that Virginia would accomplish the mandated goals by development and implementation of a two system approach. To establish the Occupational Information System and the Career Information Delivery System, VOICC contracted with two educational institutions.

The Occupational Information System (OIS) program was funded through a project at the University of Virginia at the Tayloe Murphy Institute. James M. Heilman directs the project. The first OIS publication prepared by the staff is a supply-demand characteristics matrix for several hundred Virginia occupations. The Tayloe Murphy Institute staff are working with existing data bases and converting mainly administrative records. The information must be standardized according to the new Standard Occupational Classification system and entered into a computerized data bank. The new format will make the information useful to local and state planners and counselors. A call-in data retrieval system is planned for same-day processing.

The Career Information Delivery System was funded through a project at Virginia Polytechnic Institute and State University. Carl McDaniels directs the project and Juanita Snipes is the project manager.

This system seeks to put career information in consumer format for use by school students of all ages, Virginia Employment Commission clients, correction systems inmates, CETA clients, displaced homemakers, and others needing reliable information.

The initial activities undertaken were "an Occupational Information System (OIS) Feasibility Study, a Career Information Delivery System (CIDS) Feasibility Study, a Directory of Licensed Occupations (DOL) Project, and other activities such as establishing inter-agency coordination, providing training and awareness sessions, and evaluating current reporting procedures" (McDaniels et. al., 1980).

CAREER INFORMATION DELIVERY SYSTEM FEASIBILITY STUDY

Many of the SOICCs studied the feasibility of a career information system for improving career decision-making in their state. Virginia was no exception. Virginia Polytechnic Institute and State University was selected to conduct the study and funded by VOICC for a nine-month period grant. The feasibility study for a Career Information Delivery System (CIDS) in Virginia was conducted by Carl McDaniels, Juanita Snipes and Evelyn Peevy from October 1, 1979 to June 30, 1980. In addition to determining the feasibility of a statewide CIDS for the Commonwealth of Virginia, the purpose of the study was "to propose a CIDS for the state and to make recommendations for the implementation of the system including a plan for its development" (McDaniels, et. al., p. 2). The study attempted to fit Virginia needs with the best approaches in other states.

Methods used to determine the types of delivery systems currently in use were direct visits, telephone contact, study of state level reports and information gained from the Virginia Occupational Information Coordinating Committee Pre-Virginia Personnel and Guidance Association state-wide conference (McDaniels, et. al., 1980).

An important previous study had been conducted and presented by McDaniels (1979) in the Status Report on Educational Information Centers in Virginia 1978-1979. The State Council of Higher Education identified

the assessment of the current availability and need for Educational Information Center services as a primary activity for 1978-79. At that time, it was determined that 883 Educational Information Center (EIC) units existed in Virginia and that a concentration of services existed in heavily populated centers while other areas of the state were underserved. Unserved and underserved populations most frequently noted were women, minorities, the handicapped, and older citizens. It was recommended that a "wide variety of dissemination technologies be used in any proposed statewide EIC network, and that this diversity of approaches be used in keeping with the various underserved groups" (McDaniels et. al., 1979).

Educators and professionals in the fields of vocational rehabilitation, vocational education, and the Virginia Employment Commission attended a VOICC Conference early in 1980. They agreed that a statewide computerized CIDS was needed in order to provide more efficient access to comprehensive information, to supply state and sub-state data, and to provide occupational information more economically than the present unrelated CIDS. The participants suggested that a "statewide computerized system should be supplemented by microfiche and hard copy including books, directories, and brochures" (McDaniels, et. al., 1980, p. 36). The most common concerns about a statewide CIDS were the cost to the local users and user services to aid counselors in integrating a CIDS into the existing counseling and guidance programs.

Based on reports and proposals from other states developing Career Information Delivery Systems that verified the need for occupational information by new entrants into the labor market, by people re-entering the labor market, and by people currently employed, it was assumed that Virginians exploring occupations, making career and job decisions, and selecting postsecondary education need accurate, current, accessible occupational information. After establishing this need, the problem was the lack of a systematic way of organizing and delivering the occupational information, of accessing the information, of making the information available for effective utilization (McDaniels, et. al., 1980).

The report lists the following characteristics of an effective CIDS which are within the broad guidelines set by NOICC and were reviewed by consultants in Michigan and Florida (McDaniels, et. al., 1980):

1. "Possess the capability for making information accessible to a wide variety of persons with varying abilities and experiences.

2. Be easy to use, provide written instructions which are clear and manageable, and provide readily accessible information at appropriate reading levels.

3. Display and deliver information in an attractive manner.

4. Provide accurate, current information which is reviewed and revised at least yearly.

5. Supply national, state, and sub-state data.

6. Function efficiently, that is use hardware devices which are reliable, available widely, and applicable.

7. Provide information regarding a wide variety of occupations, covering 90 per cent of the total employment in the system service area.

8. Provide direct and structured access integrating the occupational information with the client's interests, aptitudes, and abilities.

9. Include specific information such as job duties, work environments, hiring and training requirements, outlook, etc. as well as psychological and social aspects of the occupation.

10. Possess the capability of being used by persons independently or as part of the counseling process.

11. Be attainable in terms of competitive, feasible costs for initiating, maintaining and updating the system.

12. Be feasible in the capability of expanding the types and amounts of data in the system.

13. Be acceptable to users" (p. 5-6).

Three stages of development were recommended for the Career Information Delivery System in Virginia. The first stage involved the "development of state educational and training information which is readily accessible, and the development of descriptive information about occupations, occupational requirements, and preparation and training data on national and/or state level to be disseminated through low cost, attractive media such as microfiche, newspapers, posters, directories, and brochures" (McDaniels et. al., 1980, p. 125).

Stage two involves the "development of school and financial aid information, the development of sub-state occupational information with the primary emphasis on the supply and demand outlook and salary information, as well as the review and revision of data developed in stage one" (p. 126). The third stage involves the "review and revision of data from stage two; the preparation of the revised data in computer format and language in addition to formats suitable for microfiche, newspapers, brochures, etc.; and the development of the computerized delivery system including the implementation in selected sites and the development of a statewide implementation plan" (p. 126).

A copy of the plan for development designated by function, stages of development, division of responsibilities and estimated costs prepared as a part of the feasibility study is found in Figure 3 (McDaniels et. al., 1980, p. 10-11).

The results of the study indicated that the development of a statewide career information system was feasible and needed. A multi-media system to meet the needs of a diverse clientele was recommended. It was decided that the Virginia Career Information Delivery System will use four dissemination media. Each is briefly described in the following section.

VIRGINIA CAREER INFORMATION DELIVERY SYSTEM DISSEMINATION MEDIA

It was recommended that the multi-media dissemination approach include: (1) print media, (2) a toll-free hotline, (3) microfiche, and (4) computers.

FIGURE 3

STATEWIDE CAREER INFORMATION SYSTEMS
DEVELOPMENT

FUNCTION	STAGES ONE	TWO	THREE
INFORMATION DEVELOPMENT AND REVIEW	CIDS	CIDS	CIDS
	EDUCATIONAL AND TRAINING PROGRAM INFORMATION FOR MICROFICHE AND OTHER MEDIA	DEVELOP SCHOOL INFORMATION, FINANCIAL AID INFORMATION, AND REVIEW AND REVISE EDUCATIONAL AND TRAINING DATA FOR ALL MEDIA LISTED	REVIEW AND REVISE DATA FROM STAGE TWO AND DEVELOP LOCAL VISIT FILES ALL MEDIA INCLUDING COMPUTERS
	VOICC	VOICC	VOICC
	DEVELOPMENT OF ECONOMIC OUTLOOK INFORMATION, OCCUPATIONAL DESCRIPTIONS, OCCUPATIONAL REQUIREMENTS PREPARATION AND TRAINING DATA ON NATIONAL AND/OR STATE LEVEL FOR MICROFICHE AND PRINTED MEDIA	COMPLETE AND REVISE STATE AND/OR NATIONAL DATA FROM STAGE ONE AND DEVELOP SUB-STATE DATA FOR ALL MEDIA LISTED	REVIEW, REVISE, AND PREPARE DATA FROM PREVISION STAGES FOR COMPUTER AND OTHER MEDIA
MATERIALS PRODUCTION	MICROFICHE NEWSPAPER BROCHURES DIRECTORIES POSTERS USER SERVICE MANUAL FOR MICROFICHE	MICROFICHE NEWSPAPER BROCHURES POSTERS DIRECTORIES UPDATE USER SERVICE MANUAL	USER SERVICE MANUAL FOR MICROFICHE UPDATE, USER SERVICE MANUAL FOR USER AND COUNSELORS FOR COMPUTER SYSTEM

STATEWIDE CAREER INFORMATION SYSTEMS
DEVELOPMENT
(CONTINUED)

FUNCTION	STAGES ONE	TWO	THREE
USER SERVICES	IN-SERVICE WORKSHOPS, NEWSLETTERS	IN-SERVICE WORKSHOPS, NEWSLETTERS, EVALUATION OF MICROFICHE BY USERS	IN-SERVICE WORKSHOPS, NEWSLETTERS, IN-SERVICE TRAINING FOR SYSTEMS APPLICATION TO SELECTED SITES
DISSEMINATION MEDIA	TOLL FREE NUMBER MICROFICHE NEWSPAPER BROCHURE POSTERS	STAGE ONE CONTINUED	STAGE TWO CONTINUED AND COMPUTERIZED SYSTEM AT PILOT SITES
ESTIMATED COSTS	$110,000 - $120,000	$140,000 - $150,000	$300,000 - $400,000

PRINT MEDIA

One of the selected medium is printed directories. Two directories, Licensed Occupations in Virginia and Apprenticeship Occupations in Virginia, have been prepared, printed and distributed. The Licensed Occupations in Virginia (1980) contains information on use of the directory and the following categories of information for forty-one occupations with available data: (1) brief job description; (2) education and licensing requirements; (3) national and state employment outlook; (4) national and state salary information; (5) available training programs; and (6) other sources of information. The Apprenticeship Occupations in Virginia (1981) directory contains information on forty-two apprenticeship opportunities, including job descriptions, occupational forecasts, education and other requirements, wage and salary information along with sources of additional information.

A newsletter, The Forum, is printed and disseminated throughout Virginia. The newsletter describes VOICC activities and provides occupational and career information for educators, directors of agencies, and others. In addition, the services have been publicized through professional conferences, workshops and programs provided to a variety of audiences in several locations across the State.

TOLL-FREE HOTLINE

The Career Information HOTLINE is a toll-free number (800 542-5870) which provides a variety of information related to education and job training opportunities, occupational licensing, financial aid, occupational requirements and outlook in addition to select "difficult to locate elsewhere" occupational and educational information.

Reasons for selecting the hotline as a delivery media were the reasonable cost, acceptance of the concept for obtaining information through toll-free numbers by the public and ability to reach the public not served by agencies or educational institutions (Snipes & McDaniels, 1982).

The telephone was installed at Virginia Polytechnic Institute and State University in November of 1980. Over 3,000 calls were received and answered during the first year and one-half of service. A tally indicates that the most typical calls are from females in the 19-45 age bracket and rate the information obtained as very helpful. The caller can remain anonymous or can give their address or telephone number for materials to be mailed or the answer to questions which are not immediately answered and require research.

Attractive calendar cards, brochures, posters, television and radio announcements, news releases, workshops, and word-of-mouth have been used to publicize the Hotline across the State.

MICROFICHE

The third medium for career information delivery is microfiche since it is inexpensive to reproduce and requires only a microfiche reader in capital outlay by user institutions. The systems approach selected for collection, organization, and dissemination of occupational and educational information was the Vital Information for Education and Work (VIEW) microfiche system. Virginia was the recipient of the Michigan Occupational Information System (MOIS) from the Michigan Department of Education. Their system is being converted to operational form for Virginia and represents a tremendous savings in time, money, and effort.

Implementation of the Statewide Virginia VIEW system is planned for a three year period. The first set includes 150 occupational clusters of the Standard Occupational Classification system. Five files are included: occupations, military training, apprenticeship, post-secondary school, and financial aid. Fourteen pages of large, easy-to-read type are available for each occupation and include an occupational definition, the nature of the occupation, working conditions, worker requirements, earnings, employment outlook, education and training, sources of more information and review questions. This first set of microfiche was distributed during a series of regional workshops in November of

1981. A second set of 150 additional occupations with two additional files (secondary school subject and post-secondary program file) and a structured search program which will enable users to match their interests, aptitudes, and preferences with Virginia occupations is scheduled for distribution in February of 1982.

Continuous effort to keep the system current and accurate is a vital part of the plan. It is expected that the microfiche deck will be updated annually.

COMPUTER

The fourth medium is interactive computer programs which will provide users of mainframe and micro-computers with software and technical assistance. Through a computer probe, personal interests, aptitudes, and preferences can be matched with training programs and jobs. The computerized information along with the microfiche version are planned adaptations of the Michigan Occupational Information System (MOIS). The MOIS has one of the oldest established and most refined computer delivery systems.

AN OVERVIEW OF THE VIRGINIA CAREER INFORMATION DELIVERY SYSTEM

Following the passage of legislation reviewed in the first section of this chapter, each state proceeded to fulfill its related responsibilities. Efforts to accomplish the stated goals began in 1978 and are currently continuing. This section has provided a brief overview of the current status and the four dissemination media used in Virginia. Attractive features of the Statewide Career Information Delivery System chosen and implemented in Virginia are that it is offered without charges or fees; contains state and substate data which existing systems do not possess; is accessible by segments of the population previously unserved or underserved; has provisions for user services to agencies for assisting personnel in using the system and can be effectively integrated into such services.

CHAPTER III

REVIEW OF EVALUATION LITERATURE AND PRESENTATION OF MODEL

The review of literature related to evaluation that follows includes information in several sections which help to form an understanding of evaluation and development of an evaluation model for career information delivery systems. An introduction to the chapter is followed with the status of career information delivery system evaluations. The second section will review major evaluation models. A career information delivery system comprehensive evaluation model is presented in the next section. An adaptation plan for evaluating career information delivery systems follows.

REVIEW OF EVALUATION LITERATURE

Accountability is an important concept throughout the nation and an emphasis on evaluation has resulted. Legislators and the general public are asking for evidence to support increased funding requests. However, evaluation is one of the most widely discussed and yet least understood processes in today's educational systems.

Concern for adequate evaluations led the Phi Delta Kappa (PDK) Commission on Evaluation to state that the "lack of certain crucial elements without which the science or art of evaluation cannot be expected to make significant forward strides" existed in 1971 (Stufflebeam, et. al., 1971, p. 8). They proceeded to list the following crucial elements: (a) adequate evaluation theory, (b) specification of the types of evaluative information which are most needed, (c) appropriate instruments and designs, (d) good systems for organizing, processing, and reporting evaluative information, and (e) sufficient numbers of well-trained evaluation personnel.

Failure to use appropriate evaluation prevails in many cases. Such failure has been attributed to ignorance, laziness and/or political sidestepping (Guba & Lincoln, 1981).

The term evaluation became popular within education in the 1930's (Hanson, 1978). Robert Thorndike was instrumental in the adoption of measuring techniques to assess or evaluate changes in learner behavior in the early 1900's. The accreditation movement occurred and also had an impact on evaluation methodology (Thorndike & Hagen, 1969). Emphasis on education evaluation is also attributed to the Sputnik, launched by the Russians in 1957. Massive expenditures of federal dollars poured into education programs such as the National Defense Education Act and Congress demanded programmatic evaluation in addition to fiscal accountability (Worthen & Sanders, 1973).

Several descriptive studies conducted in the 1950's and 1960's provided methodological grounds for large-scale evaluation studies. The Coleman Study focused on the opportunities available to minorities within the United States. Project TALENT involved the measurement of abilities and characteristics exhibited by 440,000 individual students in a school situation. The focus of Project TALENT was to associate these identified abilities and characteristics with success or failure in post-program jobs. Ralph Tyler initiated The National Assessment Project. This project sampled student behavior at different grade levels in schools across the nation (Worthen & Sanders, 1973).

With the passage of the Vocational Education Act in 1963, each state was required to establish a state advisory committee for vocational education which would be responsible for evaluation within each state (Vocational Education Act of 1963). Educational accountability became a prime concern of educators at the state and local level with the passage of the Elementary and Secondary Education Act in 1965 (Institute for Development of Educational Activities, Inc., 1974). This legislation required that each project conducted under Titles I and III possess a specific evaluation component (Elementary and Secondary Education Act of 1965).

The Vocational Education Amendments to the 1963 act were passed in 1968 and reemphasized the requirement for evaluation on the part of each state and each advisory council. In addition, all Exemplary Projects for Career Education were required to incorporate a third-

party evaluation which involved an evaluator external to both the funding agency and the project (Vocational Education Amendments of 1968).

In summary, evaluation as a field came into existence as a response to the political problem of insuring accountability for federally funded programs and to public demands for more information about how schools were serving the educational needs of children. In addition, knowledge of what was happening and the results were desired by taxpayers, legislators, educators, and the general public.

STATUS OF CAREER INFORMATION DELIVERY SYSTEM EVALUATIONS

The purpose of this section is to describe the evaluation activities and progress which State Occupational Information Coordinating Committees have achieved. It is appropriate that all educational programs and system operations be evaluated. Therefore, the type of evaluation was included in a position paper on the organization and development of career information delivery systems. It states that the CIDS staff should continuously monitor and assess the system's use, impact, and performance. Furthermore, sufficient information should be gathered on project operations and costs to make possible analyses for cost effectiveness, systems comparisons, and other purposes (NOICC, June, 1979).

PUBLISHED EVALUATION CRITERIA

The information provided by NOICC and included in the position paper and administrative memoranda as evaluation criteria are included below in entirety.

"1. Impact Criteria

Criteria for evaluating the impact of the systems on students and other user clients ought to include knowledge of occupations; awareness of personally relevant occupations; knowledge of occupational information sources, including people and institutions in the community that can help with occupational exploration and job placement; and knowledge of other sources of career information, including activities to obtain vocational

information or experience on one's own. Other impact criteria may be used if applicable to the particular system.

2. Performance Criteria

Valid and reliable measures of the following performance criteria should be applied, to permit evaluation of the performance of the CIDS.

a. Penetration in Schools

(1) The system's information is accessible to more and more schools until it is available to (i.e., the capacity to be used by) two-thirds of the high school students in the State or local area within 3 or 4 years after the inauguration of the CIDS. For each high school served by the system there should be sufficient capacity to serve at least 80 percent of the students by the end of the second operational year.

(2) Data should be collected on the number of students who use the system in each school, as well as the total number of uses made of the system in a school year.

b. Penetration in Other User Agencies

The system is used by several agencies that serve people who need occupational information for making vocational choices; e.g., community colleges and universities; employment security agencies; vocational rehabilitation and other social service agencies; places of incarceration; manpower training agencies, such as the Job Corps; and libraries. Data should be collected on the number of different people in each user agency who use the system, as well as the total number of uses made of the system each year.

c. Variety of Users

The system is used by various types of clients. Data should be collected on the types of users by academic program followed (college, technical, vocational, high school, etc.). Information on users by sex, race, economic status, employment status, veteran status, academic ability, and whether English is spoken as a second language would be useful to determine information needed in the system, as well as client group penetration.

d. Ease of Use

The system is easy to use and can be operated by most clients with written instructions or after only a brief instruction. Information should be collected on users' reactions.

e. Integration with Educational Program

The system becomes part of guidance or employment in a school or other site; i.e., guidance or employment counselors use the system and refer students or other clients to it, and teachers incorporate information from system into career education or subject curriculum. Information on such uses should be collected.

f. Costs

User agency should keep account of annual cost per user as a way to assess the cost benefits.

If other performance criteria are considered applicable for a particular system they may be included. Whether the users themselves (e.g., students) believe the system helps them make career decisions of whether parents believe the system aids their children in making career decisions are examples of other such criteria. Again, the operational strategy of the SOICC relative to the total Occupational Information System being implemented by the SOICC will be an important consideration.

3. Other Evaluations

Systems may wish to conduct longitudinal evaluation studies that compare the labor market success or experience of clients who used the system with those who did not. Followup studies of this kind require very large sample sizes to make meaningful conclusions; hence, they are expensive. Caution is advised in undertaking these kinds of evaluation. Coordination with the National Committee would probably be advisable to avoid duplication in this area" (NOICC, June, 1979, p. 29-32).

A telephone interview was conducted on January 8, 1982, with Ms. Wynonia Dunn, NOICC Occupational Information Systems Specialist, to confirm that the above information comprised the evaluation criteria provided to the States. She indicated that: (1) the evaluation requirements were only those itemized above, and (2) that no provisions

for gathering information on a uniform basis for submission to NOICC are provided.

The Association of Computer-Based Systems for Career Information (ACSCI) is a non-profit corporation. Standards and self-evaluation guides for system assessment are itemized in the ACSCI Handbook on Standards and Accreditation. It is noteworthy that the four standards dealing with evaluation are simply stated as follows:

"Standard 2.7. If an accessing strategy is used, an empirical relationship should exist between characteristics of the user and those of the occupations or education programs in the system" (ACSCI, 1979, p. 23).

"Standard 5.1. An annual evaluation should be in evidence.

Standard 5.2. A plan for utilizing evaluation results should be in evidence.

Standard 5.3. A system research and development effort should be in place, with adequate resources allocated, to ensure that the delivery system keeps up with technological improvements in the field" (ACSCI, 1979, p. 32).

STATE EVALUATIONS

The NOICC staff was most cooperative and allowed this researcher to visit the office in Washington, D.C. to gain access to the most current evaluation reports. Sources from many states indicate that evaluation was part of the proposed project but that actual evaluation plans have not been developed or completed. Ten states have submitted evaluation reports, four (Arizona, Maine, Maryland and Michigan) of which were prepared by external evaluators.

Brief reports of these career information delivery systems are identified by state in the following portion of this chapter. Table 2 designates the performance evaluation criteria found in the NOICC guidelines and criteria identified by this writer. A summary of the items included in individual state evaluation reports is provided.

