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DOCTOR OF PHILOSOPHY
IN
COUNSELOR EDUCATION AND STUDENT PERSONNEL

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ABSTRACT

Virginia VIEW (Vital Information for Education and Work) has provided Virginians with up-to-date-career information since 1980. This research furnished a descriptive, historical narrative of Virginia VIEW, the Virginia Career Information Delivery System (CIDS) from 1980-1995. The study included the major trends and events that led to Virginia VIEW's founding. Primary sources for this study were Virginia VIEW records contained in the Virginia VIEW archives, Virginia Occupational Information Coordinating Committee (VOICC) records, materials available from the National Occupational Information Coordinating Committee (NOICC), educational institutions, and private collections. Categorical sources comprised the Feasibility Study for a Career Information System for Virginia, 1979, Virginia VIEW Quarterly Reports 1980-95, Virginia VIEW Annual Reports 1991-1995, meeting proceedings, agreements of understanding, and other pertinent data. Secondary sources included data on events that demonstrated the necessity for career information development.

Specific research problems consisted of finding out the answers to the following five research questions: What is the summation of the 15-year history of Virginia VIEW? How does the historical documentation reflect Virginia VIEW's mission of providing equity in career information delivery? How has the project remained faithful to, and forged on, its mission over the years? How has Virginia VIEW met the original goals and objectives as set forth in the 1979 study? How has Virginia VIEW's premise of maintaining a multi-
media approach been received and recorded? What impact have various evaluation studies of Virginia VIEW had on the project?

This investigation included an in-depth account of Virginia VIEW’s funding, costs, products, specific services such as the Career Information Hotline and publications, workshops, information gathering, information dissemination, evaluation, comparison with other states, and project impact. Virginia VIEW’s implementation proved to be an apt example of application of theory to practice and strong Federal-State cooperation. The project’s mission compelled it to develop into its most effective form of service to its customers. This vitalistic force, which could be equated with clear vision of purpose, also compelled Virginia VIEW to shift and change. How these changes and shifts occurred played a vital role in this study.

In summary, the results of this study showed that Virginia VIEW is a flexible, comprehensive, and accommodating career information delivery system which has the following components: microfiche and print materials, computer program, career information hotline, and a place on the world wide web. Constant project evaluation and networking with users and organizations such as the Virginia Counselors’ Association ensured that the Virginia VIEW staff never lost touch with their users.

In conclusion, Virginia VIEW knew its origins were in producing career information materials that would be available to the largest number of Virginia citizens. New products were added without ignoring the user demand for the older, still serviceable products. At the end of its 15-year history, Virginia VIEW can be used with paper, pencil, and microfiche reader as well as the career information hotline, the stand-alone computer program, and the Internet. A full range of career information products were available to a wide range of users. The program planners, from the start, were interested in information equity.
Acknowledgments

I wish to express gratitude to Carl McDaniels, my committee chair and mentor, who believed in my ability to obtain this degree before I believed in it myself. Dr. McDaniels' devotion to the importance of career information, and to the founding and maintenance of Virginia VIEW, has not only provided me with a challenging dissertation topic, but has provided generations of Virginians with information they need to make career decisions. I am grateful to have played a small part in his mission.

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I wish to acknowledge my son, David James Castleman, my number one fan and so much more, whose example of academic achievement despite learning distinctions reminded me of what you can do when people believe in you. Along those lines I need to remember my late mother, Margaret Leona Corell Fisher, who instilled in me a sense of mission. I am indebted to my late grandmother, Margaret Leona Jamison Bobbitt, whose front porch stories of the past provided me with a sense of worth and belonging and a love of history. Another person deserving of acknowledgment may not even remember me but has played an important role in my life. Melvin Doughty, 1966-67 youth minister at Belmont Baptist church in Roanoke, VA, believed in my abilities when I was in high school; he asked me more than half a lifetime ago where I was going to college and he assisted me in seeking the higher education options
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I owe thanks to the many, many professors whose feedback clarified my thoughts and redirected my lines of inquiry when I felt mired down beyond any chance at forward motion; to the special friends and confidants who shared the secrets of my soul in moments when I needed someone to hear them with a caring and uncritical heart; to my good Old Southwest neighbors whose positive regard took me through many a "down" day and whose neighborly fellowship kept me grounded; to those rare souls whose unique gifts and whose remarkable achievements reminded me that the human spirit soars if it is given the wings of support and understanding; to the academic and civic communities in which I have lived and to which I owe so much in return. To all of you goes my profound gratitude and my commitment to use what I have learned and to pass on some of the many gifts you have given me to those whose wings are as yet untried.
"When you cease to make a contribution you begin to die."

Eleanor Roosevelt

"I gain strength, courage, and confidence by every experience in which I must stop and look fear in the face...
I say to myself, I've lived through this and can take the next thing that comes along...
We must do the things we think we cannot do."

Eleanor Roosevelt
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Chapter 1

Introduction

Counselors and educators have long maintained that the choice of an occupation is a basic and fundamental right. Freedom to choose an occupation requires access to up-to-date, accurate career information. The creation of career information has been heralded as an essential element to facilitate people making career decisions (McDaniels & Gysbers, 1992). People cannot aspire to enter an occupation or comprehend what it might be like to perform a job, if they have no idea about that type of work. Accurate up-to-date occupational information, and proper self assessment, can empower individuals to avoid many a snare. Yet, just what this information entails differs from not only from individual to individual, but from decade to decade. Still, its significance remains timely; consider Parsons' (1909) decree that few "plan scientifically" for a career. Additionally, information necessary for career decision makers can vary as demand and technology change, civil rights movements emerge, wars occur, women enter the labor force, and populations diversify.

Yate (1995) noted that the rules have changed over the years. The work ethic of the Great Depression generation no longer applies: [F]ive generations of professionals sacrificed a life for a corporate career, on the promise of security that sacrifice
would bring. But technology is now allowing business to renege on the promise. The subsequent confluence of job exploration, defense-industry contraction, workplace automation, corporate restructuring, and the continuing dramatic shift to a contingent workforce has led Labor Secretary Robert Reich to comment, that when it comes to steady employment in the nineties, "Nobody is safe."

Yate, (1995) further asserted that the remarkable nineties job generation effort has created a plethora of low-paying, part-time, or temporary jobs. Work life buoyancy in the nineties demands that people make smart decisions, take organized action, and adapt to change (Yate, 1995). People need information to make decisions.

The idea that career information access is an entitlement has led the Commonwealth of Virginia to meet those needs from 1980 - 1995 through the Virginia Career Information Delivery System (CIDS), Virginia VIEW (Vital Information for Education and Work).

**Background**

Virginia VIEW is Virginia's multi-media answer to the need stated above. The cost of the system has been partially underwritten by the Virginia Occupational Information Coordinating Committee (VOICC) with a blending of state and federal funds. The project has been contracted to Virginia Tech in Blacksburg, VA. Virginia VIEW has been providing timely and accurate occupational and educational
information to Virginians for over 15 years. Each year over 1500 sites across Virginia receive up-to-date Virginia VIEW materials. These products include microfiche, printed workbooks, worksheets, newspapers and computer storage programs. A hotline was established in 1980 to make career information available to all citizens of Virginia without cost to them.

Virginia VIEW was established as a result of a 1979 study pointing to a dearth of career information available to the Commonwealth's citizens (McDaniels, Snipes, & Peevy, 1979). The Virginia Tech researchers discovered a veritable lack of Virginia-specific career information. This included a paucity of information available to consumers about Virginia's colleges and other training opportunities. Moreover, Virginia VIEW was not created in a void. National policy makers became aware of the need for career information and began to seek remedies and their findings were used to create Virginia VIEW. Flanders (1988) maintained that before the establishment of National Occupational Information Coordinating Committee (NOICC) and the State Occupational Information Coordinating Committees (SOICCs), vocational educators at state and local levels had not paid adequate attention to certain labor market factors. One neglected area was a way to make certain that vocational training meet employment and training needs. The Congressional Educational Amendments of 1976 (U. S. Congress, 1976) also produced programs to provide educational and
occupational information as well as counseling. Public Law 94-482, Title II, Vocational Education, Section 161 created NOICC and challenged the agency to develop the Occupational Information System (OIS) and Career Information Delivery System (CIDS). Inter-agency agreements on both the federal and state level included the State Employment Security Agency, vocational education administrators, State Employment and Training Council, and the state agency supervising rehabilitation programs. These agreements promoted the cooperation required by the legislation (Shealy, 1982).

Additionally, the Youth Employment and Demonstration Act of 1977 required NOICC to become involved with those Federal programs that gather, analyze, and disseminate career information. The Comprehensive Employment and Training Act of 1978 (CETA) further expanded NOICC's role and required that special attention be given to the labor market information requirements of the nation's youth. Before that, the little information that was available, mostly written on the national level, included the Occupational Outlook Handbook (U. S. Department of Labor, first published in 1949 and biennially thereafter), and the Dictionary of Occupational Titles (U. S. Department of Labor first published in 1939), The Occupational Outlook Quarterly and the Monthly Labor Review, all published by the Department of Labor. These were fine information resources, but they were generic, available only in print form, and had limited use for a seeker of facts on work and schooling in Virginia.
Statement of the Research Problem

This study is an effort to develop a descriptive history of Virginia VIEW, the Commonwealth's Career Information Delivery System (CIDS), from its inception to 1995, most specifically, from 1980-1995. Many public documents and other sources exist in various other archives and at Virginia VIEW and they will prove helpful to this research, which is intended to record the project's history.

An important aspect of the research problem is discovering the type of career information Virginians have demanded, and developed, in the past. Over the years, Virginia VIEW has accumulated a rich, resplendent 15-year history. During that time the project has changed and matured in its mission to provide the Commonwealth's citizens with the most up-to-date-career information through its multi-media system. This study will trace the current CIDS system, Virginia VIEW from 1980 to 1995, a 15 year span. This will also serve as an example of what a state CIDS can do to implement Federal and State cooperation in meeting state mandates. The individual state CIDS were an early illustration of the now-popular devolution concept, the returning of federal mandates to the states.
Purpose of the Study

Usually professionals contemplate the use of career information from a futuristic perspective, exemplified currently by the belief that computers will change the work place of tomorrow beyond our capacity to imagine. Rarely do these experts look at the development of career information in a historical context. Currently, the Old Dominion's career information needs are met by Virginia VIEW, the Virginia State Career Information Delivery System (CIDS) since 1980. The Virginia VIEW project located at Virginia Tech in Blacksburg, VA.

The purpose of this study is to record the History of Virginia VIEW 1980-1995. Little documentation exists about Virginia VIEW's predecessors in Virginia, nor has documentation been compiled about Virginia VIEW's history with the exception of McDaniels' (1987) historical overview. The VIEW concept had its beginnings in other states such as: (a) Florida VIEW (Marshall and Woolley, 1978); (b) the Michigan Occupational Information Service (MOIS), (Flanders, 1988), and (c) California's use of Computer Assisted Guidance (CAG) systems (Katz, 1980) and Gerstein's (1967) San Diego VIEW project.

The Michigan project served as Virginia VIEW's parent. Juanita Snipes, Virginia VIEW User Services Manager 1980-1989 described her contacts with the MOIS staff as invaluable in advancing Virginia
VIEW's inaugural. She recounted the many times MOIS staff had been exceptionally valuable to the VIEW staff. Each year the Michigan project shared its data base with Virginia VIEW (personal conversation with Juanita Snipes, May 16, 1996).

Rationale of the Study

Currently, there is no exhaustive historical study of Virginia VIEW, except for McDaniels' (1987) account in the Journal of Career Development. Other studies have been accomplished attesting to Virginia VIEW's incontestable use in career counseling, notably those of Hedrick (1985) and Conrad (1989), but these studies by design included only limited information about the history of the Virginia VIEW project. Shealy (1982) developed a theoretical evaluation model and applied it to Virginia VIEW. There appears to be little information available about predecessor programs. While it is an error to say that history is destiny, people do tend to shape their destiny in a more informed way if they understand their complete history.

Ethical concerns about career information dissemination are prevalent especially in the area of computer assisted guidance. A significant amount of time has been devoted in Virginia VIEW-directed workshops to informing VIEW users about ethical concerns in computer use. Conrad (1989) emphasized the importance of (a) screening users for computer and user suitability, (b) making certain
that the computer software meets the users' needs, (c) ensuring that the user has the skills to manipulate hardware operation and software applications, (d) following through to make certain that the user has been able to benefit from the computer assisted guidance rather than assuming so. Over the years Virginia VIEW workshop participants have commented on computer use; this material is a notable part of Virginia VIEW's history.

Other career information ethical concerns entail informing users without providing disseminator bias. Usually "just the facts" will do. Nevertheless, a Virginia VIEW Hotline operator might be amiss not to point to significant trends that the caller might not know or sources for callers to seek out to assist them to decide on their own. For example, all the facts suggest job security in the nursing field unless the consumer realizes that the demand and supply figures take a couple of years to compile; and the figures probably do not include the effect of managed care on, for instance, the rapid decline in hospital-based nurses. Obviously the public is entitled to as much information as possible and to weigh the pros and cons before making a decision.

Assumptions and Limitations

The writer of this dissertation acknowledges the difficulties of evaluating existing programmatic records. Even though the primary source creators were presumably honest, careful, and observant
recorders of their own artifactual narratives, nevertheless, they were not entirely disinterested recorders. Likewise, the recorder of this history knows the availability of accounts, records, and official documentation is problematic.

Another major limitation of this study is that its author can make no claim of absolute objectivity since she has worked for the Virginia VIEW project for over five years and has used and admired its products since its inception. Most information for this project comes from the Virginia VIEW archives because of limited outside sources. It is so attractive to work with information at hand, especially in the case of Virginia VIEW. On the other hand, disparate sources may contain useful information, but sources of information gathered from the archives are voluminous. This document’s author may be forced to limit the many archival sources to those that are most essential in preserving the history of career information in Virginia.

Research Questions

Over the years, how have Virginia’s citizens met their needs for various forms of career information? Obviously, national events, like the beginnings of the vocational guidance movement in the early 1900’s, spurred by the growth of public education, eventually impacted the Old Dominion. Parsons (1909) determined that useful career information was necessary in the career decision making
process. He described the ideal counselor as one with a high degree of industrial knowledge. This knowledge would include classification of industries and vocation, conditions of success in various occupations, and knowledge of apprenticeship programs. Parsons' theories about the importance of the client's access to accurate information influenced the development of Virginia VIEW.

Many questions come to mind when contemplating compiling Virginia VIEW's history. For the purposes of this study the research questions will focus on the following:

1. What is the summation of the 15-year history of Virginia VIEW?

2. How does the historical documentation reflect Virginia VIEW's mission of providing equity in career information delivery and how has the project remained faithful to, and forged on, its mission over the years?

3. How has Virginia VIEW met the original goals and objectives as set forth in the 1979 study?

4. How has Virginia VIEW's premise of maintaining a multi-media approach been received by users?
5. What impact have the various evaluation studies of Virginia VIEW had on the project?

Significance

No published record of a major state CIDS over this 15-year period exists. There is a need to record the history of Virginia VIEW as a part of the continuing historical documentation of vocational guidance. How these CIDS and, especially Virginia VIEW, were developed and implemented should prove significant to future planners.

Social, economic, and political conditions have played a part in the creation and dissemination of career information. For example, the civil rights movement had a remarkable impact on the guidance movement and the understanding of need for career information in Virginia. Each generation is sure that it is on the cutting edge and that the future will be radically different from the past. Yet a cursory review of career guidance materials reveals that severe competition in the job market has been a concern of counselors for at least 90 years:

There was never a time when the right choice of profession or vocation meant so much as it does to-day. Individual business
life is not so many-sided as it was once. To-day a man must be trained to do some special thing. In order to meet the tremendous competition to-day, a young man needs not only a broad education and special training, but also every bit of help he can get from the enthusiasm and energy which come from his being in the right place, from doing the thing he was by nature intended to do. (Marden, 1905)

Socio-economic and political considerations have an impact on how career information is gathered and distributed in Virginia. Technology may, in fact, radically change the labor market, as it did in the introduction of the automobile in our society. Henry Ford predicted it would, and he was right. Other forecasts prove erroneous, for instance, the prediction that Americans would not have to take time to eat because all of our nutritional needs would be met by swallowing pills (Huff & Huff, 1945). People with information about the past are better equipped to deal with the future than professional prognosticators.

The presentation of career information changed over the years. For example, Marden (1905) suggested that it might be wise to choose an occupation based on the longevity of its occupants. Today's career seekers might find such a criterion a bit foolish. Nevertheless, chances are good that today's career information disseminators' choice of information to give out might appear odd to
tomorrow's career seekers. A complete, accurate history of Virginia VIEW's operation from 1980-1995 might serve to answer inquiries about future directions for the Commonwealth's CIDS. Additionally, other states might look to Virginia VIEW as a model as they plan for their CIDS.

**Organization of Study**

This investigation will employ a combination of topical and chronological material arrangement. The effect of this study includes an in-depth account of Virginia VIEW's funding, costs, products, specific services such as the Hotline and publications, workshops, information gathering, information dissemination, evaluation, comparison with other states, and project impact. In summation, this writer will employ skills much like a detective to discover and develop a descriptive history of Virginia VIEW 1980-1995.

Chapter one contains purpose and general introduction of the study. The availability of career information is an entitlement. Advancing technologies make up-to-date career information more of a necessity and Virginia VIEW, the career information delivery system for Virginia has met those needs from its inception in 1980.

Chapter two contains a general literature review describing the historical events that led to the establishment of programs like Virginia VIEW. The review is concerned with the development of
the American guidance movement and is most specifically devoted to history of the dissemination of educational and occupational information.

Additionally, chapter two will feature data contained in Virginia Tech research that predated Virginia VIEW, but intensely contributed to its founding: Status Report on Educational Information Centers in Virginia 1978-1979 and A Feasibility Study for a Career Information System for Virginia.

Chapter three contains a description of the methodology proposed for use in this study. Virginia VIEW has proved to be an apt example of application of theory to practice. Both primary and secondary sources will be employed to produce a descriptive history of the Virginia VIEW project.

Chapter four will provide a historical flow of events which will include, but not be limited to the following: (a) VIEW federal funding, (b) VIEW Virginia state funding, (c) program evaluation (d) equity and mission, (e) advisory groups to include user support and input, (f) advisory Group, (g) Virginia Occupational Information Coordination Committee to include both the Executive Committee and Advisory Committee and (h) specific information about information collection.
Chapter five contains a review of the gamut of Virginia VIEW products since the project's inception. Virginia VIEW services are emphasized and the workshops and hotline activities are delineated.

Chapter six contains a summary, conclusions and recommendations for further study. Additionally, the summary will determine whether the collected historical evidence answers the five questions asked in chapter one. Lastly, a section, based on the experience of completing this historical study about Virginia VIEW, will include what recommendations can be made for the project's future study.
Definition of Terms

Access - Refers to the process of obtaining information from the Virginia VIEW system.

Areas of Work - Refers to broad occupational groups or fields of work such as Business, Humanities and Human Relations, and Medical and Related Services.

CAG - Computer Assisted Guidance

Career - Refers to the sum of one's work plus leisure activities over the lifespan (McDaniels, 1989).

Career Information - Refers to information necessary for informed decision making about one's work and leisure activities.

Career Information Delivery Systems - Refers to ordinarily computer-based career information systems that have large files of data on occupations as well as labor market information, CIDS for short.

Career Information Hotline - Refers to the Virginia VIEW Career Information Hotline operated as a toll-free access 8-5, Monday
through Friday to provide career information on demand. CIH for short.

**College Search** - Refers to the accessing strategy to obtain information about Virginia’s two and four year public and private colleges.

**Data Occupations** - Refers to occupations that deal with information, knowledge and ideas.

**DOL** - Refers to the Department of Labor.


**Educational Levels** - Refers to amount or kind of educational training the worker needs to enter an occupation.

**Education Information** - Refers to information necessary to make informed decisions about educational institutions such as colleges, universities, vocational schools, and private career schools.
**GATB** - Refers to the General Aptitude Test Battery produced by the Occupational Research Division of the United States Employment Service.

**Index** - Refers to a listing of names, numbers or locators for Virginia VIEW products and services.

**Interactive VIEW** - Refers to the Virginia VIEW hard disk computer program that includes all the information in the system.

**Interests** - Refers to whether an occupation involves working with data, people, or things,

**Licensure** - Refers to the granting of permission to perform specific functions by a state or federal governmental agency

**NOICC** - Refers to the National Occupational Informational Coordinating Committee composed the federal agencies, educational institutions involved in the dissemination of career information.

**Occupation Search** - Refers to Virginia VIEW's accessing strategy, which specifies personal preferences in relation to over 300 occupations.
**Occupational Information** - Refers to information necessary to make informed decisions about occupational choice and may include items such as the nature of work, working conditions, qualifications and advancement, job outlook and earnings.

**OOH** - Refers to the *Occupational outlook handbook*, first published by the Department of Labor in 1949 and biennially thereafter.

**People Occupations** - Refers to those occupations that deal with humans.

**Things Occupations** - Refers to those occupations that deal with material objects.

**VCA** - Refers to the Virginia Counselors Association.

**VIEW** - Refers to Vital Information for Education and Work.

**VOICC** - Refers to the Virginia Occupational Information Coordinating Committee composed of state agencies, educational institutions, and private industries charged with supplying career information to Virginia's citizens.
Chapter 2

Review of the Related Literature

Virginia VIEW Foundations 1900 Through 1979

Virginia VIEW, the Commonwealth of Virginia’s Career Information Delivery System (CIDS), began to operate in 1980. It influenced the manner in which career information has been disseminated in Virginia ever since. Virginia VIEW’s origins predate 1980 because its legacy resonated from the beginnings of the American Guidance movement. This chapter’s purpose is to describe the numerous educational reforms, societal circumstances, and efforts of individual reformers that have influenced the development of career information and, most importantly, of Virginia VIEW.

Before VIEW

The origin of the vocational guidance movement can be traced as far back as the colonial apprenticeship system. Young people were apprenticed out to neighboring farms and businesses to learn a trade and provide income for their families. The young people were kept off the streets and created few social problems. Since most training was done at home or close to home, there was little need for career information. Virginia State archives have census collections that verify the many varied occupations practiced in the state, such as cooper, taylor, clerk, iron smith, and tinker to name a few. Most
occupational training was on the job (OJT) as occupations were passed from generation to generation.

After the Civil War, the need for skilled labor increased as the South rebuilt and the North expanded its industrial base. Federal Legislation, the Morrill Acts of 1862, made it possible to establish land grant colleges for agricultural and mechanical training. Young people were encouraged to pursue formal training in areas which heretofore had been OJT (Hunt, 1975). As more education became available, people became aware of a need for guidance and career information usually provided by classroom teachers or from within families.

1850-1900: The Need for a Formal Guidance System

Borow's (1964) chronology of the American Guidance Movement suggested that a plethora of factors contributed to guidance's origins. One early factor was the 1850-1900 economic dilemma arising from industrialization and the need for of the division of labor. Additionally, social factors such as urbanization, the use of child labor, mass immigration and transmigration, the ideological spirit of reform, and the belief that people can be improved contributed to the movement's founding. The idea that human science could identify and improve mankind's lot led to work in psychophysiology and experimental psychology. Also, the need for career information was made more apparent with the advent of
psychological testing. The idea developed, and was bolstered, that humans have differing abilities and that entering a parent's occupation might not ensure one's success (Borow, 1964).

**Advent of Psychological Testing: 1875-1900**

In 1874, Francis Galton published work about the origin of human abilities and in 1879 the first psychological laboratory was established by Wilhelm Wundt. The idea that human behavior conforms to natural laws and can be investigated scientifically was a determining factor in the development of G. Stanley Hall's 1883 work in child psychology. In 1890 James McKeen Cattell first used mental tests to describe the abilities of students at the University of Pennsylvania and Columbia University. For the first time individual differences among humans were scientifically identified and quantified Alfred Binet and V. Henri developed tests to measure the more complex mental functions in 1896. These were later combined to produce the first Binet-Simon intelligence scale in 1905. Also in 1896 the first psychological clinic was established at the University of Pennsylvania by Lightner Witmer. His work emphasized the study of learning difficulties and their treatment in children. In the area of occupational testing, W. L. Bryan and N. Harter investigated the development of skill in telegraphy through practice in 1897. The classic report was noteworthy because, for the first time, systematic research techniques had been applied to occupational skill development. Systematic occupational research led to the work of
Frank Parsons' belief that self-knowledge, aptitude, and information contributed equally to a person's vocational success (Borow, 1964).

Frank Parsons, the Father of Vocational Guidance: 1900-1910

Immigration, technological change, and social unrest paved the way for Frank Parsons, the father of vocational guidance, to establish the Breadwinners' College in Boston to benefit struggling young people to find a place in the labor market. Parsons (1909) was convinced that these young people would be able to make better choices if they were aware of their individual talents and had knowledge of the jobs available to them. Parsons had already established himself as a social reformer and teacher before he established the Breadwinners College. He was well-prepared to found the organization because he was known in the Boston community. In the true Victorian custom he was able to secure talented, dedicated and sometimes noted lecturers, most especially, Meyer Bloomfield, a young Harvard graduate. Bloomfield became the first Director of the Boston Civic Service House and later Director of the Vocation Bureau (Borow, 1964). Parsons was keenly aware of the activities of Jane Addams' Hull House, as indicated in his correspondence housed in the Frank Parsons Collection at Yale University. He admired her success at Hull House and sought to emulate Hull House's social work accomplishments, but he added vocational guidance to the services of the Boston Civic House.
Parsons, based on his varied experiences, was convinced that if people had appropriate self-understanding and knowledge of the world of work, their social problems were solvable.

Unlike today's typical professionals, Parsons practiced many different professions, such as civil engineer, political scientist, textbook editor, college professor, school teacher, lawyer, economist, and social reformer. This range is evidenced in the Frank Parsons' Collection at Yale University. The varied knowledge obtained served him well as he developed his new vocational guidance methods.

Parsons, a progressive reformer, was a product of Victorian America. As such, he was a lover of new gadgets and technology. Innovation was rampant. Inventions such as the typewriter, cash register, the elevator, camera, electric lamp, telephone, and moving pictures were then just as significant as, or even more significant than than computer technology is today (Watts, 1994). New occupations like telephone operator, photographer, and electrician appeared. Other occupations were irreversibly altered as the cash register made it possible to keep accurate ongoing records and freed clerks to concentrate on marketing their wares (Watts, 1994). Parsons emphasized the need for career information as these new occupations were introduced.
In 1908, Parsons presented his sole report to the Executive Committee of the Vocation Bureau. He described his work with some eighty young men and women and the techniques and procedures he employed. His scientific methods were basically a matching process; the vocational counselor was challenged to match information about occupations with information about the individual to achieve a union. Stephens (1970) aptly describes this process:

Following a self-study with the help of a vocational counselor, the individual could allegedly make a rational and free decision about the best work setting and the vocational education that would match. Such an approach, argued Parsons, would benefit both the workplace and the individual and this would aid in the improvement of society (p. 12).

Parsons advocated that his methods could be better used if they were employed in the public school systems in every community with professionals trained in the art of vocational counseling providing the service. In 1909 Parson's' book, Choosing a Vocation, was published posthumously. That book, Choosing a Career, along with a 1906 booklet by Ei W. Weaver, principal at Boy's High School, Brooklyn, New York, became the cornerstone career information literature (Borow, 1964). Parson's theories formed the base of work that would culminate in the development of the CIDS, and ultimately, the charter of the Commonwealth's CIDS,
Virginia VIEW. The chart featured in Figure 1 illustrates the groundwork Parsons laid in the form of a tree with his work forming the tree's base and the work that followed building on that strong foundation.
Figure 1: Career Information History 1900-1980
A climacteric event occurred in 1913 with the establishment of the United States Department of Labor. The Bureau of Labor Statistics (BLS), formerly of the Interior Department, was moved to the new department. Over the years, the BLS has collected and disseminated statistics, including the unemployment rate, employment levels in specific occupations, earning levels for specific populations such as women, young people, and blacks, and wage flexibility data. Planners, educators, and career counselors have come to depend on BLS data to enhance their work (McDaniels, 1987).

In Virginia, vocational directors completed a survey of employers in 1917. This survey, probably complied as a result of the Smith Hughes Act, enacted due to concerted efforts by professional industrial and agricultural organizations, admonished educators for failing to provide adequate vocational training and information. Students, mostly young men without skilled training, entered the labor market unprepared (Richmond Vocational Council, 1917). The Smith Hughes Act's intent was to provide vocational education, but future rulings by the Commissioner of Education made funds available for vocational guidance activities to include information dispensing (Calhoun & Finch, 1976). Thus, job training and labor market information became wholly linked as educators realized the need for both.
In 1918 James Burt Minor developed the first interest inventory at the Carnegie Institute of Technology. His work led Bruce V. Moore to work with Stanford graduate engineering students to devise a technique of interest measurement. This work laid groundwork for Karl Cowdery to create a method of differential weighting of interest items. These efforts contributed background for the work of Edward K. Strong, Jr., who published the 1927 first edition of the Strong Vocational Interest Blank (Borow, 1964). Since previous research was devoted to worker trait differences and emphasized ability, the new interest research gave people even more information as they considered occupational choices.

Guidance and career information specifically for women was included during this decade. Mass production of food and clothes, the decline of home-based industry, labor saving devices, and, most importantly, economic necessity pushed even married women to enter the work force (Coontz, 1992). A 1919 publication, The Girl and the Job, (Hoerel and Saltzberg) lamented the fact that many women were compelled to participate in the work force as well as care for their families, so they had best be prepared to find occupations that suited them well. The authors encouraged young women to consider starting their own businesses as public stenographers by taking advantage of the new technology of the typewriter. Public stenographers were frequented by small business
persons and authors such as Frank Parsons as indicated in his correspondence from the Frank Parsons' Collection at Yale University.

The invention of the typewriter and duplicating methods led to more printed guidance materials. In fact, print media became the method of choice for most career information dissemination. State and local information became more accessible because, unlike books produced by the new methods of print media, pamphlets, leaflets, and brochures could be reproduced relatively inexpensively.

**Training and Testing in the ‘20’s**

Instruments to measure internal information became incisive to the progressing necessity for career information. Harry D. Kitson’s *The Psychology of Vocational Adjustment*, published in 1925, served as the basis for the specific training of new vocational. The Hawthorne studies, performed in 1927 at the Western Electric plant in Chicago, led to greater understanding of the relationship between environmental conditions and worker behavior. This research indicated that worker performance was a more complex subject than previously suspected. Factors such as human relations, supervision, and worker morale were found to be critical elements in evaluating worker productivity. Additionally, Clark L. Hull’s 1927 work in aptitude testing provided a glimpse into today’s computerized work world when he proposed the use of a machine to predict worker success using input from specific aptitude testing data (Borow, 1964).
The 1930's: Momentous Progress

The 1930's, as a result of the Great Depression and the New Deal, were possibly the golden age of government intervention, and consequent private investment in vocational guidance movement and career information development. Keynesians promoted deficit spending to fund programs such as the Labor Department's gamut of efforts to support laboring people. Lash (1988) suggested that the New Deal originates not from economic theory, but from its creators' optimism that government intervention had a place in improving people's lives. Whether people agree with the New Deal or not, it blazed the trail for the government to collect information, provide safety nets, and settle labor disputes.

Another important 1930 development was the publication of Donald G. Paterson's Physique and Intellect. Paterson investigated the relationship between body traits and intellectual performance. He also dispelled the pseudoscientific belief that physiognomy should play a critical part in vocational guidance and personnel selection. Peterson established the Minnesota Employment Stabilization Research Institute. The Institute's Occupational Analysis Clinic helped many clients of the public employment offices in St. Paul to find work in that depressed economic area. The Clinic provided aptitude testing, career information, and employment counseling. For over six years the NOC (National Occupational Conference) served
as a clearing house of information on how to assist unemployed youth and published the first periodic bibliography of current occupational literature (Borow, 1964).

The next event impacting vocational guidance was the Great Depression, following the stock market crash of October, 1929 and general global economic conditions occurring after World War I. People stood in soup lines while waiting for the free market to supply work. In 1933, the people sought a New Deal and the government was asked to intervene and provide sustenance and employment for the unemployed. President Franklin Roosevelt assembled a brain trust composed of Frances Perkins, his Secretary of Labor, Harold Ickes, and Harry Hopkins to devise programs. The Civilian Conservation Corps (CCC), the Work Progress Administration (WPA), and the Farmers Home Administration (FHA) were such programs. Senator Robert Wagner, (D) NY, drafted and promoted legislation to assist and protect the American worker. He had a profound sense of mission to improve laboring conditions for workers. This sense of mission came after he served as the chief investigator/state legislator looking into the horrific conditions that led to the Triangle Shirtwaist fire in New York's garment district in 1911. Wagner, who had worked with Frances Perkins on the New York State Commission and had recommended her Labor Department appointment to FDR, sponsored the occupational legislation that is so controversial today, The Occupational Safety and Hazardous Work
Act (OSHA). He was the father of the United States Employment Service (USES) created by the Wagner-Peyser Act and established to prevent the intolerable fees charged to unemployed workers by private employment contractors. Also he was behind the unemployment compensation legislation in 1933 (Huthmacher, 1968).