ARIZONA

The Arizona State Occupational Information Coordinating Committee contracted with the Natelson Company, Inc. of Phoenix to conduct an

TABLE 2

CORRELATION OF EVALUALTION CRITERIA IN STATE REPORTS

NOICC PERFORMANCE EVALUATION CRITERIA		AZ	CO	FL	GA	ID	ME	MD	MI	SC	WI
2.a.1.	Number of students with access	*		*					*		*
2.a.2.	Number of students who use system	*		*	*	*	*	*	*	*	*
	Total number of uses in schools			*	*	*	*	*	*	*	*
2.b.	Number of users in other agencies				*	*		*	*	*	
	Total number of uses in other agencies				*	*		*	*	*	
2.c.	Use by various types of clients:										
	academic program										
	sex	*	*		*		*	*		*	*
	race	*	*					*			
	economic status	*									
	employment status		*		*						
	veteran status										
	academic ability	*			*		*		*	*	*
	English as a second language	*									
2.d.	Ease of Use	*		*	*	*	*	*	*	*	*
	Instruction	*		*							
2.e.	Integration with educational program				*			*			*
2.f.	Cost	*			*						

CORRELATION OF EVALUATION CRITERIA IN STATE REPORTS

(CONTINUED)

	QUESTIONS SPECIFIC TO STATE DATA COLLECTION	AZ	CO	FL	GA	ID	ME	MD	MI	SC	WI
1	Success Rating			*			*	*	*		*
2	Reason for Use	*		*			*	*	*	*	*
3	Interest Related to Career	*			*	*	*				*
4	Ease of Understanding	*	*	*	*	*	*		*	*	*
5	Interest Level	*			*		*				
6	Handicapped or Disabled Population									*	
7	Staff Time									*	*
8	Reason for Difficult Use								*		
9	Assistance to Users	*	*		*			*	*		
10	Bilingual Users	*									
11	Bilingual Counselor at Site										
12	Specific Recommendations	*			*			*	*		
13	Age	*			*	*	*			*	

evaluation of the Arizona Career Information Delivery System. The Guidance Information Service (GIS) is the vehicle which provides career information to Arizona users.

The report indicates that some of the survey sites originally targeted for study were either unable or unwilling to take part in the survey process. A list of the selected sites was provided without an explanation of the selection process.

The Arizona Career Information System staff and The Natelson Company decided that a minimum 25 percent of the expected annual user count should be surveyed.

A revised evaluation approach "entailed shifting the study focus from a comprehensive analysis of the diverse user groups in geograhically dispersed regions to focusing sampling efforts on the large urban secondary school populations" (Natelson Company, Inc., 1981, p. 13). The report states that this shift in emphasis "was motivated by the data availability problems but later rationalized by the fact that the major portion of GIS system users is comprised of the large urban secondary school population" (Natelson Company, Inc., 1981, p. 13). Survey information was gathered through on-site interviews at the survey site locations. A trained Natelson Company professional staff member established an interview schedule with the appropriate career guidance counselors, teachers, supervisors, etc. During each interview session the survey administrator explicitly identified the intent behind each of the questions on the survey instrument. The survey administrator remained present with the respondents until each respondent completed the survey form in order to minimize any potential misunderstandings. The survey administrator "verified all survey forms for completeness. Incomplete questionnaires were subsequently discarded" (Natelson Company, Inc., 1981, p. 19).

Survey questionnaires were administered to supervisory personnel and computer terminal users. Significant findings were identified from the data collected from (1) supervisory personnel, (2) users at sites other than urban secondary schools and (3) users at urban secondary schools.

It was concluded that the Arizona Career Information System GIS III package is popular among both students and counselors and that a strong association exists between institutional commitment to use the system and its impact on students. In addition, needs for more information and more technical support were reported.

The summary of significant findings is extensive. Weaknesses of the study include the concentration upon large urban secondary school populations and the fact that incomplete questionnaires were discarded.

Some but not all of the evaluation criteria published by NOICC are addressed and only the information delivery component is evaluated. Of the criteria listed by NOICC included at the beginning of this section, the Arizona data collection instruments addressed the following performance criteria: penetration in schools, sex, race, economic status, veteran status, English as a second language, ease of use, instruction and cost. Data collection was limited to the school population and therefore penetration and use in other user agencies was not determined. Impact criteria and integration with the educational program were not addressed. Eight of the thirteen state data collection factors were addressed. A summary of the evaluation criteria may be found in Table 2.

This writer acknowledges the value of this study on a single user population; however, criticizes the fact that other portions of the population were omitted. The results address the reaction from one user group, the large secondary schools. The results may not be generalized to the total population.

COLORADO

The purpose of the Colorado Career Information System evaluation was to provide information to determine the effectiveness of implementation of the Colorado Career Information System (COCIS) and the extent to which COCIS has met the expectations of the Occupational Information System Grants Program Standards and Guidelines. The report contains an overview of system development listed under the following criteria headings: (1) System Development; (2) System Utilization; and (3) Systems Influence. This document presents an assessment based upon the

subjective judgment of the COCIS project staff. In many areas, where data is not yet available, "conclusions have been made based upon subjective, yet educated, judgments of the COCIS staff". This evaluation report provides a brief background of the COCIS project and discusses current evaluation efforts which have been conducted and were still underway at the time the report was written (Ishimaru, 1979).

Two specific COCIS evaluations are included in the report: (1) Effects of Career Information Delivery Systems on Sex Stereotyping and (2) Boulder County Manpower Career Development Workshops. The first reports the results of COCIS use at East High School in Denver. This project examines the effectiveness of a computerized career information system, in terms of sex bias in career choice and potential improvement in career education delivery systems. This project was implemented in one of the Denver Public Schools' senior high schools (Ishimaru, 1979).

The career choice and attitudes of 150 female and male students were examined by grade level, ethnic group, and achievement level, before and after they had participated in activities in three delivery systems. The two experimental groups in the sample utilized COCIS, the comprehensive career information system. Group 1 received time on the computer and additional activities designed to introduce or reinforce exposure to nontraditional careers. The two additional activities were the film entitled Anything You Want To Be and the Strong-Campbell Interest Inventory. Group 2 students were scheduled to work on the computer with a counselor also. They were given free access to use the computer as many times as they desired, on their own initiative. Help was given to any student who asked; however, they had no further planned activities. Group 3 was the control group composed of participants in the ongoing career guidance program implemented in the Denver Public Schools. They were not allowed to use the computer between the time of the pre- and post-test (Ishimaru, 1979).

One test was administered to all three experimental groups as a pre- and post-test. Data from all tests were collected and analyzed by Analysis of Variance techniques to see if changes in career choices had

occurred; and, if so, whether there were changes from traditional to nontraditional careers or the reverse.

The second evaluation involved summer career development workshops conducted by the Boulder County Manpower program. All students were to be given a pre-test and post-test during each of the three phases (self, career and job) of the workshop program (Ishimaru, 1979).

These evaluations provided helpful information although they did not address all of the evaluation criteria published by NOICC. Weaknesses appear to be that the sample populations in these two evaluations were each limited to one site. The focus of the first evaluation was on sex stereotyping rather than the total impact of the Colorado Career Information Delivery System. It is noteworthy that process evaluation was included; however, it was based upon the subjective judgment of the staff.

The accompanying questionnaire addressed the following criteria: sex, race, employment status, ease of understanding and assistance to users. A summary of the evaluation criteria may be found in Table 2. Obviously, this report contained informative and helpful data even though it failed to address all of the evaluation criteria.

FLORIDA

The Center for Career Development Services in Florida conducted a survey in 1979 building on past efforts to evaluate Florida VIEW (Vital Information for Education and Work). Objectives of the survey were:

"1. To test specific VIEW innovations and develop a priority sequence for their future development.

2. To examine the impact of various VIEW awareness and dissemination strategies on both students/clients and delivery agents (counselors, occupational specialists, etc.).

3. To determine users' perceptions of specific VIEW characteristics (a necessity for effective revision of materials).

4. To document the status of micrographics use and delivery.

5. To explore user patterns of discussing career information with others" (Thomas, 1979, p. 5).

A two-tiered design and a survey format were used. The two levels surveyed were: (1) student/client and (2) delivery agent (Guidance Counselor, Occupational Specialists, Media Specialists, etc.). Six schools were selected as the survey sites and a student opinionnaire was completed by all seniors in attendance on the administration date. Local district/school personnel administered the student survey. The delivery agents' surveys were mailed to all schools, colleges and agencies that had purchased VIEW or received Career and Educational Planning Guides. These surveys were mailed with a pre-addressed and prepaid envelope and resulted in a response rate of 29%. The surveys were tabulated and the results were put into percentage tables. Data interpretation followed. The rather extensive information was combined and reported in eight conclusions.

Since a random sample was not selected for this study, the results are not necessarily representative of the entire population. However, specific improvements and modifications for the Florida VIEW and VIEW products were reported.

In summary, the Florida system evaluation indicates the VIEW information is useful and helpful even though several improvements are suggested. The limited sample sites and poor response rates are the major concerns identified upon review of this evaluation report. Some but not all of the evaluation criteria published by NOICC are addressed and only the information delivery component is evaluated.

Of the criteria listed by NOICC, the Florida report addressed the following performance criteria: penetration in schools; ease of use and instruction. Data collection was limited to the school population and therefore penetration and use in other user agencies was not determined. Impact criteria, variety of users, integration with the educational program and costs were not addressed. A summary of the evaluation criteria may be found in Table 2.

This writer acknowledges the value of this study; however, criticizes the fact that only six schools were selected and that only students in their senior year were administered the student opinionnaire. Objective #3 states that the survey is to determine users' perceptions of specific

VIEW characteristics (page 50). Senior students at six schools is a very restrictive sample. The results address the reaction from this user group and may not be generalized to the total population.

GEORGIA

The Georgia report begins with an overview of the status of the Georgia Career Information System and pilot site operation. It then proceeds with an overview of pilot site evaluations. Data on impact criteria were obtained from user reaction sheets and from interviews with site coordinators. A user evaluation form used previously was revised for this study (GCIS, 1980).

To assess performance criteria, staff members are reportedly developing "various measurement tools and procedures that will evaluate system performance" (p. 6). The evaluation package includes user evaluation questionnaires, user site log, log summary forms, site coordinator's reaction sheets, and problem report forms. This report indicates that a statistical package program will be used; however, the data had not been collected and analyzed at the time of this report. Penetration in schools was anticipated for the 1983-84 year and a summary of the various kind of settings contracting for service was included. Data will reportedly be collected on the number of people using the system in each site and the total number of uses made of the system. Demographic data has been gathered through user evaluation questionnaires and during the Women's Diversion Center research. The report indicates that the information is presently undergoing analysis (GCIS, 1980 Evaluation Report, 1980).

Pilot site coordinators indicated that the Georgia Career Information System (GCIS) has rapidly become an important component of ongoing educational programs at each institution indicating integration with educational programs. An analysis of user costs averaged $3.46 per user session. The details of how this amount was determined was not disclosed. The report indicates that a special random sample study is planned that will involve parent reactions to supplement the user evaluation assessments that are planned (GCIS, 1980 Evaluation Report, 1980).

In review, the Georgia evaluation report stated that several evaluation studies are in process. A summary of the evaluation criteria may be found in Table 2. The major evaluation criteria published by NOICC are identified and briefly addressed. These include impact criteria, performance criteria, penetration in schools, penetration in other user agencies, variety of users, ease of use, integration with educational programs, and costs. However, the report summarizes the current status and fails to provide an evaluation. Of particular interest, the report indicated that the Georgia Career Information System is willing to participate with other states in "more ambitious evaluation studies that will address the issue of obtaining more accurate measurements of system impact on users" (GCIS, 1980 Evaluation Report, 1980, p. 9).

IDAHO

The evaluation conducted by Shirley Silver was to evaluate the early implementation of the program in Idaho: (1) to determine if the system was being used and if so how it was being used; (2) to find out how useful it was as a counseling tool; and (3) to determine its effectiveness and helpfulness to students/clients making career decisions.

The methodology included a telephone survey of counselors and a user questionnaire. Seventy-six sites (59% of the user sites) were contacted as part of user services follow-up activities. The counselors were asked if they were using the system; if they liked it, and; if they were having any problems or difficulties. Suggestions were offered and comments were recorded on a card for each site. An evaluation instrument was designed for users to rate their reaction to the system in terms of ease-of-use, ease-of-understanding, usefulness of information, and effectiveness in helping the decision-making process (Silver, 1981).

It is noted that only twenty-five percent of the user's questionnaires were returned and that approximately one-third of the responding users were dissatisfied with a portion of the system. The evaluation was limited to the information delivery component. Of the criteria listed by NOICC, the Idaho report addressed the following performance

criteria: penetration in schools and other user agencies; and ease of use. Impact criteria, integration with educational programs and costs were not addressed. Table 2 provides a summary of the evaluation criteria.

In addition, two local high schools conducted independent evaluations which involved student comments on the system. Although these comments were recorded, no reporting of summaries or specific positive or negative reactions was given.

MAINE

This report presents the results of the evaluation conducted by the Center for Career Education, College of Education of the University of Maine at Orono, under a contract from the Maine Occupational Information Coordinating Committee.

The Guidance Information Service (GIS) was chosen as the vehicle to promote career information to potential users in Maine. Therefore, their evaluation focuses only on the impact of GIS on selected users in public schools and agencies. Time Share Corporation, a subsidiary of Houghton Mifflin, marketed GIS which is a computer-based information system consisting of six national files: Occupational, Armed-Services Occupational, Two-Year College, Four-Year College, Financial Aid and Graduate School. Three additional state files were developed: Maine Occupational Information, Maine Vocational-Technical Institutes and Maine Financial Aid (Center For Career Education, 1980).

A modified time-series design was utilized in which subjects were tested immediately following use of the terminal and six to eight weeks later. The design was used to assess public school and agency user reactions to a computer information system, GIS data, and program impact. Six different instruments were developed for the study: (1) Agency Characteristics Form, (2) Public School Form, (3) Public School Users Log, (4) Agency Users Log, (5) Batch Processing Reaction Form, and (6) Public School Career Education Activities Form. A quota-sampling procedure using random selection was followed. Each participating site was mailed a packet with a statement of purposes of the impact study,

the instruments and directions for collecting the data. Demographic characteristics and use frequency of different files by the public school and agency groups are summarized. Eight conclusions were drawn from the evaluation data and twleve specific recommendations were made to improve the system (Center For Career Education, 1980).

The evaluators themselves noted that the evaluation design had limitations in controlling sample selection and erosion. It was also noteworthy that the instruments may not have accurately assessed the career counseling processes that accompanied GIS. It was recommended that additional and improved studies be designed to assess the impact of GIS. Several of the summary recommendations were not based on information gained from the evaluation. The content of this evaluation was broader in scope and addressed the information development component as well as information delivery. Of the criteria listed by NOICC, the Maine report addressed the following performance criteria: penetration in schools and other user agencies, variety of users and ease of use. A summary of the evaluation criteria may be found in Table 2. Integration with educational programs as well as costs were not addressed.

MARYLAND

An evaluation of the Maryland Career Information Delivery System was conducted by the Western Occupational Research Corporation of Denver in the spring of 1982. The evaluation was conducted over a three-week time period. Staff at five types of user-sites were asked to respond to questions designed to assess their attitudes concerning the effectiveness of the system in the particular settings where they work. A total of 99 telephone interviews were actually conducted consisting of 16 percent of the 610 user-sites. These staff persons were asked to administer a set of user questionnaires for their site. A total of 336 user questionnaires were returned.

Results of the user-site staff interviews were discussed in three categories: (1) adequacy of staff training and user materials;

(2) frequency of use of the system and its perceived role in various user settings; and (3) perceived importance and quality of the information files.

It was reported that over 85 percent of staff across all user groups had received some form of training on the system and user materials were rated very high for clarity and completeness. Among high school users, the system was used frequently; however, frequency of use dropped off quickly for other user groups. All user groups responded positively to questions concerning the accuracy of the data files and the importance of the Maryland-specific information.

Results of the user questionnaire were discussed in four categories: (1) characteristics of the users; (2) frequency and duration of use; (3) perceived usefulness of the information; and (4) evaluation of the information files. Eighty-two percent of the respondents were middle and high school students. It was reported that less than one percent of all other user groups participated in the user evaluation. The demographic characteristics of the survey participants were summarized. The average length of use was 40 minutes and the average number of times of use per user was 3.5. Ninety-five percent of the users reported that the information was helpful in planning their future and 92 percent indicated that they would use the system again to obtain occupational or educational information.

Of the criteria listed by NOICC, the Maryland evaluation addressed the following performance criteria: penetration in schools and other agencies, sex, race, ease of use and integration with the educational program. Data collection focused narrowly on the school population. The remaining evaluation criteria were not addressed. A summary of the evaluation criteria may be found in Table 2.

MICHIGAN

The Michigan Occupational Information System Final Evaluation Report was prepared by Instructional Development and Evaluation Associates, Inc. (1980) as a result of a contract funded by the Michigan Occupational

Information Coordinating Committee. The two purposes of the evaluation were: (1) to provide information as to the extent the Michigan Occupational Information System (MOIS) was fulfilling its intended mission of providing career information to Michigan client populations that are in the process of career exploration and decision making and (2) to identify, specifically, where and what improvements need to be made to increase the ability of MOIS to fulfill its mission. The six-phase evaluation had five objectives which are specified in this review.

A site survey, a staff survey, and a client survey were developed by a MOIS Evaluation Advisory Committee and Instructional Development and Evaluation Associates, Inc. to obtain the information necessary to meet the five objectives of the evaluation. A two-stage stratified cluster probability sampling procedure was used to obtain a sample representative of the agency types currently using MOIS. Agencies included in the sample were: CETA, libraries, Michigan Employment Security Commission (MESC) offices, postsecondary schools, K-12 schools and vocational rehabilitation offices (Instructional Development and Evaluation Associates, Inc., 1980).

A commitment to complete the survey was obtained from every site included in the sample prior to the survey distribution. A follow-up letter was sent to each site in the sample and agency administrators to each site. A complete mailing was necessary since the surveys were completed anonymously. A response rate of 71% resulted (IDEA, 1980).

The survey instruments collected data relative to the five specific objectives and were analyzed using the procedures specified below.

OBJECTIVES	METHOD OF ANALYSIS
1. To identify the career information needs of the various population served by Michigan agencies.	Means were calculated for the responses to each of the possible career information needs for each agency type.
2. To identify the extent to which the MOIS program strategies meet the career information needs of the client population.	Means were calculated for the responses of each agency type to the survey items concerning this objective. A discrepancy analysis was undertaken comparing importance of the needs with level of coverage.

3. To identify characteristics of the different Michigan agency/MOIS delivery situation.	Frequencies and percentages for each of the item responses concerning this objective were calculated for each agency type.
4. To identify and analyze characteristics of those MOIS delivery situations that best meet the career information needs of the client populations and those where they are not well met.	A descriptive discriminate analysis within each agency type was conducted. Using classical psychometric theory, the analysis was conducted using respondents in the upper and lower 25% groups using the "success" of the sites as the breakdown variable. "Success" was measured using two items on the site surveys. The first item asked was "How successful do you feel your office has been in implementing MOIS?" The second item was "Overall, how successful do you feel MOIS has been in meeting the career information needs of your clients?" Staff responded using a scale where 1 = very successful and 5 = not at all successful. Variables shared by sites classified in the upper 25% success group were compared to variables shared by sites classified in the lower 25% success group to determine variables which might influence the success or failure of a MOIS site" (IDEA, 1980, p. 24).
5. To make recommendations for improving MOIS.	

The overall assessment of MOIS based upon both staff and client responses to the survey, was that MOIS fulfills its intended purpose and is meeting the career information needs of clients. The findings which support this conclusion and six areas of recommendations resulted from the data (IDEA, 1980).

The Michigan evaluation was a well planned and executed evaluation. The extensive report and appendices share the details of their approach to assess user reaction. Components other than information delivery and impact of the comprehensive system were not included in this evaluation.

Of the criteria listed by NOICC, the Michigan data collection instruments addressed impact criteria and the following performance criteria: penetration in schools and other user agencies, the academic

ability of users and ease of use. Integration with the education program, various types of clients and costs were not addressed. Table 2 summarizes the evaluation criteria addressed and the omissions.

SOUTH CAROLINA

Evaluation of the South Carolina Occupational Information Coordinating Committee (SCOIS) is reported to be an on-going process through feedback from clients and counselors as to the system's effectiveness and impact on users and through direct interviews with clients, counselors, and administrators. An initial attempt to assess user reaction to the SCOIS was a request to users to respond in writing regarding their impression of the SCOIS. Many letters of appreciation for the service and endorsement of the system were received. Copies of those letters were attached to the evaluative information reviewed. Another measure is the number of incidents of system use. A computer monitoring package is used to evaluate this aspect of the system and can report at any time the number of log-ins, connect time, and central processing time. A SCOIS utilization report is run daily and is cumulative for the month (David, 1981).

A formal evaluation of the SCOIS was conducted in May, 1980. A sample of SCOIS users was surveyed to assess their reaction to the SCOIS and to determine the effectiveness of the system in meeting career information and job search needs. The user questionnaire, a four-dimensional profile of the SCOIS from the client's perspective, was conducted to serve a dual purpose: as a "state of the art" of the system and, since representative groups were surveyed, as a base-line for future comparisons. The questionnaire shows the system's profile in a four area design; users, hardware, software and impact. The sample was drawn from a representation of site types: high schools, postsecondary schools, community action agencies, vocational rehabilitation sites and libraries. The total number of respondents was 205. Survey packages were mailed to three areas of the state and included a cover letter, twelve coded copies of the survey and a self-addressed envelope. Follow-up cards and phone calls were placed to delinquent participants. Only 49.8% of those surveyed responded (David, 1981).

Table 2 summarized the evaluation criteria addressed in this report. Of the NOICC criteria, the South Carolina report addresses penetration, sex, academic ability and ease of use.

This study was directed toward users only in the Greenville and Charleston area of South Carolina; however, all site types were represented. This factor added with the low response rate limits the scope and representativeness of the study and results, which addressed information delivery and impact. Another part aimed at counselors, planners, coordinators and administrators and dealing with needs assessment is planned.

WISCONSIN

This report constituted the first in-depth attempt at telling the story(ies) of how the Wisconsin Career Information System is comprehended and used, by focusing on a selection of the public schools in Wisconsin using the Wisconsin Career Information System (WCIS). It was thought that the "best way to understand and to learn of the differences in each school's interaction with what was assumed to be a relatively stabilized information delivery system, was to look closely at each of a small number of schools, examine the strengths and weaknesses of their WCIS based career education programs" . . . (Knapp and Augustin, 1980, p. 23).

Six schools were selected for the study and names were disguised in the report. Instruments were used to evaluate each site. The questionnaires were specifically adapted to four groups: teachers, guidance counselors, librarians, and students. Factual and speculative questions were included. In addition, information was gathered from distribution centers for computer sites about numbers of log-ons, file usage, minutes per log-on, etc. Information was obtained by examining copies of the print-outs students received in the course of their computer searches. Several visits to each site were made to collect specific data. The facts were presented in the format of six narrative stories (Knapp and Augustin, 1980).