A result of the Wagner-Peyser Act was that the USES sponsored the Occupational Research Program and created programs in testing, counseling, placement, job analysis, and worker analysis research. For the first time employment counseling for adults as well as young people became a national policy. In 1939, the Dictionary of Occupational Titles (DOT), Occupational Aptitude Profiles (OAP's) and the General Aptitude Test Battery (GATB) were developed to assist in this process (Fredrickson, 1982).

Trait-factor theorist E. G. Williamson (1937) postulated that students benefit from knowing their abilities and from being able to apply those abilities to occupational tasks. He theorized that people have varying abilities to accomplish various tasks. Aptitude test results using such instruments as the General Aptitude Test Battery (GATB), established in 1945 by the USES Occupational Analysis Division, can positively influence vocational choice.
Williamson's work has been criticized as being abundant in advice giving and short on information dispensing (Brown, 1987). Counselor trainers often warn against giving advice, yet few today will say that Williamson was wrong. He advised students and their parents that white collar work was not the only meaningful, rewarding work. He admonished his students about the glorification of occupations by advising them to understand all aspects of a job. For example, he pointed out that there is more to a lawyer's job than arguing a case before the Supreme Court. He wanted his students to understand that luck usually strikes a lawyer in the law library at 3 AM and, that much of a lawyer's job, as with most jobs, involves dull routine. His 1939 text warned counselors to inform students that they needed to know more about occupations (Williamson, 1939). He utilized the example of people wanting a job in manufacturing as a knowledge deficit. He would probably be desirous of educating today's occupation seekers and policy makers who want jobs in computers and technology that they lack specific occupational knowledge. Williamson was not a "test'em and tell'em" advocate. Modern guidance programs that feature career shadowing and job site interviews can trace their origin to his work (Brown, 1987).

Interestingly, even during the depths of the depression, career information was created encouraging young women to enter professions. Hall (1933) analyzed the requirements, remuneration, and condition of employment for 19 vocations open to women in
Virginia. These occupations included nontraditional fields like dentist, accountant, and advertiser. Fittingly, each of the occupations featured provided input from a female practitioner who expounded on the pluses and minuses of the work. The thirties educators seemed to realize the importance of featuring role models in providing career information (Hall, 1933).

African American youth were another special population. For them, Everett (1935) produced a book, *The Colored Situation: A Book of Vocational and Civic Guidance for the Negro Youth*. African American youth were admonished to consider those occupations open to them like Pullman porter, usher, railroad gang worker, minister and any other suitable occupation open to African Americans. African American women were advised to be content with domestic service. African American colleges were featured for training options.

The 1940's: Occupational Outlook Service

In 1940, Congress established the Occupational Outlook Service (OOS) within the BLS of the United States Department of Labor. The agency's chief functions included providing information about occupational characteristics, trends, and job availability. The *Occupational Outlook Handbook,* (OOH), published biennially since 1949, provides information helpful to counselors, students, and planners. The OOH offered explanations of the nature of work,
working conditions, employment training, other qualifications for advancement, job outlook, earnings, related occupations and sources of additional information on specific occupations (McDaniels, 1987). Additionally, it contained projections about future labor force demands and made predications as to whether or not the labor force would continue to grow. For example, the current 1994-95 edition makes the following prediction:

Total employment is expected to increase from 121.1 million in 1992 to 147.5 million in 2005, or by 22 percent. The 26.4 million jobs which will be added to the U. S. economy will not be evenly distributed across major industrial and occupational groups, causing some restructuring of employment. Continued faster than average employment growth among occupations that require relatively high levels of education or training is expected. Occupational Outlook Handbook (1994. p. 13.)

In 1941, the Vocational Information Service (VIS) was born. The consultation service was formed as a cooperative effort of the Virginia State Board of Education, the National Youth Administration, and Virginia State Employment Service to dispense vocational information. VIS produced Work and Training, a monthly bulletin published September through May. The other service operated by VIS was disseminating information about work, training facilities,
and other vocational subjects. Efforts were made by the service to localize the information provided to the state of Virginia. The proposal to produce *Work and Training* included these suggested contents:

1. Bibliographies on fields of work and occupations within such fields. These bibliographies will include which may be obtained free, or at a nominal cost, as well as books.

2. News of the activities of the National Youth Administration of Virginia, including descriptions of various NYA Resident projects.


4. Concise discussions of various laws in Virginia which affect workers and about which youth should have information.

5. Timely news on national defense employment and training opportunities.
6. Discussions of health, work habits, etc., together with statements from representative Virginia Employers regarding their importance.

7. Articles on educational opportunities for youth with limited finances.

8. Articles on self-initiated employment.

9. Articles on youth problems, counseling techniques, etc.

Unfortunately, no issues of Work and Training are housed in the Virginia State Archives, but records indicate the bulletin existed. Superintendents, principals, school counselors, and vocational teachers were encouraged to share the information in the bulletin with colleagues, parents, and students. The vocational services were intended for professional use; a significant portion of the Vocational Service Handbook was devoted to covering the Service's limitations. The service was (a) unable to answer students' questions directly, (b) unable to handle each student's request for specific occupational information, (c) not involved in specific career decision making counseling, and (d) unable to answer general questions referring to "Which field of work offers the most opportunity?"
On other fronts, firms like Chronicle Guidance Publications began to provide monographs featuring occupational practitioners. A sample first-hand account might tell the reader what it is like to be a carpenter (McDaniels & Gysbers, 1992).

A social crisis occurred when the victorious men returned from World War II and the women went home to raise families. The economic prosperity that followed the war led to the creation of a well-off middle class, creating a sense of economic security in income and upward mobility. The prerequisite of possessing a college degree was not necessary as the labor-dependent, rather than capital-dependent, family breadwinner could earn a living that included home ownership and education for the children.

In 1943 Public Law 16 was passed. Known as the Disabled Veterans Rehabilitation Act, this law was responsible for the successful integration of veterans in need of work adjustment into society. Another important element in this postwar prosperity was the passing of Public Law 346, known as the G. I. Bill. This legislation made it possible for returning soldiers to receive educational benefits for college and vocational training. Adults were encouraged to enter new occupations and they, along with more traditional-aged students, sought labor market information to assist them (Borow, 1964).
The 1950's: Career Development Decade

The decade of the 1950's saw the guidance profession progress in assisting students and adults with their career development issues. In 1951 the Veterans Administration's Vocational, Rehabilitation and Education Service appointed an advisory committee composed of the guidance professions' best minds. Donald Super, Daniel Feder, and E. G. Williamson appraised the program and made recommendations for improvement of practice standards, to include the development of career information sources (Borow, 1964). Their exemplary efforts led to innovation in other guidance programs.

The Eisenhower years brought new funding for public education with the National Defense Education Act of 1958. Funds were made available to guidance counselors to incorporate career information into the regular curriculum. Career resource centers were established for counselor, librarian, and student use (Fredrickson, 1982).

Firms like Chronicle Guidance Publications and Science Research Associates (SRA) began perfected print materials like monographs featuring occupational practitioners. A sample first-hand account might inform the reader about what it is like to be a gas welder or an English teacher (McDaniels, & Gysbers, 1992). Also in the late fifties, counselors exhorted the virtues of having
prediction data readily available to career choosers and changers, but they warned that compromise is necessary when using evaluation prediction data results (Katz, 1973).

**The 1960's: Job Training and Career Information**

The Federal government entered the job training arena with the Manpower Development and Training Act (MDTA) in 1962. This legislation established a legacy of job training programs such as the 1967 Work Incentive Program (WIN), the 1978 Comprehensive Employment and Training Act (CETTA), and the 1982 Job Training and Partnership Act (JTPA). The necessity for career information became more apparent. These efforts, as mentioned before, culminated in the passing of the Education Amendments of 1976 that resulted in the funding of NOICC and the individual SOICCs (Calhoun, & Finch, 1976).

**VIEW's Debut**

A significant progression of career information in the ‘60’s occurred with the use of microfilm and the birth of VIEW (Vocational Education for Education and Work). Four standardized pages of occupational information was dispensed on each microfilm aperture card. These cards included the following: (a) occupational requirements and qualifications; (b) occupational prospects and opportunities; (c) job description; (d) local information about job
openings; (e) availability of training; (f) names of persons in the community to serve as mentors to students; and (g) bibliographic references to various, books, surveys, studies, and periodicals used in the preparation of each occupational entry. Large amounts of data could be stored in a small space, allowing users to access more and more information. Dissemination of the data was improved; the rationale was that career and educational planning was an critical function of the guidance counselor's job (Gerstein & Hoover, 1967).

The VIEW system was readily received in San Diego County and began to extend other areas in California. Soon VIEW was found in other states. A major advantage of VIEW was that each state could select, present, and organize the occupational to suit its particular needs. Gerstein (1983) offered the following account of VIEW growth and specific state adaptation:

As VIEW expanded to other states, the scripts or VIEW information have generally included the same types of information. Some current systems include up to 20 standard size pages of data. A major variation exists between states which localize information by a number of separate regions, and states which generalize the information for users statewide. One of the better examples of a localized (by region) system is Tennessee's INFER-- Information needed for occupational entry (Cameron, 1972). For the state as a whole,
the script gives the DOT number of an occupation, a definition, a cartoon illustrating a worker, personal qualifications, special problems, educational and training requirements, appropriate courses of study, other requirements for entry, a description of duties on the job, working hours, fringe benefits, paths of advancement, and a reference for further information; for the region (Tennessee has nine), the script includes local earnings (local compared to national), local employment outlook, and local institutions for education and training. (p. 137).

Aperture cards, microfiche, cassette, and spool film used by the VIEW method contributed to the expansion of career information for several reasons because this media was: (a) an economical reference material, (b) easy to update, (c) easy to store and easily accessible, (d) specific to the local labor market, (e) reflective of community resources, (f) an ideal way to use the results of extensive and practical occupational information research. By 1965 VIEW was in use in approximately 40 states and its use by schools and agencies was successful (Gerstein, & Hoover, 1967).

While VIEW's use of its microfilm media was at a peak, another significant event occurred; in 1966, David Tiedman's pioneer federally-funded work at Harvard's School of Graduate Education formed the basic research for computerized career information
delivery systems. Guidance Information System (GIS) traces its origins to that work (Guidance Information System, 1980). VIEW programs incorporated the new technology into their unique combination service delivery methods and continued to prepare and provide localized career information to their diverse users.

NOICC's Debut

The enabling legislation for National Occupation Information Coordinating Committee (NOICC) was the Educational Amendments of 1976, P. L. 94-482:

To develop and implement an occupational information system to meet the common occupational information needs of vocational education 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, U. S. Code Congressional and Administrative News, Congress. 2nd. Session, (1976 p. 2198).

NOICC's aim was to standardize occupational classifications by including invariable data on occupational supply and demand, definition, and estimating procedures. The legislation further called for interagency cooperation by the Employment and Training Administration, Bureau of Labor Statistics, U. S. Office of Education,
and the National Center for Educational Statistics. Improved access to career information was mandated and the development of Career Information Delivery Systems was encouraged (NOICC, February, 1978). Additionally, Educational Information Centers (EICs) were set up to disseminate career information and provide counseling and guidance activities.

**Career Information in the 1970's**

Considerable progress, and significant change, transpired in career information delivery during the 1970's. Again, the ability to adapt to change was touted as a fundamental skill. Having accurate, up-to-date career information was viewed as essential to develop that skill. Mere job duty data (job analysis) would not provide the information necessary for occupational choice. Items such as role, status, appraisal of self-worth, and working conditions were as meaningful to occupational choice as job duties (Katz, 1973). Projects like the New Jersey Career Resource Centers were established with media and materials available to both teachers and students. These centers were staffed with vocational guidance professionals. They developed such positions as Audio-Visual Media Coordinator and School-Industry-Cooperation Coordinator to interface with business and community leaders to ensure the best service to the students. Another project, the North Dakota Exemplary World of Work project, emphasized career information dissemination from elementary grades through high school (Borow, 1973). These projects were
developed to assist students, teachers, and parents to understand the many different options available to all students.

Career theorists like Borow (1973) postulated that, contrary to popular belief, work was not going to become obsolete or be out of style. He predicted that changes in the labor force would fall differently on the various segments in society; that the typical work week would be four days long; that young people would spend more years in school and, as a result, enter the labor force at a later age; that baby boomers' parents would face retirement at a earlier age.

**Computerized Career Information**

The advent of computers and their availability to the general public in the seventies began to change career information dissemination methods as professionals observed their use. In Oregon, the Career Information System (CIS) was developed as a result of a Department of Labor contract and Bruce McKinley's work with that state. CIS encouraged other states to join in the computerized career information revolution (McKinlay, 1979). NOICC contracted with the National Governors Association (NGA) to make the proposed nation-wide, customized-in-each-state CIDS an actuality. In 1979, CIDS responsibility was transferred from the Department of Labor to NOICC (Flanders, 1988).
Harris-Bowlsbey (1985) suggested that the problem of career information had been resolved in that every user of a computer program would benefit from consistency impossible before, and that reliance on counselors would be as good at the end of the day as at its beginning. Others such as Super feared that counselors would be initially threatened by the new technology:

Computers, with their vast storage capacity, their rapid and accurate retrieval power, and their programs which make possible selective retrieval with personalized interpretation and summaries, could therefore be easily threatening to counselors, to teachers, and other dispensers and interpreters of knowledge. They could be equally be threatening to administrators faced with planning for changing methods and systems, and to the public asked to support practices which they themselves have never been experienced. (Super, 1973, p. 298).

Perspectives on computer use have run the gamut among guidance professionals from those who initially were fearful of the new technology to those who now think that the World Wide Web will provide most of the answers to information seekers. Those who envision that technology rather than professionals will provide most of the career information in the future might be wise to look at the predictions made during the last decades. The predictors were right.
to envision a shorter work week, but they failed to foresee the effects of part time employment. Salaried workers are working longer hours than in the past. Students are in school for more years than in the past, but many enter the labor market while still in high school. Baby boomers and their parents are retiring earlier but they are seeking other employment to supplement their incomes as many were forced to retire.

Most importantly, for the purposes of this study, the 1970's effort to establish career information delivery services led to the 1974 Employment and Training Administration (ETA) effort to launch career information services. Eight states, Alabama, Colorado, Massachusetts, Michigan, Minnesota, Ohio, Washington, and Wisconsin were grant recipients. These states experiences shaped the best-practice tenets, and formed the nucleus for other state projects. Each state set up a system designed to meet its specific needs (Clyde, 1979). In Oregon the CIDS was envisioned as a public consortium with an advisory board and staff capable of educational and occupational development, user services management, and data expertise (McKinlay, 1979). These early CIDS-established efforts created interest in each state. Juanita Snipes, User Services Manager, Virginia VIEW, 1980-89 proposed that Virginia VIEW's early success encouraged many other state systems to investigate the multi-media Virginia model (personal conversation with Juanita Snipes, May 16, 1996).
Beyond Computers: Career Information for the '80's

Throughout history guidance programs had been improved and expanded; this growth carried into the '80's. During the '80's life roles became more varied and fluid. Career development professionals emphasized that occupational settings involved more than work related events; individuals began to expect more from work than just to have a job. Counselors began to apply the career development theories that had evolved in the '70's. They aided their clients in thinking of their careers as more than specific occupations. Counselors realized that their clients' need for prediction and development encompassed more than the mere selection of the proper education plan. Clients' needs involved having a well-informed perspective. While assisting clients with problem-solving skills was not entirely new for counselors, they saw their role in a new light. They encouraged their clients to acquire competencies rather than to concentrate on their deficits (Gysbers, 1982).

Gerstein (1982, p. 292) suggested that the 1980's would challenge career guidance professionals to "reflect some modest redefinitions and new directions in the years ahead." To that end the entire June, 1982 issue of The Vocational Guidance Quarterly was devoted to both a looking back and forward in the field. The issue's contributors analyzed the role of counselors in elementary, middle,
high school and adult settings, career information, program development, and applied career development theory.

Upton (1982), Splete (1982), Cole (1982), and Johnson & Johnson (1982), advocated that career guidance be an integral part of any comprehensive vocational program. They suggested that counselors should work not in isolation, away from unrealistic case loads and clerical duties, but promote activities designed to meet the needs of the students. They also advised career development should include all students, and that career development requirements begin in kindergarten and continue throughout school. School students were, and are, encouraged to develop individual competencies, such as the ability to consume and interpret career information, explore careers in their communities, and involve others in their decision making process.

On another front, Gerstein (1982) emphasized that adults experience stress in their work lives and need comprehensive vocational guidance services. He suggested that counselors trained to recognize adult career development issues can assist people to clarify values, assess interests, and identify skills, as well as gather information, develop alternatives, and assess alternatives. Gerstein (1982), and Knowdell (1982) maintained that adult services are best delivered to meet clients' individual needs since people are projected to change jobs several times during their worklife and meet many
social pressures. As a result of career development for adults in the "80's," many firms, including ATT, Citicorp, General Electric, NASA, Bush, Bache, Disneyland, and Virginia Polytechnic Institute and State University acquired employee career development programs, further delineating the need for accurate up-to-date career information (Knowdell, 1982).

Career information performed a crucial element in the career decision making process. Clients cannot acquire and identify needed competencies without the proper information. McDaniels (1982) detailed the role of career information as one of expansion: over the years the expanded roles of the Department of Labor, commercial publishers, the media, technology, and personal information needs contributed to the development of a national policy for better career information. McDaniels identified the key foundations of a comprehensive career information system. The first foundation was to build the career information system on a wide ranging multi-media approach. The next foundation included expanding career information sites from the traditional school and post-secondary institutions to encompass job service offices, senior citizens' centers, job training agencies, correctional facilities, rehabilitation offices, women's resource centers, and private industries.

Humes (1982) and Miler (1982) reiterated McDaniels' belief that career information must be available to divergent populations as
the third foundation; they stressed the distinct needs of the handicapped and disadvantaged persons for specific career information. Broad user groups that include all ages, all geographic areas, and all categories stand to benefit from expanded efforts to deliver career information. These new user groups might require new methods of career information delivery such as radio, newspapers, posters, or charts. Certainly, new services such as toll-free telephone number availability and more advanced computer software influenced dissemination methods to these diverse groups of users.

McDaniels' (1982) fourth foundation for building career information systems embraced finding a broad selection of career information sources to include in the systems. Data collection is crucial to the appropriate career information dissemination to varied of public users. BLS statistics and census data might form a cornerstone of the system, but other data comprised of regional educational information, employment statistics, and state and local labor market information should be included as well.

In conclusion, the '80's imparted unprecedented challenges as career development professionals developed comprehensive guidance programs, aided clients to develop competencies, found new populations to serve, and implemented career information delivery
systems. Herr (1982) asserted that the challenge of comprehensive guidance involved the answering of some tough questions:

How should career guidance for the gifted be differentiated from that provided to the mentally retarded, whether educable or trainable? How do the facts get separated from stereotypes about the content of career guidance for any group? Is free and informed choice a viable concept if persons belonging to any group--socioeconomic, intellectual, social, ethnic, racial, sexual--are denied information about the full range of educational and employment possibilities in society? (p. 377).

The launching of career information development systems had attempted to equalize information dissemination. Policy-makers may now consider having proper information an entitlement, but the success of CIDS is a tribute to the innovators of the late '70's and early 80's.

Career Information in the '90's

The development of career information continued to expand into the '90's. Tabloid newspapers, hotlines, and computer-based systems have evolved as information media during the last twenty years. NOICC initiated an examination of career information delivery systems in 1991. The investigators concluded that CIDS have proven to be prime examples of individual states developing programs to
meet their needs. Individual SOICCs offer a medley of services. Some states, such as Maryland and Mississippi are content to offer computer based services to 214 and 61 sites respectively. Other states, such as Virginia and Michigan, have 2021 and 2469 sites because of their multi-media approach (Hopkins, Kinnison, Morgenthau & Ollis, 1992).

Access to career information and vocational assessment plays an integral role in the 90's philosophy of holistic counseling (Betz & Corning, 1993). The need for career information arises early in the developmental process, as career professionals involved in the 90's movement to introduce and improve elementary school guidance counseling attested. For example, Tice, Hughes, Odom, Woods and McClellan (1995) postulated that children are more influenced by their fathers' occupations and that parental influence is strong when parents hold similar occupations. They found their hypothesis was wrong. They suggested a need for more study regarding occupational choice among elementary-aged groups, and that children's very specific developmental requirements for information be met.

Another '90's theme that has impacted career information is employer downsizing and the resultant need for outplacement services. In fact, the North Carolina SOICC has offered special training for independent Human Resource Development (HRD)
professionals. Downsized workers are taught to become career information consumers (Kirk, 1994). Additionally, Anderson & Niles (1995) suggest that university career counseling consumers often have non-career exploration concerns, for instance, the need to update skills or plan for retirement, yet they find it impossible to separate non-career issues from their need to plan.

**Educational Information in Virginia Before VIEW**

The influence of federal legislation, specifically the Education Amendments of 1976, was apparent in Virginia VIEW's evolution. The first in a series of processor events to Virginia VIEW was the availability of funds to study existing services to post-secondary students. This predecessor work, performed at Virginia Tech foreshadowed Virginia VIEW's establishment for at least two reasons. First, the Virginia Tech investigators gained expertise in the area of career information system research. Secondly, the university researchers convinced Virginia Tech officials that their involvement in the preparation of career information materials was a fitting part of their Land Grant mission. Appropriately, the work on the *Status Report on Educational Information Centers in Virginia* (McDaniels, Cox, & Kassem, 1979) laid the cornerstone for Virginia VIEW's founding. The status report's organization and development added rationale for the project. A comprehension of this report is necessary to understand Virginia VIEW's origins.
The Education Information Centers

In 1978, the Virginia State Council of Higher Education contracted with Virginia Tech to provide a needs assessment of current information services and to assess the need for Educational Information Center (EIC) services in the Commonwealth. The Council was interested in finding out if improvements were needed in the current educational information delivery system. Virginia Tech researchers investigated the EICs, composed of legally recognized political subdivisions, private corporations, or private nonprofit post-secondary institutions, to determine the type and availability of educational information and referral services to Virginians (McDaniels, Cox, & Kassem, 1979).

The Virginia Tech researchers sought to identify (a) the institutions, agencies, organizations and units responsible for making career and educational information accessible to Virginia residents, (b) whether existing EIC services were sufficient and met increased demand, (c) the need for state-level coordination of services, and (d) which services might qualify for federal funding. The council also sought to determine what specific products would achieve parity in educational information delivery services throughout the Commonwealth (McDaniels, et al., 1979).

Some products and services the council selected for the state to possibly develop included the following:
1. To produce an automated data system for all Educational Information Systems in Virginia.

2. To produce a comprehensive directory of Educational Information Centers in Virginia.

3. To devise an automated system for maintaining the Educational Information Center's mailing list and directory.

4. To develop a status report on all EIC Services in Virginia which would:
   a. Describe Virginia's population of Educational Information Centers.
   b. Document the need for EIC services by Virginia citizens.
   c. Summarize and critically analyze the strengths and weakness of the EIC Services in terms of:
      1) the numbers and diversity of clientele being reached.
      2) the scope and adequacy of services being rendered by those providing and receiving these services, and
3) the geographic accessibility of existing service (McDaniels, et. al., 1979, p. ii-iii).

Educational Information Center Services

The EICs offered both career and educational information. They also provided information on: (a) access to post-secondary education, (b) financial aid, (c) talent search and outreach services, (d) community helping organizations, (e) remedial instruction providers, (f) career and educational testing, and (g) guidance and counseling. The complete informational services provided by the EIC's were broken into the areas of Career Information, Educational Information, and EIC Related Services (McDaniels, et. al., 1979).

Career Information included dispensing data on (a) the nature of work, (b) the places of employment (specific locations, types of industries), (c) education, training, certification and licensure data, (d) employment outlook, (e) initial and long term earning potential, and (f) working conditions. Educational Information included dispensing information on (a) nature and objectives of courses, (b) education or training provider locations, (c) education or training level offered, (d) the accessibility of post-secondary opportunity, (e) return on educational or training investment, and (f) the learning environment the specifics of which include program length, student characteristics, instructional methods, and social life (McDaniels, et. al., 1979).
Lastly, EIC Related Services covered (a) placement assistance, (b) competency based learning opportunities, (c) remedial or tutorial instruction, (d) and guidance and counseling services (interest, aptitude, and advisement). These services above were offered by diverse organizations throughout the Commonwealth (McDaniels, et. al., 1979).

A major task for the Virginia Tech researchers was the identification and assessment of those services already available in the Commonwealth. An inventory was prepared to identify the institutions, agencies, organizations and units that supplied career and educational information, provided general information and referral services, and offered counseling and guidance services. Another role of the investigators was to appraise whether existing EIC services were adequate to meet the current and projected demands of the state's growing population, and whether or not those services were equally accessible to Virginia citizens regardless of geographical location, economic status, race, and gender. Correspondingly, the researchers were directed to make recommendations as to the need for state-level coordination of EIC services (McDaniels, et. al., 1979).
EIC Evaluation Team

Assisting the Virginia Tech researchers in evaluating the EICs were members of the Future Directions for a Learning Society (FDLS), an Exxon educational foundation sponsored by the College Entrance Examination Board, and the National Center for Educational Brokering (NCEB). NCEB is a Washington, D. C. based organization recognized for its work on educational information and counseling services. NOICC was another player in the EIC evaluation process. NOICC was launched by the same 1976 Education Amendments that provided for the EICs. NOICC's initial goal was to coordinate, but not collect, occupational information (NOICC, 1979). These organizations lent their specific expertise and experience to aid the Virginia team in making their recommendations to the State Council of Higher Education as to the soundness of the current services. They also helped address the consideration of offering state-wide information and referral services (McDaniels, et al., 1979). Furthermore, these assisting organizations' staff provided the Virginia team a diverse glance into the EICs and set the stage for the investigators to form other groups of experts in the Virginia VIEW Feasibility study.

NOICC/SOICC Influence

NOICC was able to tap into the prior work of the DOL's Division of Career Information Services to help them enlist state support in the providing career information services. At the time of the EIC study, NOICC had been successful in launching over 40 SOICCs but
Virginia was not among them. Some states had already engaged their EICs and SOICCs under the direction of their governors. Virginia's neighboring states, North Carolina and South Carolina, had developed an occupational slant to their SOICCs. In 1976, eight states, Alabama, Colorado, Massachusetts, Michigan, Minnesota, Ohio, Washington, and Wisconsin, had already established state-wide career information delivery systems using DOL start-up funds. These pilot programs, evaluated annually, were already exemplary in their state-wide approach to the collection, organization, and dissemination of career information at the time of Virginia Tech's EIC study (McDaniels, et. al, 1979).

EIC Study Methodology

The EIC project was divided into five areas: (a) questionnaire development, (b) mailing list preparation, (c) directory development, (d) needs assessment development, and (e) planning conference development data. A literature search was performed, and several needs assessment questionnaires were judged. Next, the selected needs assessment questionnaire and related materials were sent to the State Council of Higher Education for review. After receiving the Council's input, a second draft of the needs assessment questionnaire and related materials were presented to the Post-Secondary Education Advisory Committee for critique. The Virginia Tech
investigators made painstaking efforts to ensure the accuracy of data they collected (McDaniels, et. al, 1979).

**EIC Study Recommendations**

Results of the meticulous EIC study revealed that although 883 EIC units existed in Virginia, and vast numbers of Virginians remained underserved. Many sites such as libraries and cooperative extension offices disseminated educational information, but this was not central to their mission and, as a result, upkeep of that information was problematic, so they were not included in the study. Most services were available to secondary school students, and to two and four-year college students ages 18-24. On the other hand, women, minorities, handicapped individuals, adults in rural areas, underemployed and unemployed adults, and non-English speaking Virginians were underserved (McDaniels, et al., 1979).

Other discoveries included findings that: (a) EIC services were mainly located in the northern part of the state and that the southern, central and western areas of the state were less well served, (b) few EIC centers were aimed at adults, (c) survey respondents expressed a desire for a statewide network for the collection and dissemination of education and occupational information, (d) there was an interest in serving underserved populations, (e) traditional methods of providing services such as counseling, group counseling and the provision of print materials
were employed, (f) few creative techniques were used to publicize EIC services, and (g) a few creative, local EIC service models were found throughout the state (McDaniels, et al., 1979).

The Virginia Tech researchers recommended that the Virginia Community College System (VCCS) be the regional nucleus in the provision of the information services. VCCS would be empowered to provide assistance to regional service providers and, as a result, people could be served by a variety of educational institutions and service agencies. Short term recommendations suggested that (a) the planning process for EIC centers be continued by the Council, (b) federal funding be secured, (c) state funding be secured if federal funding is not available, (d) Virginia coordinate their EIC efforts with the SOICC, and (e) that a continual dialogue be developed with consumer groups.

Long-range recommendations called for (a) the development of a statewide plan for the EIC networks, to include the VCCS established connection with local agencies and private and public schools, (b) a wide variety of dissemination techniques to be employed and diverse approaches to be developed to encompass the underserved groups, (c) EIC networks that serve adults, women, minorities and the handicapped as a priority, (d) the more creative EIC models to be supported and studied, and (e) that continuing education to be provided to those professionals who render EIC
services (McDaniels, et al., 1979). The EIC study provided timely, valuable information to Virginia VIEW's planners so that they were keenly aware, due to their research, of the Commonwealth's educational and occupational information strengths and deficits. The planners also knew of the national effort to ensure state participation in the collection and dissemination of career information.

Congressional Mandates

In its endeavor to increase the availability of career and educational information, Congress challenged the states in the 1976 Educational Amendments to accomplish three specific goals. These follow:

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 the employment and training programs at the 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 (NOICC, May 1979).

In response to the above mandates, Virginia state officials became interested in coordinating their career and educational information services.

Virginia Occupational Information Coordination Committee's Debut

In 1978, Virginia planners decided that the mission described above could be best met by forming the Virginia Occupational Information Coordinating Committee (VOICC). VOICC was created as an inter-agency effort. In September 1979, VOICC employed Jeffrey Windom as its first executive director. Four-member agencies, modeled after NOICC, comprised the executive committee. Members came from the Virginia Department of Rehabilitative Services, the Virginia Department of Education, the Governor's Employment and Training Department (GETD) and the Virginia Employment Commission. These agencies were charged with providing career information services to the Commonwealth's youth and adults. Figure 2 contains an organizational chart explaining the Committee's composition (Windom, 1980).

In 1980, VOICC sponsored a conference for professionals and educators involved in career information dispensing. Participants
representing vocational education, business and industry, guidance directors, community college personnel, the Department of Rehabilitative Services, and the Virginia Employment Commission addressed the desire for a statewide CIDS. The professionals proposed that the Virginia CIDS should: (a) provide more efficient access to comprehensive information, (b) fill a void in existing occupational information by providing both state and local information, and (c) possibly provide the information at lower cost than the current system by benefiting from economies of scale (McDaniels, Snipes, & Peevy, 1980).

VOICC program attendees were convinced that a statewide CIDS was beneficial, but they were concerned that the already tight budgets of the various schools and agencies would be unable to absorb the system's start-up and operating costs. The conference participants also suggested that Virginia consider augmenting a computerized CIDS with microfiche, hard copies, books, directories, and brochures. Nevertheless, they all agreed that more information needed to be gathered before any decisions were made. (McDaniels, et al., 1980).

The VOICC's first executive committee was: Melvin H. Garner, administrative director of Vocational and Adult Education for the Virginia Department of Education; George Meeks, of the Department of Rehabilitative Services; George Scherer, of the Governor's
Employment and Training Department; and Kenneth Moore of the Virginia Employment Commission. Dr. Melvin Garner was appointed Chairman. Additionally, an advisory committee, meeting quarterly to assist the executive board as advocates, was formed and comprised of both state and local human development resource personnel. The advisory committee had representatives from such diverse institutions as the Virginia Association of Private Career Schools, the Virginia Community College System, Comprehensive Employment Training Act (CETA), forerunner of the current Job Training and Partnership Act (JTPA), prime sponsor, and the Department of Corrections (Shealy, 1982).
CIDS Feasibility Study

One of VOICC's first mandates was to investigate the possibility of creating a statewide career information delivery system. The Committee turned to the already seasoned researchers at Virginia Polytechnic Institute and State University (Virginia Tech) to benefit from their previous EIC study expertise. The Virginia Tech team, composed of Carl McDaniels, principal investigator, Juanita Snipes, and Evelyn Peevy, conducted the Virginia CIDS Feasibility Study from October 1, 1979 to October 1, 1980. Their dual assignment encompassed producing a detailed CIDS proposal and an Implementation Plan (Shealy, 1982).

Primary Task

A primary task for the research team was to decide the attributes of an effective career information delivery system necessary to meet Virginia's prerequisites. They defined the following 13 characteristics as being essential to successful CIDS operation. It must:

1. Possess the capacity to make 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 effectively, 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 structural 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 in the system.

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

13. Be acceptable to users (McDaniels et al., 1980, p. 5, 6).

Feasibility Study Purposes
Next the research team made initial identification of areas of study to guide their investigation and meet the following ten specific objectives:

1. Research findings pertinent to the effectiveness of various CIDS were summarized and analyzed.

2. Existing career information systems operational in Virginia were appraised as to their extent of coverage and present costs.
3. The best practice of states with operational CIDS and from proposals and studies from other states developing CIDS were analyzed.

4. NOICC, Employment and Training Administration, Association of Computer-based Systems for Career Information standards, guidelines, and recommendations were analyzed.

5. Guidance systems by commercial firms were analyzed.

6. The criteria for a career information system which incorporates the best practices of CIDS in other states and the agencies' guidelines which best address the special circumstances in Virginia were determined.

7. The specific conditions and circumstances in Virginia were analyzed according to these criteria.

8. Recommendations for a statewide career information system were developed.

9. Implementation strategies for the system detailing procedures, resources, and stages were developed.
10. A plan for the development of the CIDS was developed to include both immediate and long range stages of development (McDaniels et al., 1980, p. 15).

**Feasibility Study Organization**

The feasibility study was divided into three primary phases: (a) planning, (b) data collection, analysis, evaluation and formation of recommendations and a development plan, (c) preparation of the report. The first phase entailed producing a project plan, plus a time line and an information sheet. A literature search was also completed. Mid-sixties computerized career information systems were researched. These included David Tiedman's, 1979 Harvard School of Graduate Education and New England Educational Data System's crucial contributions to the CIDS with his Information System for Vocational Decision (ISVD) and the Darby, Korotkin, and Romasko definitive work, *The Computer in Secondary Schools* (1972) about computer use in secondary schools.

Mailings, visits, contacts, presentations, conferences, and meetings provided data collection opportunities during the second phase. Information was solicited from other states. These data included other CIDS feasibility studies, CIDS best practice descriptions from the 57 states and territories, and telephone contacts and a visit to NOICC and DOL. Also, site visits were made to...
West Virginia and South Carolina. Ultimately, 42 of the 50 state SOICC directors responded to the researchers' requests. The educational institutions visited by the Virginia Tech team included eleven secondary schools, one elementary school, three community colleges, and five four-year colleges. These efforts produced data on the types, number, location and diversity of career information delivery settings (McDaniels et al., 1980).

In December of 1979, an advisory committee was selected by Virginia Tech to assist the research team. Dr. Robert Hoppock, Professor Emeritus, New York State University and distinguished occupational information contributor and researcher; William Woolley, Executive Director for the Center for Career Development Services, Florida Department of Education, Division of Vocational Education; and Harvey Ollis, Executive Coordinator of the Michigan Occupational Information Coordinating Committee comprised the team. These luminaries were selected for the committee based on their diverse and expert knowledge in career guidance, specifically in career information delivery. During their December 10-11, 1979, session, the advisory committee met and discussed: (a) desirable characteristics of CIDS, (b) best practices of various CIDS systems, (c) the various systems, staff functions and responsibilities, (d) the systems' funding and cost effectiveness, and (e) implementation strategies. The committee produced a tentative outline for commencing the Virginia CIDS. On March 6-7, 1980, the advisors
met again and formed concrete recommendations for the Virginia system (McDaniels et al., 1980).

Another important second phase function was the investigation of current commercial alternatives on career information systems, software, computer applications, microfiche, view-deck, technical assistance, access strategies, and system costs. Evaluating the commercial products required immense effort because so many varieties of products and services were available. In Oregon, for example, the Oregon Employment Division, involved in labor market research, united with the Oregon Department of Education to form the Career Information System (CIS). Bruce McKinlay of Oregon's CIS heralded the Oregon CIS experience as the precursor of computer career information delivery systems and state and local cooperation. McKinlay published a guide aimed at other states to help them develop standards of use. The how-to guide offered specific information on how to set up a career information system (McKinlay & Franklin, 1975).

The third phase of the Feasibility Study was dedicated to the preparation of the CIDS report. The pertinent data contained in the report included (a) the kinds of CIDS systems, (b) Information about User and Data Information Services, (c) profiles of existing CIDS in Virginia, (d) an analysis of best practices of other states, (e) organization and management of the best systems, (f) financing, (h)
practices to avoid, (i) an analysis of NOICC guidelines and recommendations, (j) an analysis of the Employment and Training Administration Office of Youth Program Guidelines, (k) an analysis of the Association of Computer-based Systems for Career Information Standards, (l) an analysis of commercial products, (m) specific data about Florida VIEW, and (n) a section on the conditions and circumstances in Virginia. This voluminous and painstakingly collected sum of information was used to make specific recommendations for forming a statewide Virginia CIDS.

Feasibility Study Recommendations

The Virginia Tech researchers, as a result of their painstaking planning, made numerous recommendations. The criteria they set up were based on a combination of best practice efforts and included guidelines and standards for the Virginia CIDS operation. The recommendations were organized to reflect the following areas: (a) System development, (b) CIDS characteristics, (c) System Management, (d) System Information, (e) Dissemination, and (f) User Services. The suggestions for the CIDS operation were not intended to be specific, but they provided basic guidelines from which to operate a competent CIDS (McDaniels et al., 1980).

Certain assumptions were made beyond the scope of the feasibility report about the proposed CIDS regarding the specific (a) funding, (b) agencies involved in implementation and planning, (c)
continuing signatory agency cooperation, and (d) staffing. Concerns were declared about the amount of staff time and expertise required to obtain and develop the state and sub-state data. Another planning concern was related to the necessity of marketing the Virginia CIDS project to prospective users. Funding issues were addressed by the VOICC committee and its executive director (McDaniels et al., 1980).

Clearly, the Virginia Tech researchers had completed a thorough, prodigious task. In fact, the work involved in the Feasibility Study might be a worthy dissertation topic itself, but this work is devoted to the history of Virginia VIEW. For the benefit of the reader, a complete listing of the Feasibility Study recommendations is found in Appendix A of this document.

A general plan was produced to assist in the implementation of the Virginia CIDS. The research operated under the following assumptions in the plan suggestion in that: (a) the new CIDS would require acceptance and visibility to a diverse group of users; (b) staff time would be needed to develop information on occupations and training programs in the format, reading level, and style suitable for multi-media delivery; (c) adequate funding sources would have to be available to provide a statewide computerized CIDS; (d) at the time of the study no commercial vendor could to meet the specific criteria necessary for a Virginia CIDS.
Virginia VIEW's Implementation

Legislative mandates required each state to have a CIDS. After much deliberation, Virginia decided to go with a variation on the Florida and Michigan systems. The project adopted the name Virginia VIEW after Florida and the predecessor states back to California's San Diego project. The Michigan Occupational Information System (MOIS) served as a model for Virginia. Joe McGarvey, MOIS director, spent innumerable consultation hours with the Virginia Tech team and Executive VOICC Director, Jeffrey Windom, introducing them to the Michigan system. MOIS was appealing to the Virginia system because of its (a) availability to its users without cost, (b) adaptability to add state and substate data, and (c) inexpensive microfiche format. Additionally, the Virginia team, as a result of the feasibility study, was impressed with MOIS because the system seemed to incorporate most of the best practices found in other states (Personal communication with the former VOICC Executive Director, Jeffrey Windom, March 12, 1996).

Michigan proved to be so apt a model that Virginia and Michigan jointly sponsored a conference for other states interested in inaugurating CIDS programs. McGarvey from Michigan resolved that it would be easier and less time-consuming to instruct the states at once rather than one at a time. Several states responded and attended the conference, but, according to Windom, chose not to
model themselves after Michigan or Virginia because the states “decided to take the easy way out and go with commercial vendors” (Personal communication with the former VOICC Executive Director, Jeffrey Windom, March 12, 1996).

In 1980, Jeffrey Windom of VOICC and Juanita Snipes of Virginia Tech responded to NOICC’s request for proposal. Mrs. Snipes traveled to Richmond from Blacksburg, and they wrote the 250-page proposal on Windom’s card table. Windom related that they would work all day and into the evening and then rush downtown Richmond to the Kelly Services typist to have their work typed. After a week of painstaking work, the diligent duo rushed to the post office and beat the proposal deadline by one hour. The NOICC grant was approved and the Virginia VIEW project had enough funding to begin operation (Personal communication with the former VOICC Executive Director, Jeffrey Windom, March 12, 1996).

Pilot Study Set-Up Procedure

The researchers recommended a three-stage plan for the CIDS development. The first stage required that the state training and educational information be secured and developed, as well as research and production of the occupational information. The second stage was devoted to obtaining the requisite school and financial aid information, plus preparing the sub-state data with emphasis on the
supply and demand portions. Stage three was dedicated to formats for materials for the microfiche, brochures, newspapers and other print media. Additionally, all material prepared in stage two was reviewed and attention was paid to the preparation of the computerized CIDS.

The piloting of the original CIDS study was set up in three phases. Planners proposed that the multi-media CIDS be developed incrementally, and their initial plan included deciding the number of occupational files to deliver and determining the methods of delivery. To this end, they resolved to research and develop 150 occupations and distribute the data on microfiche. Another consideration of the pilot study involved field testing of the computer-based portion of the CIDS. CIDS user services staff monitored the entire system, both microfiche and computer search, evaluating use, impact, penetration, and performance. The interim and final evaluation incorporated both user and agency counselor evaluations.

Six sites were selected for field testing of the microfiche for the purpose of gathering State and sub state data. The investigators were concerned with finding the following information: (a) the use, impact and penetration of the microfiche material; (b) an evaluation of users’ reaction, over a period of time, to the microfiche; (c) an assessment of counselors’ evaluation of the system.
The second phase of the pilot study involved field testing of the computer-based portion of the CIDS and microfiche. For this purpose the planners chose a rehabilitation center, a corrections facility, a secondary school in an urban setting, a secondary school in a rural setting, a community college and a local job service site. Field sites were selected based on the following criteria: (a) availability of a contact person to attend training sessions, (b) site access to compatible hardware and/or a microfiche reader, (c) willingness to participate in the monitoring and evaluation process. As a result of this careful planning, the field-sites' experiences provided the Virginia VIEW staff with start-up data that has remained accurate throughout the years.

VIEW's Three Year Plan

The original plan for implementing the Statewide CIDS was realistically envisioned to be accomplished over a three year period. The plan was modest and predicated on the users' conservative estimates. The next step involved whether to choose the system developed in-house, to select an outside vendor, or to develop a combination of in-house and vendor CIDS. The in-house developed system was selected because, over the planning period, the system proved effective with both rural and urban users. Additionally, the existing CIDS was chosen for the three-year implementation because other systems would require licensing fees. Also, the for-fee systems did not include State or sub-state data. Another consideration for
choosing the existing CIDS was economic efficiency. User sites could obtain the CIDS at little or no cost.

Successful implementation of the plan utilized career counseling expertise found at Virginia Tech. This expertise provided contact with leaders and decision-makers in the schools and community agencies. Similarly, the pilot project’s activities prior to implementation were directed toward the plan’s ongoing accomplishment. A timetable was prepared to precipitate the plan’s execution.

During the first year the plan called for the completion of 150 occupational briefs for those most representative occupations found in Virginia. The second-year plan included the development of 150 additional occupational briefs and the updating of the original 150 occupations, bringing the total to 300. Also at the end of the second year, the planners envisioned that the data field would be complete, and that the support materials and services would be ready for field tests of the newly developed computer-based system.

Another important aspect of the plan involved the selection of the target populations to be served. Project planners envisioned that three quarters of secondary students would use the CIDS. They based their prediction on the following reasons: (a) a large number of secondary schools already used computer-based career information
delivery systems, (b) secondary school users would be attracted to a non licensed, free database that includes State and substate data, (c) user services public relations and hotline services would publicize the system, (d) career education and career guidance pinpointed the necessity for computer-based career information.

College students were a significant target population. Community college students represented a large group of potential users. Community colleges had access to computers for CIDS delivery and their students were highly motivated to secure career information. Additionally, the planners predicted that at least one-fifth of four-year college students would be interested in using the State CIDS because they were becoming more and more career-oriented. Furthermore, as the years passed more and more secondary students would be familiar with the CIDS and, as a result, would seek it out in the college career centers. Over time the CIDS could expect the collegiate market share to grow in this manner.

Employment service users were another targeted user group. Several factors interested these users: (a) the user's ability to access information without assistance, (b) the provision for accessing the system through the USES interest inventory, (c) the career change needs of employment service applicants, (d) the need of employment service personnel to access career information expeditiously. Other targeted groups were rehabilitation, corrections, and job training.
program workers (McDaniels, et al., 1979). Figures 3 and 4 provide more detailed information about the Virginia VIEW Implementation Plan.

**Summary**

Virginia VIEW is a product of the many years of effort and practice put forth by people who have envisioned a better future for the nations' citizens. Frank Parsons' progressive spirit influenced the project in that he was the first to indicate that a knowledge of industry was paramount to the selection of an occupation. The federal government's entrance into occupational information area eventually provided the project with the substantial material about occupations the career information projects requires. The 1939 publication of the *Dictionary of Occupational Titles* and the 1949 publication of the *Occupational Outlook Handbook* by the Department of Labor were direct predecessors. Without these efforts, projects like Virginia VIEW may not have evolved.

Other factors pertinent to Virginia VIEW's establishment was the development of job training programs and social programs along with industrial change. During the depression and all the way to the Job Training and Partnership Act of 1982, the need for career information has increased. Career development professionals
<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>STAGES</th>
<th>MATERIALS PRODUCTION</th>
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<tbody>
<tr>
<td>INFORMATION DEVELOPMENT AND REVIEW</td>
<td>EDUCATIONAL AND TRAINING PROGRAM INFORMATION FOR MICROFICHE AND OTHER MEDIA</td>
<td>DEVELOPMENT OF ECONOMIC OUTLOOK INFORMATION, OCCUPATIONAL DESCRIPTIONS, OCCUPATIONAL REQUIREMENTS PREPARATION AND TRAINING DATA ON NATIONAL AND/OR STATE LEVEL FOR MICROFICHE AND PRINTED MEDIA</td>
</tr>
<tr>
<td></td>
<td>DEVELOP SCHOOL INFORMATION, FINANCIAL AID INFORMATION, AND REVIEW AND REVISE EDUCATIONAL AND TRAINING DATA FOR ALL MEDIA LISTED</td>
<td>COMPLETE AND REVISE STATE AND/OR NATIONAL DATA FROM STAGE ONE AND DEVELOP SUB-STATE DATA FOR ALL MEDIA LISTED</td>
</tr>
<tr>
<td></td>
<td>REVIEW AND REVISE DATA FROM STAGE TWO AND DEVELOP LOCAL VISIT FILES ALL MEDIA INCLUDING COMPUTERS</td>
<td>REVIEW, REVISE AND PREPARE DATA FROM PREVIOUS STAGES FOR COMPUTER AND OTHER MEDIA</td>
</tr>
<tr>
<td></td>
<td>VOICC</td>
<td>MICROFICHE</td>
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<td>NEWSPAPER</td>
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<td>BROCHURES</td>
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<td>DIRECTORIES</td>
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<td>POSTERS</td>
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<tr>
<td></td>
<td></td>
<td>USER SERVICE MANUAL FOR MICROFICHE</td>
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<td>DIRECTORIES</td>
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<td></td>
<td></td>
<td>UPDATE USER SERVICE MANUAL</td>
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<tr>
<td></td>
<td>VOICC</td>
<td>USER SERVICE MANUAL FOR MICROFICHE UPDATE, USER SERVICE MANUAL FOR USERS AND COUNSELORS FOR COMPUTER SYSTEM</td>
</tr>
</tbody>
</table>

Figure 3: Virginia VIEW Implementation Plan
<table>
<thead>
<tr>
<th>USER SERVICES</th>
<th>IN-SERVICE WORKSHOPS, NEWSLETTERS</th>
<th>IN-SERVICE WORKSHOPS, NEWSLETTERS, EVALUATION OF MICROFICHE BY USERS</th>
<th>IN-SERVICE WORKSHOPS, NEWSLETTERS, IN-SERVICE TRAINING FOR SYSTEMS APPLICATION TO SELECTED SITES</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISSEMINATION MEDIA</td>
<td>TOLL FREE NUMBER MICROFICHE NEWSPAPER BROCHURE POSTERS</td>
<td>STAGE ONE CONTINUED</td>
<td>STAGE TWO CONTINUED AND COMPUTERIZED SYSTEM AT PILOT SITES</td>
</tr>
</tbody>
</table>

Figure 4: Virginia VIEW Implementation Plan
recognized the necessity of career development through the lifespan (McDaniels and Gysbers, 1992) as both students and adults were faced with both occupational and personal change as they developed their careers.

Virginia VIEW owes much to the researchers at Virginia Tech as they sought to study the availability of career information in the Old Dominion. Their EIC and Virginia VIEW Feasibility Studies set the stage for an equity-based, multi-media CIDS. CIDS planners, both at Virginia Tech and statewide, made the decision early on that career information would be available to all Virginians without regard to economics, age, status, or geographic location. They did not make this decision in a vacuum, but they based their findings on both the Parsons past and their hopes that Virginians would be able to make more informed career decisions by making available the most up-to-date career information possible.

In conclusion, the need for up-to-date career information and career counseling has become a popular topic, especially as workers become less secure about their jobs. Newspapers and weekly magazines almost always have an article about the latest downsizing. Career development professionals continue to meet challenges as they assist clients. Fortunately, they have a rich history and, as a result of earlier innovations such as CIDS, career counseling centers, employment services, they have tools to do the job.
Chapter 3

Methodology

This study employs historical and descriptive procedures to delineate the development and continuation of Virginia VIEW, Virginia's CIDS. Every effort was made to assure that this account is unified and complete. Barzun and Graff (1992) suggest that every writer who has "got the facts right" is, in fact a historian. Over the years, voluminous amounts of information have been collected about Virginia VIEW; this work will attempt to provide order and make certain all of the important data are reported and that the history of this project is dutifully recorded.

A first step in the process was to carry out an extensive review of the related literature which is contained in Chapter 2. The second step was to study the Career Information Delivery Feasibility Study conducted by Carl McDaniels, Juanita Snipes, and Evelyn Peevy from October 1, 1979 to June 30, 1980. The data and recommendations found in this study form the basis for Virginia VIEW.

Theoretical Significance

Gilderhus (1987) suggested that because historians must face the bewilderment of the uncertainty of being able to interpret evidence correctly, they "should rank among the humblest of people." (p.2) Yet the ability to correctly record history is worthwhile.
because in the process the historian is able to acquire self-knowledge, investigate ethical sanctions, and prepare for the future. This study's purpose was to record the history of Virginia VIEW. A public account of the project's history should serve to validate the $5.5 million spent on Virginia VIEW over the years. This writer employed historical research methods and concentrated on the actual artifacts of the project. Emphasis was placed on the cause and effect relationships that allow for retroactive predictions.

Another aspect of this study was to contemplate the linkages between intentions and consequences. Certainly, a challenge existed to merely record the history of Virginia VIEW, but the formidable task here was to discover the "why" behind the project.

Areas of Study
The following areas were identified to study the historical development of Virginia VIEW:

Performance Criteria- Includes the project's penetration in the schools and agencies over the years. User variety over the years will be investigated. Have the typical users remained the same or has the user base changed? Has goal attainment been achieved over the years?
Funding- Includes the projects funding levels to include both the amount and source of funding over the years. Topics might include the obtaining of state funding from the General Assembly, funding charts and tables, NOICC grant availability, funding from special sources.

Costs- Includes the cost of providing Virginia VIEW products over the years and the impact on product development and economic efficiency. Topics might include the impact of going from a four color Career Hunt to black and white, including scan sheets in the index, imposing fees and other pertinent information relating to program costs.

Products- Includes the artifacts generated by the project over the years. What products have been innovated? Have others been eliminated, and if so, why? How have the products such as the Index changed over the years? How have products been expanded such as the number of occupations covered in the system? What role have Virginia VIEW's publications such as the Career Hunt and VIEWStart played?

Hotline- Includes hotline implementation, activities, and performance. Topics might include implementation, staffing over the years, position in the over all system, reports, special
costs and other pertinent information. User comments collected over the years will be studied.

**Workshops**- Includes looking at data collected about the fall workshops conducted by Virginia VIEW staff over the years. How have they changed over the years? Have the topics covered reflected counselors' timely concerns?

**Information Gathering**- Includes those activities conducted by the Virginia VIEW staff to harvest data for dissemination. Topics might include the development of a computer data base, specific projects such as researching information for publications such as the *Career Hunt for Veterans*, special presentations, apprenticeship data, licensure information, and other pertinent information gathering activities.

**Information Dissemination**- Includes those activities performed by Virginia VIEW Staff to disseminate information. Topics might include early efforts to get counselors and agency personnel to become aware of the system, *Career Hunt* dissemination, the establishment of charging for products, the development of shareware, impact of Virginia VIEW's appearance in public service announcement TV and Radio ads, its emergence on the World Wide Web, and other pertinent information dissemination activities.
Evaluation- Includes those activities over the years designed to evaluate Virginia VIEW. Evaluative data might include but not be limited to dissertations, evaluations conducted by Virginia VIEW staff over the years, the Virginia Department of Education, and the VEC. User comment collected over the years will be studied.

Comparison with other States- Includes an investigation of how Virginia's CIDS, Virginia VIEW compared with other state systems over the years. Topics might include Virginia VIEW's relationship with MOIS, state privatization of systems, and Virginia's multi-media approach versus entirely computer-based systems.

Project Impact- Includes looking at the project's impact on the career decisions made by the Commonwealth's citizens over the years. Topics might include lessons learned and recommendations.

Framework

A 1974 study completed by the General Accounting Office (GAO) determined that vocational educators were making course
offerings without sufficient labor market information (NOICC, 1979). With the passage of the 1976 Educational Amendments and the creation of NOICC and the individual SOICCs, states such as Virginia could develop career information dissemination programs tailored to meet that state's particular needs. This 1970's mandate to cooperate led to the development of programs such as Virginia VIEW. Each level of government and their outside influences were studied to highlight the resulting collaboration that made Virginia VIEW possible.

Both primary and secondary sources will be utilized in this study. Primary sources included records kept by the Virginia VIEW project staff over the years. Public records and reports included quarterly and annual reports, correspondence, minutes of meetings, handouts, and evaluation studies completed by both Virginia VIEW staff and outside sources. Additionally, projects artifacts such as the Virginia VIEW Index, The Career Hunt, The 1991 Job Hunt, and The 1993-94 Career Hunt for Veterans served as primary sources. Special attention was applied to Virginia VIEW's components, like the Hotline, the occupation search accessing strategies, and the development of Interactive VIEW.

This study concentrated on the written material that is housed in the local Virginia VIEW Archives, the Virginia State Library Archives, materials available from NOICC, educational institutions
and private collections. Additionally, materials from Virginia VIEW's mother project, The Michigan Occupational Information System (MOIS) were examined. Articles about Virginia VIEW in publications such as the Virginia Counselors Journal, the Journal of Career Development, the Career Development Quarterly, and NOICC Occasional Papers, were consulted.

A limited effort included seeking information from the project's former staff. Effort was made to contact other significant parties to the development and continuation of Virginia VIEW, such as Bill Woolley with Florida VIEW, Harvey Ollis of NOICC, and other career development professionals. An additional effort was made to contact Jeff Windom, the Virginia VOICC director. Harvey Ollis was helpful and pointed out NOICC occasional papers and other pertinent data of interest to this project. Jeff Windom proved to be knowledgeable about Virginia VIEW's origins and was willing to share his understanding of Virginia VIEW's early days. This researcher was unable to contact Bill Woolley, formerly of Florida VIEW. Former staff members contributed appropriately to the completion of this document.

Specific Sources of Information

Particular effort involved studying the following artifacts:

1. Status Report on Educational Information Centers in


5. NOICC Administrative Reports.


7. Proceedings of Virginia Occupational Information Coordinating Committee (VOICC) Meetings.


11. Agreement of Understanding, Virginia Tech and the Commonwealth of Virginia Department of Education.
12. NOICC Directories.


14. ERIC Documents


17. Hedrick, Shealy, and Conrad Dissertations

18. Virginia VIEW Correspondence files.

19. Virginia VIEW Career Information Hotline Reports


**Summary**

Summarily, this writer employed skills much like a detective to discover and develop a descriptive history of Virginia VIEW 1980-1995. Virginia VIEW’s implementation has proved to be an apt
example of application of theory to practice. The project’s entelechy compelled it to develop into its most effective form of service to its customers. This vital force which became a clear vision of mission also compelled VIEW to shift and change. How these changes and shifts have occurred will play a vital role in this investigation. For example, Virginia VIEW has been challenged over the years to adapt from delivering basic print media to appearing on the World Wide Web. Gale Watts, Project Manager 1989-1995, saw the benefits of the new technology and in March 1995 Virginia VIEW programmer, Jim Dobberful, designed a Home page for the project. Another important change over the years involved the selection of what occupations to include in the career information delivery system as it expanded from one hundred fifty occupations to three hundred thirty. How has the project met this challenge and similar challenges over the years? More importantly, do meeting these challenges have implications to other projects such as operating information delivery hotlines? This historical descriptive study attempted to answer this type of question.
Chapter 4

Virginia VIEW: Funding, Staffing, Information Collection and Evaluation

Introduction

This chapter concentrates on the indispensable substance factors critical to Virginia VIEW's mission of disseminating career information such as (a) funding and fee imposition, (b) staffing, (c) mentorship and support activities, (d) information collection and presentation, and (e) program evaluation. Over the years, securing and maintaining adequate funding has required perpetual effort as funding sources have emerged and evaporated. Statewide support has proved a significant component of Virginia VIEW's ongoing success. Early planners set up a specific action plan from which to launch the Commonwealth's CID's. In addition to meeting funding and support challenges, the project has endeavored to develop new sources of information and to meet ever-new technological demands in the areas of career and educational information collection and presentation.

Another aspect of the ongoing success of the project was the planners' ability to secure support from diverse sources such as Virginia Tech, the VOICC Committee, the Virginia Department of Education, the Virginia Counselors Association, Vocational Educators,
Guidance Directors, plus support from career development professionals and college professors.

From the beginning, the program staff made evaluation a critical program component. (Snipes, 1982) emphasized that Virginia VIEW was the Career Information Delivery System (CIDS) for Virginia and owed its users feedback about the project's success. Counselors and users were asked for feedback and their comments were incorporated into the development of next year's products and services. Outside evaluation projects of Virginia VIEW were undertaken by the Virginia Employment Commission and the Virginia Department of Education. Another source of supplementary evaluative work was provided by graduate students over the years and their work provided project staff with valuable information.

**Virginia VIEW Funding**

Proper funding is crucial to the success of any endeavor and Virginia VIEW was no exception. Over the years services have been expanded or curtailed depending on the political climate and availability of monetary resources. Originally, program planners estimated that the fully-operational CIDS would require at least $300,000 to $400,000 1980 dollars to offer a full range of necessary services. They had reached their estimates by using states such as South Carolina, and Florida as examples (McDaniels, et al., 1980).
A combination of federal funding, NOICC, and Carl Perkins Federal Vocational Education monies kept the project growing in the early eighties. The initial appropriations provided for microfiche production and the necessary supported print products. The NOICC grant expired in 1983, but the Virginia General Assembly augmented project funds with the first ever line-item allocation for the Virginia Employment Commission, the grantor agency for VOICC, and as a result, Virginia VIEW. This federal-state partnership provided enough funding for the project to operate adequately for the next several years.

The project began with a funding level of about $100,000 in the first year and reached its peak funding of $422,900 in the 1990-91 funding cycle. At first, a good portion of project funds were spent appropriately on inservice training, especially for public school secondary personnel. The Virginia VIEW Career Information Hotline was funded to provide Virginians from every area of the state immediate career information at no cost to them. Additionally, the years of increased funding led to the development of new products and the expansion of computer-based services. Early on, each funding cycle's increase led to the expansion of the CIDS. Virginia VIEW materials were found in almost 100 percent of Virginia's secondary schools and in many diverse agencies.
Also over the project lifespan the Virginia VIEW staff sought funding for special projects over and above that obtained for the regular scope of work. In the 1982-83 program year the project received a grant from the Department of Defense of $115,425 to research and include military listings in the Virginia VIEW materials. Another Department of Defense project involved adding information from the Armed Services Vocational Aptitude Test Battery (ASVAB) to the Virginia VIEW scope of work. The Department of Education funded special tabloids: The Job Hunt and Vocational VIEWS, created especially for Virginia's Vocational Education students. In 1993, the project secured $25,000 from the Employment and Training Administration, Veteran's Division, Department of Labor through the Virginia Employment Commission to produce a special Career Hunt for Veterans designed to assist the many veterans resulting from the defense slowdown.

The 90's Funding Challenges

The 1991-1995 fiscal years saw funding reductions, leading to fee impositions for shipping and handling services and the curtailment of services, especially print media, to Virginia citizens. Figures 5 and 6 provide a chart and timeline featuring the Virginia VIEW appropriations history.
Virginia VIEW Funding

1979-1995

TOTAL $5,316,518

$x = dollars \quad y = years$

Figure 5: Virginia VIEW Funding Graph 1979-1995
Cumulative Virginia VIEW Funding  
10/79-6/96

<table>
<thead>
<tr>
<th>Project Year(s)</th>
<th>Funded Dollar Amount</th>
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</thead>
<tbody>
<tr>
<td>10/79-6/80</td>
<td>20,000</td>
</tr>
<tr>
<td>10/79-6/80</td>
<td>99,999</td>
</tr>
<tr>
<td>9/80-6/81</td>
<td>65,000</td>
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<td>316,000</td>
</tr>
<tr>
<td>7/95-6/96</td>
<td>316,000</td>
</tr>
</tbody>
</table>

Total : $5,316,518

* Job Hunt, Vocational VIEWS
** 1993-94 Career Hunt for Veterans

Figure 6: Virginia VIEW Funding Chart 1979-1995
In 1991 project planners became aware of funding issues which arose because of the restructuring of vocational education funding under the Carl Perkins Act of 1990. Funds that had been available to operate the statewide CIDS program were required to be sent to the localities. Like the Chinese whose ideograph for crisis and opportunity is the same, the Virginia VIEW staff began a painstaking self-study, designed to pinpoint the project’s priorities. Every effort was made to keep the Virginia VIEW operation as a system intact.

In May of 1993, Virginia VIEW staff became concerned with the effects of continual budget cuts upon the Virginia VIEW project. Consequently, they prepared a position paper to illuminate the situation. They noted that the funding level for 1993-94, $268,800, was less than the ten-year earlier $359,000 for the 1983-84 year, when inflation was lower and the services and products offered by the project were fewer. The 1984 Virginia VIEW project did not produce the preVIEWs, Microfiche, the Career Hunt, or any specialty newspapers such as the Job Hunt and Vocational VIEWs. To complicate matters further, the cost of providing computer-based services had increased over the years as technology had become more prevalent but costlier.

For the 1993-1994 project year the budget level was reduced to a bare-bones minimum. In response to the cuts, the funding of the Project Director in the Virginia VIEW budget was reduced over a
three-year period from 50% to 20% to zero in 1993. Since that time, the Project Director has donated his time and Virginia Tech has picked up this as an in-kind contribution. Carl McDaniel, project director, and Gale Watts, project manager, reported to the VOICC committee that the Virginia VIEW staff made up for personnel cuts by regularly working overtime to continue to provide a high level of products and services.

Funding limitations also reduced allocations for ancillary materials such as posters, pens, bookmarks, and other materials aimed at publicizing the project, especially the Career Information Hotline. In-service training, both for large public school systems and public service agencies such as the Department of Corrections, the Department of Rehabilitative Services, the Department of Social Services and the Virginia Cooperative Extension, was curtailed. Public service agency employees were denied training in the use of the CIDS since they were not able to pick up the training costs due to their own significant budget cuts.