Rather extensive information is reported on students in these six schools and areas the staff can consider improving are discussed. The case study approach used by Wisconsin was a unique method. The evaluation criteria established by NOICC and addressed in this report is summarized in Table 2. The major criticism is that the school setting was the only site used in the study and only six sites were included. These facts must be considered when reporting the responses. Furthermore, information delivery is the only component included.

SUMMARY

As the preceding reviews indicate, a variety of evaluation studies have been planned and implemented. The reports demonstrate the lack of a uniform approach to career information delivery systems evaluation. Differences in specified objectives, instruments used, data collection techniques and methods of analysis exists. However, many examined similar criteria and used survey methods.

Table 2 summarizes the evaluation criteria addressed by the ten different state reports. Seventeen items of information are identified in the NOICC performance evaluation criteria. Of the ten state evaluations available, none address the complete list of NOICC criteria. Two state evaluation reports assess ten of the seventeen items. One assesses eight of the seventeen items identified by NOICC. Three state reports assess seven of the NOICC performance evaluation criteria and three others assess five of the items identified by NOICC. One report addressed only three of the NOICC criteria. Two of the evaluation criteria were not addressed by any of the state reports reviewed. However, the remaining fifteen were addressed in at least one report.

Thirteen additional items specific to state data collection have been identified by this writer. Of the ten state evaluations available, none address the complete list of these evaluation items. One state evaluation report assesses eight of these items; three assess six of these items; two assess five of these items; and two assess three of these items. One of the state reports addresses a total of four items and one other addresses only two of the evaluation items.

Some commonalities exist and included among these are the focus on user/client reactions and staff/counselors' responses. The content of the various questionnaires overlap even though the presentation of each varies. Two states, Arizona and Maine, have adopted Guidance Information System programs and their evaluations focus on the delivery of this system on selected users. Other reports include planned rather than implemented phases of evaluation studies. Several weaknesses are prevalent. Major concerns are attached to the restricted sampling methods reported by Arizona, Colorado, Florida, Maine, Maryland and Wisconsin and the low response rate identified in the South Carolina, Florida and Idaho reports.

The reports from Arizona, Maine and Michigan specified the survey methodology in greatest detail and extensive findings were included. However, these reports do not address all of the NOICC criteria and are therefore insufficient in scope. The most comprehensive study addressed only ten of the seventeen evaluation criteria designated by NOICC.

The content of these evaluation studies have been analyzed using the evaluation criteria provided by NOICC in a position paper and administrative memorandums. State evaluations have, in general, focused on the information delivery component and have addressed performance criteria. Impact criteria has been ignored in most studies and longitudinal evaluation studies have been completely omitted in the literature. It appears to this writer that comprehensive evaluations of such systems would also address details of the organization and management structure, information development, user services and economic efficiency. However, these program components have been neglected and in several cases omitted. In addition, system administrators have not been identified as data sources. These individuals are identified as valuable resources and key information contributors for several aspects of comprehensive system evaluations.

The major omission appears to be planned use of the information gained through these evaluation studies. Methods of reporting to the National Occupational Information Coordinating Committee have been omitted in the literature. Furthermore, statements regarding accountability to advisory committees and state and federal agencies are absent.

MAJOR EVALUATION MODELS

To help clarify the concept of evaluation and to further explore the selection of evaluative approaches applicable to career information delivery systems, some of the major evaluation models will be reviewed.

The universe of evaluation literature presents numerous models, emerging characteristics, definitions, ideas and practices. However, several major models emerge. For the purposes of this review, major evaluation models are identified as those appearing in tables printed in Educational Evaluation: Theory and Practice (Worthen & Sanders, 1973) and "Assumptions Underlying Evaluation Models" (House, 1978). In addition, utilization-focused evaluation is included. The five major authors which appear in both resources are: Marvin C. Alkin, Michael Scriven, Robert E. Stake, Daniel L. Stufflebeam, and Ralph W. Tyler.

These various frameworks for planning evaluation studies possess important components and the information presented below has been limited to a brief summary of the selected models.

DECISION MAKING

Alkin (1969) defined evaluation as the process of ascertaining the decision areas of concern, selecting appropriate information, and collecting and analyzing information. He identified five types of decisions that decision makers are concerned about: problem selection, program selection, program operationalization, program improvement, and program certification. He paired these decision areas, respectively, with the following types of evaluation: needs assessment, program planning, implementation evaluation, and outcome evaluation. Needs assessment provides information on the subject of an evaluation effort. Program planning involves assessment of programs or methods to meet the identified need. Implementation evaluation consists of monitoring how closely a program coincides with its description or intention. Progress evaluation is related to decisions about improving the program. Outcome evaluation enables the decision maker to decide whether to eliminate, retain, modify or alter programs.

GOAL FREE

In 1967, Michael Scriven wrote an important paper on evaluation entitled "The Methodology of Evaluation". He asserted that the then current conceptions of the evaluation of educational instruments were inadequate both philosophically and practically. His goal-free system evaluates actual effects against a profile of demonstrated needs in education. Scriven identified many roles evaluation can play; however, he has concluded that the one functional goal of the evaluation process is to determine the worth or merit of something. Scriven's organizer became effects rather than goals or decisions. "Goal-free" evaluation does not mean that evaluation lacks goals but that it should not be limited to a specific set of stated goals (Scriven, 1972). He suggested 9 steps in his Pathway Comparison Model. They are: (1) characterizing the program, (2) clarifying the nature of the conclusions wanted, (3) assessing the cause and effect relationship in the program, (4) comprehensively check all program consequences, (5) defining and rating the program goals, (6) assessing program costs, (7) identifying and assessing critical competitors, (8) performing a needs assessment to rate the utility of the program, and (9) developing an overall judgment of the merit of the program (Scriven, 1967).

Scriven's approach places a great deal of attention on steps that insure the technical adequacy and inclusion of judgments in the evaluation. Little concern is given to interaction with the audiences that are designed to insure the utility of the evaluation process.

TRANSACTION

Robert Stake defined evaluation in terms of describing and judging. His countenance model is representative of objectives-oriented evaluation and involves completing two data matrices: the description matrix and the judgment matrix. Each is divided into two columns. The description matrix is divided into intents and observations. The judgment matrix is divided into standards and judgments. Three rows (labeled antecedents, transactions, and outcomes) divide both matrices. Therefore, a

twelve-cell model design emerged (Stake, 1967). First, the evaluator must determine entries for the intents column at the antecedents, transactions, and outcomes levels. Antecedents are identified as inputs and the conditions existing prior to the teaching and learning that may determine or relate to outcomes. Transactions are the events or experiences that constitute the program. Outcomes are the effects of the program.

Second, the evaluator is to collect data for the observations column that will show the extent to which each objective specified in the intents column is met. Information is available that shows if antecedent conditions were met and whether the teaching-learning process was followed as specified. Therefore, a basis for proposing and testing hypotheses about causes for the failure of desired outcomes exists by assessing the antecedent and tranaction data. Standards listed in the first column of the judgment matrix are referred to if discrepancies arise at any of the three levels.

The final column of the judgment matrix labeled judgment involves interpreting discrepancies between observed performance and standards. Stake does not specify how weights can be determined or how standards can be combined to yield a composite rating.

Stake expanded the concept of objectives to include contextual factors and objectives for teachers. He provided for the evaluation of the objectives and included judgment as an aspect of evaluation. He distinguished between absolute and relative standards. However, he did not specify means for deriving standards nor how the evaluator should deal with competing values in setting intents and in deriving standards. He did not provide direction on how to locate and deal with unintended effects (Stake, 1967).

Stake (1967) has suggested an approach that involves: (1) describing a program, (2) presenting the program description to many audiences, (3) collecting judgments from the audiences, (4) analyzing the results of evaluation, and (5) developing and transmitting a final evaluation report that both describes and judges the program.

DECISION MAKING

Several evaluations use decisions as a base and require information about what decisions are to be made, who is to make them, the schedule and criteria. Stufflebeam's Context-Input-Process-Product model (CIPP) is an example. His attention to decisions developed into an analysis of decision types and classification in established categories. He proposed four decision types produced by crossing an ends-means dimension with an intended-actual dimension.

Stufflebeam identified two roles that evaluation serves: decision making and accountability. He believes there are four main questions to be served by evaluation whether in a decision making or accountability mode. These questions pertain to determining the merit of goals, of designs, of activities and of results. Goals or objectives are determined through a series of planning decisions serviced by context evaluation. Needs, problems, and opportunities within the decision maker's domain are continuously assessed. Designs, processes or procedures are determined through a series of structuring decisions serviced by input evaluation. Alternative means for achieving specified ends are assessed. Activities are determined through a series of implementing decisions serviced by process evaluation. Results lead to a series of recyling decisions through product evaluation. This type of evaluation is concerned with comparing actual to intended ends (Stufflebeam et al., 1971).

Stufflebeam et al., (1971) presented a three step process which includes: (1) interacting with the audience to delineate information requirements, (2) collecting, organizing and analyzing the needed information, and (3) interpreting and reporting the findings back to the audience. This approach places heavy emphasis on interaction with audiences to insure that the obtained information will be used by the intended audience.

BEHAVIORAL OBJECTIVES

Ralph W. Tyler's formulation of evaluation is based on the process of comparing performance data with clearly specified objectives. In

Basic Principles of Curriculum and Instruction (1949), he prescribed objectives for outputs or the terminal behaviors of students. The process of evaluation proposed by Tyler is summarized in nine steps (Tyler, 1949) which focus on curriculum evaluation.

UTILIZATION-FOCUSED EVALUATION

The utilization-focused approach, presented by Michael Quinn Patton, is based on the belief that evaluation research must be useful and is derived from many sources. This comprehensive approach to program assessment provides an overall framework to develop an evaluation design with a built-in utilization component. This component should be appropriate to the unique circumstances of the program (Patton, 1978).

Utilization-focused evaluation is described as an approach, an orientation, and a set of options rather than a formal model or recipe. The two fundamental requirements in this approach follow: (1) relevant decisionmakers and information users must be identified and organized, and (2) evaluators must work with identified decisionmakers and information users to make all other decisions about the evaluation (Patton, 1978).

The following outline was presented to pull together and organize the critical elements and considerations in utilization-focused evaluation:

I. Identification and Organization of Relevant Decisionmakers and Information Users

II. The Relevant Evaluation Questions are Identified and Focused

III. Evaluation Methods Are Selected That Generate Useful Information For Identified and Organized Decisionmakers and Information Users

IV. Decisionmakers and Information Users Participate with Evaluators in Data Analysis and Data Interpretation

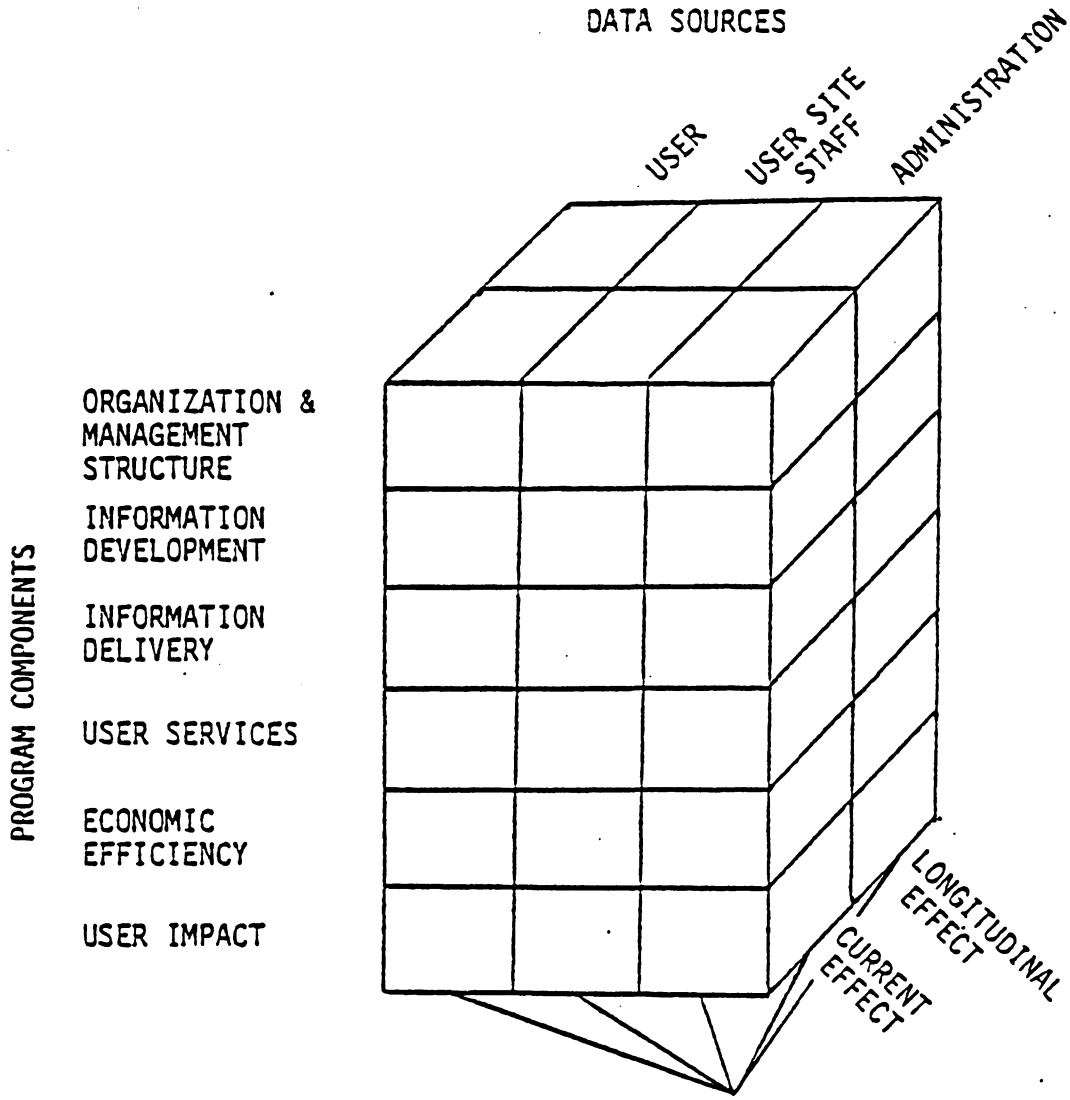
V. Evaluators and Decisionmakers Negotiate and Cooperate in Dissemination Efforts (Patton, 1978)

A CAREER INFORMATION DELIVERY SYSTEM COMPREHENSIVE EVALUATION MODEL

The evaluation efforts reviewed in a previous section of this chapter are commendable as initial efforts in the relatively new concept of career information delivery systems. However, they focus on user response and major omissions exist. The inclusion of or even reference to all program components is the identified weakness of career information delivery system evaluations. This researcher also feels that a time factor is necessary since change over time and long-term effect is important. Program components should be evaluated upon implementation and continuous phases of a comprehensive evaluation should be effective in assessing the longitudinal effect. Longitudinal evaluation studies that compare the labor market success or experience of clients who used the system with those who did not have previously been suggested (NOICC, June, 1979). Three groups of data sources can make significant contributions to the total evaluation from different vantage points and include: (1) users (students and clients); (2) user site personnel (staff/counselors); and (3) administrators.

The system concept connotes several coordinated and interrelated parts. These parts of career information delivery systems are identified as (1) the organization and management structure, (2) information development, (3) information delivery, (4) user services, (5) economic efficiency, and (6) user impact (NOICC, 1980).

A symbolic representation of the various aspects of the proposed CIDS comprehensive evaluation model is presented in Figure 4. Extensive information is required to enact the total process described in this model. Obviously, the guide is flexible enough to allow for a wide variety of evaluation strategies and can be divided, as appropriate, into several phases. This overall evaluation model is comprehensive and each aspect is a significant and necessary part of the total evaluation plan. However, an existing career information delivery system does not have to make a commitment to the overall process since strengths exist in individual segments and timely implementation. The macro or whole concept



SYNTHESIS OF DATA
↓
ANALYSIS OF FINDINGS
↓
CONCLUSIONS
↓
RECOMMENDATIONS
↓
PRESENTATION TO AUDIENCES

A. CIDS Staff
B. SOICC & State Agencies
C. Advisory Committee
D. NOICC & Federal Agencies

FIGURE 4. CIDS COMPREHENSIVE MODEL FOR USE IN EVALUATION

A Guide for Planning Career Information Delivery System Evaluations by Application of the CIPP Model With Program Components Evaluated by Multiple Data Sources

approach is identified along with more specific micro components.

NOICC memorandum 80-19 (September, 1980) specifies selection criteria for eligible funding. The first five program components identified in the guide are specifically identified in the memorandum and it is therefore appropriate that they be evaluated. The sixth component, impact criteria, is identified in the NOICC evaluation criteria.

This model is designed to be used as a guide in planning comprehensive evaluations to determine the effectiveness of career information delivery systems as perceived by three data sources on the six identified program components.

Evaluation of the organization and management structure should address:

- the organization structure;
- representation on the policy board of information users and producers
- member agency agreement and commitment to cooperative effort;
- written policies and policy board operation;
- resources;
- duties and performance of all professional staff;
- staff in-service training.

Evaluation of the information development phase should begin with a clearly defined need statement and address how well the need is met. Specific factors include:

- target population;
- occupations to be covered;
- kind and number of information types;
  - decriptive information about occupations,
  - conditions and requirements of occupations,
  - economic information about occupations,
  - educational and training information related to occupations,
  - employment outlook,
- length and detail of information presentation;
- sources of information;
- level of georgraphic specificity (local, state and national);
- accuracy and currency of information;
- attractive format and appropriate language level;
- freedom from bias (sex, racial and white-collar);
- feasibility and cost of obtaining and processing information;
- procedure to provide feedback to data producers.

The information delivery component is composed of two broad functions: accessing and disseminating of career information. Specific

factors included in the evaluation of this component include:

- -delivery vehicle(s);
- -assessing strategies;
- -capabilities of the delivery system to store information;
- -statewide availability and penetration;
- -types of users;
- -expandable, adaptable and updating capabilities;
- -varied media for communicating with diverse target populations;
- -client ease of use;
- -integration with instructional, career counseling, development and job placement programs;
- -cost.

User services are the support services provided to users and evaluation of this component should address:

- -marketing awareness and promotion;
- -user in-service and pre-service training;
- -demonstration of system components and integration of CIDS with guidance and instructional programs;
- -consultation on effective use;
- -orientation to the limitations as well as the benefits;
- -ongoing contact with users and consultation regarding program modifications;
- -cost.

The concern with cost efficiency is a vital aspect of all system evaluations and the importance of this factor related to career information delivery systems cannot be minimized. Attention should focus on the following details:

- -a detailed budget itemizing the projected cost of each function;
- -justification of expenditures and promotion of a cost efficient system operation;
- -ongoing review of cost efficient management;
- -plans to become self-supporting as NOICC funds phase out;
- -feasibility for user agencies to afford the system financially.

The NOICC guidelines specify the following criteria for evaluating the impact of the systems on students:

- -knowledge of occupations;
- -awareness of personally relevant occupations;
- -knowledge of occupational information sources including people and institutions;
- -knowledge of other sources of career information.

In addition, user entering and exiting behavior should be addressed as well as uncontrolled factors which influence user impact.

CORRELATION OF PROPOSED MODEL WITH NOICC EVALUATION CRITERIA

The information provided by NOICC and included in the position paper as evaluation criteria can be correlated with this proposed evaluation model. Item 1, criteria for evaluating the impact of the systems on students and other user clients is identified by program component #6, labeled user impact. Item 2, performance criteria including penetration in schools, penetration in other user agencies, variety of users, ease of use, integration with educational program and costs are identified by program component #3, labeled information delivery. Item 3, longitudinal evaluations are identified across all six program components as a time factor.

CORRELATION OF PROPOSED MODEL WITH COMPONENTS ADDRESSED IN SITE REPORTS

The evaluation reports and correspondence of evaluation criteria of ten states which have previously completed such efforts are reviewed briefly in an earlier section of this chapter. The thirty-six cells of the model in Figure 4 have been cross-referenced with the components addressed in the state reports. The items included are identified in Table 3. It is important to note that only one state report incorporated administrators as a data source. All others sought information from users and site staff. Only one report addressed the organization and management structure and information development program components and this was done in a cursory way which lacked specific attention to the factors stated to describe the evaluation of these components.

User services were addressed in two state reports; however, unexplicit references to this program component occurred or were implied by questions used in several other evaluations. User impact was referenced in many of the reports; however, only five of the evaluations included questions useful in adequately incorporating this program component.

As shown in Table 3, the information delivery component was consistently the focus of past evaluations. In addition, system administrators were not reported as data sources. Longitudinal evaluation

TABLE 3

CROSSWALK OF COMPONENTS IN FIGURE 4
WITH THOSE ADDRESSED IN STATE REPORTS

COMPONENTS IN FIGURE 4	AZ	CO	FL	GA	ID	ME	MD	MI	SC	WI
Organization & Management Structure x User x Current Effect										
Organization & Management Structure x User Site Staff x Current Effect										
Organization & Management Structure x Administration x Current Effect		*								
Organization & Management Structure x User x Longitudinal Effect										
Organization & Management Structure x User Site Staff x Longitudinal Effect										
Organization & Management Structure x Administration x Longitudinal Effect										
Information Development x User x Current Effect		*								
Information Development x User Site Staff x Current Effect										
Information Development x Administration x Current Effect		*								
Information Development x User x Longitudinal Effect										

CROSSWALK OF COMPONENTS IN FIGURE 4
WITH THOSE ADDRESSED IN STATE REPORTS

(CONTINUED)

COMPONENTS IN FIGURE 4	AZ	CO	FL	GA	ID	ME	MD	MI	SC	WI
Information Development x User Site Staff x Longitudinal Effect										
Information Development x Administration x Longitudinal Effect										
Information Delivery x User x Current Effect	*	*	*	*	*	*	*	*	*	*
Information Delivery x User Site Staff x Current Effect	*		*	*	*	*	*	*		*
Information Delivery x Administration x Current Effect		*								
Information Delivery x User x Longitudinal Effect										
Information Delivery x User Site Staff x Longitudinal Effect										
Information Delivery x Administration x Longitudinal Effect										
User Services x User x Current Effect										
User Services x User Site Staff x Current Effect				*			*			
User Services x Administration x Current Effect										

CROSSWALK OF COMPONENTS IN FIGURE 4
WITH THOSE ADDRESSED IN STATE REPORTS

(CONTINUED)

COMPONENTS IN FIGURE 4	AZ	CO	FL	GA	ID	ME	MD	MI	SC	WI
User Services x User x Longitudinal Effect										
User Services x User Site Staff x Longitudinal Effect										
User Services x Administration x Longitudinal Effect										
Economic Efficiency x User x Current Effect										
Economic Efficiency x User Site Staff x Current Effect										
Economic Efficiency x Administration x Current Effect										
Economic Efficiency x User x Longitudinal Effect										
Economic Efficiency x User Site Staff x Longitudinal Effect										
Economic Efficiency x Administration x Longitudinal Effect										
User Impact x User x Current Effect		*		*		*		*	*	
User Impact x User Site Staff x Current Effect				*				*		
User Impact x Administration x Current Effect		*								

CROSSWALK OF COMPONENTS IN FIGURE 4
WITH THOSE ADDRESSED IN STATE REPORTS

(CONTINUED)

COMPONENTS IN FIGURE 4	AZ	CO	FL	GA	ID	ME	MD	MI	SC	WI
User Impact x User x Longitudinal Effect										
User Impact x User Site Staff x Longitudinal Effect										
User Impact x Administration x Longitudinal Effect										

effors have been completely omitted and various cells identified in the proposed comprehensive evaluation effort have been ignored by various states.