As a result of the cuts some Virginia VIEW products were discontinued. The printed directories for apprenticeship and licensed occupations were deleted. Career Hunt distribution dropped 50% when small fees for shipping and handling were attached. Virginia VIEW Research Associates spent considerable time and effort, at the expense of ongoing programmatic efforts, keeping track of the small
shipping and handling charges imposed. Neither the Complete Career Information or PreVIEWs microfiche were distributed for the 1993-94 project year. New users and users without computers were denied the complete information. The next year the funding for the microfiche was restored because Virginia VIEW patrons wrote letters and contacted funding sources.

Print support materials were cut. Virginia VIEW users were forced to absorb the duplicating costs for the worksheets and scan sheets. Classroom use of Virginia VIEW was more difficult because many teachers and guidance counselors had limited access to copying services. Additionally, Virginia VIEW staff's effort to increase services to elementary school students was thwarted because the project was unable to pay the mass printing costs and to unable to hire a part time professional to develop new elementary school products; and because of funding cuts, the elementary school newspaper, The VIEWStart, was not duplicated for a couple of years.

As a result of funding cuts, the staff made every effort to maintain an acceptable level of services. Little time was left to explore new product and service lines. National databases were not available due to their costs, even though some Virginia VIEW products could have been much improved with their use. Some state of-the-art equipment purchases were put on hold.
Virginia VIEW's Statewide Funding Support

Since 1983, the Virginia General Assembly has continued to fund the Virginia VIEW project. The project has continued to take advantage of technological change, particularly in the information preparation area; as a result, it has been able to reduce the effect of some funding cuts. Future funding may depend on the project planners' ability to expand subsidies and to continue to keep the invaluable, effectual federal-state appropriation partnership intact.

Virginia VIEW staff kept a roster of Virginia VIEW friends willing to contact legislators at a moment's notice. The list included career development professionals who hailed from the Commonwealth's more rural areas like Floyd, Warsaw, Buena Vista, Lebanon, Hot Springs, Fincastle, Wytheville, Hillsville, and Gloucester, as well as the more populated cities of Martinsville, Richmond, Newport News, Virginia Beach, Fairfax, and Lynchburg. The Virginia VIEW friends came from a diverse group of guidance counselors, community colleges, four-year colleges and universities, vocational education directors, state and local corrections employees, librarians, other private and public agencies, and private industries. Any threat to Virginia VIEW funding brought forth a series of phone calls, letters, and personal visits to General Assembly members who were often their friends, children's counselors, and neighbors.
Virginia VIEW supporters were committed to the project's goals of supplying multi-media career information to the entire Commonwealth. They were convinced that their students and clients would have to do without important career information if Virginia VIEW were not funded. A selected group of Virginia VIEW friends' letters are displayed in the Appendix B of this document, but several of the most candid excerpts are recorded below from the 1991 project year in which funding was reduced due to changes in the statewide availability of funds in the Carl Perkins Act of 1990:

Difficult economic times makes the availability of accurate career and labor market information of greater importance to all Virginians. As a helping professional I want to enlist your support for the Virginia Career Information Delivery System, Virginia VIEW....I work with citizens who are your constituents and I know they need Virginia VIEW. The information Virginia VIEW provides helps young people prepare to enter the world of work and help adults adapt their work skills to a changing economy. (Larry Sinsabaugh to Senator Joseph Benedetti, January 27, 1991)

I am writing to enlist your support for the Virginia Career Information Delivery System, Virginia VIEW. For the past ten years, we have used Virginia VIEW in our 7th and 8th grade
units on career exploration. We have found the information provided invaluable to our students.

Nowhere else have we been able to obtain, at any price, career material that is so relevant, up-to-date, and accurate for the state of Virginia. We would be at a loss to find other sources of information for our units. (Bolling C. Carter to Watkins M. Abbott, January 15, 1991, January 15, 1991)

**Imposition of User Fees**

An important aspect of the funding question was the implementing of user fees. Originally, program planners were adamant that the career information delivered by the Virginia VIEW project be disseminated to users at absolutely no cost. Virginia VIEW was modeled after the system in Michigan and Michigan Occupational Information System (MOIS), without cost to the Virginia project, had supplied expertise and allowed Virginia to use MOIS materials to model the Virginia data:

A significant similarity exists between the Michigan and Virginia Occupational Information Coordinating Committees' philosophies of providing a data base free to user sites. By supplying the occupational information free, more sites will be able to participate in the statewide system. The rural and
sparsely populated areas, which are presently underserved, can become a part of the system without undue expenditures. Consequently, citizens throughout the state will have more equal opportunities for accessing the system. (Windom, 1980, p. 13, 14).

Virginia VIEW had maintained its status as a non-profit organization, and had been able to arrange workshops sites at no charge. Program planners were fearful that imposing charges would endanger the use of several workshop sites. More than a few sites would either charge the Project fees for using the site or not allow a fee-charging organization to use the facility at all. Additionally, project staff realized that the fees required from commercial sites to accommodate the project's workshop site needs would force the project to charge more than nominal fees.

VIEW staff thought imposing charges diverted the focus of the Project from the production and distribution of accurate career information materials to becoming a project responsible for collecting fees. Additionally, the imposition of fees would require additional staffing to institute systems to keep track of the incoming monies, make deposits, and insure proper dispatch of materials. Fees imposed would take time away from the research development mission. Program leaders pointed out that information is received
from the Michigan CIDS on the basis that no fees be charged for its use.

Another consideration in fee imposition was that Virginia VIEW users would have more difficulty maintaining accurate information because imposing charges would undoubtedly lead to many users skipping a year (or more) and not obtaining the latest information thereby sacrificing accuracy. Copying and copy protecting Virginia VIEW was another problem because users currently are encouraged to copy Virginia VIEW printed materials when feasible. In fact, to reduce project printing costs, since fall 1991, users have had to copy the Occupation Search and College Search Worksheets. In 1992 Scansheets were added to the list of deleted mass-produced materials and contained in the Index. The trend of reducing printing costs continued into 1995 when the former Occupational Search Workbook was included in the 1995-1996 Virginia VIEW Index. Clearly, Virginia VIEW users had been not only encouraged to reproduce materials, but required to copy them if they desired to work with a group.

Users must make their own duplicate copies of Virginia VIEW computer programs. There is no copy-protect on the computer programs, and devising one would be extremely difficult. In fact, the cost of adding copy protection might very well exceed the fees currently imposed. Planners were concerned that Virginia VIEW
would have to pay for a compaction program the project could use because of its nonprofit status. Fees would have to cover the cost of duplication and purchasing disks.

Additionally, if fees were imposed for attending the workshops, but not for shipping materials, many persons would choose not to attend the workshops (and therefore avoid paying the fee), but would ask their materials be shipped to them. Another reason for not imposing workshop fees is that if a fee were imposed for attending the workshops, all attendees might perceive this fee as entitling them to receiving the exact same amount of materials, whether they needed them or not.

After considering all of the alternatives to workshop and user fees, project planners implemented a plan to generate enough income to cover some actual costs. Users were required to bring enough new disks to replace those required to produce Interactive VIEW to each Fall Workshop. Materials such a copy of the Virginia VIEW Microfiche and Microcomputer Index, copies of the Career Hunt, and VIEWStart, and other Virginia VIEW materials were made available to Workshop attendees, but a cost saving effort was initiated by charging small shipping and handling fees to cover the costs of mailing and packaging Virginia VIEW materials to those users who were unable to attend the Fall Workshops. By attending the Virginia VIEW Fall workshops, users were able to obtain the materials at
virtually no cost and the original program planners' goal of making Virginia VIEW available to as many users as possible remained intact even in the face if funding reductions.

Project Staffing

Virginia VIEW's university affiliation has helped the project recruit and keep qualified staff. The Original CIDS proposal recommended that the project be staffed with Co-Directors. These staff members would coordinate and manage the CIDS operation and act as liaisons to the policy board, other advisory bodies, professional organizations and agencies. Other duties required that the Co-Directors plan and establish time lines and work charts, and supervise the CIDS staff. The information manager's responsibilities would include establishing and maintaining liaisons with information providing agencies, especially the Tayloe Murphy Institute at the University of Virginia, Virginia's Occupational Information System (OIS). Additionally, the information manager would supervise the CIDS staff involved in collecting, compiling, formulating, analyzing, and interpreting career information. Information analysts would compile and prepare the CIDS data for delivery. The above staffing plan was fashioned after successful CIDS in other states, with the exception of the unusual provision for Co-Directors. The NOICC proposal recommended that Carl McDaniels, program area leader for Counseling Education at Virginia Tech, career information author, and the CIDS Feasibility Study conductor; and Jeffrey Windom, OIS
consultant to Ohio State University and Virginia Tech, serve as Co-Directors.

The CIDS staffing pattern was based on the best practices analysis found in the 1980 CIDS Feasibility Study. The state population, planning areas, information provided, multi-media format were factors in determining the staff size. Project planners proposed hiring staff already employed by Virginia Tech because they were already beneficiaries of NOICC in-service training. Figure 7 represents the original Virginia VIEW staffing plan.

Detailed job descriptions for the 1989 Virginia VIEW staff are provided in Appendix C of this document.
Figure 7: Proposed Original Virginia VIEW Staffing Chart 1980
Since VIEW's inception Carl McDaniels has served as the sponsoring professor and Project Director. Feasibility study and proposal author Juanita Snipes served as the project's first Project Manager/User Services Manager from 1980-1989. In 1989, Lou Talbutt was promoted from Information Manager, the job she had occupied since 1980, to Project Manager/User Services Manager. Gale Watts became Project Manager/Information Manager in the fall of 1989, when Dr. Talbutt left to become Guidance Director for the Roanoke City Public School System.

Other staff positions have been held by masters-level Research Associates, most of whom were pursuing doctoral degrees. The hotline staff have been counseling masters degree students or doctoral-level students at Virginia Tech completing their residence requirements. During the first few years the project hired a student computer programmer, but project management found it necessary, due to rapid technological growth and growth in computer-user demand, to hire a full-time programmer in 1993.

Over the years part-time staff have played an important role in the project's success. In the eighties, part-time staff were necessary to input large amounts of copy into word-processing units. As computer technology improved, more of the project's resources were put into computers, and, as a result, less part-time clerical help was needed. Traditionally, an undergraduate student packer has been
hired to pack the materials for the Fall workshop season. Students have been utilized to get out mailings, collate workshop materials, and perform routine clerical duties. The students gained valuable work experience and many kept the Virginia VIEW staff appraised of their whereabouts and successes. Occasionally the students, especially the undergraduates, added a bit of excitement. There was the example of the undergraduate who had never seen an IBM Selectric typewriter and had no idea how to type an envelope. Thankfully, the young woman was an apt pupil and proved to be worthy of her hire. Then there was the computer science student programmer who declared that he had heard of an Apple II, but had never seen an Apple II computer and had no idea how to program it, since it was obsolete when he worked on his first computer. He was astonished to find the dinosaurs were still in use in many school systems.

**Staff Presentation Efforts**

An important duty for all staff members was to make presentations about Virginia VIEW to many diverse groups. A typical time period might include such events as a presentation to the Cooperative Extension Staff, a staff member acting as a Plan Development Leader at the Summer Youth Institute, held annually in Staunton, and a staff presentation to Department of Corrections personnel. An entire year's events recorded for the 1990-91 program year, when the staff appeared quite busy. Excerpts from
the January, 1992 Annual Report can be found detailing specific staff activities in Appendix D of this document.

Mentorship and Support

The support of career development professionals and VOICC was instrumental in to Virginia VIEW's sustenance, particularly in the program's early years. Professionals from diverse agencies and geographical areas contributed their expertise and support to the career information dissemination mission. A typical executive committee's makeup featured representatives from the Virginia Department of Education, Vocational Education Department, Department of Economic Development, Virginia Community College System, Department of Rehabilitative Services, the Governor's Employment and Training Department, and the Virginia Employment Commission. The advisory committee offered assistance to the executive committee and provided information and feedback as to the needs of their many organizations. An illustrative advisory committee might include members from the State Council of Higher Education, the Virginia Chamber of Commerce, Virginia Department of Education, local school Vocational Education Director, private career school representative, a local economic development authority, apprenticeship training representative from the Virginia Department of Labor and Industry, employment services representative from the Virginia Department of Social Services,
Virginia Council on Vocational Education representative, Virginia Department of Corrections Representative, Virginia Department of Correctional Education representative, local community college representative, and a Virginia Employment Commission representative.

The full VOICC committee met once per quarter, and at that time Virginia VIEW staff, as one of the committee’s contractors would offer a report. Excerpts from a routine full executive and advisory VOICC Committee included such detailed information about Virginia VIEW activities as was delivered by VIEW staff at the September 19, 1990 meeting:

Information Development- The Virginia VIEW staff introduced the 1990-91 line of Virginia VIEW products which will be distributed to helping professionals at workshops held across the state this fall. The new look of Virginia VIEW was evidenced in the materials distributed at the meeting. VOICC members were given folders containing the handouts that fall workshop participants will be receiving. VOICC members were also given the new colorful Virginia VIEW posters, pens, the new Microfiche/Microcomputer Index and the College Search folder. The updated, re-formatted Complete Career Information Microfiche and the PreVIEW Microfiche was also made available at the VOICC meeting. It was explained how
the Microfiche/Microcomputer Index is the key to the entire Virginia VIEW Career Information Delivery System. The Interactive VIEW computer program was demonstrated, highlighting its new features of the computerized College Search, the PreVIEWs occupational information, and the counselor’s module which allows helping professionals to design their own evaluation inventory to obtain feedback from their students/clients regarding their use of interactive ViEW.

Another new product that will be introduced at the fall workshop is an elementary school level career focused newspaper called CloverVIEW. This tabloid has been made possible through a joint effort of VIEW and Cooperative Extension staff and will be distributed on a trial basis to elementary school counselors from selected school systems.

User Services- The demand for Virginia VIEW products continues year round. This summer the user services staff made presentations to the diverse audiences of helping professionals found at: the Mid-Atlantic Upward Bound Project; Challenge 2000 Conference; the Intermediate 4-H Congress; JOBS-ESP Conference with the department of Social Services; and the Summer Youth Institute, Governor’s Employment and Training Department.
Counselor Support

From the beginning Virginia VIEW has depended on counselor support throughout the state. Foremost in this support has been the relationship formed with the Virginia Counselor's Association (VCA). This partnership proved especially effective when the project approached the General Assembly for funds. Over the years, Ellen Chewning, VCA legislative liaison, has repeatedly sought legislative support on behalf of Virginia VIEW.

Program Evaluation Impact

Evaluation of government-funded programs is an invariable concern because the public must be convinced that the funds are being used appropriately. Several evaluation studies have been completed over the years about the effectiveness of Virginia VIEW. Watts (1989) listed the evaluative objectives for the annual counselor survey as determining: (a) the availability of the equipment needed to use the Virginia VIEW system, (b) the frequency of the overall system's use, (c) the rate of use by counselors of specific Virginia VIEW components, (d) how counselors present the system's components to the end users, and (e) the multiple applications of the Virginia VIEW system. She discovered that: (a) the system was being used as intended by its planners, (b) the multi-media approach was an effective means of career information delivery, (c) users can easily understand the directions to use the Virginia VIEW materials, and (d) counselors, vocational
educators, and career development professionals found Virginia VIEW was a valuable career information resource.

A 1994 evaluative effort by Watts and Jaques emphasized the NOICC standard that the “CIDS staff should continuously monitor and access the system’s use, impact, and performance (NOICC, 1979, p.29). Watts and Jaques found that the Virginia VIEW project staff had made considerable effort to carry out the NOICC mandate. The 1992 and 1993 evaluation survey results replayed those of earlier years in that the Virginia VIEW staff was able to use the feedback as a valuable tool to adapt, improve, and expand the project’s products and services (Watts and Jaques, 1994).

An apt summary of Virginia VIEW Evaluations was prepared by the Virginia Department of Education as a part of their report to the General Assembly and can be viewed in Appendix E of this document. Overall, the 1994 Department of Education Study emphasized that Virginia VIEW, one of only 11 state-specific systems, returned much value for the amount of money spent. The cost of only $231.00 per site was a bargain when compared with states that deliver Guidance Information System (GIS) at $2,250, DISCOVER at $1, 850.00, Coordinated Occupational Information Network (COIN) at $850.00, and Career Information System (CIS) at $850.00 per site.
Additionally, the Virginia Education Department (1994) researchers determined that Virginia VIEW: (a) was state-owned and customized to meet the Commonwealth's career information demands, (b) included 330 of the occupations most in demand in Virginia, (c) utilized other state agencies as resources in compiling the database, and (d) that the direct contact through the hotline with users ensured that their needs were being met. They ascertained that Virginia VIEW was highly regarded by its users and its innovative, interactive multi-media system has consistently achieved its goal of delivering up-to-date career information to Virginians.

This study does not attempt to critique the evaluations, but merely to report their significance. The evaluation studies have had an ongoing impact on the Virginia VIEW project because the evaluation process has allowed project planners to know and react to both the site user and, more importantly, the actual users' specific needs.

Evaluation materials were fashioned on an adaptation of the MOIS evaluation. The instrument was designed to discover the Virginia system's (a) ease of use, (b) user satisfaction, (c) user reaction to effectiveness. Additionally, users were surveyed to determine the degrees of helpfulness of support personnel. A checklist was prepared for counselors to evaluate use of the CIDS in the existing counseling program. Both formal and informal feedback
were solicited. Site visits were made frequently to observe the pilot operations and to consult with counselors. See Appendix F for a copy of the Virginia Evaluation modeled from the Michigan form distributed to Virginia VIEW Workshop attendees.

Project planners conceived that the evaluation process would involve both process (implementation) and product (outcome), and be a continuing effort during the CIDS' evolution. To achieve the evaluation goal, CIDS staff were to analyze the data and make recommendations for improving the system in the following areas: (a) system use and level of usage, (b) identification of user target groups, (c) comparative use of data files, (d) the relationship between data file use and the target populations, (e) user satisfaction, and (f) counselor satisfaction. A three-year plan was prepared to help the staff meet their assessment objectives.

Shealy (1982) developed a specific evaluation model from which to evaluate CIDS programs; she applied her findings specifically to Virginia VIEW. She addressed the program components of organization, management and structure, information development, information delivery, user services, and economic efficiency, and compared these factors with the evaluations by actual users, user site staff, and administration. Her findings were that: (a) most Virginia VIEW users were interested in exploring career options rather than making specific career decisions; (b) the Virginia
VIEW system, even though used in many group settings, was essentially an individual activity, (c) access to adequate microfiche readers affected use; (d) users and site employees expressed appreciation for accurate, current, and relevant occupational information; (e) the microfiche was used exclusively in only 18% of the sites; (g) those sites that used the microfiche rated it favorably; and (h) the need exists for current occupational information and Virginia VIEW appeared to be meeting that need.

Hedrick (1985) emphasized Virginia VIEW users’ application of the products. She found that: (a) the users did access the occupational information after completing the career search, (b) users are basically satisfied with the Career Search activity, and (c) the Career Search is an exploration tool, but counselors continue to perceive it as an interest inventory. She suggested that counselors and VIEW staff encourage a wide use for the program through promotion of Virginia VIEW’s use by 4-H, church groups, and by civic organizations such as the Kiwanis and Ruritans, Boy Scouts and parent groups.

Another 1985 study, completed by the Virginia Employment Commission, reported that VOICC operated two highly successful information disseminating and training programs, Virginia VIEW and Virginia Occupational Information System (VOIS). The study further revealed that the level of expenditures incurred were justifiable for
benefits received for Virginia VIEW. Other topics contained in the study were (a) the possibility of cost reductions, (b) possible reductions in program scope, and (c) contracting parts of the program to the VEC. The VEC study mentioned the imposition of user fees but rejected imposing fees because:

Institution of User Fees
This is not prudent or viable as those needing and using services are least able to pay and would have to be denied another service that aids them to be an asset to society rather than a liability. This a primary objective of this program.

At the conclusion of the report, the VEC recommended that (a) the Virginia VIEW contractor develop a sound needs assessment, (b) that funding be kept at current levels, (c) VOICC and the VEC develop detailed specifications for program operations, (d) VOICC and the VEC examine organizations qualified to submit proposals for competitive bidding. Obviously, the VEC was unable to secure other suitable bidders for the Virginia VIEW program since Virginia Tech has remained its sole contractor (VEC, 1985).

Watts (1989) reported that counselors were using the computer versions of Virginia VIEW and appeared pleased with the products. Conrad (1989) completed a study comparing Virginia VIEW with DISCOVER, a commercial computer-assisted program
using Shealy's (1892) evaluation model. He found no statistical difference in the use of Virginia VIEW and DISCOVER. Yet the cost of his obtaining DISCOVER was significantly higher than his no-cost use of Virginia VIEW. Both Hedrick and Conrad addressed difficulties they encountered in attempting to determine how people choose and assimilate career information.

The most recent outside evaluation was completed by the Virginia Department of Education in response to the Virginia General Assembly’s request. Legislators wanted to know about the project's effectiveness and were interested in placing Virginia VIEW’s administrative functions with the most appropriate state agency. The 1994 study recommended that administrative review of the program be moved to the Department of Education (Department of Education, Commonwealth of Virginia, 1994).

Each year's workshops included feedback from attendees. Their evaluative comments were used to plan for the next program year. Planners have reacted and sought to make programmatic changes based on such counselor comments. Some comments recorded in 1983 follow:

Please include in your presentation a demonstration of the computer, etc., used in the search process. Our responsibilities in our schools change, in some cases each year. Please do not
assume that we are not in need of refresher procedures, materials, etc.!! Just one set-up with demonstrations would have been sufficient.

People not exposed last year need more information.

Have an actual demonstration for the counselors- rather than just talk about how to do it.

Suggestion- Have easel available for persons who do summary from each group at end of session so that his/her hands can be free.

I learned some new ways in which I can more effectively use the Virginia VIEW with students in JVG [Jobs for Virginia Graduates] classes.

I definitely like the Virginia Colleges being added to the microfiche,

Most important 2 1/2 hours I've spent as a counselor. So glad Virginia is making this available. FREE!!! We've been paying for pieces of this in a hodgepodge fashion!
The information, product, and service development over the years has reflected that planners took the information recorded above and used the counselor comments in program planning areas.

Another Evaluation Means

Much can be learned by comparing Virginia's approach to those of other states. Initially, Virginia VIEW's planners sought the guidance from other states to develop a CIDS scheme designed specifically for Virginia (McDaniels, et al., 1980). Until the last several years the project has sought the use of Michigan materials to complete the program information. According to the Association for Computer-Based Career Information Systems (ASCIS) directory (1995), Virginia and Michigan still operate similar programs as Virginia has proven to be an apt pupil. For example, in the 1994 program year, Virginia had 1,392 sites compared to Michigan's 1,561 sites, even though Michigan is a more populated state. The ASCIS statistics reported that Missouri, with Missouri VIEW's 1,592 sites, was the only other state with over 1,000 sites. On the other hand, Hopkins et al. (1992) reported that Michigan had 2469 user sites while Virginia had 2021. Florida, the other state CIDS that helped fashion Virginia VIEW, had 809 sites and produced a Middle School Tabloid. Unfortunately, the ASCIS Directory did not furnish its users with information as to cost of the system to users so there is no way to tell if fees levied at user sites contributed to a particular system's lower rate of use.
Factors that favor Virginia's high number of sites are that materials are obtained at no cost to the individual user sites at the Fall workshops, materials may be used with class-size groups without computer investment, materials were produced for older computers, and technical support is readily available at no cost to the users by dialing the career information hotline.

Program Evaluation Goals

Virginia VIEW researchers have long been aware of how difficult it is to evaluate career information dissemination. Yet the project has sought and implemented evaluation efforts. While most states have been content to hire computer-based commercial systems to meet their CIDS obligations (Hopkins, et al., 1992), Virginia has sought to produce a multi-media system at no cost to users demanded by its diverse user base. If the numerous evaluations have a common theme, it is that Virginia VIEW users want career information materials with substate data that will be available at no cost to the users.

Information Collection

An undated document, devoted to the project's General Information Development Procedures, probably from the mid-1980s (because of the mention of the Tayloe Murphy Institute now renamed the Weldon Cooper Center for Public Service at the
University of Virginia), was found in the Virginia VIEW archives. Virginia VIEW staff adopted information development procedures consistent with those of NOICC and the Association of Computer-Based Systems for Career Information guidelines. The staff prepared accurate, current, and reliable information for the CIDS. The information developers followed a written format adapted from a guide furnished by the Michigan system. Occupational Briefs, conforming to NOICC guidelines, were classified by Standard Occupational Classification (SOC) and Dictionary of Occupational Titles (DOT) codes and included descriptive information. The NOICC regulations required Virginia VIEW staff to include: (a) descriptive information about the occupation, (b) requirements, (c) economic information and opportunities, (d) preparation information, and (e) educational information. In addition to information on occupations, Virginia VIEW occupational briefs contained facts on post secondary educational opportunities and informed users about programs and degree offerings. Other offerings included material on financial aid, apprenticeship opportunities, all-service military information, secondary school subjects, and other vocational training data.

The Michigan Occupational Information System (MOIS) microfiche and the Occupational Outlook Handbook were employed to assist the Virginia VIEW staff in their yearly update efforts. General categories of occupations were devoted to the nature of the occupations and dealt with working conditions, national outlook,
national salary, worker requirements, and sources of more information. The update process reflected changes in the Michigan system as it was adapted to the Virginia system. The information developers entered their changes on a word processor and then proofread the information for accuracy. Often the Virginia VIEW staff read the occupational briefs, especially lengthy or new briefs, aloud to each other to ensure accuracy.

The read-aloud proofing system was used for all Virginia specific information. Virginia state data (outlook, salary, and training) were recorded in a format consistent with the original occupational files adapted from Michigan and procedures established by the Virginia VIEW staff. The salary and outlook sources were consistent with the Occupational Information System (OIS) publication prepared by the Tayloe Murphy Institute. Current salary surveys were supplied by the Virginia Employment Commission (VEC).

The general files were updated annually through a series of review panels. The post-secondary school information included information items such as tuition, enrollment, programs, and degrees offered. Each educational institution was asked to respond to an annual update request. Information on other training opportunities was updated from agencies such as the Department of Commerce, Virginia Department of Education, and the Woodrow Wilson
Rehabilitation Center. Moreover, the Virginia VIEW staff made annual revisions of the apprenticeship, financial aid, and secondary school subjects file. In addition to staff revisions, processionals from agencies and schools throughout the Commonwealth were asked to review the information for accuracy and clarity. The review professionals included, but were not limited to, representatives from the Virginia State Council of Higher Education, the Virginia Loan Authority, the Virginia Department of Labor and Industry, and the United States. Department of Labor Apprenticeship Division. Additionally, Military Occupational Training Data (MOTD) was provided by the Department of Defense. This included 210 military occupations for enlisted and officer personnel. Information about each military occupation contained facts on working conditions, duties, worker requirements, employment and outlook for the military and aptitudes. Virginia VIEW staff made every effort to field-test additions and additions to the system.

The information developers devised procedures for adding new information to the Virginia VIEW system. They consulted the annual surveys from the workshops for information that addressed requests for new data. As a result, new information about job search and enrollment trends was added. Another user suggestion was to reduce the reading levels required so the information would be more accessible to younger students and those with low reading skills.
Eventually user requests led to the development of the Virginia VIEW PreVIEWs files.

Project planners realized the importance of securing reliable sources of information because without them the project could not disseminate accurate, up-to-date information. A diverse group of contributing sources was created to provide the project the necessary data the public requested. Great care has been taken over the years to ensure the information is up to date. One example of this is that the publication of the *Occupational Outlook Handbook* is as eagerly awaited every other year as are new cars in the local car dealer's showroom. Since the OOH editor's son is a Virginia Tech graduate and former Virginia VIEW student helper, Carl McDaniels was able to arrange an OOH copy for the project before the publication date each year. Figures 7 and 8 contain information about the Virginia VIEW Information Data Base and the contributing sources to the Virginia VIEW Information Data Base.

**Virginia VIEW Center Core**

The Virginia VIEW central information data base formed the very core of the system. The focal source of the Virginia VIEW system for national information was the Department of Labor, Bureau of Labor Statistics (BLS). The BLS main contribution is the *Occupational Outlook Handbook* with its information about the nature of the work, working conditions, employment, training and
advancement, job outlook, earnings, related occupations, and sources of additional information. Other BLS data in Virginia VIEW products are found in the Dictionary of Occupational Titles, and occupational projection data.

Virginia state and sub-state data were obtained from the Virginia Employment Commission, Economic Information Services. These data were gleamed from the manufacturing and salary surveys and salary data collected by the VEC and were a significant contribution to the Virginia VIEW data base.

Other Virginia state agencies such as the State Council of Higher Education, and the Virginia Department of Education furnished educational training and supply information. The Virginia Department of Personnel and Training supplied Virginia VIEW with the Virginia State Employee Compensation scales, challenging the Virginia VIEW staff to keep up with General Assembly actions concerning state employee pay. The state salary data served as a reference point to many public and private industries and agencies; they consult it frequently for average Virginia salary information. Certification and Licensure data are provided by the Virginia Department of Health Professions and the Virginia Department of Professional and Occupational Regulation. Virginia VIEW staff members extend much effort to keep in touch with these agencies because each year the General Assembly adds, changes, or deletes occupational regulations.
Virginia VIEW established information exchange relationships with many different organizations. Specific information is provided by the Virginia Department of Rehabilitative Services, Virginia Community College System, Department of Criminal Justice, Virginia Aviation Department, the Governor's Employment and Training Department, Virginia Loan Authority and the many various Virginia Proprietary Schools. The project's careful and wide-spread information collection for its data base has resulted in its many diverse users in public, private agencies and industries to seek the updated Virginia VIEW data each year. They all have said they can find no other source that is as up to date. Figures 8 and 9 display the Virginia VIEW contributing sources and information data base.
Figure 8: Contributing Sources to the Virginia VIEW Data Base
Chapter 5

Virginia VIEW Products and Services

Introduction

Chapter 5 includes commentary on particular Virginia VIEW products and services. Since its inception, the Virginia VIEW project has sought to produce career information materials that best suit their consumers' desires within the projects' allocation limitations of providing materials at no cost to the ultimate user. This mission has compelled project planners to adapt to both technological change and funding restraints over the life of the project. This chapter is divided into two major sections: specific Virginia VIEW products such as the Complete Information Microfiche, the PreVIEWs Microfiche, the Complete Microfiche/Microcomputer Index, Interactive VIEW, the Career Hunt, etc.; and specific Virginia VIEW services such as the workshops and hotline.

Specific Virginia VIEW Products

This segment contains information about the many Virginia VIEW products created by staff over the years. Juanita Snipes, User Services Manager for the project, 1980-1989, was asked if she had a specific service or product she was exceptionally proud of over the years. Her response was that no particular Virginia VIEW product came to mind because the products were envisioned to fit together as
a system. Mrs. Snipes commented that it was the entire Virginia VIEW system's use by its many users throughout the Commonwealth that made her proud (personal conversation with Juanita Snipes, May 16, 1996). Every effort has been exercised to ensure that the array of products is inclusive and in the proper categorical order, but since the project archives offer no complete listing in either chronological or categorical order, error is possible. Nevertheless, the catalogue of products prepared over the years is as creditable as possible. This categorical presentation for years up to 1989 has been complied with the assistance of Lou Talbutt, Information Manager 1981-1989 and Project/Information Manager 1989, as a result of a personal communication on April 2, 1996. The complete list of Virginia VIEW products are compiled below in the following sections: (a) original study, (b) complete information and support products, (c) basic print products (d) promotional products, and (d) tabloids.

Original Study

As mentioned before, the Feasibility Study served as the project's foundation document and at first glance it is almost senseless to list it in a review of Virginia VIEW products. Yet, the study results predetermined most of the products that followed and its importance can not be overly emphasized. The study's front place is deserved in a listing of Virginia VIEW products.
A Feasibility Study for a Career Information Delivery System for Virginia- This document was the first effort of what would become the Virginia VIEW staff. The Feasibility Study served as the foundation document for the new project in that its recommendations formed the nucleus of its mission, goods and services offered, and specific program goals.

Complete Information and Support Products

This portion is devoted to those Virginia VIEW products that are contained within the complete information product structure. The products listed are below are mostly interdependent and form the essence of the data, people, and things relationship driven information system. The following products comprise those items that more than a few guidance counselors have determined they would want in their career centers if they could have nothing else at all.

The Complete Microfiche/Microcomputer Index 1982-95- The Index is essential and serves as a key to the Virginia VIEW system. The first edition appeared in 1981 and was essentially an alphabetical listing of the 150 occupations found in the system, designed to help the user to more appropriately use the data, people, things procedure to access the information contained in the Virginia VIEW Complete Information Microfiche. Over the years the Index has been expanded to include career information resources such as bibliographies,
worksheets, and scan sheets. The addition of the worksheets and
scan sheets in the Index has been the result of funding cuts over the
last few years.