ADAPTATION PLAN FOR EVALUATING CAREER INFORMATION DELIVERY SYSTEMS USING THE CIPP MODEL

As stated by Worthen and Sanders (1973), "program evaluation can be analogous to a Sunday afternoon drive - if you don't know how to proceed or where you are going, how do you know when you get there?" Herein lies the value of evaluation models. A model is an abstract or symbolic representation of the various aspects of a complex event or situation, and their interrelationships (Lippitt, 1973). A brief review of the literature on major evaluation models is included in a previous section of this chapter. Actually all the evaluation models included could be used to complete or implement the many phases of the comprehensive evaluation suggested in Figure 4 other than that proposed by Ralph W. Tyler. The CIPP Model, proposed by Dan Stufflebeam, will be applied for one phase of the comprehensive system evaluation.

Figure 5 best represents interpretation of the Context, Input, Process, Product (CIPP) Model. It is viewed as a 3 x 4 matrix. On the left side, the three steps in the evaluation process are listed; delineation of the information to be collected, obtaining of the information, and applying or providing the information. These steps provide the basis for a methodology of evaluation. The four types of evaluation - context, input, process, and product, correspond to the four columns (Stufflebeam et. al., 1971).

Context evaluation serves planning decisions to determine objectives or goals; input evaluation serves structuring decisions to determine project designs. Essentially, the program or project goals and objectives have been decided upon and the program or project plan for achieving those goals and objectives has been set. Therefore, in the terminology of the CIPP evaluation model, process and product evaluation will be concentrated upon in the evaluation conducted and reported

	CONTEXT (GOALS)	INPUT (DESIGNS)	PROCESS (ACTIVITIES)	PRODUCT (RESULTS)
DELINEATING	Clarify the Questions and Evaluation Criteria			
OBTAINING	Clarify How the Data Will Be Collected, Organized, & Analyzed			
APPLYING	Clarify what reports having what contents will be provided to what audiences through what communication channels.			

FIGURE 5. OVERALL EVALUATION DESIGN MATRIX (CIPP MODEL)

in this study. Process evaluation serves implementing decisions to control project operations; and product evaluation serves recycling decisions to judge and react to project attainments.

The following statements indicate how this model will be used as a point of reference to implement evaluation of the information delivery component of the Virginia Career Information Delivery System microfiche. The scope and limitations of this dissertation will prevent the implementation of the complete career information delivery system comprehensive evaluation guide. The program component that will be implemented is the information delivery component and the CIPP model will be applied to only two of the cells in Figure 4, the current effect identified by users and site staff. More specifically, the microfiche dissemination media will be addressed.

Decisions served by context evaluation include deciding upon the needs of people served, the general goals, and the specific objectives to be achieved. These decisions have been identified and appear in the literature. The reader is asked to recall: (1) the legislation which established career information delivery systems (pages 13-16); (2) the characteristics of an effective career information delivery system (page 32); and (3) the developmental stages of the Virginia system (page 33). The specific decisions which might result from the evaluation of the Virginia VIEW microfiche system were derived from a study of these sources combined with both the evaluator's direct employment with the project and through interaction with the project director. Explicit decisions, data sources, and rationale for such decisions are in Chapter IV. Figure 6 indicates how each step fits into the overall evaluation design matrix. The purpose of input evaluation is to provide information for determining what resources will be utilized to achieve the objectives. This was accomplished and reported in the feasibility study by identifying and assessing (1) relevant capabilities of the VCIDS, (2) methods for achieving the objectives, and (3) plan for implementation.

Once a designed course of action has been approved, as this system has, and implementation of the design has begun, as this has, pro-

	CONTEXT (GOALS)	INPUT (DESIGNS)	PROCESS (ACTIVITIES)	PRODUCT (RESULTS)
DELINEATING	RATIONALE FOR OBJECTIVES	PROCEDURAL DESIGN TO ACHIEVE OBJECTIVES	MICROFICHE DISSEMINATION MEDIA	UNINTENDED AND INTENDED EFFECTS
OBTAINING	EMPIRICAL STUDIES CONCEPTUAL ANALYSIS	STAFF DELIB-ERATIONS PROFESSIONAL LITERATURE PILOT EXPERI-MENTAL PROJECTS	SURVEY RESEARCH & INTERVIEWS	INTERPRET THE OUTCOMES IN TERMS OF RECORDED INFO.
APPLYING	NOICC/SOICC MANDATES VCIDS PROJECT PROPOSAL	FEASIBILITY STUDY	DATA ANALYSIS & SUMMARY	DECISION MAKING

FIGURE 6. CIDS EVALUATION DESIGN MATRIX (CIPP MODEL)

cess evaluation is needed to provide periodic feedback to persons responsible for implementing plans and procedures. This will be done to provide decision makers with information needed for anticipating and overcoming procedural difficulties and for interpreting project outcomes.

Instruments for describing the process can address: whether the design is being implemented as intended, flaws in the design, and if adequate orientation and training occurred. Product evaluation is to measure and interpret effects and to relate this information to objectives and to context, input, and process information. The process portion of the matrix identified by survey research and interviews will be detailed in the next chapter. The product portion of the matrix will be reported in Chapter V.

CHAPTER IV
THE STUDY METHODOLOGY

The intent of this chapter is to describe the research method, the procedural plan, the development of the data collecting instruments, the data collection process and the analysis of data. This study addresses only the microfiche dissemination media of the information delivery component of the Virginia Career Information Delivery System. This portion of the system was selected as the most accessible and appropriate for the researcher. As an employee of the project in Virginia for six months, it was less objectionable than evaluating performance of professional staff, established agency procedures for information development, and economic efficiency which involves knowledge of the budget. Also, it seemed necessary to assess information delivery prior to user impact. Information delivery is one of six program components identified in the career information delivery system comprehensive evaluation model. The other components are: organization and management structure; information development; user services; economic efficiency; and user impact. Data have been collected on the current reaction from two sources: (1) users and (2) user site staff. Therefore, two of the thirty-six cells of the proposed career information delivery system evaluation model have been addressed. The purpose was not to evaluate the system, which is in the developmental stage, but to identify evaluation procedures. The 1981 edition of the microfiche was a preliminary deck limited to 150 occupations in the occupation file. Structured searches will be distributed with the 1982 edition and should increase use. Direct access was used to obtain information from the 1981 edition.

RESEARCH METHOD AND PROCEDURES

Survey research is a useful tool for educational fact-finding and the one that was used to acquire information for this study. This method was appropriate since the survey researcher is interested in

the accurate assessment of the characteristics of whole populations - in this case users of the Virginia VIEW microfiche. Therefore, a nonexperimental research design was chosen instead of an experimental approach in which an independent variable is manipulated (Kerlinger, 1973). Instead, the variables were investigated as they exist.

Surveys are conveniently classified by the methods of obtaining information. The method used to conduct surveys for this study is the "total design method" (TDM) (Dillman, 1978). This method has been shown to maximize both the quality and quantity of responses. It relies on a theoretically based view of why people do and do not respond to questionnaires and a well-confirmed belief that attention to administrative details is essential to conducting successful surveys. Past research on surveys conducted with and without the total design method suggest that the TDM is capable of producing quite satisfactory results for many studies (Dillman, 1978).

A packet of survey instruments and cover letter explaining the purpose and administration procedures were sent to each selected site. A letter of general directions for distributing and collecting the survey instruments was included in each packet. The contact person was asked to be responsible for the distribution and collection of the survey instruments at their locations.

Cover letters, one site questionnaire, five user questionnaires and a stamped, pre-addressed return envelope were mailed to the participating sites on April 13, 1982 with return requested for April 30, 1982. Representation from each of the six site categories were used. All persons who work with students/clients and were recipients of the Virginia VIEW microfiche during the workshops help in November of 1981 had a known chance of being included in the sample. A total of 203 site questionnaires and 1,015 user questionnaires were mailed. Each site participant was asked to read the cover letter containing directions and to complete the accompanying questionnaire. A copy of each is contained in Appendix A.

The administration of the student/client survey was conducted by the recipients of Virginia VIEW who work directly with students/clients.

Each site participant was asked to give the user questionnaire to the next five users of the Virginia VIEW at their site. A copy of the cover letter and user questionnaire are contained in Appendix B.

A post card follow-up was sent to each staff participant exactly one week after the evaluation packet was mailed. A copy is found in Appendix C. The second follow-up (Appendix D) was mailed to non-respondents three weeks after the original mailout.

On-site interviews were also conducted at six locations to gather data through direct contact with users. One site representing six categories of user sites was selected by the researcher. These were scheduled with the microfiche recipients in advance. Staff and user interview questions are included in Appendix E.

A summary of the expenses necessary to conduct these phases of the evaluation is included in Appendix F.

INSTRUMENTS

A uniform method of data collection is of major importance to the stated need for information which can be aggregated. Evaluation data was obtained by mailing questionnaires to the user populations. As discussed in the preceding section, two mail survey instruments were used to obtain information: a site survey and a user survey. Three sources were utilized in the content development of these instruments: existing evaluation instrumentation, existing federal and state documentation, and the Virginia Career Information Delivery System Project. Table 4 specifies the correlation of each survey and interview question with the reason for inclusion. The site survey has been designed to obtain demographic characteristics of the site setting and to identify staff ideas related to information needs of their clients as well as the ability of the Virginia VIEW to meet these career information needs. The user survey was developed to determine the reactions of the student/client regarding their use of the system and how well it meets their career information needs. More specifically, the evaluation instruments have been designed to rate the reaction to the system in terms of ease-of-use, ease-of-understanding, appropriateness of the information, and effectiveness related to career information needs.

TABLE 4

CORRESPONDENCE OF INSTRUMENT QUESTIONS WITH REASON FOR INCLUSION

NOICC PERFORMANCE EVALUATION CRITERIA		SITE SURVEY	USER SURVEY	SITE INTERVIEW	USER INTERVIEW
2.a.1.	Number of students with access	Q-13, 14			
2.a.2.	Number of students who use system	Q-13, 15		Q-6	
	Total number of uses in schools	Q-13, 16		Q-8	
2.b.	Number of users in other agencies	Q-13, 15		Q-6	
	Total number of uses in other agencies	Q-13, 16		Q-8	
2.c.	Use by various types of clients:			Q-12	
	academic program		Q-10, 18		
	sex		Q-15		
	race		Q-16		
	economic status		Q-14		
	employment status		Q-13		
	veteran status		Q-12		
	academic ability		Q-18		
	English as a second language	Q-17a			
2.d.	Ease of Use	Q-6	Q-5		Q-3
	Instruction	Q-9	Q-6	Q-9	
2.e.	Integration with educational program	Q-19		Q-10	
2.f.	Cost	Q-18			

CORRESPONDENCE OF INSTRUMENT QUESTIONS WITH REASON FOR INCLUSION

(CONTINUED)

QUESTIONS SPECIFIC TO STATE DATA COLLECTION		SITE SURVEY	USER SURVEY	SITE INTERVIEW	USER INTERVIEW
1	Success Rating	Q-1	Q-1	Q-1	Q-9
2	Reason For Use	Q-3	Q-2		Q-8
3	Interest Related to Career	Q-4	Q-3		
4	Ease of Understanding	Q-5	Q-4		
5	Interest Level		Q-7		Q-5
6	Handicapped or Disabled Population		Q-11		
7	Staff Time	Q-2			
8	Reason for Difficult Use	Q-8			
9	Assistance to Users	Q-10		Q-5	Q-2
10	Number of Bilingual Users & Language(s)	Q-17b			
11	Bilingual Counselor at Site	Q-17c			
12	Specific Recommendations	Q-20	Q-19	Q-11,13,14	Q-10,12
13	Age		Q-17		
QUESTIONS SPECIFIC TO VIRGINIA CAREER INFORMATION DELIVERY SYSTEM					
1	Microfiche Index Use		Q-8a		
2	Microfiche Index Rating	Q-11	Q-8b		
3	Computer Availability	Q-12	Q-9		
4	Virginia VIEW Content Headings	Q-7			
5	Location			Q-2,3	Q-6
6	Lack of Use			Q-4	
7	Publicity for System			Q-7	
8	Microfiche Use				Q-1
9	Encouragement to Use Microfiche				Q-4
10	Time of Microfiche Use				Q-7

The site survey contained twenty questions and was four pages in length. The user survey contained nineteen questions and was four pages in length. A copy of each questionnaire is contained in the Appendices. Both questionnaires were formatted so that the majority of responses fall into pre-established categories. This approach was used to yield frequency distributions and to facilitate data analysis. Both questionnaires also contain open ended response questions. These questions were included to provide respondents the opportunity to express their attitudes toward the microfiche system and to suggest system improvements.

As suggested by Dillman (1978), three groups were involved in the pretesting and scrutiny of the questionnaires. Colleagues in a survey research class evaluated the questionnaires in terms of whether they would accomplish the study objectives and the overall presentation. The Virginia Career Information Delivery System Project Director, Manager, and Information Development Manager and members of the investigator's interdisciplinary dissertation advisory committee critiqued the questionnaires and suggested changes. The third group from which information was sought were representatives from the population to be surveyed. Participants were observed as they completed the evaluation procedure. Comments on the questions and the format were helpful to the evaluator in revising the questionnaire. The proposed questionnaires were approved by the dissertation committee prior to distribution. The instrument was considered reliable to the extent that independent applications of it yielded consistent results. The reliability coefficient was determined using the test-retest method (Ferguson, 1976). It is assumed that an indication of reliability can be achieved by a pilot test by subjecting the instrument to users prior to formal use in data gathering. The pilot test was conducted using responses from 23 site respondents and 38 user respondents. Representatives from each of the six site categories were used. Correlation coefficients were completed to measure the consistency between the appropriate questions on pre and post test scores and are reported in Table 5. The purpose of these procedures was to make certain that the questions comprising the instruments are clear, appropriate, and have content validity (Kerlinger, 1973).

TABLE 5

CALCULATED CORRELATION COEFFICIENT VALUES

Site Survey		User Survey	
Question	r value	Question	r value
1	.916	1	.870
2	1.000	2	.874
3	.741	3	1.000
4	.910	4	.780
5	.855	5	.900
6	.780	6	1.000
7a	1.000	7	.850
7b	.683	8a	.640
7c	.690	8b	.400
7d	1.000	9	.833
7e	1.000		
7f	.673		
7g	1.000		
8	.750		
9	1.000		
10	1.000		
11	.770		
12	1.000		

In addition, structured interview questions were identified to collect data on a personal basis. A format of staff and user questions have been selected to gather information in a more informal manner. Basic questions have been identified and are included in the appendices.

The decisions regarding revisions and further development of the Virginia VIEW microfiche may be made based on information obtained from the prepared questionnaires. These decisions were based on the compilation of the literature on career information delivery systems at the national level (pages 16-18), the NOICC criteria (pages 41-43), the characteristics of effective career information delivery systems (page 32), the development of the Virginia system (page 33), and the outline of context evaluation and decisions identified by the CIPP model (page 73). In addition, insights gained as an employee of the project in Virginia and through interaction with the project director were incorporated.

The twelve decision topics are listed below with the data source and rationale related to each decision.

Decision 1: Should the occupational information content of the mircofiche be changed?

Data Source: Questions on the prime motivating force to use the microfiche (Site Questionnaire-3) and most important reasons for use (User Questionnaire-2).

Rationale: The developmental intent of the microfiche was to provide information on occupations, e.g., preparation for occupations, training and educational requirements, salaries, employment opportunities. If the reasons users give for accessing the microfiche are not consistent with the intent, content changes will be needed.

Decision 2: Should the reading level and format of the microfiche information be changed?

Data Source: Questions on the difficulty of understanding the microfiche information (Site Questionnaire-5, 8; User Questionnaire-4) and questions on the difficulty of microfiche use (Site Questionnaire-6; User Questionnaire-5; User Interview-3).

Rationale: The microfiche information was designed for use by a wide variety of persons with varying abilities and experiences. The reading level and format should change if difficulty in understanding and using the microfiche materials is reported.

Decision 3: Should further in-service instruction be planned and implemented?

Data Source: Questions on the degree of assistance provided for users (Site Questionnaire-9; User Interview-2); identification of the individuals available at site locations (Site Questionnaire-10, Site Interview-5); and amount of help needed (User Questionnaire-6, User Interview-4).

Rationale: In-service instruction for counselors at the site locations was provided. If the individuals available to assist users are not adequately prepared as perceived by the user, change is needed to provide assistance. It may be necessary to train the individuals working in direct contact with users and to designate locations where further training is necessary. For example, rather than provide in-service at a central location, in-service on site to those who actually assist users may be more effective in reaching those who most need training.

Decision 4: Should written instructions to the user on microfiche be revised and/or expanded?

Data Source: Questions regarding the use and rating of the microfiche index (Site Questionnaire-11 and User Questionnaire-8).

Rationale: The microfiche index has been prepared and provided as a tool in helping users access information on the microfiche. If it is used and perceived by users as an adequate tool in locating the information they desire, no change is necessary. However, if the response is not favorable, revisions in content and/or format are necessary. If a great number of respondents did not use the index, a follow-up to determine availability, readability and useability will be necessary.

Decision 5: Should the content headings displayed on the microfiche be changed?

Data Source: Questions on the adequacy of content headings in leading users to the information they are seeking (Site Questionnaire-7).

Rationale: The specific content headings were designed to lead users directly to the information they are seeking. If the questionnaire responses indicate that content headings

do not adequately satisfy this purpose, changes in content headings should result. Content headings may be changed to increase useability and to be more descriptive of the actual contents.

Decision 6: What priorities exist regarding the utilization and distribution of future editions of the Virginia VIEW microfiche?

Data Source: Questions regarding identification of site locations (Site Questionnaire-13, User Questionnaire-10); demographic information (User Questionnaire-11, 12, 13, 14, 15, 16, 17, and 18); and estimated use (Site Questionnaire-14, 15, and 16).

Rationale: The population to be served by the microfiche was a wide variety of persons with varying abilities and experiences. If the demographic information which results from the questionnaire responses indicates that only limited segments of the population have access to the microfiche system, then changes will be needed. Strategies may be identified and implemented to reach unserved or underserved groups of individuals. If the reported use is now widespread throughout the state, strategies to increase use should be developed and implemented. These efforts should be concentrated at site locations where current utilization is less than optimum.

Decision 7: Should bilingual editions of the microfiche system be developed and distributed.

Data Source: Question on the number of bilingual students/clients and the languages needed for bilingual editions (Site Questionnaire-17).

Rationale: The population identified for use is comprehensive and therefore may include students and clients fluent in languages other than English. If a substantial number of potential users are unserved or underserved due to language barriers, bilingual editions need to be developed, reproduced and distributed to the appropriate locations. A cost analysis to determine the feasibility of such expenditures will be necessary.

Decision 8: Should future budgets designate funds for equipment at site locations?

Data Source: Questions regarding the costs incurred by site locations (Site Questionnaire-18).

Rationale: The materials require a microfiche viewer for use. If the required equipment is not available or attainable

at the various site locations, funds need to be appropriated for the equipment needed or the microfiche need only be distributed to sites which can provide the equipment for use. This factor may have impact on other decisions.

Decision 9: Should further efforts to integrate the microfiche system with existing programs be expended?

Data Source: Questions on identification of ways the Virginia VIEW microfiche has been integrated with existing programs (Site Questionnaire-19, Site Interview-9, 10, and 11).

Rationale: The microfiche system has been designed for use by individuals independently, to be integrated with existing career education programs, and to become a part of the counseling process. If this has not been accomplished, assistance to do so is required. Successful and innovative strategies for integrating the Virginia VIEW microfiche information with existing programs should be recorded and shared. In addition, problems associated with integration of the system should be addressed and eliminated.

Decision 10: Should efforts be expended to upgrade the general response to the Virginia VIEW system and the use of the system?

Data Source: Questions describing the overall presentation and success of the microfiche system (Site Questionnaire-1, 2, 4; User Questionnaire-1, 3, 7; Site Interview-1; User Interview-9).

Rationale: The system was designed to display and deliver information in an attractive, easily accessible and interesting manner. If the site and user responses indicate lack of use and descriptions of the system which are inconsistent with the intent, change is needed to present the information in an appropriate and acceptable manner.

Decision 11: What improvements may be made to upgrade the present system?

Data Source: All user and site respondents were given the opportunity to make recommendations and informal comments regarding the microfiche system (Site Questionnaire-20; User Questionnaire-19; Site Interview-2, 3, 4, 13, 14; User Interview-6, 7, 10, and 11).

Rationale: A primary reason for evaluating the system is to identify problems and to move in the direction of appropriate

improvements. All reasonable recommendations addressed by users and site participants should be considered in view of desirability and affordability. All practical and cost effective improvements should be seriously considered and implemented to the extent possible.

Decision 12: Should funds for the Virginia VIEW project continue and, if so, should funding increase, decrease, or be maintained at the current level?

Data Source: The summation of all evaluative information on the Virginia VIEW project.

Rationale: The evaluative information addresses the current status of the project and aids in future decisions. Project funds may be increased, decreased, reappropriated or eliminated as a result of the success or lack of success in meeting program objectives.

SAMPLE

A stratified random sample was used (Festinger & Katz, 1966). Six mutually exclusive subpopulations (strata) were identified: (1) middle, intermediate and junior high schools; (2) high schools and vocational technical schools; (3) postsecondary schools including proprietary schools, community, private and public colleges and universities; (4) rehabilitation agencies including the Department of Rehabilitation and Rehabilitation School Authority; (5) public libraries; and (6) all others including CETA programs, Virginia Employment Commission Offices, EOC and a Women's Center.

This procedure was selected because the survey is designed to provide sample results about the subpopulations separately, in addition to the whole. The procedure insured that Virginia Career Information Delivery System user sites were represented in the sample and increased confidence in making generalizations to particular subgroups.

All persons who work directly with students/clients and were recipients of the Virginia VIEW microfiche during the workshops held in November of 1981 had a known chance of being included in the sample. Recipients employed at Virginia Employment Commission Offices which have closed were excluded. The User Services Specialist for Virginia

VIEW provided the list and known current addresses of these recipients. Recipients were identified by strata and by number and random selection was implemented using A Million Random Digits with 100,000 Normal Deviates.

A formula for determining sample size specified in Sampling Techniques (Cochran, 1963) was used to calculate the sample size from the number of site recipients. It was assumed that: (1) one-half of the users would respond positively, as the greatest-variance case; (2) a margin of error of ± 10% is acceptable; and (3) the interval contains the population parameter 95% of the time. Table 6 designates the total number of Virginia VIEW user sites and the sample size.

One site from each strata was selected and contacted with a request for the on-site visits.

ANALYSES OF DATA

A compilation of the collected data will result in a discussion of findings to report the information provided by the respondents and to determine recommendations following conclusions (Ferguson, 1976).

No assumptions nor hypotheses have been made indicating that particular variables "cause" certain conditions or "effects". This research is being undertaken to implement one component of this proposed evaluation model by implementing an evaluation of the general use of the Virginia VIEW microfiche. Descriptive statistics were used to summarize the data.

Obviously, much information was collected. For the purposes of this dissertation, however, the analyses of data was limited to the following areas:

1. Answers for each question have been summarized by frequency, and percentage of response.

2. Data obtained from the site surveys have been used to indicate the number of individuals with access to Virginia VIEW and the approximate number of users per week at the various site locations. Tables indicating the responses and a summary are included.

TABLE 6

TOTAL NUMBER OF VIRGINIA VIEW RECIPIENT USER SITES
AND SAMPLE POPULATION SIZE

USER SITES	NUMBER OF SITE RECIPIENTS	SAMPLE	PERCENT OF TOTAL SAMPLE
MIDDLE, JUNIOR & INTERMEDIATE SCHOOLS	70	41	20.197%
HIGH SCHOOLS AND VOCATIONAL TECHNICAL SCHOOLS	212	68	33.497
POSTSECONDARY EDUCATION (Proprietary, Community, Private & Public Colleges & Universities)	60	37	18.226
REHABILITATION AGENCIES (Department of Rehabilitation and Rehabilitation School Authority)	28	22	10.837
PUBLIC LIBRARIES	18	17	8.374
OTHER SITES (CETA, Women's Center, EOC, VEC)	22	18	8.866
TOTAL	410	203	

3. Data obtained from the user surveys have been used to indicate the overall success rating, ease of understanding the information, ease of microfiche use, and help needed to locate the information at the various site locations. Tables indicating the responses and a summary will be included.

4. Demographic characteristics of the user groups have been summarized by site location and as the total survey population. Tables will present site and total survey population age, sex and race or ethnic identity. A summary of significant findings will result.

The data were transferred from the questionnaire forms to data sheets and then entered directly on a computer terminal. The summarizing analyses was accomplished using the Statistical Analysis System known as "SAS" (Helwig, 1978). Using SAS, frequencies and means were obtained. The user and site questionnaires have some of the same questions which allows for an appropriate comparison of responses. Stratification by agency was used for comparison also. The data were processed by the computer and data processing center at Virginia Tech.

Information collected during the on-site visits was organized and presented in a brief narrative report. The completed information and discussion of findings are included in Chapter V.

Furthermore, the final section deals with the application of this study and the model. Statements about revisions and adaptations for other systems are included. The appropriateness of the materials are addressed as well as the evaluation of additional components.

CHAPTER V
RESULTS OF THE STUDY

This study was designed to (1) identify an evaluation model which applies a comprehensive approach to evaluate statewide career information delivery systems and (2) evaluate the effectiveness of the information delivery component of the Virginia Career Information Delivery System microfiche as determined by implementation of that phase of the model, and (3) identify further adaptations needed for the model to apply to other career information delivery systems.

The career information delivery system comprehensive evaluation model developed by this writer was presented in Chapter III. This chapter will report the results of the evaluation conducted to determine the effectiveness of the information delivery component of the Virginia Career Information Delivery System microfiche. The results of this study are represented in narrative and tabular forms.

The data for this study was collected by three methods: (1) a questionnaire to obtain user reactions and demographic information, (2) a questionnaire to obtain site information and, (3) on site interviews with structured questions to gather information in a less formal method. The questionnaire packets were mailed directly to the site employee who attended the fall workshops and received the microfiche. These individuals were directed to complete the site questionnaire and to distribute the user questionnaires.

QUESTIONNAIRE RESPONSE RATES

Two instruments were used to collect the data. Questionnaires were mailed to all 203 sites which received the 1981 edition of the microfiche. User questionnaires were also mailed directly to site participants with instructions that they be given to the next five users of the Virginia VIEW at their site. Copies of the questionnaires are displayed in Appendices A and B.

One hundred and eighty-four returned questionnaires provided data for the summary of items specified on the site questionnaire. Of this number, fifty site employees replied with an explanation that they could not complete the survey due to lack of use. Explanations for lack of use included 31 due to the fact that no microfiche reader was available, 11 due to lack of funds, 5 due to cancellation of the service, 1 because the recipient said they did not receive the microfiche and 2 because they had not used the materials. In addition, one reply was received stating that the recipient was no longer employed with the agency. Hence, the number of useable site questionnaires was one hundred and thirty-four.

Three hundred and sixty-nine user questionnaires were returned and provided data for this study. This was a low user response rate and represents only 36.4 percent of the user questionnaires requested; therefore, the reader should be aware that these responses may not be representative of the entire user population. The low user response rate may be attributed to a variety of factors. Speculative reasons include the timing of the request, staff reductions at several locations, failure to assume additional responsibility for completing and returning the survey, low number of users at locations and/or lack of contact with users by staff survey recipients. A summary of the response rate is included in Table 7. The reader is asked to note that on several returned questionnaires responses were omitted for certain questions. This accounts for the different number of total responses recorded on tables throughout this chapter.

PRESENTATION OF FINDINGS

As previously stated, two instruments were used to collect the data. The first part of both questionnaires asked for microfiche evaluation information from the respondents.

Both questionnaires asked for an overall success rating of the Virginia VIEW microfiche in meeting the career information needs of users. The data revealed that 95.53 percent of the site respondents and 96.74 percent of the user respondents rated the Virginia VIEW

TABLE 7

RESPONSE RATE

SITE CLASSIFICATION	SITE NUMBER SELECTED	SITE SURVEYS RETURNED	SITE PERCENT RESPONDING	PERCENT OF TOTAL SITE RESPONSE	USER SURVEYS RETURNED
MIDDLE, JUNIOR AND INTERMEDIATE SCHOOLS	41	39	95.12	19.21	58
HIGH SCHOOLS AND VOCATIONAL TECHNICAL SCHOOLS	68	65	95.59	32.02	230
POSTSECONDARY EDUCATION	37	30	81.08	14.78	43
REHABILITATION AGENCIES	22	20	90.91	9.85	16
PUBLIC LIBRARIES	17	15	88.24	7.39	8
OTHER SITES	18	15	83.33	7.39	14
TOTAL	203	184		90.64	369

microfiche as successful or very successful. A summary of site responses indicating success rating is designated in Table 8 and a summary of user responses is found in Table 9.

Both questionnaires asked for the respondents to indicate the prime reason for using the microfiche. Eight choices were listed as well as space to insert another. Fifty-one percent of sites indicated exploration was a major use. To complete a class assignment was the response of 7.52 percent. General interest was the reason selected by 6.77 percent and to select an occupation/career was selected by 8.27 percent. Other answers and combinations of answers were selected by the remaining respondents. A summary of responses are found in Tables 10 and 11. User respondents indicated that 42.51 percent use the materials to explore occupations. To complete a class assignment was the reason selected by 12.81 percent and general interest was selected by 8.72 percent. A smaller number of user respondents, 7.08 percent, indicated that the most important reason for use was to select an occupation/career and also to find out about school and college programs. Other answers and combinations of answers were selected by less than 2.73 percent of the respondents.

Both questionnaires asked if the Virginia VIEW microfiche has provoked increased interest in career awareness. Eighty percent of the site respondents and 84.12 percent of the user respondents answered affirmatively. A summary of user and site responses are found in Tables 12 and 13 respectively.

Both questionnaires asked that ease of understanding the information as well as ease of use be rated on a predetermined scale. Of the site respondents, 96.92 percent rated the information contained on the Virginia VIEW microfiche easy or very easy to understand. The remaining 3.08 percent rated the information as difficult to understand and no site respondents indicated a reply of very difficult. Of the user respondents, 97.01 percent rated the information contained on the Virginia VIEW microfiche easy or very easy to understand. Seven user respondents, 1.90 percent, rated the information as difficult to

TABLE 8

SUMMARY OF OVERALL SUCCESS RATING
REPORTED BY SITE RESPONDENTS

RATING	FREQUENCY	PERCENT
Unsuccessful	6	4.47
Successful	73	54.48
Very Successful	55	41.05
Total	134	100.00

TABLE 9

SUMMARY OF USER RESPONSES INDICATING OVERALL SUCCESS RATING OF VIRGINIA VIEW

RATING	JR HIGH N	JR HIGH %	SR HIGH N	SR HIGH %	POSTSECONDARY N	POSTSECONDARY %	REHABILITATION N	REHABILITATION %	LIBRARIES N	LIBRARIES %	OTHER N	OTHER %	TOTAL N	TOTAL %
Unsuccessful	0	0	10	2.72	0	0	2	.54	0	0	0	0	12	3.26
Successful	36	9.78	113	30.70	27	7.34	8	2.17	6	1.63	10	2.72	200	54.35
Very Successful	22	5.98	107	29.08	16	4.34	5	1.36	2	.54	4	1.09	156	42.39
Total	58	15.76	230	62.5	43	11.68	15	4.07	8	2.17	14	3.81	368	100.00

TABLE 10

SUMMARY OF THE PRIME REASONS FOR USE
REPORTED BY SITE RESPONDENTS

RATING	FREQUENCY	PERCENT
Explore Occupations	68	51.13
Select Occupations/Career	11	8.27
School/College Selection	5	3.76
Class Assignment	10	7.52
General Interest	9	6.77
Other	7	5.26
Combination of Above	23	17.29
Total	133	100.00

TABLE 11

SUMMARY OF THE PRIME REASONS FOR USE
REPORTED BY USER RESPONDENTS

RATING	FREQUENCY	PERCENT
Explore Occupations	156	42.51
Select Occupation/Career	26	7.08
Apprenticeship Programs	10	2.73
Military Programs	6	1.64
School and College Programs	26	7.08
Fiancial Aid	5	1.36
Class Assignment	47	12.81
General Interest	32	8.72
Other	59	16.07
Total	367	100.00

understand and 4 user respondents, 1.08 percent, rated the information as very difficult. This information is reported further in Tables 14 and 15.

Use of the Virginia VIEW microfiche was rated as easy or very easy by 91.54 percent of the site respondents; however, 8.46 percent rated the use as difficult and no respondents indicated a reply of very difficult. Of the user respondents, 96.44 percent rated use of the Virginia VIEW microfiche as easy or very easy. Seven user respondents, 1.90 percent, rated the use as difficult and six user respondents, 1.63 percent, rated the use as very difficult. A summary of user and site responses are found in Tables 16 and 17.

Both questionnaires asked for response regarding use of the microfiche. Question 6 of the user questionnaire asked that respondents indicate the amount of help needed to locate information on the microfiche. The response that no assistance was needed was given by 52.44 percent of those surveyed. Brief oral or written instructions resulted from 42.90 percent and 4.64 responded that another person was needed to find the information. A summary of assistance needed by users is provided by Table 18.

The site questionnaire sought several responses regarding use of the microfiche. Responses to the extent content headings lead users to the information they are seeking indicated that the following percentage of site respondents indicated an answer of often or very often: nature of the occupations, 76.38 percent; working conditions, 79.36 percent; worker requirements, 86.51 percent; earnings and advancement, 88.10 percent; employment and outlook, 84.80 percent; educational training dial, 72.23 percent; and related education and training, 76.99 percent. This information is reported in Table 19.

In response to site question Q-8, 122 respondents did not answer. It is assumed, based on the specific wording of the question, that this lack of response meant students/clients did not find the microfiche difficult or very difficult to use or understand. Of the 81 responses, 45.68 percent indicated the reading level and 34.57 percent indicated difficulty in locating desired information on the microfiche. Of the

TABLE 12

SUMMARY OF THE INCREASED INTEREST
IN CAREER AWARENESS REPORTED BY
USER RESPONDENTS

RATING	FREQUENCY	PERCENT
No	57	15.88
Yes	302	84.12
Total	359	100.00

TABLE 13

SUMMARY OF THE INCREASED INTEREST IN CAREER
AWARENESS REPORTED BY SITE RESPONDENTS

RATING	FREQUENCY	PERCENT
No	26	20
Yes	104	80
Total	130	100

TABLE 14

SUMMARY OF STUDENT/CLIENT EASE OF UNDERSTANDING
REPORTED BY SITE RESPONDENTS

RATING	FREQUENCY	PERCENT
Difficult	4	3.08
Easy	103	79.23
Very Easy	23	17.69
Total	130	100.00

TABLE 15

SUMMARY OF USER RESPONSES INDICATING EASE OF UNDERSTANDING OF VIRGINIA VIEW

RATING	JR HIGH N	JR HIGH %	SR HIGH N	SR HIGH %	POSTSECONDARY N	POSTSECONDARY %	REHABILITATION N	REHABILITATION %	LIBRARIES N	LIBRARIES %	OTHER N	OTHER %	TOTAL N	TOTAL %
Very Difficult	0	0	3	.81	0	0	1	.27	0	0	0	0	4	1.08
Difficult	1	.27	6	1.62	0	0	0	0	0	0	0	0	7	1.90
Easy	38	10.30	116	31.43	28	7.59	10	2.71	4	1.08	8	2.17	204	55.28
Very Easy	19	5.15	105	28.46	17	4.61	5	1.36	2	.54	6	1.63	154	41.73
Total	58	15.72	230	62.32	45	12.20	16	4.34	6	1.62	14	3.8	369	100.00

TABLE 16

SUMMARY OF STUDENT/CLIENT USE OF MICROFICHE
REPORTED BY SITE RESPONDENTS

RATING	FREQUENCY	PERCENT
Very Difficult	0	0
Difficult	11	8.46
Easy	93	71.54
Very Easy	26	20.00
Total	130	100.00

TABLE 17

SUMMARY OF USER RESPONSES INDICATING EASE OF USE
OF VIRGINIA VIEW

RATING	JR HIGH N	JR HIGH %	SR HIGH N	SR HIGH %	POSTSECONDARY N	POSTSECONDARY %	REHABILITATION N	REHABILITATION %	LIBRARIES N	LIBRARIES %	OTHER N	OTHER %	TOTAL N	TOTAL %
Very Difficult	0	0	5	1.36	0	0	1	.27	0	0	0	0	6	1.63
Difficult	0	0	5	1.36	1	.27	1	.27	0	0	0	0	7	1.90
Easy	30	8.17	88	23.98	26	7.08	8	2.18	4	1.09	7	1.91	163	44.43
Very Easy	28	7.63	133	36.24	16	4.36	6	1.63	1	.27	7	1.91	80	52.04
Total	58	15.80	231	57.21	43	11.71	16	4.35	5	1.36	14	4.01	367	100.00

TABLE 18

SUMMARY OF ASSISTANCE NEEDED BY USERS

RATING	JR HIGH N	JR HIGH %	SR HIGH N	SR HIGH %	POSTSECONDARY N	POSTSECONDARY %	REHABILITATION N	REHABILITATION %	LIBRARIES N	LIBRARIES %	OTHER N	OTHER %	TOTAL N	TOTAL %
None	30	8.19	123	33.61	23	6.28	5	1.36	2	.54	9	2.46	192	52.44
Oral or Written	25	6.83	97	25.50	20	5.46	8	2.19	4	1.09	3	.82	157	42.90
Another Person	3	.82	10	2.74	0	0	2	.55	1	.27	1	.27	17	4.64
Total	58	15.84	230	61.85	43	11.74	15	4.10	7	1.90	13	3.55	366	100.00

16.05 percent indicating other, no one specific reason surfaced. Designated reasons listed by respondents included: difficult machine, students do not have enough information about themselves, failure to follow directions, unfamiliarity with the microfiche reader, physical manipulation of the reader, and difficulty for groups to see the microfiche reader. This information is reported in Table 20.

Table 21 reports responses regarding assistance available to users. Fifty percent of the site respondents indicated that some assistance is provided, if requested. Assistance is available at all times users are present was the response of 46.92 percent and 3.08 percent responded that no assistance is provided.

In response to the question, who is available to assist users at the microfiche, 52.31 percent of the site respondents indicated that a professional is available and 16.15 percent indicated that a paraprofessional is available. In addition, 12.31 percent indicated that both a professional and paraprofessional are available. A student is available to assist at the site location of 5.39 percent of the respondents and both a professional and a student are available at the site location of 7.69 percent of the respondents. This information is reported in Table 22.

Question 7 of the user questionnaire asked the respondent to rate the microfiche information as uninteresting, interesting or very interesting. Interesting was marked as the response by 63.04 percent and very interesting was indicated by 33.97 percent. Only 2.99 percent responded that the microfiche information was uninteresting. Table 23 summarizes this data.

User respondents were asked if they used the microfiche index, and, if so, to rate the microfiche index as a tool in helping to use the microfiche. An affirmative response was given by 71.98 percent. A negative reply was given by 28.02 percent and 5 individuals did not answer the question. Of the respondents indicating they used the microfiche index, 53.43 percent rated it very helpful and 44.66 percent rated it as helpful. This information is presented in Tables 24 and 25 respectively.

The site questionnaire also asked that the microfiche index be rated as a tool in accessing information. Very helpful was the reply of 50.38 percent of the respondents and helpful was the reply of 48.12 percent. This information is recorded in Table 26.

TABLE 19

EFFECTIVENESS OF CONTENT HEADINGS IN FINDING INFORMATION ON THE MICROFICHE REPORTED BY SITE RESPONDENTS

CONTENT HEADING	NEVER	SOMETIMES	OFTEN	VERY OFTEN
		(PERCENT OF RESPONSES)		
Nature of the Occupation	0	23.62	33.86	42.52
Working Conditions	.78	19.84	37.30	42.06
Worker Requirements	0	13.49	40.48	46.03
Earnings and Advancement	0	11.90	34.92	53.18
Employment and Outlook	0	15.20	35.20	49.60
Educational Training Dial	.79	26.98	31.75	40.48
Related Education and Training	1.59	21.43	31.75	45.24

TABLE 20

REASON(S) FOR DIFFICULTY OF USE REPORTED BY SITE RESPONDENTS

DIFFICULTY	FREQUENCY	PERCENT
Reading Level	37	45.68
Difficulty in Locating Information on Microfiche	28	34.57
Other	13	16.05
Combination of Above	3	3.70
Total	81	100.00

TABLE 21

DEGREE OF ASSISTANCE PROVIDED FOR USERS AT THE MICROFICHE LOCATION

ASSISTANCE	FREQUENCY	PERCENT
None	4	3.08
Some Assistance, If Requested	65	50.00
At All Times	61	46.92
Assistance Available		
Total	130	100.00

TABLE 22

IDENTIFICATION OF INDIVIDUALS TO ASSIST USERS AT THE MICROFICHE

ASSISTANT	FREQUENCY	PERCENT
Professional	68	52.31
Paraprofessional	21	16.15
Student	7	5.39
Combination of Above	34	26.15
Total	130	100.00

TABLE 23

USER DESCRIPTION OF MICROFICHE

RATING	FREQUENCY	PERCENT
Uninteresting	11	2.99
Interesting	232	63.04
Very Interesting	125	33.97
Total	368	100.00

TABLE 24

REPORTED USE OF MICROFICHE INDEX

RATING	FREQUENCY	PERCENT
No	102	28.02
Yes	262	71.98
Total	364	100.00

TABLE 25

MICROFICHE INDEX RATING BY USERS

RATING	FREQUENCY	PERCENT
Not Helpful	5	1.91
Helpful	117	44.66
Very Helpful	140	53.43
Total	262	100.00

TABLE 26

SITE RATING FOR MICROFICHE INDEX AS A TOOL
IN ACCESSING INFORMATION

RATING	FREQUENCY	PERCENT
Not Helpful	2	1.50
Helpful	64	48.12
Very Helpful	67	50.38
Total	133	100.00

Both questionnaires requested information regarding the availability of computers for accessing career information. It was reported that no interactive computer system was available for clients to use in accessing career information at 69.23 percent of the sites and that computers were available for this purpose at 30.77 percent. When asked if a computer is available for use in finding career information, 57.97 percent of the users responded negatively and 42.03 responded affirmatively. Tables 27 and 28 report this information.

In addition, site respondents were asked if this material reduced their time spent in gathering materials and research. They were instructed to answer this question only if their responsibilities include gathering materials and research. Therefore, it is assumed that site respondents that did not answer the question do not have this responsibility. Of the 110 respondents that replied to this question, Table 29 indicates that 87.27 replied yes and 12.73 replied no.

When asked the number of potential users located at their site or those with access to materials at their school, agency, or institution, 30.83 percent of the respondents indicated 1001 or more. The response category of below 50 individuals was the reply of 6.01 percent; 50 to 150 was the reply of 6.02 percent; 151 to 250 was the reply of 4.51; 251 to 500 was the reply of 18.80 and 501-1000 was the reply of 33.83 percent. Specific numbers indicated by respondents beyond 1001 ranged from 1050 to 2400 for secondary schools and 1600 to 19,000 for post-secondary institutions. This information is reported in greater detail in Table 30.