The Complete Information Microfiche— the first career information
packet of microfiche, produced for the first time in 1981, featured
150 occupations with later editions climbing to 350 occupations.
Based on the Data, People, Things hierarchy, the information
provided the user a method to categorize the career information data
and provided specific occupational information. Each VIEWscript or
occupational profile included a VIEW interest inventory designed to
acquaint the user with the specific occupation's relationship with
data, people, and things with along with Standard Occupational Codes
(SOC) and Dictionary of Occupational Title (DOT) Codes. Other
VIEWscript features contained information about (a) Nature of the
Occupation, (b) Working Conditions, (c) Worker Requirements, (d)
Earnings and Advancement, (e) Employment and Outlook, (f)
Education and Training Dial (later versions featured a computer), (g)
Related Education and Training, (h) Related Education and Training,
(i) Review Questions/Supply Data, and (J) Sources of More
Information. From 1981-1993, the microfiche included artwork
depicting the Virginia VIEW dog, modeled after Virginia’s official dog
the foxhound, performing each featured occupation. The art work
served to make the information appealing to a wide variety of users
and space the information so each VIEWscript contained exactly 14
pages. In addition to each 14-page VIEWscript, the microfiche contained information about Virginia’s (a) two-year private and public colleges, (b) four-year public and private colleges, (c) private career schools, (d) financial aid, (e) apprenticeship occupations, (f) occupational licensure information (g) military occupations, (h) job search methods, and (i) additional training opportunities such as that available at Woodrow Wilson Rehabilitation Center and a complete listing of nursing schools. The approximately 6,000 pages of specific career information can be accessed by using the Career and College Search accessing strategy. A complete 1988 VIEWscript for computer operator may be found in Appendix G in this document.

The Virginia VIEW Occupational Search- A computerized product that features the accessing method to the Virginia VIEW career information usually used in conjunction with The Complete Information Microfiche. This product is useful to people who do not have large amounts of space available on their computers.

The Virginia VIEW Occupational Search Workbook- The Virginia VIEW occupation search was designed to assist each person to identify unique strengths, talents, abilities, and preferences for activities. Users were allowed to specify personal preferences and develop a personal preference profile. The Virginia VIEW occupations listed contained specific requirements relating to data, people, and things and the workbook was constructed to allow the
user to select those occupations that best suited that unique individual. Occupational search workbook users were asked their preferences as to interests, areas of work, physical strength, physical capabilities, working conditions, educational levels, and temperaments. This accessing strategy streamlined the users’ approach to occupational information and provided them with methods to investigate only those occupations that met their interests, abilities and educational attainment goals. These workbooks were designed to be used in either a classroom or with individuals. Virginia VIEW staff distributed enough workbooks for each of the 2,500 sites to have enough to work with classes or groups and encouraged career development professionals to use the workbooks over and over. The workbook was designed to be used with either The Complete Information Microfiche or computerized Virginia VIEW version, Interactive VIEW. Excerpts from the workbook that demonstrate this accessing strategy can be retrieved in Appendix I of this document.

**Virginia VIEW Occupation Search Worksheet**- These worksheets were intended for use with the Virginia VIEW Occupational Search Workbook. Users would complete the half-sheet form and then either use the microfiche or computer program to access the list of occupations identified in their search. Until 1993 these sheets were bound by the Virginia Tech Print shop in pads to be distributed at the fall workshops. In 1993 the sheets were reproduced in the
Virginia VIEW Occupational Search Workbook in order to allow the project to save the printing expense. The worksheet can be located in Appendix G of this document.

Scan sheets- Scan sheets were created to allow Virginia VIEW users to take their personal preference profile findings recorded on the Virginia VIEW Worksheet browse lists of the featured occupational titles and choose the ones whose characteristics matched their individual profiles. This paper and pencil method of using Virginia VIEW encouraged wide use of the occupational information because it required the site to be able to use the system without any financial outlay if a microfiche reader was available.

The Virginia VIEW College Search- The Virginia VIEW college search, first produced in 1985, was fashioned after the Career Search and served as a strategy to access information collected about Virginia’s public and private two- and four-year institutions of higher learning. Users develop a personal preference profile based on the following factors: (a) Length of training desired, either two or four year; (b) Affiliation of Institution, either public or private; (c) Size of Surrounding Community, Town/City 1-10,000 population, Town City 10,000-70,0000, Suburban, Urban, and Rural; (d) enrollment, six categories ranging from under 1,000 to 11,000 and over, and cost, eight different categories ranging from $1,200 to $16,000 and over; (e) region, Far Southwest, Roanoke/Danville, Lynchburg/Lower,
Shenandoah Valley, Charlottesville/Harrisonburg, Tidewater and Eastern Shore, and Northern Virginia; and (f) Admissions Selectivity, Open to all high school graduates, Liberal, May accept students from the lower half of graduating class, Traditional, accept students from the top 50% of high school graduating class, and Selective, Accept students from the top 25% or above from the high school graduating class. The information for the college search is collected from Virginia colleges and universities annually. Over the years this collection has yielded some interesting results. For example, both Radford University and Virginia Tech are in the Montgomery County area, yet Radford University personnel reported they fit the Town/City category while Virginia Tech personnel claimed their school is in a Rural area. Counselors are encouraged to inform their clients that the college information is self-reported. Since 1990, the college search information has proved even more valuable to Virginia VIEW users. The school information has included the most up-to-date tuition and cost information for comparable selection obtainable, since the cost of attending college in the Old Dominion has increased dramatically each year.

**College Search Worksheet**- Fashioned on the **Career Search Worksheet**, this half-sheet paper and pencil product allowed users to develop a personal preference profile and record the results.
College Search Scan Sheets- The College Scan sheets were created to allow Virginia VIEW users to take their personal preference profile findings recorded on the College Search Worksheet to browse lists of the featured institutions of higher learning and choose the ones with characteristics which matched their individual profiles.

Interactive VIEW- Interactive VIEW, the computer version of the entire Virginia VIEW information system. Originally, the project planners were impressed with Michigan’s system. They were aware at the project’s inception that a state-developed computer program would be a vital project product (personal conversation with Jeffrey Windom, first VOICC Executive Director, March 12, 1996). The very first computer-based product was introduced circa 1983 in the form of the occupational search. Many first-time Virginia VIEW and computer users found manipulating the occupational search information both novel and entertaining as well as informative. After completing the occupational search on computer, the users were then required to access the occupational information stored on microfiche. In 1989, as a result of hiring Virginia Tech student programmers, the Virginia VIEW Staff was able to offer the complete information system in the IBM and Compatible format. Later the service was expanded to include IBM, IBM Compatible, and Macintosh formats.
The over 6,000 pages of information included in the computerized system covered the following areas: (a) as many as 330 VIEWScrips explained above in the microfiche section; (b) Virginia licensure requirements; (c) national certification requirements; (d) post secondary information covering as many as 175 institutions; (e) additional training information on nursing programs, flight schools, private detective and security schools, and flight schools; (f) general financial aid information; (g) apprenticeship information that contained data formally found in the Apprenticeship Directory; (h) relating school subjects to occupations, a list of the occupations that use the knowledge, skills and abilities that can be learned in 185 subjects taught in Virginia public schools; and (i) military occupational information containing data on 137 enlisted and 70 officer military occupations.

**PreVIEWs** - In their effort to meet their users' expectations and further their mission of disseminating career information to all Virginians, Virginia VIEW planners innovated a new Virginia VIEW product, the PreVIEW. The PreVIEWs were designed by using the existing occupational briefs as the base content for the low reading-levels briefs. Appropriate pages were copied from existing files, cut and pasted to include the following categories of information: (a) duties, (b) workplace, (c) method of entry, (d) special requirements, (e) earnings, and (f) employment.
 Portions of the briefs were rewritten using the recommendations of Dr. J. Niles, a Virginia Tech reading specialist. Dr. Niles provided two samples to assist the Virginia VIEW staff. He suggested they use words with no more than four syllables whenever possible and to keep difficult words to a minimum. Additionally, he recommended that sentence length be kept to 20 words or less, that the amount of information per page be reduced, and that bold type be utilized. Each PreVIEW should contain no more than three pages. Graphic symbols were employed alongside the list of duties.

Dr. Niles' title-heading suggestions were followed and are listed as follows: (a) Where do I work? (b) How do I enter this job? (c) What else is required? (d) What is the pay? (e) How many jobs will there be? This uncomplicated method of organizing the PreVIEWs served to make Virginia VIEW materials more available to a variety of special needs populations.

The first PreVIEWs set emphasized those 28 occupations that required less than a high school diploma. Again, each PreVIEW was entered into the word processor and read aloud by one staff member to another. Corrections were made. Graphics were pasted on to each PreVIEW from the appropriate graphic file. The files were then arranged in alphabetical order and page according to the microfiche format.
Each year the PreVIEWs are updated using a similar process to the regular VIEW scripts. Virginia VIEW information updaters have an added responsibility to make certain that the reading levels are pertinent. Staff members worked with Readability Estimating Graphs and applied techniques recommended by reading experts found in instructional information. For example, the Sarkees and Scott (1986) work on vocational special needs was consulted to assist the staff in evaluating reading levels.

**Basic Print Products**

The following products have served as ancillary additions as project staff has been available to work on various projects. Over the years, these stand-alone publications have served as desk-aids to career development professionals throughout the Commonwealth. Some of these publications were later merged into the complete information system.

*Licensed Occupations in Virginia*-This document was the first Virginia VIEW product distributed throughout the Commonwealth. Published in 1980, this publication, the first compilation of information on occupational licensing ever done in Virginia, was an example of what could be accomplished by assembling data from different agencies such as the Virginia Employment Commission, the Virginia Department of Labor and Industry, the Virginia Department
of Education, the State Council of Higher Education, and Virginia Tech to create a helpful source document for public use. A section on How to Use the Directory guided the user in determining the regulations for over 50 occupations in Virginia. An additional section provided information on Apprenticeship Opportunities in Virginia. The basic information found this product has been incorporated into The Complete Information Microfiche and Interactive VIEW. Excerpts from this directory can be found in Appendix J of this document.

Apprenticeship Directory—First published in 1981, the apprenticeship directory compiled information from several Federal and State agencies and was a joint effort the Virginia Employment Commission, the Department of Rehabilitative Services, and the Governor’s Employment Council, now the Governor’s Employment and Training Department. Its contents contained information about apprenticeships and featured the following trade areas: (a) Industrial and Related Occupations, (b) Service Occupations, (c) construction occupations, (d) occupations in transportation activities, (d) scientific and technical occupations, (e) mechanics and repairers, and (f) health occupations. Sub-state wage surveys and employment projections displayed in this document provided the users additional information. The apprenticeship directory was published on an as needed basis through 1988, when funding restrictions prohibited its production. Sample selections of apprenticeship occupations and
information in the 1981 and 1988 editions of the directory are included in Appendix K of this document.

*Virginia VIEW Annual Bibliographies 1982-1995* - An annual bibliography included the most up-to-date career information materials possible. Virginia VIEW staff combed the latest publisher catalogues, and, in many cases, read and reviewed, the sources. These resources reflected the many career information sources contained in the Career Information Hotline Library. As in the case of all Virginia VIEW products, the career information hotline number was prominently displayed should users have any questions or difficulties obtaining the career information featured. A variety of Virginia VIEW Bibliographies are contained in Appendix L of this document.

**Promotional Products**

This category includes those products designed to promote the projects products and services. As funding became tighter, project staff made every effort to make these products informative as well as promotional.

*Posters* 1985-90, 94, 95 - Virginia VIEW posters were first created to promote the Career Information Hotline. They became a popular part of the workshop tour because participants looked forward to seeing each new year’s edition. Some of the more memorable early
posters included (a) a line art drawing poster depicting people engaged in different occupations, (b) a bright yellow poster depicting a person's head with a maze, (c) a cow jumping over the moon poster, (d) a bright blue poster with a telephone receiver and Virginia VIEW written in a white background, and (e) a career for the 90's poster depicting dogs on ladders climbing over the letters. Posters were not produced for three years from 1991-93 because of funding cuts and an ample supply of the 1990 posters. In 1994 and 1995 Virginia VIEW staff designed new posters to disseminate specific career information such as (a) Jobs With the Most Openings in the United States 1990-2005, (b) Fastest Growing Jobs in the United States 1990-2005, (c) Licensure and Certification Information for Health Related Occupations in Virginia (d) Virginia's Fastest Growing Occupations 1990-2005, (e) Jobs With the Most Openings in Virginia 1990-2005, (f) Today's Temporary Worker, (g) Investigative Protective Service Occupations, (h) Virginia's Two Year Public and Private Institutions, (i) Virginia's Four-Year Public Colleges, (j) Virginia's Four-Year Private Colleges

Bookmarks 1985-90- At first, Virginia VIEW book marks were created to go with each year's poster. In 1990, the book marks were reproduced in generous enough quantity to ensure enough for several years. Packets of 25 were given to workshop participants, conference attendees, and other professionals to promote the use of the Virginia Career Information Hotline, (800) 542-5870. Bookmarks
were discontinued in 1994, as a result of funding reductions and Virginia Department of Education Recommendation. Bookmark samples are found in Appendix M of this document.

**Tabloids**

At first, the tabloids were intended for high school sophomores to have portable career information they could take home to their parents. *The Career Hunt* proved to be so popular that it was soon requested by both agencies and schools. The Virginia VIEW produced tabloids appear below:

*The Career Hunt 1986-1995*- First published in 1987, the first *Career Hunt* was targeted to all sophomores attending Virginia’s public schools. Later, the tabloid, a compendium of occupational and educational resources, became a prized publication by agency personnel working primarily with adults because of its contents and portability. The earlier editions featured color covers, but since 1991 the tabloid covers have been black and white, featuring the Virginia VIEW mascot the American foxhound and the official Virginia State Dog, in order to lengthen its contents to include more occupational information. A typical edition contained information and articles about the following topics as the table of contents for the 1995 edition illustrates: (a) Virginia’s Job Market: Opportunities for everyone, (b) High Schools that Work, (c) Consider a School to Work Transition Program, (d) Vocational Education Can Prepare You for a
Career, (e) A Word About All Vocational Education Program Areas, (f) Investigative Protective Services Occupations, (g) 330 Virginia Occupational Opportunities, (h) Virginia's Post secondary Education Institutions, (i) Virginia's Proprietary Institutions, (j) Today's Apprentice, (k) Vocational Gender Equity, (l) Internships, (m) $20,000 Part Time? Virginia Army National Guard, (n) Job Corps, (o) Virginia Adult Education Opportunities, (p) Virginia Department of Rehabilitative Services, (q) Virginia Department of Social Services ESP/JOBS, (r) Job Training Partnership Act (JTPA), (s) Virginia Employment Commission, (t) Transition Planning Building Your Future, (u) Creating a Professional Portfolio, (v) Finding About Job Openings, (w) Classified Ads, (x) Job Application - Neat and Complete, (y) Job Search Correspondence, (z) Having a Winning Job Interview, and ((a)) Virginia's Small Business Development Centers. The Career Hunt has become a collaborative effort over the years as Virginia VIEW staff have contacted the different agencies and educational institutions to contribute different articles. Reproductions of the 1992 and 1995 The Career Hunts' covers can be found in Appendix N of this document.

The CloverVIEW- The CloverVIEW, published in 1990, was the first effort at producing an elementary school tabloid. It contained developmentally appropriate activities to engage students in occupational exploration. This product, a joint effort between Virginia VIEW and the Virginia Cooperative Extension was only
published once, but it proved to be a big statewide success with the elementary counselors.

The VIEWStart 1991-1995- Because of the success with the CloverVIEW, Virginia VIEW staff decided to produce an elementary school product for statewide distribution. Puzzles, poems, and visual exercises specifically intended for early and middle grades featured different occupational exploration and career development activities. That popular 8-page tabloid was known as The VIEWStart.

The 1991 Job Hunt- This tabloid, sponsored by the state department of Vocational Education, was created for the graduating seniors enrolled in vocational education programs throughout the state. Leftover copies were distributed to different agencies such as the Department of Rehabilitative Services, the Virginia Employment Commission, and Job Training and Partnership programs. The publication contained sections on job search techniques such as resume writing, answering wantads, interviewing and preparing job search correspondence. This product proved to be very popular and many requests were made for its re-issue. A reproduction of The Job Hunt's cover can be found in Appendix N of this document.

The 1991 Vocational VIEWS- Again, this tabloid, sponsored by the state department of Vocational Education, was created for students and their parents enrolled in vocational education programs through
out the state. It featured opportunities in vocational technical education. Articles about vocational education sites such as Floyd S. Kay Technical Center in Rockbridge County were featured for their innovate programs requiring specific program plans for students and the integration of academic and vocational education subjects. For example, tasks were assigned to integrate English and speech skills when students were asked to prepare a group discussion for an auto body repair class. Problem solving and critical thinking skills were applied to real life situations. *Vocational VIEWS* contained (a) a graph displaying information about occupations in which large numbers of 16-24 year olds were employed, (b) sample vocational program plans, (c) scholarship programs for vocational students, (d) information on the 2 plus 2 programs, and (e) interviews with successful vocational education students. A reproduction of the *Vocational VIEWS’* cover can be found in Appendix N of this document.

**The Career Hunt for Veterans** - This publication was a collaborative effort between the Virginia State Department of Veterans Affairs, U. S. Department of Labor and Virginia VIEW to do a special *Career Hunt* for Veterans in 1993. At the request and invaluable support of Benjamin Trotter, U. S. Dept. of Labor, Virginia Veterans Program Director, this publication was used in the military’s Transitional Assistance Program (TAP) designed to assist the many veterans created by the military downsizing at the end of the Cold War. It
contained information that assisted military personnel to convert their military job titles into civilian ones whenever possible and articles encouraged the veterans to successfully market their military experience in the civilian labor market. Over 100,000 copies of this well-received product were distributed to military personnel and veterans throughout the Commonwealth. A reproduction of The Career Hunt for Veterans’ cover can be found in Appendix N of this document.

Workshops

Guidance Counselors and Career Development Personnel, inspired by the nascent Virginia VIEW project, appeared to look forward to attending the Fall workshops. Various user evaluation forms included workshop participants’ comments that they wanted the up-to-date information dispensed each year. In the beginning, they came to take back up-to-date occupational statistics and information on Virginia-based education and training materials that had, hitherto, had been unavailable to them. Cynthia Russler Sterret, User Services Specialist, 1981-83, reported that first workshop participants were primarily school personnel being introduced to the new Virginia VIEW career information system. She remembered that the participants were very positive about the new program. They had never seen such conglomerate of occupational information as was in Virginia VIEW before. They immediately recognized its value (personal conversation with Cynthia Russler Street, May 1,
1996). These workshops were held at local hotels and included an all-day program created for guidance directors and other career development personnel (personal conversation with Carl McDaniels March 21, 1996).

Over the years, the career development personnel have come to depend on receiving Virginia VIEW materials to augment or, in more than a few cases, comprise their career information acquisitions. Juanita Snipes, User Services Manager 1980-89, recounted the excitement generated at the workshops because the Virginia VIEW workshops provided the first opportunity for Virginia counselors in the many different settings such as schools, social services, corrections, rehabilitation, mental health, and higher education were to meet and network (personal conversation with Juanita Snipes, May 16, 1996). Virginia VIEW users were composed of representatives from many diverse sites. Figure 10 depicts the various sites covered through December 1995.
Virginia VIEW User Sites as of January 4, 1996

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Elementary School</td>
<td>104</td>
</tr>
<tr>
<td>Public Middle School</td>
<td>254</td>
</tr>
<tr>
<td>Public High School</td>
<td>464</td>
</tr>
<tr>
<td>Private School (K-12)</td>
<td>42</td>
</tr>
<tr>
<td>Community College</td>
<td>52</td>
</tr>
<tr>
<td>4 Year College/University</td>
<td>58</td>
</tr>
<tr>
<td>VA Dept of Rehab</td>
<td>40</td>
</tr>
<tr>
<td>VA Dept of Social Services</td>
<td>41</td>
</tr>
<tr>
<td>VA Dept of Vis Handicapped</td>
<td>5</td>
</tr>
<tr>
<td>VEC</td>
<td>30</td>
</tr>
<tr>
<td>Hospital</td>
<td>8</td>
</tr>
<tr>
<td>Libraries</td>
<td>58</td>
</tr>
<tr>
<td>Extension Office</td>
<td>8</td>
</tr>
<tr>
<td>JTPA</td>
<td>44</td>
</tr>
<tr>
<td>Private Counseling</td>
<td>53</td>
</tr>
<tr>
<td>Military</td>
<td>24</td>
</tr>
<tr>
<td>Other</td>
<td>22</td>
</tr>
<tr>
<td>VA Dept of Corrections</td>
<td>7</td>
</tr>
<tr>
<td>School Administration</td>
<td>16</td>
</tr>
<tr>
<td>Vo Tech Center</td>
<td>31</td>
</tr>
<tr>
<td>Adult Education Center</td>
<td>16</td>
</tr>
<tr>
<td>Joint Owned Vo Tech Center</td>
<td>6</td>
</tr>
<tr>
<td>Dept of Correctional Ed</td>
<td>17</td>
</tr>
<tr>
<td>2 Yr Private College</td>
<td>6</td>
</tr>
<tr>
<td>Community Based Agency</td>
<td>32</td>
</tr>
<tr>
<td>Private Career School</td>
<td>1</td>
</tr>
<tr>
<td>Voc Ed Directors</td>
<td>10</td>
</tr>
<tr>
<td>VOICC</td>
<td>1</td>
</tr>
<tr>
<td>Business</td>
<td>11</td>
</tr>
<tr>
<td>Unspecified</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL User Sites</td>
<td>1465</td>
</tr>
</tbody>
</table>

Figure 10: Specific Virginia VIEW 1995 Site Distribution
Workshop Planning

Virginia VIEW Staff have began to plan for the Fall workshops as soon as a post-mortem had been done for the previous fall sessions. Ideas for new sites, future programming, and changes in logistics, were apt to be current immediately after the workshop season completion. As early as January strategies to get ready for next Fall involved (a) making preliminary arrangements for new sites, (b) getting bids on workshop supplies such as pencils and pens, (c) preparing correspondence to guidance directors about dates to avoid, and (d) checking out audio-visual equipment and making recommendations for necessary replacement. Ideas for posters and themes were researched.

Early program records indicate that workshop planning was complete in the early summer. In 1992, due to fee impositions, workshop invitations were completed much earlier. The schedule was no longer tentative by April 1, because workshop invitations had to be sent before the close of school so Virginia VIEW planners could estimate the amount of fall workshop materials to order.

Preparing for the Fall workshops required that (a) workshop topics be researched and objectives defined in time to reproduce handouts, (b) transparencies and/or slides be made, (c) audio-visual aids be secured, and (d) adequate time be available to get ready by producing workshop scripts and practicing. Workshop topic research
efforts involved staff time in the library, informal polling of Virginia VIEW users about proposed topics, and telephone contacts with various consultants in workshop topic areas. The immense effort extended by Virginia VIEW staff in workshop planning was apparent as evidenced by the 1991 handout describing the Fall workshops’ goals and objectives:

Fall 1991 Virginia VIEW Workshop Objectives

**New User's Workshop**

Participants will be able to identify the various components of the Virginia VIEW Career Information Delivery System.

Participants will be able to assist a student/client in completing the Career Search Accessing Strategy and the College Search Assessing Strategy.

Participants will be able to assist a student/client in interpreting the Career Search Accessing Strategy using the Career Search Scan Sheet or the Career Search computer program.

Participants will be able to assist a student/client in interpreting the Career Search Accessing Strategy using the
Career Search Scan Sheet or the Career Search computer program.

Participants will become familiar with the PreVIEWs microfiche, the Complete Career Information microfiche, and the Interactive VIEW computer program and will learn how to access data from these sources of Virginia VIEW career information.

Financial Aid Workshop

Participants will learn the basic principles of Financial Aid

Participants will become more familiar with the "language" of Financial Aid, i.e. aid types, aid sources, award types, etc.

Participants will become more aware of avenues for seeking aid for those with special circumstances, i.e. the nontraditional student.

Participants will learn how Virginia VIEW materials can aid in the Financial Aid counseling process.

Participants will be better able to advise their students/clients on the Financial Aid application process.
Job Search Strategies Workshop

Participants will be better able to assist each student/client to develop an individual job search strategy.

Participants will be able to integrate Virginia VIEW information in the job search process.

Participants will be made aware of networking techniques for the job search.

Participants will learn the importance of information gathering as it applies to the job search.

Participants will earn follow up techniques for job search success.

Other workshop information can be found in Appendix O in this document. Each year workshop staff prepared a format for the participants. A typical handout is displayed in Figure 11 below:
WORKSHOP FORMAT

FALL 1991

8:30 to 9:20 am  Individual Registration
                 Materials Distribution &
                 Review

9:20 to 9:30 am  General Introduction to
                 Virginia VIEW 1991

9:30 to 10:45 am WORKSHOP A
                 Session I: Theory & Practice
                 of Virginia VIEW for
                 New Users
                 Session II: Revised & Updated
                 Virginia VIEW for 1991-92

10:45 to 11:15 am Individual Orientation &
                 Materials Review II

11:15 am to 12:15 pm WORKSHOP B
                 Session I: Virginia VIEW &
                 Information on Financial
                 Aid for Training
                 Session II: Virginia VIEW &
                 Job Search Strategies

12:15 to 12:30 pm Wrap Up

Figure 11: 1991 Virginia VIEW Workshop Format
A significant amount of time was scheduled for the workshop participants to network with their colleagues from local schools and agencies. Most years, except 1993 and 1994, refreshments have been served to facilitate participant dialogue and expedite the handing out of materials. Refreshments were deleted from the budget as a matter of economic efficiency. The workshop staff immediately realized that the lack of refreshments made for a couple of tumultuous years before volunteer sponsors could be found. Many workshop participants traveled for as much as two hours arriving and they were in the mood for coffee before the workshop.

Over the years literally tons of printed materials have been distributed to workshop participants. Each year Virginia VIEW staff had sought methods to make handing out the materials less time consuming. Perhaps the best time-saving idea goes to Lynn Marshall, User Services Specialist 1990-92, who suggested that the project purchase biodegradable plastic bags which could be prepackaged. Both participants and staff judged the bag distribution a vast improvement. In the following years many participants said that they look forward to seeing what is in the Virginia VIEW bag for that year. In response to the bags’ popularity the staff acquired items from organizations such as the Society for Certified Public Accountants, Independent School Association, and the Virginia National Guard. Posters, Virginia VIEW printed materials, and handouts were other bag items.
In keeping with Virginia VIEW's mission to offer the most up-to-date career information each program year brought system changes. Workshop staff were challenged to make the workshops different each year so participants would attend, receive the new materials, and be made aware of the updates. Each year workshop participants received Continuing Education Units (CEU's) from Virginia Tech if they attended the entire workshop. It was not unusual to find Virginia VIEW users who have attended the workshops for over ten years.

**Virginia VIEW Hotline**

"Hello! Career Information Hotline. May I help you?" That cheery greeting has gone out to over 46,000 callers from Virginia VIEW, the Virginia State Career Information Delivery System (CIDS) since 1980. The hotline is a vital part of Virginia's multi-media CIDS and it is open to callers from 8 am to 5 PM Monday through Friday, except for state holidays. The cost of the system is underwritten by the Virginia Occupational Information Coordinating Committee (VOICC) and is contracted to Virginia Tech in Blacksburg, VA. Virginia VIEW has been providing accurate occupational and educational information to Virginians for over 14 years. Each year over 1500 sites across Virginia receive up-to-date Virginia VIEW materials. These materials include microfiche, printed workbooks, worksheets, printed newspapers and hard disk and floppy computer
programs. Originally the hotline was established to make career information available to all citizens of Virginia without cost to them. The university affiliation with its strong counseling component was ideal in connecting experienced counselors to serve as hotline operators while they were in full time graduate study in the Virginia Tech Counselor Education program.

**Telephone Service Delivery**

Toll-free numbers have been popular since their inception. During the first year (1972) more than seven million calls were made on just 650 eight hundred numbers. By 1992 more than 11.7 billion calls were made on the American Telephone and Telegraph (AT&T) network alone with more than 1.3 million numbers available. Creative marketing of goods and services have made eight hundred numbers nearly commonplace except in counseling and career information. Consumers can send a friend a teddy bear, flowers or an assortment of perfume. People no longer have to travel to the sea to enjoy a clam bake as all they have to do is to dial the Boston and Maine Fish Company's 800 number. Items such as leather goods, peanuts, wallpaper and window treatments are but a toll-free call away. Eight hundred numbers are now the coin of the realm in how people get and exchange information. Career information dissemination, even more so than computers because many more people have more telephones than computers in their homes, lends itself to this service but has been underutilized.
The career information hotline was originally envisioned as that part of the total CIDS which would be available to all citizens of Virginia; provide the most up-to-date and accurate career information possible; be available as a referral source to Virginia's career counselors and helping professionals; be a source of answers to esoteric questions that were difficult to answer as well as the more routine career information inquiries. (Snipes & McDaniel, 1982). Some examples of notably unusual questions are included are: (a) How can I assist my daughter, who has some experience as a riverboat navigator on the Potomac River, get her license to navigate a boat on the Mississippi River? (b) I am going to spend my summer in Canada with my Dad. Do they have a minimum wage? (c) Is there a compilation of all jobs open in my town, city or county? (d) Where can I train to be a clown? For a more detailed description of typical hotline call situations refer to the Appendix P. It contains vignettes of calls from all areas in the state of Virginia.

In an era of computer-assisted information delivery, the Hotline remained popular. This is because expertly trained Virginia VIEW staff answered the callers' questions like those above efficiently, quickly, and guided the callers to the next logical step as they sought answers to their career inquiries. It was not unusual to hear a caller exclaim "I am so glad a person answered this phone. I
have been trying to get help from a person but I keep being referred to a computer!" or "I am so happy to talk to a person who has the answer to my question. I have been getting the run around from other people."

Other Hotlines

Securing information via hotlines is certainly not a new idea, but it is seriously underutilized to disseminate career information. Toll-free numbers have been in use since the 1970's to provide a variety of services. Hotlines covering a wide array of subjects such as auto safety (1976), droughts (1977), runaways (1979), asbestos (1978) and child abuse (1980) affirm the popularity of obtaining information via the telephone (Snipes & McDaniels, 1982). The use of eight hundred numbers appears to be accelerating and further diversifying in the 1990's. Parents are now being encouraged to become more involved in their children's education by contacting the dial-a-teacher assistance program (Warner, 1991). HOMEwork hotlines are also popular as professionals are ever more aware of latch-key children attempting to complete assignments before their parents arrive home from work (Moskowitz, 1988). Mainstreamed and mildly handicapped students benefit from the Extraordinary HOMEwork Line as they are able to complete tasks at home that would have had to be completed in school in the past. These children experience pride as they are assisted in completing tasks for themselves (Ruffin, 1985).
Special-interest and educational groups have found hotlines to be effective. Anti-poachers (Izaak Walton League, 1992), Ex-Smokers (Shiffman, 1984) and Grammarians (Neulib & Scharton, 1982) operate hotlines to inform and educate the public. Another use for the hotline concept is to set up a network for technical assistance for specific industries. For example, New York State established a state wide line to assist the small business owner in the apparel and textile industry (Hester & McDowell, 1987). More specific information about hotline operation can be obtained by accessing articles about Hotlines published by NOICC (McDaniels, Knobloch, Watts, & Moore, 1994) and the 1995 *Virginia Counselors Journal* article written specifically about the Virginia VIEW Career Information Hotline (McDaniels, Watts, Knobloch, Moore & Tillerson, 1995). The Virginia General Assembly, the oldest continuous bicameral legislative body in the world, has opened up an eight hundred number to hear from constituents (January, 1994).

Virginia's Statewide Career Information Hotline employs strategies practiced by many of the aforementioned hotlines. Like the Anti-poachers, ex-smokers, and grammarians, Virginia VIEW Hotline serves its public. It is to give the most up-to-date information about occupational and educational information not readily available elsewhere. Virginia, Texas, New Jersey, and Florida are the only states known to provide toll-free telephone access to
career information, yet this method of dissemination has proven both pertinent and cost effective (Hopkins, V. & Kinnison J. et al. 1992).

**Consistent Hotline Trends**

Since 1980 the Virginia VIEW staff has acquired extensive experience in the operation of the career information hotline. Just as the Virginia Career Information Hotline originators predicted (Snipes & McDaniels, 1982), some things have remained fairly consistent:

1. Hotline callers tend to be adults 19-45 years of age with few connections to schools and agencies. (see enclosed chart)

2. Callers often call for information on behalf of someone else. Mothers call for children, grandparents call for grandchildren, and wives call for husbands.