When asked to identify the approximate number of different persons per week who utilize the Virginia VIEW microfiche at their site, 51.16 percent indicated the category 1 to 10. The response category of 11 to 50 was the reply of 38.76 percent; 51 to 100 was the reply of 4.65 percent; and 101 to 200 was the reply of .78 percent. This information is also recorded by site location in Table 31.

The question of the total times per week the Virginia VIEW microfiche was used yielded a reply of 51.15 percent for the category of 0 to 10. The response category of 11 to 50 was the reply of 30.53

TABLE 27

REPORTED AVAILABILITY OF INTERACTIVE
COMPUTER SYSTEM BY SITE RESPONDENTS

AVAILABILITY	FREQUENCY	PERCENT
Not Available	90	69.23
Available	40	30.77
Total	130	100.00

TABLE 28

REPORTED AVAILABILITY OF INTERACTIVE
COMPUTER SYSTEM BY USER RESPONDENTS

AVAILABILITY	FREQUENCY	PERCENT
Not Available	211	57.97
Available	153	42.03
Total	364	100.00

TABLE 29

REDUCTION OF TIME REQUIRED FOR
GATHERING MATERIALS REPORTED BY SITE RESPONDENTS

RATING	FREQUENCY	PERCENT
No	14	12.73
Yes	96	87.27
Total	110	100.00

TABLE 30

ESTIMATE OF NUMBER OF POTENTIAL USERS

RATING	JR HIGH N	JR HIGH %	SR HIGH N	SR HIGH %	POSTSECONDARY N	POSTSECONDARY %	REHABILITATION N	REHABILITATION %	LIBRARIES N	LIBRARIES %	OTHER N	OTHER %	TOTAL N	TOTAL %
Below 50	0	0	1	.75	1	.75	3	2.26	0	0	3	2.26	8	6.02
50- 150	0	0	0	0	0	0	3	2.26	2	1.50	3	2.26	8	6.02
151- 250	0	0	2	1.50	0	0	2	1.50	1	.75	1	.75	6	4.51
251- 500	5	3.76	11	8.28	3	2.26	1	.75	0	0	5	3.76	25	18.80
501-1000	9	6.77	24	18.04	7	5.27	0	0	4	3.01	1	.75	45	33.83
1000 or More	4	3.01	19	14.29	11	8.27	0	0	5	3.76	2	1.50	41	30.83
Total	18	13.54	57	42.86	22	16.55	9	6.77	12	9.02	15	11.28	133	100.00

TABLE 31

ESTIMATE OF DIFFERENT USERS PER WEEK

RATING	JR HIGH N	JR HIGH %	SR HIGH N	SR HIGH %	POSTSECONDARY N	POSTSECONDARY %	REHABILITATION N	REHABILITATION %	LIBRARIES N	LIBRARIES %	OTHER N	OTHER %	TOTAL N	TOTAL %
No Use	1	.78	0	0	1	.78	0	0	2	1.55	2	1.55	6	4.65
1- 10	6	4.65	21	16.28	15	11.63	7	5.43	11	8.53	6	4.65	66	51.16
11- 50	8	6.20	31	24.03	5	3.88	2	1.55	0	0	4	3.10	50	38.76
51-100	1	.78	4	3.10	0	0	0	0	0	0	1	.78	6	4.65
101 or More	0	0	0	0	0	0	0	0	0	0	1	.78	1	.78
Total	16	12.40	56	43.41	21	16.28	9	6.98	13	10.08	14	10.85	129	100.00

percent; 51 to 100 was the reply of 16.031 and 101 to 200 was the reply of 2.30 percent. A summary of the approximate number of uses per week is provided in Table 32.

One hundred and twenty-three site respondents, 91.79 percent, indicated that a bilingual edition was not needed for any user at their location. Eleven respondents, 8.21 percent, indicated the reverse. Of these eleven, four indicated the language needed was Vietnamese and three indicated the language needed was Spanish. Laos, Kamir, French and the combination of Vietnamese, Cambodian and Thailanese were languages indicated by single responses. This information is reported in Tables 33 and 34.

The approximate number of individuals needing a bilingual edition fell into the following categories presented in Table 35: one respondent indicated the range of 1 to 5 individuals; three respondents indicated the range of 6 to 10 individuals; one respondent indicated the range of 11 to 20 and two respondents indicated that over 40 individuals needed a bilingual edition.

Of the site respondents indicating the need for bilingual editions, only five indicated that a bilingual counselor was available to work with users at the site and this information is reported in Table 36.

When asked what equipment costs have been incurred by the site in order to use the microfiche, eighty-two site respondents, 73.87 percent, indicated the answer of zero to fifty dollars. The response category of $51 to $100 yielded a response from 5.41 percent; $101 to $200 yielded a response from 6.31 percent; $201 to $500 yielded a response from 12.60 percent and two respondents, 1.81 percent, indicated over $500. Table 37 reports the responses regarding equipment cost.

A variety of methods and combination of methods for integrating the Virginia VIEW microfiche with existing programs were identified by site respondents and reported in Table 38. Career education classes were designated by 12.28 percent, and career orientation sessions were designated by 21.93 percent. Job placement was designated by 19.30 percent and selection of postsecondary training was a response of 17.54 percent.

TABLE 32

APPROXIMATE NUMBER OF USES PER WEEK

RATING	JR HIGH N	JR HIGH %	SR HIGH N	SR HIGH %	POSTSECONDARY N	POSTSECONDARY %	REHABILITATION N	REHABILITATION %	LIBRARIES N	LIBRARIES %	OTHER N	OTHER %	TOTAL N	TOTAL %
0- 10	8	6.11	17	12.98	12	9.16	7	5.34	14	10.69	9	6.87	67	51.15
11- 50	6	4.58	25	19.09	4	3.05	1	.76	0	0	4	3.05	40	30.53
51-100	2	1.53	13	9.93	4	3.05	1	.76	0	0	1	.76	21	16.03
101-200	1	.76	1	.76	1	.76	0	0	0	0	0	0	3	2.30
Total	17	12.98	56	42.76	21	16.02	9	6.86	14	10.69	14	10.68	131	100.00

TABLE 33

EXPRESSED NEED BY SITE RESPONDENTS
FOR BILINGUAL EDITION

RESPONSE	FREQUENCY	PERCENT
No	123	91.79
Yes	11	8.21
Total	134	100.00

TABLE 34

REPORTED LANGUAGES NEEDED
FOR BILINGUAL EDITIONS

LANGUAGE	FREQUENCY	PERCENT
SPANISH	3	27.27
VIETNAMESE	4	36.37
LAOS	1	9.09
KAMIR	1	9.09
FRENCH	1	9.09
VIETNAMESE, CAMBODIAN THAILANESE	1	9.09
Total	11	100.00

TABLE 35

APPROXIMATE NUMBER OF BILINGUAL USERS

NUMBER	FREQUENCY	PERCENT
1- 5	1	14.29
6-10	3	42.86
11-20	1	14.29
Over 40	2	28.56
Total	7	100.00

TABLE 36

BILINGUAL COUNSELOR AVAILABLE

RESPONSE	FREQUENCY	PERCENT
No	43	89.58
Yes	5	10.42
Total	48	100.00

TABLE 37

REPORTED EQUIPMENT COSTS

AMOUNT	FREQUENCY	PERCENT
$ 0 - $ 50	82	73.87
51 - 100	6	5.41
101 - 200	7	6.31
201 - 500	14	12.60
Over 500	2	1.81
Total	111	100.00

TABLE 38

INTEGRATION WITH REGULAR PROGRAM

ACTIVITY	FREQUENCY	PERCENT
Career Education Classes	14	12.28
Career Orientation	25	21.93
Job Placement	22	19.31
Selection of Postsecondary Training	20	17.54
Presentations	20	17.54
Other	13	11.40
Total	114	100.00

Also, 17.54 percent of the site respondents designated that the Virginia VIEW microfiche materials were used to make a variety of presentations.

The second part of the user questionnaire asked for demographic information from the respondents. The frequency of site and user respondents from each site location are reported in Table 7.

User question eleven asked if the respondent had officially been classified as handicapped or disabled by a school or agency. The response from 94.85 percent was no and 5.15 percent responded affirmatively. This information is reported in Table 39.

User question twelve asked if the respondent had served in the armed forces and is reported in Table 40. The response from 93.75 percent was no and 6.25 percent indicated they had served in the armed forces. One user respondent did not reply.

The current employment status of user respondents is reported in Table 41. The largest single response was from full-time students, representing 45.36 percent of the respondents. Twenty-four percent responded that they have part-time paid jobs and 17.76 percent do not and have never held a paid job. A total of 40 respondents, 10.93 percent have full-time paid jobs.

An estimate of the total family income from all sources, before taxes, was requested on the user questionnaire and reported in Table 42. One hundred and two of the respondents, 28.10 percent responded that the answer was unknown. Less than $5,000 was the reply of 6.61 percent. The income category of $5,000 to $9,999 was the reply of 11.30 percent; $10,000 to $19,999 was the reply of 21.76 percent; $20,000 to $29,999 was the reply of 17.91 percent and $30,000 or over was the reply of 14.33 percent.

One hundred and forty-six of the user respondents, 39.57 percent, were male and two hundred and twenty-three, 60.43 percent, were female. A summary of the sex of user respondents by site location is provided in Table 43.

The majority of respondents, 64.13 percent, were Caucasian and 29.08 percent were Black or Afro-American. A total of fifteen, 4.08 percent were American Indian or Native American. One respondent did

TABLE 39

REPORTED HANDICAPPED OR DISABLED USERS

RESPONSE	FREQUENCY	PERCENT
No	350	94.85
Yes	19	5.15
Total	368	100.00

TABLE 40

USERS REPORTING SERVICE IN THE ARMED FORCES

RESPONSE	FREQUENCY	PERCENT
No	345	93.75
Yes	23	6.25
Total	368	100.00

TABLE 41

USER EMPLOYMENT STATUS

EMPLOYMENT	FREQUENCY	PERCENT
Do Not And Have Never Held A Paid Job	65	17.76
Currently Employed (Part-Time)	89	24.32
Currently Employed (Full-Time)	40	10.93
Currently An Unpaid Volunteer	6	1.64
Full-Time Student	166	45.36
Total	366	100.00

TABLE 42

ESTIMATE OF TOTAL FAMILY INCOME

INCOME LEVEL	FREQUENCY	PERCENT
Less Than $5,000	24	6.61
$5,000 - $9,999	41	11.30
$10,000 - $19,999	79	21.76
$20,000 - $29,999	65	17.91
$30,000 or Over	52	14.33
Unknown	102	28.10
Total	363	100.00

TABLE 43

SUMMARY OF SEX OF USERS RESPONDING TO THE SURVEY

SEX	JR HIGH N	JR HIGH %	SR HIGH N	SR HIGH %	POSTSECONDARY N	POSTSECONDARY %	REHABILITATION N	REHABILITATION %	LIBRARIES N	LIBRARIES %	OTHER N	OTHER %	TOTAL N	TOTAL %
Male	26	7.05	80	21.68	16	4.34	11	2.98	6	1.62	7	1.90	146	39.57
Female	32	8.67	150	40.65	27	7.32	5	1.36	2	.53	7	1.90	223	60.43
Total	58	15.72	230	62.33	43	11.66	16	4.34	8	2.15	14	3.80	369	100.00

not answer the question and the remaining 2.72 percent were Hispanic or Spanish American, Oriental or Asian American or other. This information is reported in Table 44.

Table 45 indicates the age range of user respondents. Two hundred and twenty-one user respondents, 61.58 percent, were in the 15 to 18 age category and fifty-one, 14.21 percent, were 12 to 14 years of age. The age category of 19 to 22 was the reply of 8.09 percent; 23 to 30 was the reply of 7.53 percent; 31 to 40 was the reply of 5.30 percent; 41 to 50 was the reply of 2.23 percent and 51 and over was the reply of 1.11 percent. Ten respondents did not indicate their age.

The majority of respondents, 64.85 percent, indicated they have nine to twelve years of education or have completed requirements for the GED. One to eight years of education was the reply of 18.53 percent. Thirteen to sixteen years of education was the reply of 11.17 percent and 5.45 percent of the respondents indicated they have seventeen to twenty years of education. This information is presented in Table 46.

DISCUSSION OF FINDINGS

The data obtained yields information to assess the status of the Virginia VIEW program and may be used in making the kinds of decisions previously listed.

Tables 10 and 11 provide information for determining Decision 1. The prime reason for use yielded from both user and site questionnaires is to explore occupations. This is consistent with the developmental intent of the microfiche and does not indicate that content changes are necessary.

Tables 14, 15, 16, 17, and 20 provide information related to Decision 2. The majority of both user and site respondents indicated that the materials are easy to understand. The majority of site respondents described student/client use of the microfiche as easy while the majority of users described this procedure as very easy. Reading level and format changes do not seem indicated.

TABLE 44

USER RACE OR ETHNIC IDENTITY

IDENTITY	FREQUENCY	PERCENT
American Indian	15	4.08
Afro-American	107	29.08
Hispanic	5	1.36
Oriental	3	.82
Caucasian	236	64.13
Other	2	.54
Total	368	100.00

TABLE 45

REPORTED AGE OF USERS

YEARS OF AGE	JR HIGH N	JR HIGH %	SR HIGH N	SR HIGH %	POSTSECONDARY N	POSTSECONDARY %	REHABILITATION N	REHABILITATION %	LIBRARIES N	LIBRARIES %	OTHER N	OTHER %	TOTAL N	TOTAL %
12 - 14	42	11.70	8	2.23	0	0	0	0	1	.28	0	0	51	14.21
15 - 18	9	2.51	207	57.67	2	.56	2	.56	1	.28	0	0	221	61.58
19 - 22	1	.28	5	1.39	15	4.18	3	.84	2	.56	3	.84	29	8.09
23 - 30	2	.56	3	.84	17	4.74	2	.56	0	0	3	.84	27	7.54
31 - 40	2	.56	2	.56	7	1.95	3	.84	0	0	5	1.39	19	5.30
41 - 50	0	0	0	0	2	.56	3	.84	1	.28	2	.56	8	2.23
51 and Over	1	.28	2	.56	0	0	1	.28	0	0	0	0	4	1.11
Total	57	15.89	227	63.25	43	11.99	21	3.92	5	1.40	13	3.63	359	

TABLE 46

REPORTED EDUCATION OF USERS

YEARS OF EDUCATION	FREQUENCY	PERCENT
1- 8	68	18.53
9-12 or GED	238	64.85
13-16	41	11.17
17-20	20	5.45
Total	367	100.00

Tables 18, 21, and 22 indicate the responses to questions concerning assistance needed by users and provide information for Decision 3. The majority, 52.44 percent of user respondents indicated that no assistance was needed. However, 81 of the site respondents indicated a reason for difficulty with use. The specific reasons for difficulty identified in Table 20 should be reviewed and evaluated further with consideration for changes to eliminate these difficulties.

Information associated with Decision 4 is found in Tables 24, 25, and 26. An affirmative response was given by 71.98 percent of the users when asked if they used the microfiche index. Of the respondents indicating they used the microfiche index, 53.43 percent rated the tool as very helpful and 44.66 percent rated it as helpful. Therefore, it is concluded that the microfiche index is an adequate tool and changes are not necessary.

Table 19 provides information relative to Decision 5. Responses to the extent content headings lead users to the information they are seeking resulted in answers of often or very often ranging from 72.23 percent to 88.10 percent for various headings. Revised content headings should be pretested and those which lead to greater accuracy in locating information should be incorporated in future editions. This does not seem a high priority need based on responses.

Information used to identify the population currently using Virginia VIEW, addressed in Decision 6, is presented in Tables 39, 40, 41, 42, 43, 44, 45, and 46. All specified segments of the population are represented in the total sample. A diverse population of users in the sample resulted from the methods and procedures followed and corresponds to the targeted population. Over sixty percent were females and over sixty-four percent were Caucasian. A large segment of the user survey population, 83.88 percent, were twenty-two years of age or younger and 45.36 percent were full-time students. A large number, 28.10 percent, indicated their family income was unknown. Only 16.62 percent of the user respondents reported educational training beyond the high school level. Efforts to include individuals representing the entire user population were incorporated in this study. However, it is important to note

these classifications of the actual respondents when this data is used or interpreted. Specific strategies may be needed to increase use by unserved or underserved segments of the population at various locations. This applies most directly to out of school adults.

Decision 6 also deals with the use of the microfiche system for which data are reported in Tables 30, 31, and 32. The reported use is not widespread throughout the state. Forty-two of the one hundred and eighty-four site respondents replied with an explanation that they could not complete the survey due to lack of use. Strategies to increase use should be developed and implemented. User comments and recommendations reported in this chapter may be used to determine strategies. Cost implications must be considered.

Decision 7 addressed the need for bilingual editions and this information is reported in Tables 33, 34, 35, and 36. Only eleven sites expressed a need for bilingual editions of the materials and of these, seven different languages were reported. Bilingual counselors are available at five of these locations. Bilingual editions should be developed as the need grows and as funds for development become available.

Table 37 designates equipment costs referred to in Decision 8. Due to the large number of site respondents that indicate lack of use due to absence of the necessary equipment, it is recommended that future appropriations be made for site locations to purchase the required equipment. The set of microfiche need not be distributed to locations which do not have microfiche viewers or are unable or unwilling to purchase the microfiche.

Table 38 reports methods used to integrate the Virginia VIEW microfiche with existing programs addressed in Decision 9. A variety of efforts to integrate the microfiche materials with the regular program were reported; however, career orientation was listed most often. The success of these efforts were not evaluated and it is suggested that future efforts to do so will be necessary following an appropriate period of time for such integration.

Information pertinent to Decision 10 is presented in Tables 8, 9, 12, 13, 23, and 29. Both user and site respondents have indicated a favorable overall success rating and description of the materials. It is not suggested that changes to display and deliver the information in a different manner be made.

Suggestions for general improvements from users and site respondents, the topic of Decision 11, were requested on both questionnaires and during all interviews. A summary of all recommendations are included in the next sections. They should be carefully reviewed, evaluated and incorporated if feasible and complimentary to the existing program.

Decision 12 requires a compilation of all evaluative information concerning the Virginia VIEW system. Future decisions regarding funding and budgetary requests should result from this total assessment by the appropriate individuals making decisions regarding the project.

In summary, the data obtained yields information to assess the current status of the Virginia VIEW program and may be used in making the decisions identified. The areas where change has been suggested includes: (1) elimination of difficulty with use; (2) strategies to increase use; (3) future preparation of bilingual editions; and (4) provisions for required equipment. The expenditures for these program additions and changes must be carefully assessed in view of available resources.

SUMMARY OF RECOMMENDATIONS FROM RESPONDENTS

The last question on the user and site questionnaires asked the respondent what recommendations they could make to improve the Virginia VIEW microfiche and provided space for any comments. A total of 112 user respondents and 77 site respondents made specific recommendations.

RECOMMENDATIONS FROM USER

The recommendation repeated most frequently was to expand the number of occupations summarized on the microfiche. Twenty-four users included this comment along with the request for more specific specialized occupations. The original plan for development of the microfiche included additional occupations for the second edition.

The comment that the information was helpful was included by a total of fifteen user respondents. Some commented further that it was quick and easy to use for finding career information.

Five users specified that the microfiche should be publicized and used more often. Four user respondents designated the need for more information on schools and colleges and three users specified that they enjoyed using the microfiche.

Some recommendations by single users follow:

Have current job opportunities.

Have more microfiche readers.

Keep it simple and up-to-date.

Add sound.

Add more information about nurses.

Collect data that reflects current market trends.

Indicate required or desired college requirements.

Add pictures and more information concerning wages.

Provide a more detailed index.

Change the color (white on blue is hard to read).

Make the microfiche file easier to follow.

Provide slides on specific classifications of jobs.

List the location of companies that employ persons trained in particular occupations.

Alignment rails to hold the fiche in proper position are needed.

Comments from users included a wide range of responses. Several are listed below:

I have learned about occupations which I did not know existed.

Very informative as presented. Very easy to follow.

I received a lot of good information and I had fun doing it also.

At the time the microfiche arrived at my school, I was doing a research paper on my future career. It was very helpful and contained valuable and technical information.

We used it as a part of a unit on job preparation and it was great. By knowing what entry requirements were needed for different jobs, I was able to prepare myself and questions for my mock interview. We really found this entire unit enjoyable and helpful.

I enjoyed using it and cannot think of any recommendations.

Other favorable comments include the statements that it was informative, complete, required only brief instructions, the microfiche is an interesting piece of equipment, easy to use, an informative way to find out about careers and up-to-date.

One junior high student emphasized that "I had rather look at this than a book." Another stated that "the Virginia VIEW microfiche . . . shows how you deal with your jobs and amount of education needed or required. And it has helped me really figure out what I want to do with my career as a student and when I am finished school." A postsecondary user was complimentary even with specific criticisms: "Take out the little pictures as they are distracting and project the presented material in a juvenile and simplistic manner rather than the mature and research-oriented manner in which such information should be presented. Deletion of the "education and training dial" would provide more space for more extensive information either on education and training or other pertinent information: the dial itself serves no purpose as far as I can perceive. All in all, I find this program as a very effective way to grasp a quick yet comprehensive view of information. Perhaps the best feature is the information on careers as it relates to Virginia employment figures as they are current as well as presented in a very comprehensible manner."

RECOMMENDATIONS FROM SITE RESPONDENTS

The recommendation repeated most frequently was to expand the number of occupations summarized on the microfiche. Several respondents designated that more publicity was needed. A librarian responded that the public was not aware that the material was available, therefore, it is not utilized. That individual stated further that they hope to make the fiche and accompanying materials more visible to their patrons.

Other recommendations by site respondents follow:

Seventh graders find the training dial difficult to understand.

Continue to keep the information current; some of the material (particularly the wages) seems out of date.

Issue several sets for those schools where enrollments are high.

Add drawings and diagrams for the purpose of increasing student interest in reading the information.

An emphasis on transferable skills from occupation to occupation would be helpful.

Clarify regional employment projections on the microfiche.

Continue to add occupations including Word Processing Office Technology.

Continue regional workshops - especially when new material comes out that is coordinated with the microcomputer.

Make careers more specialized. For example, divide the career of physician into specialists such as radiology, gyneology, etc.

The fiche are excellent; however, most of our patrons are seeking job announcements.

Launch a poster and ad campaign to trumpet the virtues of Virginia VIEW.

Other comments from site respondents are listed below:

The system is great and we are anxious to receive the additions.