3. Agencies and educational institutions use the hotline to enhance their services or they ask VIEW staff for technical assistance.

4. Most questions are answered immediately or within an hour or two.

5. Constant attention is required to keep the information up to
date and easily accessible. For example, agencies' names and addresses change frequently. Occupational licensure requirements are in a constant state of flux as the workplace adapts to technological change. Unlike print media, hotline updates are immediate.

6. General information not readily available elsewhere can be given out. Examples include information on finding overseas employment, the names of various trade and professional associations and local adult education availability in specific areas.

7. Callers like anonymity because, as with AIDS, Suicide, and Crisis Prevention Hotlines, Virginia VIEW Career Information Hotline calls are private. It is not unusual to hear a caller say that "I do not want to appear a fool but..." If anonymous callers fail to understand specific referrals they are relatively willing to ask follow-up questions.

8. Educational and Occupational referrals are specific to each caller's situation. Not surprisingly callers say they enjoy being treated as an individual rather than as members of a large group. Hotline operators report that callers express great pleasure from the fact they have been treated as an individuals rather than as impersonal computer users.
9. The hotline is state wide, but much of the information disseminated is on programs and educational institutions in the callers' own communities. Callers are empowered to contact these resources already armed with basic facts—names, addresses and local phone numbers.

10. Hotline callers are diverse; people only need to know how to access a telephone. The hotline is accessible in an equitable way to everyone, regardless of gender, age, disabling condition or economic status. Most inquiries originate from the callers' residence, making this source the most convenient possible.

11. Callers are apt to seek information about educational opportunities in their area. Most adults are unable to relocate to attend school, and they are interested in in-depth information about local class offerings. The second most-often requested information concerns occupational requirements. Callers seek data on professional associations, state and local licensure information and job search skill advice.

12. Over the 15 years of hotline operation the vast majority of callers have found the service of help, with most finding the service very helpful.
Caller Concerns

Even though general categories of questions have remained the same, VIEW staff have noticed changes in trends:

1. Categories such as keypunching have become data entry; data processing is now information technology.

2. Environmental engineering, Mediation and Diversity training were now "in".

3. The ability to use a computer has had an impact on more occupations. In some large hotels the housekeeping staff now enter data when they complete cleaning tasks.

4. Information about certification and licensure has become more important. In the current, competitive job market a certified purchasing agent is in more demand than one without certification. The Hotline staff made every effort to keep this specific type of information current.

5. More calls are from worried young adults trying to break into the labor market. As a result, inquiries about graduate programs appeared to be on the rise.
6. More effort has been extended by private rehabilitation counselors to place clients into jobs.

7. Privatization of job training programs has created an uneven service delivery system making it even more difficult to ascertain which agency offers what assistance, and where, and to whom services are open.

8. As budgets become even tighter in the 1990's, VIEW staff noticed even they have a more difficult time obtaining information from original, primary sources; fewer and fewer telephones were answered by human beings. If professional research staff who expect to dig for data are frustrated, think how the average citizen trying to find information on how to start a business must felt.

9. Anything in health care was popular. Aerospace and electrical engineering are no longer seen as hot tickets to the best jobs. The VIEW Career Information hotline has received more calls about how to become a physical therapist than any other type of call about an occupation.

10. Veterans and Displaced workers constituted more and more
callers. Most say they had no idea just how difficult it would be to find another job after being discharged or laid off.

Considerations for Hotline Operation
The Virginia VIEW Career Information Hotline has acquired over 14 years' experience. It remains a viable, cost-effective method to disseminate career information. Callers welcomed that person-to-person contact which many felt was missing in today's society. The modern labor market leaves more people feeling less secure about their careers. As time passes there is even more reason than before to establish services similar to Virginia VIEW's Career Information Hotline.

Few career information hotlines exist today. In 1987 a career information hotline fashioned after Virginia VIEW's experience was established to bring career information in Missouri to rural residents suffering from worker displacement as a result of small family farm failures (Heppner & Johnson, 1988). Hotlines are a valuable service delivery method for the 1990's. Virginia VIEW staff learned some of the following lessons during its fifteen years operations:

1. Although many inquiries show a certain sameness just as in face-to-face counseling, it is important to remember that each caller presents a special concern.
2. Training hotline operators is a constant effort. Many veteran hotline operators, who were former Virginia Tech graduate students, said the experience they obtained while working on the hotline has served them well in their varied career paths (personal interviews with former hotline operators, February 1994).

3. Expect to give technical assistance to counselors and other helping professionals. As budgets are cut, even the best run career center or library may lack some of the most recent reference materials the hotlines should have. The Trade and Professional Association Directory fits this category because of its expense and frequency of revision. Callers expect a career information hotline to always be up to date.

4. Remember that not everyone has a home computer or access to one, but people can get to a telephone even if they have to borrow one or use a coin-operated phone for free. People unused to accessing computer-driven hotlines may not be able to assimilate the necessary information. A hotline operator with good counseling skills can request enough feedback from the caller to make sure the question is answered accurately.

5. Hotlines may get calls of last resort. Many times callers have
made numerous attempts to find an answer to career information questions only to be referred to someone else. This is the place where questions get answered.

6. Those callers who need career counseling must be referred to those who can provide that service. Hotline operators must understand that their function is not to provide counseling but to disseminate career information. They need to know the services available for an appropriate referral.

7. Sometimes it may be better to mail a caller a prepared handout rather than spend an inordinate amount of time on the phone explaining, when prepared handouts/mailouts of high quality are very useful in responding to often-asked questions requiring detailed answers such as sources of financial aid, information on health careers and the like.

8. Create and maintain cooperation among the agencies and educational institutions served. Collecting information for system updates will be much easier that way.

9. Strive for consistency in service delivery. Make certain that each caller gets the same courteous and expert assistance. Occasional or random taping of calls can provide quality assurance.
10. Know that hotline callers themselves will provide an abundance of material for review. If repeated callers request, for example, more detailed information on environmental careers then hotline operators are alert to find more resources in that area. Subject related, one-page bibliographies can be prepared in many different subject areas such as financial aid, job search, international employment and temporary job topics, to name a few.

Hotline Conclusion

In the 15 years Virginia VIEW has operated a Career Information Hotline, it has received over 44,000 calls. Currently over 20,000 calls are entered into the computerized database. An analysis of these calls indicated that the hotline is a very effective and efficient way to deliver career information, especially with adults. Figure 12 reveals data collected about the Hotline in 1994. Hotline users continue to be pleased with the service as the December 1995 report indicated that 98 per cent of its users were very satisfied.

With a toll-free number, the hotline service is delivered with equity in a state without respect to the callers' economic status, location or other factors. As a result, it is available to each of the Commonwealth's citizens. The hotline continues to be integrated into
HOW DID YOU HEAR ABOUT THE HOTLINE

<table>
<thead>
<tr>
<th>Source</th>
<th>College</th>
<th>VEC</th>
<th>Poster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselors</td>
<td>10.28%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>11.85%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.75%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friend</td>
<td>3.28%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.94%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workshop</td>
<td>6.10%</td>
<td></td>
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</tr>
<tr>
<td>3.33%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bookmark</td>
<td>3.89%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>8.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.33%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calendar</td>
<td>3.88%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.71%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper</td>
<td>4.08%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter</td>
<td>3.42%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TV/Radio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.42%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CALLERS RATE HELPFULNESS OF THE HOTLINE

- VERY HELPFUL 64.2%
- HELPFUL 34.0%
- OF NO HELP 2.0%

AGE OF CALLERS

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Below 14</th>
<th>Age 15-18</th>
<th>Age 19-30</th>
<th>Age 46-65</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>3.62%</td>
<td>9.96%</td>
<td>33.06%</td>
<td>4.73%</td>
</tr>
<tr>
<td>AGE 31-45</td>
<td>48.61%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AGE 46-65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 12: Virginia VIEW 1994 Career Information Hotline Data

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existing guidance and job training services as well as the larger Virginia VIEW Career Information Delivery System.

Many additional services were provided Virginia VIEW Career Information hotline callers, such as bibliographies on various subjects (job search, financial aid, temporary work, and international employment) and copies of The Virginia VIEW Career Hunt, a 56-page tabloid containing both local, state, and national career information. These services were especially important to adults as they seldom knew where to find, or have ready access to career information in their communities. Virginia VIEW staff could both answer their immediate inquiries or send them appropriate materials, as well as refer them to local sites where they could continue their career information inquiries.

The telephone remains a widely accepted and now proven way to deliver career information. As more businesses and government institutions use electronic telephone systems to minimize public contact, direct person-to-person services such as those offered by the Virginia Career Information Hotline will be even more valued. In the end most people want to speak to a knowledgeable, caring counselor.
Chapter 6

Resolution

Introduction

Chapter six contains a summary, conclusions and recommendations for further study about Virginia VIEW. Furthermore, the summary will determine whether the collected historical evidence included answers to the five research questions asked in chapter one in the areas of Summation, Historical Document Impact, Evaluation Efforts, 1979 Study Goal Attainment, and the project's Multi-Media Mission. The last section of this document is based on the experience of completing this historical study about Virginia VIEW and the resulting recommendations that can be made for future study.

VIEW Heritage

Virginia VIEW has its roots deep in the history of the American Guidance Movement (see Figure 1). One factor prevalent in the Virginia VIEW project history was its mindfulness of its predecessors. The profession's founders, Parsons (1909), Williamson (1935), and the U. S. Department of Labor theorists (1939) developed systematic methods of providing vocational counseling and classifying occupations that made Virginia VIEW possible. Parsons (1909) determined that useful career information was necessary in
the career decision making process. He described the ideal counselor as one with a high degree of industrial knowledge. This knowledge would include classification of industries, conditions of success in various occupations, and knowledge of apprenticeship programs. Parsons' theories about the importance of the client's access to accurate information influenced the development of Virginia VIEW.

The idea that human intervention could help people identify and improve their career aspirations, led the vocational guidance movement's founders' to push for schools, colleges, and private and governmental agencies to provide guidance counseling services. Along the way, professionals began to realize the dearth of career information materials available to assist the counselors in providing services to career-decision making individuals. Government intervention occurred as a result of the Great Depression (1929-1939) and World War II (1941-1945). The Veterans Administration's Vocational, Rehabilitation and Education Service's advisory committee, composed of Donald Super, Daniel Feder, and E. G. Williamson, made specific recommendations for the improvement of vocational guidance practice standards and encouraged the development of career information sources (Borow, 1964). The Department of Labor published the Dictionary of Occupational Titles (1939), the General Aptitude Test Battery (1945), and the Occupational Outlook Handbook (1949). DOL's classifications in its worker trait groups provided counselors a method of relating
people's abilities and interests to data, people, and things through occupations. Without these significant DOL developments Virginia VIEW would not exist in its present form because its accessing system is based on the data, people, and things hierarchy.

Gerstein's (1967) Vocational Information for Education and Work (VIEW) project in California was the precursor for the Virginia VIEW project. The use of microfilm in California demonstrated the utility of making vast amounts of career information available to a diverse group of users. The microfilm was easy to store and quick to retrieve. Four standardized pages of occupational information were dispensed on each microfilm aperture card. Occupational requirements and qualifications, prospects and opportunities, job description, local information about job openings, and availability of training formed the nucleus of the occupational information contained in each occupational file. Virginia VIEW's information contains much of the same data today. Another legacy from the San Diego VIEW project was it proved that the public was receptive to new methods of career information delivery away from just print in the form of microfilm aperture cards and was more than willing to consume large amounts of data.

Virginia VIEW's specific national mandate was from the National Occupational Information Coordinating Committee.
NOICC's aim was to standardize occupational classifications by including invariable data on state and sub-state occupational supply and demand, definition, and estimating procedures. The legislation further called for interagency cooperation by the Employment and Training Administration, Bureau of Labor Statistics, U. S. Office of Education, and the National Center for Educational Statistics. Improved access to career information was mandated and the development of Career Information Delivery Systems was encouraged (NOICC, February, 1978). Additionally, Educational Information Centers (EICs) were set up to disseminate career information and provide counseling and guidance activities. The McDaniels et al (1979) Educational Information Centers Study (EIC), which provided Virginia state and local data about educational and occupational information then available to Virginians, was beneficial to the project's origin.

**Summation**

The EIC (1979) and Virginia VIEW Feasibility studies provided Virginia Tech researchers with the expertise necessary to launch Virginia VIEW in 1980. The Tech team had taken the time to (a) painstakingly investigate the other states' CIDS, (b) complete a Virginia-based needs assessment of career information availability, (c) comprise the advisory team composed of Robert Hopkock, William Woolley, and Harvey Ollis to add CIDS knowledge, and (d) develop a multi-stage implementation plan. Their careful planning was
significant in obtaining the funding and support to get the project off the ground. The EIC centers study pointed to the need for a state-wide automated career information delivery system as early as 1978. The addition of the NOICC mandates, the specific need for career information by vocational educators, and the state-wide demand for educational data created a milieu receptive to Virginia VIEW's development. Juanita Snipes, project manager 1980-1989, suggested that "a sense of excitement" enveloped the project's early days as VOICC's debut, the Virginia Counselors Association, various state agencies and educational institutions formed a base of support for Virginia VIEW.

Miscellaneous sources such as the Virginia Counselors Journal, The Career Development Quarterly, The Journal of Career Development, NOICC Occasional Papers, dissertations, program archives, and personal comments from VIEW staff all connoted the sense of mission and excitement the Virginia VIEW project portrayed from its beginning. Throughout the years the public federal-state-local partnerships formed by project staff an its supporters has assured a wide use of Virginia VIEW services and products.
Virginia VIEW Substance Factors: Funding, Staffing, and Support Activities

Funding

Substance factors such as funding, staffing, support activities, information collection and presentation along with program evaluation have all contributed to Virginia VIEW’s history. From the original NOICC grant to the last program year of federal Carl Perkins and General Assembly funding, the project has been able to weather up and down funding pattern. Virginia VIEW has been funded over five million dollars over the years. Starting with the combined 1980 funding of $190,000 to a peak funding year of $420,000 in 1988-89 to a low of $268,800 in 1993-94, and a rising funding year of 1995-96 to $316,000, the project has managed to provide up-to-date products and services each workshop season. Remarkably, it was an era of reduced funding that at the same time encouraged the project to become more technologically up to date. Computer purchases, made in the early ‘90’s, produced a more effective staff and, especially in the case of desktop publishing, required that less work was contracted out of the Virginia VIEW project and more work was performed in house. The new lock-key production capacities allowed for quick turnaround on projects. The project has continued to take advantage of technological change, particularly in the information preparation area; as a result, it has been able to reduce the effect of some funding cuts. Another source of funding occurred when the
project introduced modest shipping and handling fees in 1993 to offset the cost of mailing Virginia VIEW materials.

**Staffing**

The Virginia Tech university environment has been beneficial for staff recruitment. Over the years, new counselor education and graduate students, masters and doctoral levels, have been a constant source of well-prepared staff. Staff turnover has ensured fresh input and forward perspective.

From the beginning the CIDS staffing pattern was based on the best practices analysis found in the 1980 CIDS Feasibility Study. The state population, planning areas, information provided, multi-media format were factors in determining the staff size. Originally, one propose of hiring staff already employed by Virginia Tech was that they were already beneficiaries of NOICC in-service training. The Original CIDS proposal recommended that the project be staffed with Co-Managers supervised by the Program Director, Carl McDaniels. These staff members coordinated and managed the user and information services of the CIDS operation and acted as liaisons to the policy board, other advisory bodies, professional organizations and agencies. They planned and established time lines and work targets, and supervised the CIDS staff.
The first User Services Manager oversaw the outreach activities to users and potential users of the Virginia VIEW system and supervised the day-to-day operational activities of the staff. Another User Services responsibility covered overseeing the Graduate Assistants assigned to the career information hotline. User Services staff planned the series of fall workshops and made specific presentations about Virginia VIEW throughout the Old Dominion. They were advocates for both the counselors and career development specialists using Virginia VIEW and, most importantly, looked out for the interests of the many ultimate users, Virginia's career information seekers.

The information manager's responsibilities included establishing and maintaining liaisons with information providing agencies, especially the Tayloe Murphy Institute at the University of Virginia, Virginia's Occupational Information System (OIS), the Virginia Employment Commission's Economic Information Service (EIS), Bureau of Labor Statistics, the many other state agencies from which the project collected data, and the various private public and private educational institutions. The information manager made certain specific data from the Guide to Industries and the Occupational Outlook Handbook were incorporated into the Virginia VIEW materials. Another function of the information manager was supervising the CIDS staff involved in collecting, compiling, formulating, analyzing, and interpreting career information.
Information analysts would compile and prepare the CIDS data for delivery in a variety of media by depending on student assistants' help during the data-entry operation.

Information Collection

The information developers devised procedures for adding new information to the Virginia VIEW system. They consulted the annual surveys from the workshops for information that addressed requests for new data. As a result, new information about job search and enrollment trends was added. Another user suggestion was to reduce the reading levels required so the information would be more accessible to younger students and those with low reading skills. Eventually user requests led to the development of the Virginia VIEW PreVIEWs files.

Project planners realized the importance of securing reliable sources of information because without them the project could not disseminate accurate, up-to-date information. The information, collected from the diverse sources comprised the Virginia VIEW information system. This information base was at the center of the Virginia VIEW operation because the data base was vital to each specific product developed. Some Virginia VIEW products, most specifically the career-information tabloids, were designed to meet Virginians' specific career information needs were possible because of the up-to-date occupational database kept by the project. Without
the Virginia VIEW system of information collection and database maintenance the staff would have been unable to react as quickly to develop new products.

Project Support

Virginia VIEW's success is reflected in the support the project continues to garner from the Virginia General Assembly, professional organizations, such as the Virginia Counselors Association, Vocational Educators' organizations, and state organizations like the Governor's Employment and Training Department, the Department of Social Services, Department of Rehabilitative Services, and the Department of Correctional Education, to name a few. The 15-year project appears to have been able to define a continuous sense of mission and meet the specific career information dissemination needs of Virginia's citizens. Statewide support has proved a significant component of Virginia VIEW's ongoing success.

Products and Services:
Microfiche, Print Tabloids, and Computer Programs, Workshops and Career Information Hotline Services

Throughout its history Virginia VIEW staff have created a variety of products designed to meet the specific needs of Virginia's diverse population. Core products have been in the print areas. The comprehensive bibliographies created by Virginia VIEW Career Information Hotline Operators early in the project's history quickly
became sought after by Virginia counselors seeking a quick career-information reference to give to clients. The Career Hunt, the Virginia VIEW tabloid/newspaper was first produced in 1986 primarily for high school sophomores to assist them in their career decision making and job search efforts, but as more copies were circulated the demand for them increased to include other high school students and a mixture of adult populations. There have been several specialized tabloid/newspaper products. One of them, The 1993-94 Career Hunt for Veterans was created as a result of the military downsizing and the efforts of Benjamin Trotter of DOL and the Virginia VIEW staff; the publication, with its 100,000 copies distributed, became a popular career compendium for military personnel and their families.

Throughout the project's 15 years, the microfiche product has remained popular and is basically the same product as the computerized program, Interactive VIEW. The microfiche is still used and expected by Virginia's computer-deficit libraries, schools, and agencies. Even those sites with computers request microfiche to augment career information delivery because they do not have enough computers. Interactive VIEW was found in 943 diverse sites as of December 1995 and is on the Internet. Refer to Appendix D of this document for the Fall 1995 Report.
The microfiche and computer programs contain both the career and college search strategies designed to help Virginia VIEW users access the thousands of pages of career information. Without the accessing strategies, the information would be more difficult to use and not as effective. The searches are very popular and more than a few career development counselors refer to them as doing the “Virginia VIEW.” As a result, Virginia VIEW staff must continually point out that the career search is not intended to be used as an interest inventory, but an accessing strategy.

Promotional products in the form of posters and book marks served to market Virginia VIEW materials and services. VIEW staff spent considerable effort in the planning and designing each product to fit into integrated public relations tools. Each year the colors were different to differentiate from the year before promotional materials.

Fall Workshops
Each year Virginia Counselors looked forward to attending the Fall workshops. In the beginning, they came to take back up-to-date occupational statistics and information on Virginia-based education and training materials that had, hitherto, had been unavailable to them. Virginia VIEW workshops, in the early 1980’s, provided the first opportunity for Virginia counselors in the many different settings such as schools, social services, corrections, rehabilitation,
mental health, and higher education were to meet and network (personal conversation with Juanita Snipes, May 16, 1996). Virginia VIEW users were composed of representatives from many diverse sites such as 2-Year. Private Colleges, 4-Year Colleges/Universities, Adult Education Centers, Community Colleges, Extension Offices, Hospitals, Jointly Operated Vocational Tech Centers, JTPA Offices, Libraries, Military Installations, Private Counseling/Rehabilitation Offices, Private Schools K-12. Public Elementary Schools, Public High Schools, Public Middle/Inter./Jr. High Schools, Virginia State Agencies and Private Industry sites. The Fall 1995 workshops were attended by 1,402 career development professionals as documented by the December 1995 report which can be found in appendix D of this document.

Over the years tons of printed materials have been distributed to workshop participants. Each year Virginia VIEW staff had sought methods to make handing out the materials less time consuming. Perhaps the best time-saving idea goes to Lynn Marshall, User Services Specialist 1990-92, who suggested that the project purchase biodegradable plastic bags which could be prepackaged. Both participants and staff judged the bag distribution a vast improvement. In the following years many participants said that they look forward to seeing what is in the Virginia VIEW bag for that year. The bags' popularity added a new characteristic to the workshops. VIEW staff acquired items from organizations such as the
Society for Certified Public Accountants, Virginia Health Careers, Independent School Association, and the Virginia National Guard to add to the bags' appeal. Posters, Virginia VIEW printed materials, and VIEW staff developed-handouts were other bag items.

**Career Information Hotline**

In an era of computer-assisted information delivery, the Career Information Hotline has remained popular over the 15-year span. One factor for its popularity was that expertly-trained Virginia VIEW staff answered the callers' questions efficiently, quickly, and guided the callers to the next logical step as they sought answers to their career inquiries. It was not unusual to hear a caller exclaim "I am so glad a person answered this phone. I have been trying to get help from a person but I keep being referred to a computer!" or "I am so happy to talk to a person who has the answer to my question. I have been getting the run around from other people."

Since 1980 the Virginia VIEW staff has acquired extensive experience in the operation of the career information hotline. Just as the Virginia Career Information Hotline originators predicted (Snipes & McDaniels, 1982), some things have remained fairly consistent in that (a) hotline callers tended to be adults 19-45 years of age with few connections to schools and agencies, (b) callers often called for information on behalf of someone else, (c) mothers called for
children, grandparents called for grandchildren, and wives called for husbands (d) agencies and educational institutions used the hotline to enhance their services or they ask VIEW staff for technical assistance, (f) most questions were answered immediately, (h) constant attention was required to keep the information up-to-date and easily accessible, (i) callers like anonymity because, calls were private and it was not unusual to hear a caller say that "I do not want to appear a fool but...,” (j) educational and occupational referrals were specific to each callers' situation, (k) hotline calls originated from all areas of Virginia, and (l) 98-per cent of callers rated the Hotline's service very helpful. Not surprisingly callers said they enjoyed being treated as an individual rather than as members of a large group, and (k) the hotline was state wide, but much of the information disseminated was on programs and educational institutions in the callers' own communities. Ninety-eight per cent of Hotline callers report that they are very satisfied with the Hotline's services. More specific information about hotline operation can be obtained by accessing articles about Hotlines published by NOICC (McDaniels, Knobloch, Watts, & Moore, 1994) and the 1995 Virginia Counselors Journal article written specifically about the Virginia VIEW Career Information Hotline (McDaniels, Watts, Knobloch, Moore & Tillerson, 1995).
Comparison With Other States

Much can be learned by comparing Virginia’s approach to those of other states. According to the Association for Computer-Based Career Information Systems (ASCIS) directory (1995), Virginia and Michigan still operate similar programs. For example, in the 1994 program year, Virginia had 1,392 sites compared to Michigan’s 1,561 sites, even though Michigan is a more populated state. The ASCIS statistics reported that Missouri, with Missouri VIEW’s 1,592 sites, was the only other state with over 1,000 sites. On the other hand, Hopkins et al. (1992) reported that Michigan had 2469 user sites while Virginia had 2021. Florida, the other state CIDS that helped fashion Virginia VIEW, had 809 sites and produced a Middle School Tabloid. Unfortunately, the ASCIS Directory did not furnish its users with information as to cost of the system to users so there is no way to tell if fees levied at user sites contributed to a particular system’s lower rate of use.

Factors that favor Virginia’s high number of sites are that materials are obtained at no cost to the individual user sites at the Fall workshops, materials may be used with class-size groups without computer investment, materials were produced for older computers, and technical support is readily available at no cost to the users by dialing the career information hotline.
Answers to Research Questions

Research Question One

What is the summation of the 15-year history of Virginia VIEW?

The summation of the 15-year history of Virginia VIEW is manifold. The many records reviewed for this work revealed that the Virginia VIEW project went from being a newly-created effort to a perceived entitlement. Early on, Virginia's counselors and helping professionals had never seen a career information system like Virginia VIEW and having the best, up-to-date information about careers and educational opportunities was novel. Later these professionals began to believe that access to this information was an entitlement; they were willing to resist any effort to cut the program's funding. Virginia VIEW's planners researched the profession's best practices in career information delivery and developed the project to put the theory into practice.

The artifacts found in this study's preparation have been both voluminous in some years and sparse in others, but nevertheless telling. Information available about programs years 1988-1995 have an overabundance of data. Records, as one would expect, are scarcer for the earlier years, probably as a result of the project's moving several times. For example, determining the actual number
of calls taken by Virginia VIEW Hotline operators is difficult because records are missing for the first three years. Yet there are some gems from the early years, such as meticulously recorded workshop attendee comments. The general procedure for information collection documentation painted a precise picture of the information collection process, in that knowing that the information developers read the material back and forth led creditability to their work. The letters, reports, artifacts, and personal comments painted a picture of mission accomplishment. Therefore the first question's answer is that these records, both external and internal, demonstrated that over the 15-year period, the summation of the Virginia VIEW project is that it has met its goal of serving Virginians by delivering up-to-date career information.

Research Question Two

How does the historical documentation reflect Virginia VIEW's mission of providing equity in career information delivery and how has the project remained faithful to, and forged on, its mission over the years?

The historical documentation reflects that the project staff has been busy over the years meeting its mission of providing equity in career information delivery. The project staff have spent over five million dollars of state and federal money on this mission. Historical project data indicate that staff members have provided over 500
training seminars to career development professionals representing over 18 categories of schools and agencies throughout the Commonwealth. Almost 45,000 Hotline calls have been received from persons who were in school, re-entering school, entering work, re-entering work, changing occupations, counselors, librarians, unemployed, or in other circumstances over the 15-year hotline operation period. Virginians have enjoyed equivalent services throughout the state without regard to geography or economics. The economic efficiency of the hotline ensures that the same information and service found in prosperous Arlington and Fairfax area is available in less prosperous Russell and Wise Counties.

Through the years, according to the records kept, Virginia VIEW staff members have presented information to community organizations such as Virginia Cooperative Extension Groups, Upward Bound participants, professionals attending the Virginia Counselor’s Association, the Middle School Conferences, the Independent Association of Schools, the American and Virginia Vocational Association and the American Counselors Association, to name a few. The staff has distributed thousands of workbooks, sets of microfiche, computer programs, and career information tabloids to Virginians at no cost and on an equitable basis to all localities. The historical accounts reveal that VIEW staff have consistently moved tons of materials each year at workshop sites to ensure career counselors in their many miscellaneous milieux have enough materials to serve their customers. The historical documentation of these actions have
established the Virginia VIEW project's ability to put theory into practice. Therefore, the answer to question two is that the project's 15-year history reveals more that a sterile set of statistics. The personal accounts of past and present project staff, supporters, and project correspondence indicated that the project staff and its supporters have brought into Virginia VIEW's career-information delivery mission. Virginia VIEW supporters have realized its worth and have been willing to go to bat for the project.

Research Question Three

How has Virginia VIEW met the original goals and objectives as set forth in the 1979 study?

The basic recommendations of the 1979 Feasibility study were that Virginia implement a statewide career information delivery system and that the system be developed with the plan for initial funding through state and federal monies. Records indicate that the system developed according to the original three-stage plan suggested in the Feasibility study. The project provided information to a diverse group of Virginians as recommended in the 1979 plan. The system developed into an interactive system providing a process for the clients to match interests, abilities, references, temperaments, and aptitudes with occupations and with educational and training programs.
Therefore the answer to question three is that the data recorded by the project and outside evaluators suggested that the project planners have been able to meet the 1979 study goals. The goals have been met by the project’s continuing effort to serve all Virginians. The information had been updated annually, as envisioned by the planners, and included the most up-to date national, state, and sub-state data. The 330 occupations covered 90 per cent of the total employment in the system’s service area. The occupational information included specific information such as job duties, work environments, hiring and training requirements, and outlook, plus the psychological and social aspects of the occupation as envisioned by the Feasibility Study planners. Direct access to the information was provided in almost 1,500 sites throughout the Old Dominion. Lastly, the information has a low per-site cost because of its wide availability compared to other state systems (Hopkins et al., 1992). The project has met a major goal of the 1979 study by keeping the cost-per-site low in order to widely distribute the career information materials.

Research Question Four

How has Virginia VIEW’s premise of maintaining a multi-media approach been received by users?
Virginia VIEW project’s faithfulness to its original goal of maintaining a multi-media approach, a use of diverse career information delivery methods that include paper and pencil products, microfiche, tabloids and hotline and workshop training services, to career information dissemination can best be demonstrated by emphasizing what the system is not. Virginia VIEW is not a computer program or a hotline service alone. Each segment fits together to form the multi-media system. Hotline requests often resulted in the development of new products such as a bibliography devoted specifically to job search. New occupational titles were added or old ones deleted partly from consumer input. Many times, hotline callers are given a copy of The Career Hunt to enable them to have a complete summary of the total system.

The multi-media career information recognized that Virginia’s citizen are a diverse group. The multi-media approach allowed for the materials to be useful in an elementary school or effective in a senior citizens’ center. A 89 year-old great-grandmother was able to call the hotline and seek career referrals for her troubled great-grandson while a ten year-old elementary school child enjoyed a puzzle devoted to career exploration in the VIEWstart. The very diversity of these products promoted their wide use. Virginia VIEW’s web site has carried the system’s use around the world and beyond the Old Dominion. Each household with an Internet connection can have the computerized system in the home. This
wide Internet access would not be possible if Virginia was bound to a commercial per-site contract agreement with an outside vendor. Therefore the answer to question four is that, unlike some other states, Virginia VIEW planners recognized Virginians' diverse needs for career information and chose to develop print, computer, and service (hotline) media to serve the citizens of the Commonwealth. Virginians have reported over the years that they approve of the multi-media career information delivery approach by continuing to request the materials and use the hotline.

Research Question Five

What impact have the various evaluation studies of Virginia VIEW had on the project?

Evaluative studies completed by staff members, other agencies, and researchers as well as career development professionals' comments have provided the project planners with essential feedback over the years. Specific questionnaires were distributed to users at the workshops each fall or mailed to them on a random basis. One of the most thorough evaluations was the 1987-88 project which surveyed 704 counselors and 2,667 student and adult users. Users, counselors, and educators reported that Virginia VIEW (a) was highly useful and helpful, (b) the differing delivery methods (computer, print, microfiche, telephone) of the multi-media

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approach were useful and helpful, (c) component use was based on
the users' age and experience and the counselor's use was based on
the work setting, (d) directions for using Virginia VIEW were clear
and easy to understand, and (e) counselors desired a complete
computer information system.

The most recent major evaluative study was completed by the
Virginia Department of Education (1994) for the General Assembly of
Virginia. The 1994 DOE researchers found (a) that 41 per cent user
sites would not be able to pay for Virginia VIEW and without it they
would have to spend a significant amount of time researching
questions, (b) those who were able to pay were only able to pay up
to $50.00 per site for use, (c) Virginia's Career development
professionals depended on Virginia VIEW for sub-state data and
without it they would have to depend on the Occupational Outlook
Handbook, and (d) Virginia's low cost per site cost as compared with
other states contributed to its high rate of use (Watts, 1989 and
Watts and Jaques, 1994).

Looking at the numerous evaluations in a historical context
provides a certain perspicacity as pieces of the puzzle fit together.
Each workshop season produced a specific evaluation appraised on a
graded scale. Over the years, each evaluation pointed to the fact that
Virginia's counselors and career development professionals have
depended more and more on Virginia VIEW's availability during its
15 years. Therefore the answer to question five is the result of both the internal and external evaluations conducted over the 15-year period indicated that users not only would have trouble replacing the information the project provides, but that they perceive the accurate, up-to-date information provided to them at no cost to be an entitlement.

**Study Conclusions**

Several conclusions can be drawn from Virginia VIEW's experience.

1. First, Virginia VIEW knew its origins were in producing career information materials that would be available to the largest number of Virginia citizens in the form of microfiche. New products were added without ignoring the user demand for the older, still serviceable products. At the end of its 15-year history, Virginia VIEW can be used with paper, pencil, and microfiche reader as well as the career information hotline, the stand-alone computer program, and the Internet. A full range of career information products were available to a wide range of users. The program planners, from the start, were interested in information equity.

2. Whenever possible the project staff learned from focus groups composed of Virginia VIEW users, graduate students research efforts, and both internal and external
evaluation endeavors. Constant project evaluation and networking with users and organizations such as the Virginia Counselors' Association ensured that the Virginia VIEW staff never lost touch with their users. Also, Virginia VIEW users could call the toll-free career information hotline to make requests and express their views.

3. Virginia VIEW has had to earn its way each funding year. Each year's scope of work has reflected the philosophy of offering the most accurate up-to-date year's particular budget constraints.

4. Virginia VIEW was an example of federal, state, and local funding agencies cooperating to deliver the absolute most career information service to the Commonwealth's citizens for least amount of money.

5. Virginia VIEW is a flexible, comprehensive, and accommodating career information delivery system which has the following components: microfiche and print materials, computer program, career information hotline, and a place on the world wide web. Each component depends on another. Its uses include (a) distillation throughout the curriculum K-12, (b) academic counseling, (c) career exploration materials for young people and adults, (d) career decision making, (e) job search
activities and (f) informing users about additional training information such as flight training and real estate schools not readily available elsewhere. The clear emphasis has been on system in the fullest meaning of the term.

Recommendations for Further Study

This study has concentrated to a great extent on looking at the program’s actual artifacts and using personal comment by others to fill some gaps. A case study of how career development professionals have used and perceived the project might provide some interesting results. Long-term Virginia VIEW users are available because almost half of Virginia VIEW workshop attendees reported they have attended over five years of workshops.

Hotline call results have been logged through the years and this data represents a plethora of knowledge waiting to be evaluated. For instance, a cursory glimpse of the data indicates that the average ages of callers has increased over the years. Is this just an indication of an aging population, and more displaced workers or are older adults more concerned about their career development than they once were?

Other topics of interest could include studies that investigate the political and social climates that brought forth the various specific Virginia VIEW products and the extent of use of the multi-
media system by various user groups. Another important subject to study is the impact of popular Virginia VIEW products on the complete CIDS system or how do these products fit together to form a system?

Additionally, an ethnographic study of Virginia VIEW users might provide some insight into how this career information material has been beneficial to its many thousands of users over time. Has its persistence been useful over the years? Perhaps over the project's lifespan many people have entered occupations they first read or heard about using Virginia VIEW materials. Other questions worthy of study might be, “How is career information used by counselors and others?,” and more specifically “How do Virginia VIEW users really use the material?”

As for the future perhaps Virginia VIEW will undergo more change as technology development challenges its staff. The original planners saw no place for the private sector in the project's administration because of cost. As technology becomes more expensive this may no longer be so. For example public-private partnership might make Virginia VIEW able to produce occupational videos. A technology needs-assessment may be a suitable topic for another study.
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USA Today, December 7, 1993

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Appendix A

CIDS Feasibility Study Recommendations
CIDS Feasibility Study Recommendations

System Development and Characteristics

1. That Virginia implement a statewide career information delivery system as a component of a VOICC statewide Occupational Information System.

2. That the system be developed on the continuing commitment of VOICC signatories and other agencies with the plan for initial funding through state and federal monies for the developmental period and the initiation of low-level user fees.

3. That the system develop according to a long range plan delineating immediate (1-2 years), intermediate (3-5 years), and long range (5-10 years) target populations, informational development, and funding capabilities.

4. That VOICC interagency cooperation and commitment be assured through the approval of the master plan for the development of the system, especially for the generation and demand data on the state and sub-state level and for data suitable to special groups, training facilities, and programs.
5. That the system be cost effective, utilizing existing equipment and resources when feasible.

6. That the system be an interactive system providing a process for the clients to match interests, abilities, references, temperaments and aptitudes with occupations and with educational and training programs and institutions through self-assessment and measured instruments as well as direct access to specific occupational information.

System Management

7. That the staff be housed in an agency outside VOICC, such as a university, to allow for flexibility and quick responses for funding and financial procedures, for hiring of staff without undue restrictions, for establishing positive relations among users and suppliers of the information, and for maintaining cooperative relations with those developing information for planning purposes and to provide continuity and long range planning.

8. That the system be adequately staffed to perform the functions of developing and maintaining information,
marketing and inservice training, producing user materials, coordinating computer operations, and managing and developing the system.

9. That a broad-based advisory group be formed consisting of representatives from the VOICC signatory agencies, other state agencies, professional groups, and user groups to advise the Career Information Staff on the implementation of the plan for the statewide CIDS.

10. That an in-house evaluation system be developed to include evaluation of the amount and kinds of information used, reactive evaluations by clients as to ease of use, satisfaction and need for other information, and counselors' evaluation at the site, and that this include future outside evaluation.

11. That the System have flexibility to add information files and to provide data in the formats, quantity, and language so that it is usable on a number of different computer and terminal makes.

System Information
12. That the information in the system included in the system be accurate, current, free from recruiting and other bias, and in desirable quantity and quality with the capacity for being revived and revised.

13. That the system supply employment and earnings national, state, and sub-state data.

14. That the system utilize existing data when possible rather than generate its own data, i.e., utilize commercially prepared national data and state and regional sub-state data generated by existing state agencies after verification of its accuracy.

15. That once the system is fully operational, the occupational information included cover approximately 90-95 per cent of the labor force in the state and include, ultimately, descriptive information about the occupation, requirements of the occupation, economic information about the occupation, preparation information, educational program information, school information, financial aid information, and information on the social and psychological aspects of the occupation.

System Information
16. That the media for disseminating the information be computers, microfiche, hard copy, a toll free number(s), and other printed materials such as newspapers, brochures, posters, etc.

17. That the delivery of information be to the widest range of users in the labor force or planning to enter the labor force, including the disadvantaged, the handicapped, the incarcerated, mid-life-career changers, rural and urban clients, women, and other specific groups.

18. That the system make information accessible to persons of varying abilities and experiences with special attention given to reading requirements, the special requirements for the handicapped, and direct and exploratory access to information.

**User Services**

19. That the system provide user services to user agencies including inservice and preservice training, direct assistance, workshops, and newsletters.
20. That the system provide user services in marketing the statewide CIDS and publicizing its capabilities.

21. That the system provide an evaluation plan for the system including impact and penetration of the agencies as well as reactive evaluations by the users and counselors (McDaniels et al., 1980, p. 121-124).
Appendix B

Support Letters From Virginia VIEW Friends
January 24, 1991

The Honorable Jack Kennedy
General Assembly Building
910 Capital Street
Richmond, VA 23219

Dear Delegate Kennedy:

By now, you have probably been swamped by requests for support of the Virginia Career Information Delivery System, Virginia View.

I, too, enlist your continued support of the Virginia View System. It has proven to be very effective in providing employment information to the students in the Wise Skills Center. This type of career exploration is excellent for young persons who do not have any concrete information about future career opportunities. Virginia View is comprehensive and gives our students usable information.

The Wise Skills Center is fortunate to have the computer version of Virginia View and this allows us to offer multiple print-outs of career information to each student. This "take-home print-out" allows them to study the information at his/her leisure.

I ask that you support legislation which will insure that Virginia View will continue to be provided to all Virginia citizens at no cost to them. Giving our citizens accurate career information today will more assure that our State's economic base will be more diverse and secure in the future.

Sincerely,

James W. Price
Director

JWP:js
Delegate Maifourd W. Trumbo  
P.O. Box 44  
Fincastle, VA 24090  

Dear Delegate Trumbo,

I realize that the decisions you have before you during this difficult economic period are hard to make, but I would like for you to strongly consider the impact of funding cuts on two programs that enrich the lives of many school children in Southwest Virginia. These two programs are The Science Museum of Western Virginia in Roanoke, Virginia and the Virginia VIEW Career Information Delivery System in Blacksburg, Virginia.

Since 1989 more than 103,000 school children in 49 school districts in the western part of Virginia benefited from the programs and resources the Science Museum provided through their in-museum programs and outreach to the school systems. Most school systems are already facing drastic cutbacks in funding, which means an increased disparity in educational opportunities in southwestern Virginia.

In difficult economic times the availability of accurate career and labor market information is of greater importance to all segments of society. Not only does the information help young people make career decisions, but it is also used to assist adults who are forced to make career transitions due to lay-offs and provide information to employment professionals in their recruiting and career counseling efforts. Virginia VIEW is found in 98 percent of the schools in Virginia and in many agencies as well. Again I feel that it is the school systems which will suffer greatest if they lose these services. I still remember the school counselor in southwest Virginia who was showing me with pride the new career information corner she was developing in her school's library in the early 1980's. Her Occupational Outlook Handbook (which is updated every two years) and other books were all published in the early 1970's. The only accurate, up-to-date career/labor market information she had was her set of Virginia VIEW materials, which she could receive at no cost each year.

I chose to move "back home" to raise my child in an area which is relatively crime free, with communities which support the same sound values I was taught as a child, but I don not want to sacrifice my child's educational experiences at the same time. The quality and diversity of a child's education makes a lasting impact on the success of that child later in life.

I hope that you will be able to continue to support funding for both of these projects, so that our children in southwest Virginia can continue to benefit from these services.

Sincerely,

[Signature]

Rt. 2, Box 314  
Troutville, VA 24175  
January 30, 1991
January 15, 1991

Hon. Watkins M. Abbitt, Jr.
Room 805
General Assembly Building
Richmond, VA 23203

Dear Watkins:

I am writing to enlist your support for the Virginia Career Information Delivery System, Virginia VIEW. For the past ten years, we have used Virginia VIEW in our 7th and 8th grade class units on career exploration. We have found the information provided invaluable to our students.

No where else have we been able to obtain at any price career material that is so relevant, up-to-date, and accurate for the state of Virginia. We would be at a loss to find other sources of information for our units.

Your support is needed to assure us that we will continue to get this material at no cost. I am counting on your support to maintain the funding for Virginia VIEW for 1991-1992.

If you need further information about how we use Virginia VIEW in our work, please call on me.

Sincerely yours,

(Mrs.) Rollie C. Carter
Counselor

BCC/prs

cc: Virginia VIEW
Appendix C

Virginia VIEW 1989 Job Descriptions
User Services Manager/Operations Manager Duties:

1. Write and/or work closely with user services staff on each workshop topic for fall.

2. Follow through on paperwork pertaining to the budget and/or contract with pre awards and budget.

3. Coordinate and write VOICC reports.

4. Coordinate and approve staff schedules, and time off, including hotline schedules. Also approve time sheets.

5. Coordinate staff responsibilities concerning materials ordered by telephone.

6. Plan and monitor information development activities, including the tabloid, with information development manager.

7. Maintain contact with VOICC Executive Director and coordinate and/or make VOICC presentations.
8. Design and write programs for professional organizations.

9. Respond to calls and written requests on the project.

10. Plan activities for additional workshops and make presentations.

11. Prepare handout materials.

12. Approve final letter for Information Manager to send to workshops.

13. Check final workshop schedule, including when invitations are mailed, returned; when materials are packed and shipped. Also check attendance schedules.

14. Coordinate the printing of workshop materials and copying workshop handouts.

15. Monitor workshop materials to determine if additional printing and copying are needed.

16. Supervise the day-to-day running of the office.
17. Coordinate workshop evaluations and summarize the results.

18. Communicate with the Division regarding starting/ending dates of staff employment.

19. Monitor monthly expenses.


22. Disseminate materials at workshops.

23. Coordinate Workshops and make presentations.

24. Supervise and coordinate secretary and work load. Approve project expenditures.

25. Train and supervise hotline operators.

26. Coordinate shipping of additional tabloids.
27. Summarize materials disseminated, make estimates, and determine quantities for printing.

28. Prepare budget and accompanying appendices including scope of work.

29. Work with Contracts and Grants on budget to obtain current fringe benefits, graduate student wages, etc.

30. Maintain inventory of materials after workshops and determine necessary reprints.

31. Maintain users' information lists and supervise secretary's updating.

32. Work with libraries by writing letter and prepare order sheets for public library dissemination. Coordinate the mailing of materials to libraries.

33. Determine when additional secretarial help is needed and hire temporary secretary.

34. Hire student computer programmer.

35. Hire student packer.
36. Coordinate and print the college search.

37. Estimate the number of tabloids needed for bids and indicate labels needed for sites.

38. Coordinate the number of labels and UPS cards for workshops.

39. Recommend purchase of new equipment and complete purchase procedures.

40. Coordinate maintenance contracts.

41. Coordinate Audio-Visual Materials (transparencies, slides, typing, and reproduction).

**Information Manager**

1. Plan, coordinate, update and supervise the updating of the information in the system.

2. Work with secretary on the preparation of the attendance lists for the workshops (Summer/Fall).
3. Coordinate the preparation of the invitations/envelopes and mailing to sites on schedule.

4. Send final workshop letter to sites after project manager grants approval and turn files to the User Services Specialist.

5. Supervise the packing and shipping of materials to workshops (student packer) and notify mailroom regarding pick-ups.

6. Work with Project Manager on final workshop schedule.

7. Coordinate the dissemination of Interactive VIEW through the fall workshops; then, turn the duty to the User Services Specialist.

8. Maintain records of users.

9. Complete materials information on the workshop cover sheet. Review records with User Services Specialist.

11. Supervise the college information for the Tabloid and other items for the Tabloid (begin in summer). Continue in the Fall according to Tabloid schedule.

12. Determine Occupational Titles for the coming year. Submit to Project Director and Project Manager, along with possible content for the microfiche and Tabloid.


14. Supervise PreVIEWs update, (Summer/Fall)

15. Copy and file Occupational Briefs in the hotline room with new labels for the files.

16. Third-line back up for hotline questions on the hotline in the summer and first line back-up in the fall when the others are traveling.

17. Review both format and content of microfiche and microcomputer in order to make future recommendations.

18. Responsible for microfiche reproduction including bid specifications for microfiche and PreVIEWs.

20. Update and Proof microfiche, index, scansheets, and career search coding.

21. Write specifications and coordinate printing of the Tabloid.

22. Write Vendors and update crosswalks.

23. Supervise all college data collection including written and telephoning.

24. Responsible for planning and following through on all data collection including MOIS, State Department of Education, VEC wage/salary.

25. Pack hard copies by heading strips for microfiche (including PreVIEWs). and check pages and frame locations.

26. Prepare graphics on microfiche and order graphics as needed.

27. Proof Microfiche masters and approve final run.
28. Coordinate review panels.

29. Update revision sheet and workshop agenda.

**User Services Specialist**

1. Maintain user services by additional conference/workshop presentations.

2. Reconfirm workshop contacts, sites, and logistics during the summer.

3. Check all equipment for workshops to be sure it is working and reserve all equipment borrowed from the university. Determine if extra bulbs, extension cords, etc. are needed.

4. Finalize all arrangements for workshop refreshments, and coordinate on site serving.

5. Prior to workshops, call specific users if 100% of secondary schools, four-year colleges and community colleges are not represented.
6. Write follow-up thank you letters as soon as possible after each workshop.

7. Check car arrangements.

8. Take attendance lists to each workshop.

9. Provide maps, directions to sites, and travel arrangements.

10. Pick up state car and drive to workshops.

11. Make hotel reservations and follow through with any changes. Make cancellations if appropriate.

12. Complete site and attendance information for the workshops.

13. Clean up attendance list after each workshop.

14. Mail materials when the staff returns from workshops. Mail materials to schools not attending. Assist in mailing Tabloids and other materials through out the year.

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15. Second back-up for hotline calls in the summer or for difficult questions.

16. Take over Interactive VIEW dissemination after the workshops.

17. Check in workshop participants.

18. Provide a list of sites (names, places, addressees) to project manager so secretary can type UPS communication.

19. Prepare and present workshops.

20. Assist in the unpacking of workshop materials at the workshop sites.

21. Set-up audio-visual aids at the workshops and mini workshops.

22. Help pack and unpack workshop equipment.

23. Complete workshop summary sheet by sites and workshop location to update materials distribution.
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**Computer Programmer**

1. Make arrangements for conversion to new program year. (June 1).

2. Continue development of the Apple program.
3. Edit and make appropriate changes for Interactive System (June 15-July 15).


5. Check with project manager for testing of both IBM and Apple Software products.

6. Make back-up disk for Interactive VIEW (August 1).

7. Make duplicate Interactive VIEW disks for mailing of IBM as soon as possible after August 1.


9. Install Interactive VIEW at the Virginia Tech Counseling Center.

10. Assist users with computer questions throughout the year.

11. Develop new programs and refine existing programs as needed.
12. Write documentation for Interactive Programs.

13. Update data including career search and Interactive VIEW software.

Secretary

1. Input information on word processor for Career information Delivery System and workshops (invitations, list revisions, etc.).

2. Compile mailing lists and workshop invitation lists, and print envelopes.

3. Package materials for mailing according to orders.

4. Answer calls and refer calls to appropriate staff.

5. Prepare purchase requisitions, combos, low value purchase orders.

6. Type interdepartmental printing requests, service requests, and central store orders.
7. Type travel reimbursement forms, travel loans, and travel invoices.

8. Make travel arrangements such as state vehicle reservations, flight arrangements, and hotel reservations.
Appendix D

Staff Presentation Efforts and Virginia VIEW Quarterly Reports
April 1, 1993

Ms. Dolores Esser, Executive Director
Virginia Occupational Information
Coordinating Committee
Virginia Employment Commission
P. O. Box 1358
Richmond, VA 23211

Dear Dee:

This letter provides a summary of the quarterly activity for the Virginia Career Information Delivery System - Virginia VIEW, for the period January 1, 1993 to March 31, 1993. During this period we would like to emphasize five landmark activities as follows:

1. The toll-free Virginia Career Information Hotline received its 38,000th call since its initiation. The enclosed sheets detail these hotline calls and report some recent vignettes of typical Hotline callers.

2. The 1993 Virginia VIEW Career Hunt newspaper was researched, developed, printed and 50,000 copies distributed to persons who pre-ordered. Orders ranged from 20,000 copies sent to Henrico County Public Schools to many orders for 25 copies distributed across the state. Each Virginia Employment Commission Job Service Office received 100 copies of the 1993 Career Hunt. Our current stock of Career Hunts is all but depleted; however, we plan to print another 50,000 copies in September for distribution at our 1993 fall training workshops.

3. The information development cycle continues with inputting data from such sources as the U.S. Department of Labor, the Michigan Occupational Information System, and the VOIS. We are preparing our survey to send to each of Virginia's postsecondary institutions to obtain their current information for 1993-1994.

4. The research and development for the 1993 Virginia VIEW Career Hunt for Veterans is well underway. Mr. Ben Trotter has been in receipt of galleys for review and the bid for printing has been submitted. This additional forty page special focus career tabloid will be printed and 100,000 copies provided to Mr. Trotter by June 15, 1993.
5. The planning for the Fall 1993 training workshops for 1,300 counselors and other helping professionals is moving along at a good pace. We are reviewing carefully our workshop evaluation data on all phases of past workshops in order to carry each workshop out with maximum efficiency.

As you know, we have been working on our 1993-1994 Action Plan and budget which we submitted to you last month. We are excited about the prospect of providing all Virginians with a top-notch career information delivery system in 1993-1994 and hope to have your input on our Action Plan by April 15, 1993.

Thank you as always for your continuing support.

Very truly yours,

Carl McDaniels
Project Director
Carlisle

cc President James D. McComas

Provost E. Fred
Dean James Buffer
Division Director M.

David Alexander
September 30, 1992

Ms. Dolores Esser, Executive Director
Virginia Occupational Information Coordinating Committee
Virginia Employment Commission
P. O. Box 1358
Richmond, VA 23211

Dear Dee:

This is a letter providing a summary of the quarterly activity for the Virginia Career Information Delivery System, Virginia VIEW, for the period July 1, 1992 to September 30, 1992. As you know from past experience this period in the cycle of the four quarters of our project year is spent in doing two things:

- One, finalizing the current information for 1992 from all of our legion of sources and putting that into a multi-media form for distribution and use by Virginians throughout the Commonwealth.

- Two, arranging for all the myriad of details necessary for accommodating over 1,300 counselors, teachers, and other helping professionals in our 22 fall workshops across Virginia. These two main functions can be summarized in the following paragraphs.

First, this has been an especially busy period in the collection of vital career information. A major national source, the U. S. Department of Labor's Occupational Outlook Handbook 1992-1993 was not available until late June. This, of course, meant we had to wait for the release of this publication before we could update the national occupational projections to the year 2005. This is the latest the Occupational Outlook Handbook has ever been released.

A second major source of information which was not obtainable in a timely fashion was the new tuition and fee information for 2 and 4 year public institutions of higher education in Virginia. This information was unusually late this year because of last minute changes in student charges due to complication with the state budget. Thus there were two major sources of information seriously late, along with some other minor problems which made the collection of the data difficult and which had a rippling effect across our total data base, delaying the production of computer generated copy and subsequent product delivery.

Second the planning and carrying out of our 22 fall dissemination workshops underwent considerable review this year. For the first time workshop
invitations, stating times, locations, and asking Virginia VIEW users to RSVP indicating the workshop they planned to attend and their materials order by the end of June. Actually we accepted RSVPs until the beginning of September. This new procedure has worked well as a first time effort. Further it was decided that a special concentration should be made this fall on making available to our workshop participants a host of the latest materials published by others such as the 1992-1993 Virginia Health Career Reference Manual and the Virginia Community College System 1992-1994 Program Guide. A complete listing of new materials handed out to workshop participants this fall along with the fall workshop schedule are on the attached sheet.

In mid-September one of our four full time staff members, Ms. Lynn Marshall, left Virginia VIEW to become the new Director of Financial Aid at the Virginia College of Health Sciences in Roanoke. Ms. Marshall had been a valuable staff member for over two years. We have not had time to interview for a research associate to replace her and are using part time staff for now. If you have further questions about this quarter's work, please let me know.

Very truly yours,

Carl McDaniels
Project Director

cc President James McComas
Provost Fred Carlisle
Dean James Buffer

Division Director M. David Alexander
Virginia VIEW Quarterly Report
July 1 to October 31, 1991

- Welcomed to the Virginia VIEW staff Victoria Knox as the new Information Specialist, Mary Beth Noller and Debbie Byrd as Career Information Hotline Operators.

- Mary Anne Knobloch was a plan development leader at the JTPA Summer Youth Institute from August 12th through 16th.

- Calls to the Career Information Hotline increase each fall. Students starting school have their interest in the work of work stimulated and call for information about occupations. Adults who are interested in continuing their education call for information about training opportunities. Counselors and other helping professionals call for information about the annual Virginia VIEW training workshops and to receive support in using Virginia VIEW materials and computer programs. To date, the Hotline is approaching 33,000 calls since its inception.

- Completed development and preparation of all updated 1991-1992 Virginia VIEW print materials, all Virginia VIEW computer programs and Virginia VIEW microfiche. Developed, designed, and prepared camera ready copy for a 12 page newspaper called *Vocational VIEWs* aimed at
informing high school students about vocational education. Sent all materials to be printed or duplicated as appropriate.

- Distributed approximately 12,000 copies of the 12 page newspaper, Job Hunt. The Job Hunt was initially distributed to vocational education directors in early June 1991. This fall guidance counselors returning to their schools requested them. The remainder of Job Hunts were distributed to the counselors and helping professionals attending the fall Virginia VIEW workshops. They proved popular and the demand for them easily justifies re-printing were it possible within current budget restrictions.

- Coordinated with VOICC, the Virginia Department of Education, contact persons at public services agencies such as the VEC, Department of Social Services, Department of Correction, Guidance Directors of large school systems, to finalize the scheduling of the fall workshops. Wrote fall workshop invitations and sent them to over 5,000 counselors and helping professionals.

- Completed the logistics for the 1991 fall workshops including scheduling facilities, transportation, motel reservation, refreshments, and equipment. Eighteen workshops were scheduled for this fall, starting September 24 in Charlottesville and ending November 7 in Roanoke.
• Prepared application sessions for the fall workshops including designing overheads, preparing handouts, and developing a demonstration of the Interactive VIEW computer programs. Received from the U. S. Department of Education free copies of *A Student’s Guide* (to financial aid) to distribute to counselors and helping professionals attending the workshops. Designed extensive evaluation form to solicit feedback from counselors and helping professionals about their reactions to the workshops and their use of Virginia VIEW materials.
**Virginia VIEW 1995 Fall Training Workshop Attendance**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 24</td>
<td>Interlake, Salem High School</td>
<td>86</td>
</tr>
<tr>
<td>Sep 21</td>
<td>Blacksburg, Career Counseling</td>
<td>69</td>
</tr>
<tr>
<td>Sep 27</td>
<td>Allentown, Adult Center</td>
<td>62</td>
</tr>
<tr>
<td>Sep 28</td>
<td>Allentown, Work Center</td>
<td>37</td>
</tr>
<tr>
<td>Oct 4</td>
<td>Salem, Roanoke College</td>
<td>122</td>
</tr>
<tr>
<td>Oct 5</td>
<td>Salem, Roanoke College</td>
<td>60</td>
</tr>
<tr>
<td>Oct 10</td>
<td>Falls Church, Tidewater</td>
<td>56</td>
</tr>
<tr>
<td>Oct 11</td>
<td>Falls Church, Tidewater</td>
<td>49</td>
</tr>
<tr>
<td>Oct 12</td>
<td>Falls Church, Tidewater</td>
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<td>Oct 13</td>
<td>Falls Church, Tidewater</td>
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<tr>
<td>Oct 17</td>
<td>Lynchburg, Liberty University</td>
<td>78</td>
</tr>
<tr>
<td>Oct 18</td>
<td>Charlestowne, National Guard</td>
<td>45</td>
</tr>
<tr>
<td>Oct 19</td>
<td>Blacksburg, Spectraflex Tech Co</td>
<td>58</td>
</tr>
<tr>
<td>Oct 21</td>
<td>Richmond, National Guard</td>
<td>44</td>
</tr>
<tr>
<td>Oct 24</td>
<td>Richmond, National Guard</td>
<td>32</td>
</tr>
</tbody>
</table>

**TOTAL ATTENDING**: 1402

The chart below shows some of the Virginia VIEW materials that were distributed at the Virginia VIEW 1995 Fall Training Workshops.

**Also distributed were:**

- 140,000 copies of the 1995 VIEW 5th edition
- 24,000 copies of the 1995 Career Outlook newsletter
- 531 sets of the 1994-95 PreVIEWs notebook
- 479 sets of the 1994-95 Complete Career Information notebook

*Virginia VIEW, Virginia Tech, 205 W. Rooneke Street, Blacksburg, VA 24061-0627, toll-free Career Information Hotline, 1-800-342-5870, January 1996.*
Virginia VIEW User Sites as of January 4, 1996

<table>
<thead>
<tr>
<th>Public Elementary School</th>
<th>107</th>
</tr>
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<tbody>
<tr>
<td>Public Middle School</td>
<td>254</td>
</tr>
<tr>
<td>Public High School</td>
<td>444</td>
</tr>
<tr>
<td>Private School (K-12)</td>
<td>41</td>
</tr>
<tr>
<td>Community College</td>
<td>52</td>
</tr>
<tr>
<td>4 Year College/University</td>
<td>58</td>
</tr>
<tr>
<td>VA Dept of Rehab</td>
<td>46</td>
</tr>
<tr>
<td>VA Dept of Social Services</td>
<td>41</td>
</tr>
<tr>
<td>VA Dept of Girls</td>
<td>3</td>
</tr>
<tr>
<td>VCC</td>
<td>1</td>
</tr>
<tr>
<td>Hospital</td>
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<td>Libraries</td>
<td>58</td>
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<tr>
<td>Peterson Office</td>
<td>8</td>
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<td>EPA</td>
<td>44</td>
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<tr>
<td>Private Counseling</td>
<td>51</td>
</tr>
<tr>
<td>Military</td>
<td>24</td>
</tr>
<tr>
<td>TOTAL User Sites</td>
<td>1463</td>
</tr>
</tbody>
</table>

The pie chart below shows the approximate distribution of Virginia VIEW user sites. The bar chart shows how many of each type of Virginia VIEW computer program was distributed.

Virginia VIEW, Virginia Tech, 205 W. Roanoke Street, Blacksburg, VA 24061-0537, toll-free Career Information Hotline, 1-800-542-3334, January 1996

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Appendix E
Virginia Department of Education Evaluation Results
Section 2 (continued)

Question: How is the Virginia VIEW Project evaluated?

Answer

Appropriate system evaluation of Virginia VIEW is performed on a continuous basis during the performance period and includes:

- Workshop training evaluations by participants
- Feedback from advisory groups of users from a variety of settings
- Special research projects
- Review and evaluations of system data and materials by users and guidance professionals
- Use of products and services in Virginia

Specifically, the following evaluations have been conducted from 1982 through 1993-94:

1982 Use of Virginia VIEW microfiche

1983 User satisfaction with Virginia VIEW

1984 Workshop outcomes reported by counselors and vocational educators

1987 Career Search Accessing Strategy

1987 Use of Virginia VIEW among the Virginia Department of Rehabilitative Services Counselors, evaluators, supervisors, and technicians

1989 Comparison with the computer assisted guidance system, DISCOVER
Survey Findings (continued)

- What respondents can afford to pay for Virginia VIEW products and services: One third of the respondents indicated they could not afford to pay for Virginia VIEW products and services. Approximately another one third indicated they could afford to pay no more than $50 per year. The majority of the respondents indicated they felt Virginia VIEW should be funded at the state level and at the central offices of agencies that use the products and services.

- What other career information resources would the respondents use if Virginia VIEW products were discontinued?

The Occupational Outlook Handbook was the most frequently chosen alternate resource to Virginia VIEW products. A TOTAL OF 41 PERCENT OF THE RESPONDENTS INDICATED THEY WOULD NOT BE ABLE TO REPLACE VIRGINIA VIEW PRODUCTS AND SERVICES.

A sizable number (30 percent) of the respondents indicated they would try to personally research requests for information. The majority of respondents indicated they would not use other occupational information computer programs either commercial or in the public domain. (See Appendix C for additional information about Virginia VIEW surveys.)
Section 2 (continued)

Virginia VIEW Evaluations (continued)

1989 Counselors', students' and clients' rating of delivery media's usefulness and of the helpfulness of system information

1990 Annual survey of users of Virginia VIEW (counselors, vocational educators, and other helping professionals)

1991 Annual survey of users of Virginia VIEW (counselors, vocational educators, and other helping professionals)

1992 Annual survey of users of Virginia VIEW (counselors, vocational educators, and other helping professionals)

1993 Annual survey (see next question for details)

**Question:** How was Virginia VIEW evaluated in 1993-94?

**Answer**

In 1993-94, Virginia VIEW was evaluated as follows. All three surveys reflect overwhelming agreement on the effectiveness of the Virginia VIEW system.

1. **Survey conducted by the Department of Education**
   Survey of 271 guidance counselors asking for feedback about the Virginia State Career Information Delivery System.

2. **Survey conducted by the VEC**
   Survey of 1,000 Virginia VIEW workshop attendees, individuals who received the VOICC and Forum newsletters and names provided by the VDCE (response rate was approximately 10%)

3. **Survey conducted by Virginia VIEW**
   Survey of counselors, teachers, and other helping professionals who attended training workshops held across the state
Section 2 (continued)

**Question:** What were the objectives of the 1993-94 survey of guidance counselors?

**Answer**

1. The primary objectives of the survey were to obtain feedback regarding:

   - Frequency of use and the relative value of Virginia VIEW products and services
   - Amount of fees users could afford should it be necessary to charge for Virginia VIEW products and services.

2. Secondary objectives included examining:

   - How Virginia VIEW materials are used
   - Outcomes attributed to the use of Virginia VIEW products and services
   - What other career information and materials respondents would use if the Virginia VIEW Project were discontinued.

The findings of the survey included:

- 34 percent of respondents indicated Interactive VIEW was the product they used most frequently followed by the Career Hunt newspaper (23 percent) and the Complete Career Information Microfiche (15 percent).