This is an excellent resource. The students enjoy using it.

This is a useable system for all ages.

It has been great for job exploration and answering questions. The clients are content to search independently and the force of "books" does not scare them off. I am particularly pleased that it relates so well to the DOT and list the physical limitations involved in training. The earning potentials have been effective for career choices and give many a more realistic approach to jobs.

The Virginia VIEW microfiche is effective and functional; expand as appropriate.

We enjoy using Virginia VIEW and feel it is an excellent contribution to the career counseling and placement office.

We look forward to the computer version.

This material has been helpful because it is the first time we have had "current" materials available. The standard format is also appreciated. It is quite popular with the students and is used extensively by them.

We feel that the microfiche reader is very simple to use and requires minimal counselor supervision.

The students use the microfiche in preference to using tapes and filmstrips. We do need another microfiche reader. Folks must stand in line to use it.

> Our vocational education classes have used it most and with much ease and compliments on the contents. Subject classroom teachers have used it on occasion for special projects or papers. There is always a professional to explain the use to scheduled groups or a student aid for individuals needing assistance.

Several site respondents expressed their appreciation and desire to use the materials; however, their location did not have the appropriate equipment or personnel. A few of these comments are shared below:

> The microfiche is excellent. We just have to find funds to obtain a reader and a resource room for student use.

> Full-time counseling services at the Virginia Employment Commission are no longer available. All counseling positions were abolished in February. Before this time, I found Virginia VIEW very helpful. I believe it would be helpful if the new part-time counseling staff as well as other employees who work with the public were given training.

> The microfiche have been a valuable contribution to our career materials. We thank you for providing them to us.

> We are too understaffed to push the concept of career planning in the library.

> There is no support among the administrative staff for the program.

SUMMARY OF ON-SITE VISITATIONS

On-site visits were planned to gather additional information through direct contact with users. One site representing each of the six categories of user sites were selected by the writer. These were scheduled at convenient times for the microfiche recipients. The persons interviewed included the staff member who attended the workshop and actually received the microfiche and users present at the time of the scheduled visit. Staff and user structured interview questions are included in Appendix E. The reader is asked to note that only six locations were involved in this phase of the study. Therefore, caution must be exercised not to generalize the findings beyond the population involved. These responses from site employees and users may be representative of others. However, additional on-site visits would be necessary in order to confirm and generalize these findings to the entire population. The information gained from these visits is reported in the next two sections.

RESPONSES FROM SITE EMPLOYEES

During all six interviews, the site employees responded that they had found the Virginia VIEW microfiche to be an asset in their work setting. The major reasons included that the information was current, comprehensive and easily accessible. Therefore, the availability of Virginia VIEW was a helpful resource which eliminated other steps in gathering requested information. One site employee designated that Virginia VIEW was the only resource in the counseling center with occupational data specific to Virginia.

The location of the microfiche varied. It was found in the library of the intermediate school visited. Three copies were available at the high school and found in the library, the outer office of the counseling suite and in the private office of the Director of Guidance. The materials were found in the Career Resource Center at the post-secondary site visited and in the general office area of the rehabilitation agency. The materials were located in the Business Technology and Social Science area on the first floor of the public library visited and with other career information resources in the counseling area of the Women's Resource Center. More ideal locations within the space limitations provided were not designated. However, it was suggested that multiple copies be available for placement in several locations where large user populations existed and where limited use resulted from an inconvenient location. More specifically, counselors in educational settings suggested that the microfiche and a reader be available for independent student use, as well as accessible by all counselors. Therefore, a set of materials in the library and perhaps two sets in the counseling suite would be more ideal.

It was reported that the microfiche was being used in each location visited. However, the library setting indicated real lack of knowledge concerning use. This is understandable since the location would result in knowledge of use only in cases where the librarian was approached for assistance or in the area for other reasons. The assumption has been made that the general population does not know the materials exist at this location and therefore do not seek the available materials in public libraries.

In all six locations, users, professionals and paraprofessionals access the materials. General instructions are available in addition to assistance for use. It was indicated generally that assistance from a counselor or aid was needed for the first use. Afterwards, the user accessed information directly.

Estimates of the number of persons using the system per week varied from three to one hundred. In each case, it was designated that no monitoring system was used and, therefore, accurate assessment of the total number of uses and users was not available.

The system has been publicized in a variety of ways in each location other than the library. The methods specified include: verbal announcements, printed information sheets, posters, in-class presentations and demonstrations. In all six cases, personal contact seemed to be the most predominant means of sharing information regarding the existence of the system as well as encouraging use. It was quickly pointed out, that previous users are the best advertisement for the system and that many requests for use have resulted from contact with other users.

The estimate of the number of repeat users ranged from zero to fifty. Reasons why users return for additional information from the microfiche is unknown since no monitoring device is used. It is anticipated that many return to gain information on additional occupations and to compare factors describing various occupations. Often the first request for use results from a class assignment; additional requests result from individual interest.

The most effective way to use the system reported at four of the sites was working with students and clients in one-to-one situations. Others indicated small group workshops and independent access by users.

Teachers and other staff members were reportedly using the microfiche with groups at five of the six sites. However, the exact number of such uses was unknown. Teachers at the school settings have used the materials with classes in the following subjects: social studies, English, data processing, distributive education, general business and home economics. In addition, the information on the microfiche has been used for numerous career reports.

When asked what changes could be implemented at this site to increase usage of the Virginia VIEW microfiche, the following comments resulted:

- Additional copies of the Virginia VIEW materials and additional readers.
- Additional time during the school day when students may access the materials.
- Increase the number of occupations.

When asked to describe the typical user of Virginia VIEW, each person interviewed proceeded to describe their typical client/student population. There were no responses that distinguished particular groups from the total population other than at the postsecondary level. There it was mentioned that students in the process of selecting a career were more frequent users than those with a designated career interest.

Additional general comments and opinions regarding Virginia VIEW that were recorded during interviews with site employees follow. The postsecondary material is not used a great deal at the secondary level. The College Handbook, Peterson's Guide, etc. are used much more frequently for obtaining postsecondary information. The importance of accuracy was stressed by site employees. It was suggested that the job outlook statements should be worded differently; in some cases they are vague and sound pessimistic. A counselor stated that Virginia VIEW was the most appropriate information to share with students and teachers on particular occupations. Previously, such requests meant gathering information from multiple resources.

RESPONSES FROM USERS

Additional information was gathered through on-site interviews with users. However, the structured interviews with users of the Virginia VIEW microfiche were of less value than anticipated. Difficulty in locating previous users, the small amount of daily traffic at some sites and the time of the visit resulted in few client interviews outside of the school setting. A total of eighteen interviews were conducted.

However, fifteen of these were with students and no interviews with users were conducted at the public library nor rehabilitation agency.

When asked if they had ever used microfiche before using the Virginia VIEW, only one user replied affirmatively. The users responded that they liked using microfiche and that it was helpful to have the information compiled in this format. Four users indicated that they experienced difficulty in using the microfiche reader. Overall, the users seemed to react favorably to use of the microfiche and indicated it was fun to use and preferred over textbooks, pamphlets or brochures.

Three users responded that they used the microfiche for the first time without assistance. The other fifteen indicated that they experienced a few minutes of instructions for use of the system and a brief demonstration. Six of these had received this assistance in a group situation and the other nine received individual help.

Four users indicated that they experienced difficulty in using the microfiche. This included problems inserting the microfiche in the reader in the correct position, movement of the hand guide, less than a full page shown on the viewer, and the white letters on blue background.

Encouragement to use the system was provided by teachers and counselors. The level of encouragement seemed to have an effect on the use of the system. It was reported that each user interviewed had received encouragement from a site employee or member of their peer group.

All eighteen of the users interviewed praised the content of Virginia VIEW. It was evident that users felt their experience with the Virginia VIEW microfiche increased their awareness of the career decision-making process and their knowledge of possible occupations. They felt comfortable seeking additional information and expressed the desire to use the microfiche again. Of most importance, Virginia VIEW stimulated thinking about their future. However, some responses reflected a lack of understanding about the purpose of the microfiche as well as unrealistic expectations. For example, one user commented

that they did not like the microfiche because "it did not find me a job." Another user commented that "it did not pick a career for me."

The location of Virginia VIEW was reported to be the same as designated by site employees. No suggestions for preferable locations were voiced by the users interviewed.

The users interviewed reported that they used Virginia VIEW when they visited the office, prior to and following school hours and during lunch. Several students indicated that the additional time they desire to use the microfiche is during classes.

Ten of the interviewed users happened to use the Virginia VIEW originally as the result of an assignment. The other eight used the Virginia VIEW as a result of their search for career information.

The overall response was positive and enthusiastic. The Virginia VIEW microfiche are being used at the interview sites and have been found useful. Users commented that the information opened or expanded their career horizons and aided the decision-making process regarding their future plans. They also suggested that more occupations be included. Specifically, several popular athletic-related occupations were suggested including professional football player, basketball player and scuba diver. No further recommendations were suggested by the users interviewed. Several commented that they look forward to the updated version which will include additional occupations.

SUMMARY

The purpose of this study was to determine the effectiveness of the information delivery component of the Virginia Career Information Delivery System microfiche as determined by implementation of that phase of the proposed model. The data for this study was collected by three methods: (1) a questionnaire to obtain user reactions and demographic information, (2) a questionnaire to obtain site information and, (3) on-site interviews with structured questions to gather information in a less formal method.

The specific results of this study have been presented in narrative and tabular forms. It is evident that Virginia VIEW has received a favorable response among both users and site employees. Data collected on visits to sites and the researcher's observations verified general responses on the questionnaires. Information required to address the NOICC performance evaluation criteria and questions specific to state data collection was obtained from the two questionnaires. Therefore, the critical purposes of the evaluation were achieved through this phase of the study.

The information gained during the on-site visits was deemed profitable and served to personalize the report. The direct contact with users and opportunity to view involvement at site locations was valuable. However, this phase of the evaluation served to supplement and enhance the data collected by the paper and pencil method. The fact that users are not available for in-depth interviews at all sites and that a greater number of interviews are necessary to confirm and generalize findings to the whole population renders this phase of the study less valuable.

On-site visits and interviews are deemed an appropriate phase of career information delivery system evaluations; however, they are not considered vital. Therefore, the proposed model will not be expanded to specifically incorporate this method of data collection.

CHAPTER VI

SUMMARY, UTILITY OF THE MODEL, CONCLUSIONS, RECOMMENDATIONS AND IMPLICATIONS FOR FURTHER RESEARCH

Evaluation of state and federally funded programs is a constant concern and results in frequent claims regarding their value in journals and newspapers as well as conversations among the general public. The overall purpose of this study was to provide a model framework by which internal or external evaluations of career information delivery systems may develop evaluation strategies needed for the appraisal and improvement of such systems. This objective was accomplished through the development of an evaluation model which identifies a comprehensive approach to evaluate statewide career information delivery systems and implementation of the information delivery component phase of the model.

Because it seems justifiable to look at previous evaluations, the procedure for this study has included a review of the literature on the status of components and existing career information delivery system evaluations. Chapter III includes the NOICC evaluation criteria and a brief summary of ten state evaluations. Table 2 designates the performance evaluation criteria found in the NOICC guidelines and criteria identified by this writer. The table summarizes findings of independent reports which are intended to provide an objective view of the previous evaluation studies. Each report merits credit toward fulfilling the evaluation requirement. However, no attempt to standardize the data collection of the NOICC performance evaluation criteria and the total impact of the system has been made. The formative stage of such a national standardized evaluation has been the import of this study.

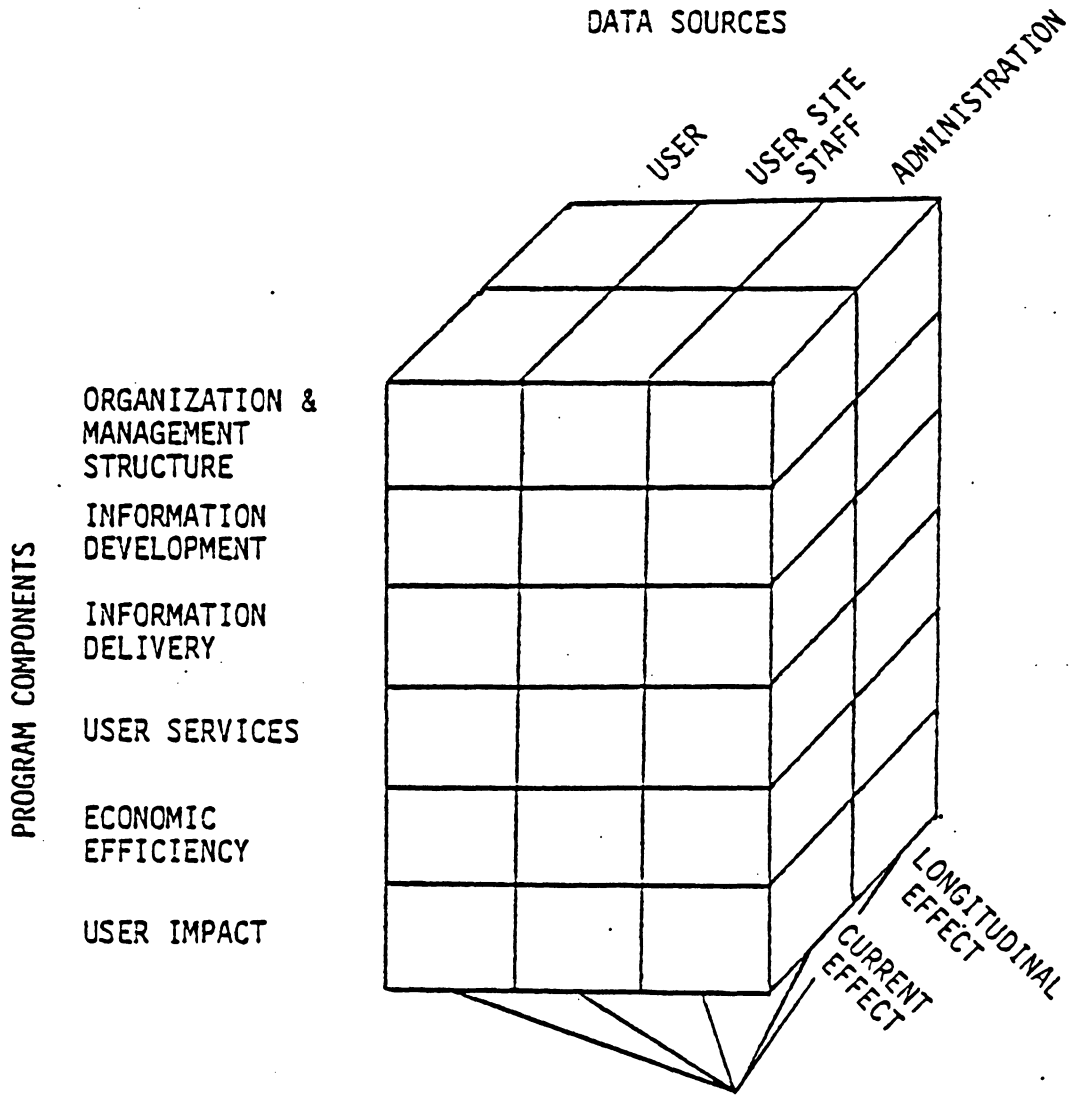
The first of the three study questions identified for this research was to identify a comprehensive approach to evaluate statewide career information delivery systems. Chapter III includes both a comprehensive descriptive model of career information delivery systems for use in evaluation (Figure 4) and the CIPP Model, an overall evaluation design matrix (Figure 5).

The second study question was to evaluate the Virginia Career Information Delivery System microfiche as determined by implementation of that phase of the model. The methodology for this evaluation was discussed in Chapter IV and the results of the application were presented in Chapter V. The evaluation planned and implemented for this study was limited in scope compared to the proposed comprehensive model. It was successful in yielding results to the: (1) seventeen performance criteria items identified by NOICC; (2) thirteen items specific to state data collection; and (3) ten items specific to the Virginia Career Information Delivery System. The 1981 Virginia VIEW microfiche have received a favorable endorsement by both users and site respondents. Decisions have not been made regarding changes in the Virginia system; however, the findings, conclusions and recommendations have been submitted to the project director for appropriate use as determined by the project administrators. Therefore, the actual utility of this phase of the study is yet to be determined.

The final study question deals with adaptations regarding the model. The purpose of this chapter is: (1) to discuss the utility of the evaluation model; (2) to present conclusions drawn from the analyses of data; (3) to present recommendations pertaining to the model and results of the study; and (4) to list implications for further research.

UTILITY OF THE MODEL

This researcher developed a comprehensive model to be used for evaluation of career information delivery systems. The model (shown in Figure 4) may be used, in part or in whole, for evaluating the effectiveness of any career information delivery system. The model was a formative theoretical effort designed to clarify and simplify the evaluation process. It was designed as a base from which to expand and develop further studies. Hopefully, this model will reduce the magnitude of problems related to establishing a standard and comprehensive method of evaluation for all statewide systems.



SYNTHESIS OF DATA
↓
ANALYSIS OF FINDINGS
↓
CONCLUSIONS
↓
RECOMMENDATIONS
↓
PRESENTATION TO AUDIENCES

A. CIDS Staff
B. SOICC & State Agencies
C. Advisory Committee
D. NOICC & Federal Agencies

FIGURE 4. CIDS COMPREHENSIVE MODEL FOR USE IN EVALUATION

A Guide for Planning Career Information Delivery System Evaluations by Application of the CIPP Model With Program Components Evaluated by Multiple Data Sources

Evaluation of comprehensive career information delivery systems should involve data regarding all program components and from multiple data sources. The model emphasizes this aspect of the evaluation process. Results from the application of this model can be used by those in the decision-making and accountability roles to aid in making decisions that affect the system.

The proposed evaluation model identifies a comprehensive approach to evaluate statewide career information delivery systems. Three groups of data sources are identified to make significant contributions to the total evaluation from different vantage points: (1) users (students and clients); (2) user site personnel (staff/counselors); and (3) administrators. Six identified program components are addressed: (1) the organization and management structure, (2) information development, (3) information delivery, (4) user services, (5) economic efficiency, and (6) user impact (NOICC, 1980). In addition, current and longitudinal effects are identified.

Of particular significance, the model designates that information obtained regarding the current and longitudinal effects of these program components from the identified data sources should be synthesized and analyzed. The resulting conclusions and recommendations should be presented to the associated staff and sponsors at the state and federal level. Advisory committees are also designated as recipients of this information. Feedback to these audiences appear in the overall plan and the importance of accountability is therefore emphasized.

The model is presented as a realistic and useful representation of the various aspects of career information delivery system evaluation. The model is by definition a simplification of the relatively complex total evaluation suggested. It is noted that the model allows for a wide variety of evaluation strategies and can be divided, as appropriate, into several phases.

As described in Chapter III, Figure 4 is a guide for planning career information delivery system evaluations by application of the CIPP model. The goals stated in the literature on Career Information Delivery Systems were identified and serviced by context evaluation,

the design of the project was established in the feasibility study and set the framework for input evaluation. Activities were determined through a series of implementing decisions serviced by process evaluation. Process evaluation was implemented and the data was collected through survey research. The results (product evaluation) will be provided to the individuals making decisions regarding the project for a comparison of actual to intended ends for their judgment and reactions. This information has been sought and reported.

The CIPP model has been effective in implementing an evaluation of career information delivery systems and the design matrix has been confirmed as appropriate. Obviously, however, the evaluator(s) must be selective in the development of strategies associated with the implementation of evaluation for various program components. For example, the administration would be the key data source when evaluating the organization and management structure component. User information, in this instance, would be of minimal significance. The opposite is true of the information delivery component reported in this study.

A sample study methodology for evaluating the information delivery component according to a standard format has been developed and implemented. Similar details for each phase of the model are yet to be developed.

CONCLUSIONS PERTAINING TO THE MODEL

The National Occupational Information Coordinating Committee (NOICC) has supported the need for the evaluation of career information delivery systems. Evaluation criteria has been published by NOICC in position papers and administrative memorandums. This state of the art study has revealed that there is nationwide interest in evaluation of these systems; however, no attempt to standardize the procedure existed.

Conclusions and implications resulting from the research study are presented below:

1. Eleven states have developed and conducted evaluations of career information delivery systems. States are interested in effective evaluations which yield sound results for future

program planning. States that have not developed and conducted evaluations are in need of assistance to implement this phase of the program. Leadership and resources for the development and implementation of career information delivery system evaluations are needed.

2. The evaluation criteria published by NOICC addresses the role and value of evaluation as an integral and important component of career information delivery systems. An emphasis on the incorporation of research and evaluation activities exists. However, guidelines for uniform collection of meaningful data by standardized procedures do not exist. These guidelines are needed to validate and improve such programs and to enhance decision-making and long range planning.

3. The states that have completed evaluation studies merit commendations for their attention to evaluation activities. In general, however, repetitious efforts have been expended. Substantial program funds have been spent in staff salaries and/or contracts with external evaluators to produce initial evaluation steps in each state.

4. The study of previous state evaluations demonstrates the lack of a uniform approach to career information delivery systems evaluation. The differences in specified objectives, instruments used, data collection techniques and methods of analysis contribute to the uniqueness of each state report.

5. Implementation of the information delivery component of the proposed model used to evaluate the Virginia Career Information Delivery System microfiche yielded results to all seventeen items of information identified in the NOICC performance evaluation criteria. The thirteen additional items specific to state data collection identified by this writer were successfully included.

6. The general conclusion is that the model prepared by this researcher is helpful for evaluating statewide career information delivery systems with the application of the CIPP or other evaluation model.

CONCLUSIONS FROM VIRGINIA VIEW STUDY

Conclusions resulting from the evaluation of the 1981 version of the Virginia VIEW microfiche follow:

1. Most of the users were interested in exploring career options rather than crystallizing decisions; therefore, it is

advantageous for a larger selection of occupations to be included and considered.

2. The Virginia VIEW system was used in group and classroom settings; however, it was primarily used on an individual basis. Therefore, multiple copies for use were needed in many locations.

3. Access to an adequate number of serviceable microfiche viewers affected use. Additional microfiche viewers are needed for maximum use.

4. A substantial number of respondents, 42 of 203, indicated that no microfiche viewer was available. Obviously, this factor eliminates use of the materials and indicates locations across Virginia which do not use the system. Therefore, microfiche viewers should be made available to recipients of the microfiche if viewers are not available or cannot be acquired.

5. Users and site employees have expressed their appreciation for the accurate, current and relevant occupational and educational information contained on the microfiche. Efforts to improve the system and various individual components should continue.

6. The response rate for user questionnaires was low and represents only 36.4 percent of those requested. Therefore, the reader should be aware that these responses may not be representative of the entire user population.

7. The survey results indicate that the Virginia VIEW microfiche are used extensively by only 18% of the surveyed sites. The system is under utilized; this is especially true in view of the current unemployment rate.

8. The response rate (90.6%) of site employees randomly selected was substantial and; therefore, it is assumed that the responses were representative of the total population.

9. A need exists for current occupational information and the results indicate that the Virginia VIEW microfiche was helpful in meeting that need.

10. The overall ratings given to the microfiche system by users and site employees who responded were highly positive.

RECOMMENDATIONS PERTAINING TO THE MODEL

Based on the data gathered by this study, the following recommendations are made:

1. A leadership role in promoting evaluation activities, in providing guidelines for such activities, and in providing a support system for evaluation activities should be established at the national level.

2. The NOICC Staff needs to review and expand their position statement about evaluation criteria and provide guidelines for implementation of comprehensive evaluations.

3. To obtain maximum benefit from the model, all program components should be included in a comprehensive evaluation plan. The importance of involving multiple data sources in the evaluation process should be emphasized.

4. Evaluation instruments should be developed for the additional program components. These instruments should be pretested for clarity, validity, and reliability.

5. Evaluation subjects should be randomly selected. If randomization is not possible, caution should be exercised in making generalizations to the entire population.

RECOMMENDATIONS PERTAINING TO THE VIRGINIA VIEW STUDY

Recommendations resulting from the evaluation of the 1981 version of the Virginia VIEW microfiche follow:

1. Strategies to increase use should be incorporated. The availability and content of these materials should be publicized further. Efforts to inform school staffs, labor leaders, occupational specialists, rehabilitation workers, apprentice representatives, librarians and the general public of the information available should continue to increase awareness.

2. Funds for microfiche readers should be acquired at locations where they do not exist or alternatives should be identified for the related equipment costs.

3. A standardized on-site monitoring device should be used to accurately account for the number of persons using the system. A user site log is suggested for recording the date of use, name of user, first time or repeat user and information sought.

4. Questions should be rewritten with appropriate terminology and address all system dissemination media which includes computers, microcomputers, microfiche, toll-free hotlines, print media and needlesorts. Table 1 identifies the dissemination media to be addressed in the various state evaluations.

5. Multiple copies of the microfiche should be available at sites with large user populations if sufficient microfiche viewers are available.

6. As planned for the 1982 version, additional occupations should be included with the original list.

7. Constant updating and periodic evaluation of the information must be a priority since the information is used for career exploration and career decision-making.

8. Assistance or adaptations for users finding the materials or equipment difficult to use are necessary.

9. Reword questions #2 and #8 on the site evaluation questionnaire so that no assumptions are necessary. For example, question #2 may first ask if gathering materials and research are part of the respondents responsibilities. An arrow may be used to direct respondents with a positive reply to a second part which asks if this material reduced their time spent in gathering materials and research.

IMPLICATIONS FOR FURTHER RESEARCH

This study has been a small or restricted one in comparison to the need for a comprehensive career information delivery system evaluation plan. The most obvious implication for further study to develop from the proposed evaluation model is the actual implementation and field testing of all components designated in the model. It is strongly suggested that strategies be developed to implement each component of the model and that standardized procedures and instruments be adopted following field testing. This information should be compiled and distributed for use by all SOICC staff members.

As a result of the data gathered from the study and a review of the literature, the following implications and recommendations for further research are made in addition to development and implementation

of other components in the proposed model:

1. A study should be undertaken for NOICC staff members to determine: (1) if they agree that more uniform evaluation procedures are needed; (2) their reaction to the proposed evaluation model, and (3) their suggestions for coordination of future evaluation efforts. Mandates regarding future evaluation activities should be established.

2. Groundwork for future longitudinal studies concerned with career information delivery systems should be established. Decisions regarding the data to be collected and methods should be identified and initial procedures for implementation begun.

3. Relationships between use of these career information resources and career decisions should be studied. Although the present topic concerns career information delivery systems, it remains clear that the process of career decision-making is not explained.

4. Other studies might well be concerned with other criteria of judging quality programs and special interest studies focusing on specific effects. Investigations of the positive and negative impacts on career choice and career success will be valuable to the profession as well as developers of career information delivery systems.

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APPENDICES

APPENDIX A

LETTER AND QUESTIONNAIRE FOR SITE PARTICIPANTS

COLLEGE OF EDUCATION

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Virginia View
301 UCOB
Blacksburg, Virginia 24061

DIVISION OF ADMINISTRATIVE AND EDUCATIONAL SERVICES

April 5, 1982

As a recipient of the Virginia VIEW (Vital Information for Education and Work) microfiche, you have been selected to participate in an evaluation survey. As you learned at the workshop where you received the microfiche, it contains career planning, education, training and job search information. It is important to know how well Virginia VIEW meets the needs of Virginia users for this information. The best way we know to find out is to ask you and your clients or students. The information provided will be used to improve the system and to serve you and others better. Your cooperation is greatly appreciated.

Enclosed with this letter is a package of evaluation materials. You are asked to be responsible for completing the site/staff survey (white) and for the distribution and collection of the enclosed user surveys (tan). Please ask the next five Virginia VIEW users at your site location to complete the user survey. The identification number on the front is for mailing purposes only, and all answers are confidential.

After the site/staff and user surveys have all been completed, please return them in the enclosed return addressed stamped envelop. We would appreciate their return by no later than April 30, 1982. If all five user questionnaires have not been completed by that date please return the blank copies.

If you have any questions, please call Faye at (804 355-7869) or write to: 6428 Penrith Drive, Mechanicsville, Virginia 23111.

The data will be used to access the impact of the Virginia VIEW microfiche upon users and counseling programs. We appreciate your participation in this evaluation which is designed to improve the career information delivery system. Thank you for your valuable time, assistance, and comments.

Sincerely,

Carl McDaniels
Project Director
Virginia VIEW

Faye Shealy
Graduate Assistant
Virginia VIEW

1981

Virginia VIEW

VITAL INFORMATION FOR EDUCATION AND WORK

MICROFICHE SITE SURVEY

The purpose of this survey is to determine how the Virginia VIEW microfiche is used in the school/agency setting, to identify characteristics of those using the system and to determine how well Virginia VIEW is meeting the career needs of users.

Your time and efforts taken to complete this survey will be greatly appreciated.

Virginia Career Information Delivery System
#272 UCOB
Virginia Tech
Blacksburg, Virginia 24061

VIRGINIA VIEW MICROFICHE

SITE EVALUATION QUESTIONNAIRE

As a recipient of the Virginia VIEW microfiche (distributed at no charge during workshops in November), your opinion regarding its' use is of great interest. Please express your opinion of the microfiche system by responding to the following questions. (Please circle the number of each answer).

Q-1 Overall, how successful do you feel the Virginia VIEW microfiche has been in meeting the career information needs of users at your location?

1 UNSUCCESSFUL
2 SUCCESSFUL
3 VERY SUCCESSFUL

Q-2 Has this material reduced your time spent in gathering materials and research? (Answer only if your responsibilities include gathering materials and research).

1 NO
2 YES

Q-3 What do you think the prime motivating force to use the microfiche is at your school or agency?

1 TO EXPLORE OCCUPATIONS/CAREERS
2 TO SELECT AN OCCUPATION/CAREER
3 TO FIND OUT ABOUT APPRENTICESHIP PROGRAMS
4 TO FIND OUT ABOUT MILITARY PROGRAMS
5 TO FIND OUT ABOUT SCHOOL AND COLLEGE PROGRAMS
6 TO FIND OUT ABOUT FINANCIAL AID
7 TO COMPLETE A CLASS ASSIGNMENT
8 GENERAL INTEREST OR CURIOSITY
9 OTHER (please specify) _____

Q-4 In your opinion, has the Virginia VIEW microfiche provoked increased interest in career awareness among users in your school or agency?

1 NO
2 YES

Q-5 Most student or client users find the information contained on the Virginia VIEW microfiche _____ to understand.

1 VERY DIFFICULT
2 DIFFICULT
3 EASY
4 VERY EASY

Q-6 Most student or client users find the Virginia VIEW microfiche _____ to use.

1 VERY DIFFICULT
2 DIFFICULT
3 EASY
4 VERY EASY

Q-7 Do these content headings lead users to the information they are seeking?

	NEVER	SOMETIMES	OFTEN	VERY OFTEN
Nature of the Occupation	1	2	3	4
Working Conditions	1	2	3	4
Worker Requirements	1	2	3	4
Earnings and Advancement	1	2	3	4
Employment and Outlook	1	2	3	4
Educational Training Dial	1	2	3	4
Related Education and Training	1	2	3	4

Q-8 For those who find the microfiche difficult or very difficult to use or understand, why do you believe this is true?

1 READING LEVEL
2 DIFFICULTY IN LOCATING DESIRED INFORMATION ON MICROFICHE
3 OTHER (please specify) _____

Q-9 What degree of assistance is provided for users at the microfiche location?

1 NONE
2 SOME ASSISTANCE, IF REQUESTED
3 ASSISTANCE IS AVAILABLE AT ALL TIMES USERS ARE PRESENT

Q-10 Who is available to assist users at the microfiche?

1 A PROFESSIONAL
2 A PARAPROFESSIONAL
3 A STUDENT

Q-11 Rate the microfiche index as a tool in accessing information:

1 NOT AT ALL HELPFUL
2 HELPFUL
3 VERY HELPFUL

Q-12 Is an interactive computer system available at your site for clients to use in accessing career information?

1 NO
2 YES

Next, I would like to ask some questions about your site setting to help interpret the results. (Circle the number of each answer).

Q-13 I am employed at a:

1 MIDDLE, INTERMEDIATE OR JUNIOR HIGH SCHOOL
2 HIGH SCHOOL
3 VOCATIONAL TECHNICAL SCHOOL
4 COMMUNITY COLLEGE
5 COLLEGE OR UNIVERSITY
6 VOCATIONAL REHABILITATION CENTER
7 PUBLIC LIBRARY
8 OTHER (please specify) _____

Q-14 How many potential microfiche users are located at this site or have access to materials at his school, agency, or institution?

1 BELOW 50
2 50 - 150
3 151 - 250
4 251 - 500
5 501 - 1000
6 1001 OR MORE (specify number) _____

Q-15 Approximately, how many different persons per week currently utilize the Virginia VIEW microfiche at your site?

1 WE DO NOT USE THE MICROFICHE
2 1 - 10
3 11 - 50
4 51 - 100
5 101 OR MORE (specify number) _____

Q-16 Approximately, how many total times per week is the Virginia VIEW microfiche utilized?

1 0 - 10
2 11 - 50
3 51 - 100
4 101 - 200
5 201 OR MORE (please specify) _____

-17 Is a bilingual edition needed for any user at your location?

1 NO
2 YES

If the answer is yes, what language(s) and approximately how many users would be involved?

_____ _____

Is a bilingual counselor available to work with users at your site?

1 NO
2 YES

-18 What equipment costs have been incurred by your site in order to use the microfiche? Indicate the item(s) and the actual cost(s).

-19 Indicate ways that the Virginia VIEW microfiche has been integrated with your program other than for accessing information by individuals.

1 CAREER EDUCATION CLASSES
2 CAREER ORIENTATION SESSIONS
3 JOB PLACEMENT
4 SELECTION OF POSTSECONDARY TRAINING
5 PRESENTATIONS
6 OTHER (please specify) _____

20 What recommendations can you make to improve the Virginia VIEW microfiche? And is there anything else you would like to tell us about the Virginia VIEW microfiche or your experiences in using this career information. If so, please use this space for that purpose.

Thank you for your time and effort in completing this survey and in assisting with the user questionnaires. Your contribution is greatly appreciated.

APPENDIX B

LETTER AND QUESTIONNAIRE FOR STUDENT/CLIENT PARTICIPANTS

COLLEGE OF EDUCATION

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

301 UCOB
Virginia VIEW
DIVISION OF ADMINISTRATIVE AND EDUCATIONAL SERVICES

Blacksburg, Virginia 24061

April 5, 1982

To: Selected Virginia VIEW Microfiche Users:

As a user of Virginia VIEW (Vital Information for Education and Work), you know that it is information on microfiche for providing career planning, educational training and job search information. It is important to know how well Virginia VIEW met your needs for this information. The best way we know to find out is to ask you. The information you provide will be used to help improve the system and to serve you and others better.

Your school or agency is one of a small number in which people are being asked to give their opinion of the microfiche. It was drawn in a sample of the entire state. In order that the results will truly represent the thinking of the people of Virginia, it is important that each questionnaire be completed and returned.

Please accept my sincere thanks for your cooperation in completing this questionnaire and return it to the individual who gave it to you. Your questionnaire will be added with others and returned to me by mail.

Thank you for your assistance.

Sincerely,

Carl McDaniels
Project Director
Virginia VIEW

Faye Shealy
Graduate Assistant
Virginia VIEW

1981

Virginia VIEW

VITAL INFORMATION FOR EDUCATION AND WORK

MICROFICHE USER SURVEY

The purpose of this survey is to identify how well the Virginia VIEW microfiche is meeting your career information needs. Please answer all of the questions. If you wish to comment on any questions, please feel free to use the space in the margins. Your comments will be read and taken into account.

Thank you for your help.

Virginia Career Information Delivery System
272 UCOB
Virginia Tech
Blacksburg, Virginia 24061

VIRGINIA VIEW MICROFICHE

USER EVALUATION QUESTIONNAIRE

Directions: (Circle the number of each answer).

Q-1 Overall, I rate the success of the Virginia VIEW microfiche in providing me with the career information I need as:

1 UNSUCCESSFUL
2 SUCCESSFUL
3 VERY SUCCESSFUL

Q-2 My most important reason for using the Virginia VIEW microfiche was:

1 TO EXPLORE OCCUPATIONS/CAREERS
2 TO SELECT AN OCCUPATION/CAREER
3 TO FIND OUT ABOUT APPRENTICESHIP PROGRAMS
4 TO FIND OUT ABOUT MILITARY PROGRAMS
5 TO FIND OUT ABOUT SCHOOL AND COLLEGE PROGRAMS
6 TO FIND OUT ABOUT FINANCIAL AID
7 TO COMPLETE A CLASS ASSIGNMENT
8 GENERAL INTEREST OR CURIOSITY
9 OTHER (please specify) _____

Q-3 I believe use of the Virginia VIEW microfiche has resulted in increased interest related to my career.

1 NO
2 YES

Q-4 I found the information on the microfiche _____ to understand.

1 VERY DIFFICULT
2 DIFFICULT
3 EASY
4 VERY EASY

Q-5 I found the microfiche _____ to use.

1 VERY DIFFICULT
2 DIFFICULT
3 EASY
4 VERY EASY

Q-6 I need the following amount of help to locate information on the microfiche.

1 NONE
2 ONLY BRIEF ORAL OR WRITTEN INSTRUCTIONS
3 ANOTHER PERSON TO FIND THE INFORMATION

Q-7 I would best describe the microfiche information as:

1 UNINTERESTING
2 INTERESTING
3 VERY INTERESTING

Q-8 I used the microfiche index.

1 NO
2 YES

If the above answer is yes, rate the microfiche index as a tool in helping you use the microfiche:

1 NOT AT ALL HELPFUL
2 HELPFUL
3 VERY HELPFUL

Q-9 A computer is available for me to use in finding career information.

1 NO
2 YES

Now I will ask some questions about yourself to help interpret the results. (Circle the number of each answer).

Q-10 I used the microfiche at a:

1 MIDDLE, INTERMEDIATE OR JUNIOR HIGH SCHOOL
2 HIGH SCHOOL
3 VOCATIONAL TECHNICAL SCHOOLS
4 COMMUNITY COLLEGE/PROPRIETARY SCHOOL
5 COLLEGE OR UNIVERSITY
6 VOCATIONAL REHABILITATION CENTER
7 PUBLIC LIBRARY
8 OTHER (please specify) _____

Q-11 I have officially been classified as handicapped or disabled by a school or agency.

1 NO
2 YES

Q-12 I have served in the armed forces.

1 NO
2 YES

Q-13 My current employment status is:

1 I DO NOT AND HAVE NEVER HELD A PAID JOB
2 I HAVE A PART-TIME PAID JOB
3 I HAVE A FULL-TIME PAID JOB
4 I HAVE A VOLUNTEER (UNPAID) JOB
5 I AM A FULL-TIME STUDENT

Q-14 My total family income from all sources, before taxes, is:

1 LESS THAN $5,000
2 $5,000 - $9,999
3 $10,000 - $19,999
4 $20,000 - $29,999
5 $30,000 or over
6 UNKNOWN

Q-15 My sex is:

1 MALE
2 FEMALE

Q-16 My race or ethnic identity is:

1 AMERICAN INDIAN OR NATIVE AMERICAN
2 BLACK OR AFRO-AMERICAN
3 HISPANIC OR SPANISH AMERICAN
4 ORIENTAL OR ASIAN AMERICAN
5 WHITE OR CAUCASIAN
6 OTHER (please specify) _____

Q-17 On my last birthday, I became _____ years old.
(enter years)

Q-18 I have completed the following years of education: (Circle the highest level comple

ELEMENTARY & JUNIOR HIGH	HIGH SCHOOL	COLLEGE
01	09	13
02	10	14
03	11	15
04	12 or GED	16
05		17
06		18
07		19
08		20

Q-19 What recommendations can you make to improve the Virginia VIEW microfiche?

Is there anything else you would like to tell us about the Virginia VIEW microfiche or your experience(s) in using this career information. If so, please use this space for that purpose.

Thank you for completing this questionnaire. Your contribution is very greatly appreciated.

APPENDIX C

FIRST FOLLOW-UP

Last week questionnaires to determine the use and effectiveness of the Virginia VIEW microfiche were mailed to you.

If you have already completed and returned the forms, please accept our sincere thanks. If not, please do so today. Because it was sent to only a sample of sites and users, it is important that yours be included in the study.

If by some chance you did not receive the questionnaires, or they were misplaced, please call me at (804) 355-7869, and I will mail another set to you today.

Sincerely,

Faye F. Shealy, Graduate Assistant
Virginia VIEW, Virginia Tech

APPENDIX D

SECOND FOLLOW-UP

COLLEGE OF EDUCATION

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DIVISION OF ADMINISTRATIVE AND EDUCATIONAL SERVICES

May 10, 1982

On April 13 questionnaires to determine the use and effectiveness of the Virginia VIEW were mailed to you. As of today I have not received your completed questionnaires.

This research has been undertaken because of the belief that your opinion and the opinion of your users will provide valuable information in accessing the Virginia VIEW.

I am writing to you again because of the significance each questionnaire has to the usefulness of this study.

In the event that your questionnaire has been misplaced, a replacement is enclosed.

Please accept my sincere thanks for your assistance.

Sincerely,

Faye F. Shealy
Graduate Assistant
Virginia VIEW

APPENDIX E

INTERVIEW QUESTIONS

SITE INTERVIEW QUESTIONS

Q- 1 Generally, have you found the Virginia VIEW microfiche an asset in your work setting? Why or why not?

Q- 2 Where is the microfiche located?

1. Office - which one
2. General Access Area
3. Career Resource Center
4. Other _____

Q- 3 Is this an ideal location or could you suggest a location(s) which may be better?

Q- 4 If the microfiche is not used at this site, why not?

Q- 5 Usually, who used the microfiche?

1. Students/clients
2. Professional
3. Other _____

How has this worked?

Q- 6 Could you estimate the number of persons using the system?
_____ Daily _____ Weekly How do you monitor use?

Q- 7 How have you publicized the system in your location? How has this worked out?

Q- 8 Can you estimate the number of repeat users? Reason for use . . .

Q- 9 What is the most effective way that you have found to use the system? Describe.

Q-10 Are teachers or other staff members using the microfiche with groups? If so, how many? What circumstances?

Q-11 Do you feel there are any changes that could be implemented at this site that would increase usage of the Virginia VIEW microfiche?

Q-12 Describe the typical user of Virginia VIEW? Are certain groups more attracted to the microfiche than others?

Q-13 What general comments do you have to share regarding Virginia VIEW?

Q-14 What is your opinion on how Virginia VIEW could be improved?

User Interview Questions

Q- 1 Have you ever used microfiche before using the Virginia VIEW?

1. No
2. Yes - which ones _____

How do you like it? What do you like best? What do you like least?

Q- 2 Did someone assist you in using the microfiche or did you use the microfiche and instructions on your own? Check.

1. Assistance from someone ____
2. Instructions on my own _____ How did this work out?

Was this group or individual help?

1. Group ____
2. Individual ____

Q- 3 Did you have difficulty in using the microfiche?

1. No
2. Yes

If you had trouble, describe the difficulty.

Q- 4 What level of encouragement was/is given to you to use the system?

1. No encouragement
2. Little encouragement
3. Average encouragement
4. Above average encouragement
5. Much encouragement

Who encouraged you? _____

Q- 5 How do you like the content of Virginia View?

Q- 6 Where is Virginia VIEW located? Do you like this location or could you suggest a better place?

Q- 7 When do you use Virginia VIEW and are there other times you would like to use the microfiche?

Q- 8 How did you happen to use Virginia VIEW?

Q- 9 How did you like Virginia VIEW? What did you like most? What did you like least?

Q-10 How could Virginia VIEW be improved?

Q-11 What general comments do you have to make about Virginia VIEW?

APPENDIX F

SUMMARY OF EXPENSES

FOR IMPLEMENTATION OF VIRGINIA VIEW STUDY

SUMMARY OF
EXPENSES FOR IMPLEMENTATION OF VIRGINIA VIEW STUDY

Envelopes:		
	9½" x 12½" Brown Envelopes (300)	$ 28.50
	6½" x 9½" Brown Envelopes (300)	12.00
Labels:		
	Envelope Stick-On Labels (600)	9.00
Postage:		
	203 Envelopes Mailed First Class @ 71¢	144.13
	203 Return Envelopes at First Class @ 37¢	75.11
	18 Pilot Study Envelopes	8.51
Printing:		
	Pilot Study (100)	5.20
	Site Participant Letters (250)	4.40
	Site Questionnaires (250)	9.23
	User Participant Letters (1200)	21.10
	User Questionnaires (1200)	29.60
	Tax	2.78
Travel for On-Site Visits (303 miles @ 20¢)		60.60
Total		$410.16

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