- When asked to indicate their agreement with the statement "Virginia VIEW materials are the best resource for occupational and educational information" on a scale of 1 to 4 with 1 being "agree" and 4 being "disagree," half the respondents indicated they agreed.
Appendix F

Virginia VIEW Workshop Evaluation Sheet
Example of a Workshop Evaluation Form:

Please circle the numbers which best express your opinion:


TODAY'S WORKSHOP SESSIONS:
1. The "Theory & Practice of Virginia VIEW for New Users" was:
   1  2  3  4
2. The "Revised & Updated Virginia VIEW for 1991-1992" was:
   1  2  3  4
3. The "Virginia VIEW and Information on Financial Aid" was:
   1  2  3  4
4. The "Virginia VIEW and Job Search Strategies" was:
   1  2  3  4

WORKSHOP CONTENT AND FORMAT
1. The overall content of the workshop was:
   1  2  3  4
2. The format of the workshop was:
   1  2  3  4
3. The handouts were:
   1  2  3  4
4. Workshop topics and their applicability to my work situation were:
   1  2  3  4

Figure 73 Virginia VIEW Workshop Evaluation Sheet
Appendix G

1988 VIEWscript
COMPUTER OPERATOR (1)
(VIEWScript #40)

OCCUPATIONAL SPECIALTIES

<table>
<thead>
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<th>DESCRIPTION</th>
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<tr>
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<td>213.362-010</td>
<td>COMPUTER OPERATOR (1)</td>
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<tr>
<td>4612</td>
<td>213.382-010</td>
<td>COMPUTER-PERIPHERAL-EQUIPMENT OPERATOR (1)</td>
</tr>
<tr>
<td>4613</td>
<td>213.685-010</td>
<td>DATA PROCESSING</td>
</tr>
<tr>
<td>4613</td>
<td>208.685-030</td>
<td>SORTING-MACHINE OPERATOR (1)</td>
</tr>
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</table>

TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATURE OF THE OCCUPATION</td>
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</tr>
<tr>
<td>WORKING CONDITIONS</td>
<td>4</td>
</tr>
<tr>
<td>WORKER REQUIREMENTS</td>
<td>5</td>
</tr>
<tr>
<td>EARNINGS &amp; ADVANCEMENT</td>
<td>6</td>
</tr>
<tr>
<td>EMPLOYMENT &amp; OUTLOOK</td>
<td>8</td>
</tr>
<tr>
<td>EDUCATION &amp; TRAINING DIAL</td>
<td>10</td>
</tr>
<tr>
<td>RELATED EDUCATION &amp; TRAINING</td>
<td>11</td>
</tr>
<tr>
<td>REVIEW QUESTIONS/SUPPLY DATA</td>
<td>13</td>
</tr>
<tr>
<td>SOURCES OF MORE INFORMATION</td>
<td>14</td>
</tr>
</tbody>
</table>

(1) ENLISTED AND (2) OFFICER MILITARY OCCUPATION; SEE MILITARY FILE IN FICHE #56 THROUGH #62.
NATURE OF THE OCCUPATION

COMPUTER OPERATORS MONITOR AND CONTROL ELECTRONIC DATA PROCESSING SYSTEMS WHICH ARE USED TO PROCESS BUSINESS, SCIENTIFIC, ENGINEERING, OR OTHER DATA. THEY ARE ALSO KNOWN AS DIGITAL-COMPUTER OPERATORS.

DUTIES:

GENERALLY, A COMPUTER OPERATOR'S DUTIES WILL INCLUDE:

- Using job set-up instructions to decide what equipment will be used and the order of its use
- Setting control switches plus selecting and loading data and materials needed for the computer run
- Using various switches or keys to clear the system and start the computer
- Separating output when sending data to different users
- Watching the computer and peripheral equipment for errors and breakdowns
- Determining the reasons for breakdown when the computer stops or error lights appear
- Keeping records on the operating time and use of the computer

OCCUPATIONAL SPECIALTIES:

COMPUTER OPERATORS MAY SPECIALIZE BY THE TYPE OF EQUIPMENT THEY OPERATE.

COMPUTER-PERIPHERAL-EQUIPMENT OPERATORS CONTROL AND MONITOR PERIPHERAL MACHINES SUCH AS CARD-TAPE CONVERTERS AND HIGH-SPEED PRINTERS TO TRANSFER DATA FROM CARDS AND TAPES AND CONVERT STORED DATA TO PRINTED RECORDS.

DATA PROCESSING AUXILIARY-EQUIPMENT OPERATORS TEND MACHINES WHICH SORT, ASSEMBLE, SEPARATE, CONVERT, OR REPRODUCE COMPUTER DATA. THESE MACHINES INCLUDE BURSTING MACHINES, COLLATORS, AND INTERPRETERS.

SORTING-MACHINE OPERATORS TEND MACHINES THAT AUTOMATICALLY SORT PERFORATED TABULATING CARDS INTO SPECIFIED GROUPS. THEY MAY ALSO REPRODUCE DAMAGED CARDS ON A KEYPUNCH MACHINE.
TOOLS, EQUIPMENT, & MATERIALS:

MACHINES, EQUIPMENT, AND WORK AIDS USED INCLUDE:
INPUT DEVICES SUCH AS CARD OR PAPER TAPE READERS, MAGNETIC TAPE UNITS, AND OPTICAL SCANNERS
OUTPUT DEVICES SUCH AS HIGH-SPEED PRINTERS AND TV DISPLAYS
OTHER DEVICES SUCH AS CONSOLES, CONTROL PANELS, CONVERTERS, PROGRAMS, PUNCHEO CARDS, MAGNETIC TAPES, DISKS AND DISKETTES, FLOW CHARTS, JOB STREAMS, PROCEDURES CHARTS, AND RELATED ITEMS.

*DID YOU KNOW?* VIEW FACT

THE FIRST COMPUTER WAS INSTALLED FOR COMMERCIAL USE IN 1957.

*DID YOU KNOW?* VIEW FACT

COMPUTER OPERATORS ARE ALSO CALLED:
DATA TYPISTS
CONSOLE OPERATORS
HIGH SPEED PRINTER OPERATORS
CARD-TAPE-CONVERTER OPERATORS
WORKING CONDITIONS

Computer operators work with or around other people in well-lighted, comfortable surroundings. Since computers are kept in areas where the temperature must be carefully controlled, operators work in air-conditioned rooms. Much of their time is spent standing and walking about while loading and checking machines. The work is not difficult, but operators may become mentally tired at times. Work areas may be noisy.

Computer operators work a 5-day, 40-hour week. Operators may work overtime frequently when deadlines have to be met. Many computer installations are in operation 24 hours a day, and employees work in shifts. Work schedules may include days, evenings, or nights. Computer operators may also have to work holidays and weekends.

Many computer operators belong to a union or professional association. Associations may include the American Federation of Information Processing Societies, the Data Processing Management Association, and the Association for Computing Machinery. Members of an association or union must pay periodic membership fees. The Institute for Certification of Computer Professionals offers certification based on tests of knowledge and professional skill. Fees are charged.
WORKER REQUIREMENTS

YOU SHOULD BE ABLE TO:

WORK IN A ROUTINE, ORGANIZED MANNER
WORK ACCURATELY AND THINK LOGICALLY (STEP BY STEP)
WORK WELL UNDER PRESSURE AND USE TIME EFFECTIVELY
FOLLOW DETAILED INSTRUCTIONS
PERFORM A VARIETY OF DUTIES WHICH MAY CHANGE OFTEN
SEE DETAILS AND RECOGNIZE ERRORS IN NUMBERS, SPELLING, AND PUNCTUATION IN
WRITTEN MATERIALS, CHARTS, OR TABLES
PERFORM ACTIVITIES WHICH INVOLVE THE USE OF MACHINES, PROCESSES, OR
METHODS

PHYSICALLY YOU MUST:

HAVE FULL USE OF YOUR HANDS AND ARMS
HAVE GOOD VISION AND HEARING (EITHER NATURALLY OR WITH CORRECTION)

SPECIAL REQUIREMENTS:

MANY LARGE FIRMS OFFER TRAINING PROGRAMS REQUIRING NO PREVIOUS EXPERI-
ENCE, WHILE OTHERS REQUIRE UP TO 2 YEARS TRAINING OR EXPERIENCE. SMALL FIRMS
USUALLY REQUIRE AT LEAST 6 MONTHS EXPERIENCE IN DATA PROCESSING. MANY
EMPLOYERS GIVE ABILITY TESTS TO APPLICANTS. SOME EXPECT OPERATORS TO KEEP IN-
FORMED ABOUT DATA COMMUNICATION TRENDS.

OPPORTUNITIES FOR EXPERIENCE:

SECONDARY VOCATIONAL EDUCATION PROGRAMS IN BUSINESS/OFFICE EDUCATION MAY
OFFER A CO-OP COMPONENT THROUGH WHICH OPPORTUNITIES FOR EXPERIENCE MAY BE
GAINED. ADDITIONAL EXPERIENCE MAY COME FROM SUMMER AND PART-TIME WORK WITH
COMPUTER CENTERS, GOVERNMENTAL AGENCIES, WORK-EXPERIENCE PROGRAMS THROUGH COM-
MUNITY COLLEGES, AND DURING MILITARY SERVICE.

METHODS OF ENTRY:

METHODS OF ENTERING THE FIELD INCLUDE APPLYING DIRECTLY TO EMPLOYERS AND
TAKING CIVIL SERVICE EXAMINATIONS. JOB OPENING INFORMATION MAY BE OBTAINED
FROM SCHOOL PLACEMENT OFFICES, NEWSPAPER WANT ADS, AND LOCAL OFFICES OF THE
VIRGINIA EMPLOYMENT COMMISSION.
WORKER REQUIREMENTS (CONT'D)

ASSISTANCE IN LOCATING JOBS MAY BE OBTAINED BY CONSULTING PLACEMENT OFFICES OF SCHOOLS AND COLLEGES OR NEWSPAPER WANT ADS. SOME WORKERS SUCH AS KEYPUNCH, TABULATING, AND BOOKKEEPING MACHINE OPERATORS MAY BE TRANSFERRED TO COMPUTER OPERATOR JOBS BY THEIR EMPLOYERS.

EARNINGS AND ADVANCEMENT

EARNINGS OF COMPUTER OPERATORS DEPEND ON THE EMPLOYER, OPERATOR'S EXPERIENCE, AND SENIORITY. THOSE EMPLOYED IN MANUFACTURING INDUSTRIES USUALLY EARN HIGHER SALARIES.

EARNINGS:

NATIONALLY, COMPUTER OPERATORS HAD MEDIAN ANNUAL EARNINGS RANGING BETWEEN $14,000 AND $25,000 PER YEAR IN 1987, DEPENDING ON THEIR EXPERIENCE, LEVEL OF RESPONSIBILITY, AND THE SIZE OF THE COMPUTER INSTALLATION. LEAD OPERATORS EARNED AVERAGE SALARIES, RANGING BETWEEN $20,000 AND $31,500 PER YEAR. EARNINGS WERE GENERALLY HIGHEST IN THE GREAT LAKES REGION DUE TO A HIGH CONCENTRATION OF MANUFACTURING, AND IN LARGE METROPOLITAN AREAS. IN THE FEDERAL GOVERNMENT, COMPUTER OPERATORS WITH NO WORK EXPERIENCE STARTED AT $13,248 A YEAR IN 1987.

IN VIRGINIA EARNINGS FOR COMPUTER OPERATORS DEPEND UPON EXPERIENCE, EDUCATION, AND PLACE OF EMPLOYMENT. THE FOLLOWING AREAS IN VIRGINIA ILLUSTRATE APPROXIMATE WEEKLY EARNINGS FOR COMPUTER OPERATORS EMPLOYED IN MANUFACTURING INDUSTRIES IN 1985.

<table>
<thead>
<tr>
<th>AREA</th>
<th>LOWEST</th>
<th>HIGHEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>LYNCHBURG</td>
<td>$180 - $239</td>
<td>$420 - $479</td>
</tr>
<tr>
<td>NORFOLK/NEWPORT NEWS</td>
<td>$180 - $239</td>
<td>$540 - $599</td>
</tr>
<tr>
<td>NORTHERN VIRGINIA</td>
<td>$180 - $239</td>
<td>$540 - $599</td>
</tr>
<tr>
<td>RICHMOND</td>
<td>$180 - $239</td>
<td>$1090 - $1139</td>
</tr>
<tr>
<td>ROANOKE</td>
<td>$120 - $179</td>
<td>$840 - $899</td>
</tr>
<tr>
<td>BRISTOL</td>
<td>$180 - $239</td>
<td>$660 - $719</td>
</tr>
</tbody>
</table>

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EARNINGS AND ADVANCEMENT (CONT'D)

FRINGE BENEFITS:

DEPENDING ON THE EMPLOYER, COMPUTER OPERATORS RECEIVE PAID VACATIONS AND HOLIDAYS; LIFE, ACCIDENT, DISABILITY, AND HOSPITALIZATION INSURANCE; RETIREMENT PLANS; AND SICK PAY.

CAREER LADDER:

A CAREER LADDER FOR A COMPUTER OPERATOR MAY LOOK LIKE THIS:

LEAD COMPUTER OPERATOR

SENIOR COMPUTER OPERATOR

*COMPUTER OPERATOR*

TRAINEE

COMPUTER OPERATOR TRAINEES ADVANCE TO HIGHER POSITIONS THROUGH A COMBINATION OF TRAINING AND EXPERIENCE. SOME OPERATORS ADVANCE TO SENIOR OR LEAD COMPUTER OPERATOR POSITIONS AFTER GAINING EXPERIENCE. THOSE WHO DEMONSTRATE WORK AND LEADERSHIP SKILLS MAY ADVANCE TO SUPERVISORY POSITIONS. WITH ADDITIONAL EDUCATION AND/OR TRAINING, SOME OPERATORS BECOME COMPUTER PROGRAMMERS.

RELATED VIEWSCRIPTS:

# 2 - COMPOSITOR & TYPESETTER (FICHE #DT16)
# 34 - BOOKKEEPING AND BILLING MACHINE OPERATOR (FICHE #DT14)
# 41 - COMPUTER PROGRAMMER (FICHE #DT1)
# 50 - DATA ENTRY EQUIPMENT OPERATOR (FICHE #DT17)
# 65 - TYPIST (FICHE #DT30)
#354 - WORD PROCESSOR (FICHE #DT31)
#211 - NUMERICAL CONTROL TOOL PROGRAMMER (FICHE #DT25)
# 52 - OFFICE MACHINE OPERATOR (FICHE #T9)
EMPLOYMENT AND OUTLOOK

NATIONAL OUTLOOK:

NATIONALLY, ABOUT 311,500 COMPUTER OPERATING PERSONNEL WERE EMPLOYED IN 1984. EMPLOYMENT IS EXPECTED TO RISE MUCH FASTER THAN THE AVERAGE FOR ALL OCCUPATIONS THROUGH THE MID-1990'S.

RECENT ADVANCES IN MINIATURIZING CIRCUITS HAVE REDUCED BOTH THE SIZE AND COST OF COMPUTER COMPONENTS. AS THIS TECHNOLOGY DEVELOPS, A CONTINUING EXPANSION IN THE USE OF COMPUTERS IS EXPECTED, ESPECIALLY BY SMALL BUSINESSES. THIS WILL SPUR DEMAND FOR COMPUTER OPERATORS. HOWEVER, EMPLOYMENT OF OPERATORS BY COMPUTER SERVICE FIRMS MAY GROW LESS RAPIDLY THAN IN THE PAST AS MORE SMALL FIRMS INSTALL THEIR OWN COMPUTERS.

VIRGINIA EMPLOYMENT:

IN VIRGINIA THERE WERE APPROXIMATELY 6,569 COMPUTER OPERATORS EMPLOYED IN 1984. THE PROJECTED EMPLOYMENT FOR 1995 IS 9,672. AN AVERAGE OF 382 JOB OPENINGS IS EXPECTED ANNUALLY WITH 282 DUE TO GROWTH AND 100 NEEDED TO REPLACE THOSE WHO QUIT WORKING. ADDITIONAL OPENINGS OCCUR WHEN COMPUTER OPERATORS ARE PROMOTED OR CHANGE OCCUPATIONS.
EMPLOYMENT AND OUTLOOK (CONT'D)

VIRGINIA SERVICE DELIVERY AREAS EMPLOYMENT OUTLOOK TO 1995:

<table>
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<tr>
<th>REGION</th>
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<th>EMPLOYMENT</th>
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<tbody>
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<td></td>
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<tr>
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<td>214</td>
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<tr>
<td>3</td>
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<tr>
<td>4</td>
<td>246</td>
<td>320</td>
<td>11</td>
</tr>
<tr>
<td>5 &amp; 6</td>
<td>2,509</td>
<td>3,605</td>
<td>138</td>
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<td>7</td>
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<td>10 &amp; 11</td>
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<tr>
<td>12</td>
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<td>13</td>
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<td>14</td>
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<tr>
<td>14</td>
<td>890</td>
<td>1,159</td>
<td>38</td>
</tr>
</tbody>
</table>

*Less than 5

SERVICE DELIVERY AREAS

1. New Southside
   COUNTRIES: Buchanan, Dickenson, Lee, Russell, Scott, Tazewell, Wise. CITY: Norton

2. New River/Mountains Region

3. Roanoke Region
   COUNTRIES: Alleghany, Bath, Carroll, Franklin, Highland, Pulaski, Roanoke, Russell, Tazewell, Wise. CITY: Riner

4. Shenandoah

5. Northern Virginia & Alexandria
   COUNTRIES: Prince George, Prince William, Arlington. CITIES: Alexandria, Falls Church, Manassas, Manassas Park, Alexandria

6. Alexandria-Arlington
   COUNTRIES: Fairfax, Loudoun, Prince William, Arlington. CITIES: Falls Church, Fairfax, Falls Church, Manassas, Manassas Park, Alexandria

7. Peninsula
   COUNTRIES: Accomack, Campbell, Gloucester, Mathews, Middlesex, Northampton, Southampton, Suffolk, Virginia Beach

8. Central Peninsula
   COUNTRIES: Albemarle, Amherst, Augusta, Bedford, Campbell, Nelson, Farmville, Forestville
   CITIES: Bedford, Danville, Lynchburg, Martinsville

9. South Central
   COUNTRIES: Alleghany, Barbour, Buchanan, Charlotte, Cumberland, Daboll, Orange, Pulaski, Smyth, Tazewell, Wise. CITY: Chilhowie

10. Richmond & Newport News
    COUNTRIES: Amelia, Brunswick, Buchanan, Charlotte, Chesterfield, Dinwiddie, Goochland, Halifax, Lunenburg, Mecklenburg, Hanover, Prince Edward, Prince George, Surry, Surrey. CITIES: Colonial Heights, Emporia, Powhatan, Hampton, Petersburg, South Boston

11. Richmond
    CITY: Richmond

12. Bay Area
    COUNTRIES: Accomac, Caroline, Currituck, King George, King & Queen, King William, Lancaster, Mathews, Middlesex, Northampton, Northumberland, Richmond, Sussex, Wythe
    CITY: Fredericksburg

13. Newport News/Wilkes Area
    COUNTRIES: Gloucester, James City, York. CITIES: Hampton, Newport News, Poquoson, Williamsburg

14. Tidewater
    COUNTRIES: Isle of Wight, Southampton. CITIES: Chesapeake, Franklin, Gloucester, Port Warwick, Suffolk, Virginia Beach

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THIS DIAL SHOWS THE LEVELS OF EDUCATION & TRAINING AVAILABLE IN VIRGINIA. THE NUMBERS IN THE CENTER OF THE DIAL APPLY TO THIS OCCUPATION.

EDUCATION & TRAINING DIAL

2. ON-THE-JOB TRAINING (OJT) FROM AN EMPLOYER IS HELPFUL IN PREPARING FOR THIS OCCUPATION (MAY OR MAY NOT REQUIRE A HIGH SCHOOL DIPLOMA).

3. A HIGH SCHOOL DIPLOMA OR GED IS HELPFUL IN PREPARING FOR THIS OCCUPATION. (SEE PAGE 11 FOR RELATED SCHOOL SUBJECTS)

4.* A HIGH SCHOOL DIPLOMA AND A SPECIFIC VOCATIONAL EDUCATION PROGRAM ARE HELPFUL IN PREPARING FOR THIS OCCUPATION. (SEE PAGE 11)

5.* VIRGINIA PROPRIETARY SCHOOLS OFFER PROGRAMS THAT ARE HELPFUL IN PREPARING FOR THIS OCCUPATION. (SEE PAGES 11 & 12)

6.* VIRGINIA COMMUNITY COLLEGES OFFER PROGRAMS THAT ARE HELPFUL IN PREPARING FOR THIS OCCUPATION. (SEE PAGES 11 & 12)

*LEVEL(S) OF EDUCATION & TRAINING USUALLY NEEDED FOR THIS OCCUPATION.
RELATED EDUCATION & TRAINING

SCHOOL SUBJECTS:

THE FOLLOWING SUBJECTS OFFERED IN VIRGINIA SCHOOLS ARE HELPFUL IN PREPARING FOR THIS OCCUPATION:

ACCOUNTING
ALGEBRA
BUSINESS COMPUTER APPLICATIONS
COMPUTER LITERACY
COMPUTER SCIENCE
COOPERATIVE OFFICE EDUCATION

DATA PROCESSING

INTRODUCTION TO BUSINESS
KEYBOARDING
RECORD KEEPING
TYPING

POSTSECONDARY PROGRAM:

DATA PROCESSING

PROGRAMS IN DATA PROCESSING PROVIDE OPPORTUNITIES TO GAIN THE KNOWLEDGE AND SKILLS NEEDED IN A WIDE VARIETY OF JOBS DEALING WITH THE SORTING, ANALYZING, AND PROCESSING OF INFORMATION USING COMPUTERS AND OTHER ELECTRONIC AND MECHANICAL EQUIPMENT.

COURSES WITHIN DATA PROCESSING AND COMPUTER SCIENCE PROGRAMS WILL VARY FROM SCHOOL TO SCHOOL BUT MAY INCLUDE:

KEY PUNCH
INTRODUCTION TO COMPUTERS
FORTRAN PROGRAMMING
COBOL PROGRAMMING
REPORT PROGRAM GENERATOR
TELEPROCESSING
PRINCIPLES AND PURPOSES OF DATA PROCESSING
SYSTEMS DESIGN AND CONTROL
COMPUTER OPERATION
ASSEMBLER LANGUAGE AND SOFTWARE

THE MOST COMMON REQUIREMENTS FOR ENTERING A COMMUNITY COLLEGE OR PRIVATE CAREER SCHOOL ARE A HIGH SCHOOL DIPLOMA, OR GED, OR BEING AT LEAST 18 YEARS OLD AND ABLE TO BENEFIT FROM THE PROGRAM, AND COMPLETING APPLICATION FORMS. COMMUNITY COLLEGES HAVE ADDITIONAL REQUIREMENTS FOR CERTAIN PROGRAMS. ENTERING A COLLEGE OR UNIVERSITY MAY REQUIRE GRADUATION FROM HIGH SCHOOL IN A COLLEGE PREPARATORY PROGRAM AND IN SOME CASES COMPLETING SPECIFIC COURSES; A GRADE POINT AVERAGE ACCEPTABLE TO THE SCHOOL APPLIED TO; AND PASSING ENTRANCE EXAMINATIONS.
RELATED EDUCATION & TRAINING (CONT'D)

VIRGINIA PROGRAM SUMMARY:

COMMUNITY COLLEGES/PUBLIC OR PRIVATE 2-YEAR INSTITUTIONS:
COMMONWEALTH COLLEGE (NORFOLK,
(PENINSULA, VIRGINIA BEACH)
DABNEY LANCASTER COMMUNITY COLLEGE
DANVILLE COMMUNITY COLLEGE
EASTERN SHORE COMMUNITY COLLEGE
GERMANNIA COMMUNITY COLLEGE
J. SARGEANT REYNOLDS COMM. COLLEGE
JOHN TYLER COMMUNITY COLLEGE
NATIONAL BUSINESS COLLEGE
NORTHERN VIRGINIA COMM. COLLEGE
PATRICK HENRY COMM. COLLEGE
SOUTHWEST VIRGINIA COMM. COLLEGE
THOMAS NELSON COMMUNITY COLLEGE
TIDewater COMMUNITY COLLEGE
VIRGINIA COLLEGE
VIRGINIA WESTERN COMM. COLLEGE
WYTHEVILLE COMMUNITY COLLEGE

PROPRIETARY SCHOOLS:
ADVANCED MANAGEMENT
ATI CAREER INSTITUTE
COMMONWEALTH COLLEGE (RICHMOND)
COMPTRAIN, INC.
COMPUTER DATA INSTITUTE
COMPUTER DYNAMICS INSTITUTE
(both campuses)
COMPUTER LEARNING CENTER
DOMINION CAREER INSTITUTE (COLONIAL
HEIGHTS)
ELECTRONIC COMPUTER PROGRAMMING INST.
(all campuses)

SOME SCHOOL DISTRICTS OFFER EVENING OR WEEKEND ADULT VOCATIONAL EDUCATION
PROGRAMS. FOR INFORMATION CHECK WITH THE VOCATIONAL EDUCATION COORDINATORS IN
THE SCHOOL DISTRICTS.

MILITARY TRAINING:
SEVERAL BRANCHES OF THE MILITARY SERVICE PROVIDE TRAINING AND WORK
OPPORTUNITIES FOR COMPUTER OPERATORS.

FOR RELATED MILITARY INFORMATION, SEE FICHE #56, FRAME E7.
THE MILITARY ACCEPTS VERY FEW NON-HIGH SCHOOL GRADUATES.
SUPPLY DATA

THE FOLLOWING CHART SHOWS IN VIRGINIA (1985-86) THE NUMBER OF INDIVIDUALS COMPLETING TRAINING PROGRAMS FOR COMPUTER OPERATOR.

<table>
<thead>
<tr>
<th>STATE OF VIRGINIA</th>
<th>PROGRAM TITLE</th>
<th>COMPLETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SECONDARY VOC. ED.</td>
<td>GEN BUSINESS DATA PROC/REL PROGS</td>
<td>1,516</td>
</tr>
<tr>
<td>PRIVATE CAREER SCHOOL</td>
<td>GEN BUSINESS DATA PROC/REL PROGS</td>
<td>440</td>
</tr>
<tr>
<td></td>
<td>BUSINESS COMPUTER &amp; CONSOLE OPER</td>
<td>372</td>
</tr>
<tr>
<td>CERT/DIPLOM, COMM. COLL.</td>
<td>GEN BUSINESS DATA PROC/REL PROGS</td>
<td>50</td>
</tr>
<tr>
<td>ASSOCIATE, COMM. COLL.</td>
<td>GEN BUSINESS DATA PROC/REL PROGS</td>
<td>517</td>
</tr>
</tbody>
</table>

TRAINING PROGRAMS VARY ACCORDING TO TITLE, LENGTH, AND COURSE OFFERINGS. PROGRAMS WITH THE SAME OR SIMILAR TITLE MAY NOT ALWAYS OFFER PREPARATION FOR THE SAME OCCUPATION. THEREFORE, THE NUMBER OF COMPLETERS MAY NOT BE INDICATIVE OF THE SUPPLY FOR THIS OCCUPATION.

**DID YOU KNOW?**

INSTRUCTIONS THAT ARE TO BE PROCESSED ARE CALLED “INPUT” AND THE RESULTS AFTER PROCESSING ARE CALLED “OUTPUT.”
SOURCES OF MORE INFORMATION

*DATA PROCESSING MANAGEMENT ASSO.
505 BUSSE HIGHWAY
PARK RIDGE, IL 60068

*AMER. FEDERATION OF INFORMATION
PROCESSING SOCIETIES
1889 PRESTON WHITE DRIVE
RESTON, VA 22091

LOCAL, STATE, AND FEDERAL CIVIL
SERVICE OFFICES

LOCAL OFFICE OF THE VIRGINIA
EMPLOYMENT COMMISSION

MILITARY SERVICE RECRUITERS

INSTITUTE FOR CERTIFICATION OF
COMPUTER PROFESSIONALS
2200 EAST DEVON AVENUE
DES PLAINES, IL 60018

LOCAL SCHOOL/COLLEGE PLACEMENT
OFFICES

*PRINTED OCCUPATIONAL INFORMATION AVAILABLE UPON WRITTEN REQUEST
Appendix H

Virginia VIEW Workbook
VIRGINIA VIEW OCCUPATION SEARCH

Each person has unique interests, talents, abilities, strengths, and preferences for activities. You probably have your own ideas about what you want in a job. Each occupation demands workers for specific jobs who can meet certain requirements. The Virginia VIEW Occupation Search will help you identify occupations where there is a match between what you want in a job and occupations that often offer jobs meeting your requirements.

POINTS TO REMEMBER

- Follow the directions carefully and write your choices on the Virginia VIEW Occupation Search Worksheet.
- THIS IS NOT A TEST! There are no right or wrong answers. Your answers should reflect your ideas about what you want in your work situation. You can experiment with changing your answers to consider different occupations matching your different ideas about what you want in a job.
- After you complete the Occupation Search, you can locate information about the occupations that match your preferences on the Virginia VIEW Microfiche or on the Interactive VIEW computer program.
- Keep in mind that your ideas about what you want in a job may change as you add to your experiences and learn more about occupations.
- Remember that occupations involve similar tasks but jobs involve specific tasks. There are usually many job opportunities in any occupation. An occupation may generally match your requirements, but any specific job performed in the occupation will vary in how well it meets the qualities you want in a job.

Components of the Occupation Search

I Interests

are defined in terms of whether an occupation involves working with Data, People and/or Things.

A Areas of Work

are defined in terms of broad occupational groups or fields of work.

P Physical Strengths

are defined in terms of the weight limitations of objects lifted and/or carried while performing the duties of the occupation.

P Physical Capabilities

are defined in terms of the physical abilities that are NOT required to enter the occupation.

W Working Conditions

are defined in terms of the physical surroundings (environment) in which the occupation is usually performed.

E Education Levels

are defined as the amount and/or kind of education or training the worker needs to enter the occupation.

T Temperaments

are defined as the characteristics the occupation demands of its workers.
Physical Strengths

Physical strengths are defined in terms of the lifting and carrying activities workers must perform. These categories are exclusive. That means if you indicate you want to do heavy work you will be matched with occupations involving only heavy work. NOTE: Due to increasing mechanization, very few occupations require heavy or even medium use of physical strength, thus the choice of medium or heavy will severely limit matching occupations.

DIRECTIONS:
Select the one strength category which you prefer. Enter your choice on the Virginia VIEW Occupation Search Worksheet above the letter "S". At the bottom of this page is an example showing you where to write your Physical Strength choice.

I Prefer Work Situations Which Require The Following Level Of Physical Strength:

Light Work: occupations which require the worker to lift no more than 20 pounds with frequent lifting and carrying of objects weighing up to 10 pounds.

Medium Work: occupations which require the worker to lift no more than 50 pounds with frequent lifting and carrying of objects weighing up to 25 pounds.

Heavy Work: occupations which require the worker to lift objects weighing over 50 pounds with frequent lifting and carrying of objects weighing over 25 pounds.

EXAMPLE:

This Worksheet is filled out to indicate the person prefers to work with both Data and People, in the Humanities, and doing Light work.

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Physical Capabilities

The duties of some occupations require a person to have specific physical capabilities. If a person does not possess certain physical capabilities, or chooses not to perform certain physical tasks, then occupations requiring those capabilities will not match. NOTE: the more physical tasks a person chooses not to perform the greater the number of occupations that will not match that person's requirements.

DIRECTIONS:
Select one or more physical capabilities which you DO NOT want to perform on your job. Enter your choices on the Virginia VIEW Occupation Search Worksheet above the letter "C". At the bottom of this page is an example showing you where to write the Physical Capabilities choices you do not want to perform.

I Prefer Occupations Which Do NOT Require The Worker To:

C Climb and Balance: climb poles, scaffolds, stairs or ramps using feet, legs, hands and arms.

H Handle, Reach Finger and Feel: extend the hands and arms, grip objects and use the fingers and fingertips to sense the texture, shape and size of objects.

K Kneel, Stoop and Crouch: bend both body and legs while moving about on hands, knees or feet.

S See: see well enough to carry out job duties and maintain the safety of self and others.

T Talk and Hear: express or exchange ideas in spoken language and/or recognize sounds.

EXAMPLE:
This Worksheet is filled out to indicate the person prefers to work with both Data and People, in the Humanities, do Light work, and not be required to Climb and Balance.
Education

Education levels are the amount and kind of education and training you expect to receive. NOTE: a high school diploma is the entry level educational requirement for most occupations.

DIRECTIONS:

Select one or two educational levels. Enter your choices on the Virginia VIEW Occupation Search Worksheet above the letter “E”. At the bottom of this page is an example showing you where to record your Education choices. NOTE: Education levels are exclusive. That means if you indicate you want occupations requiring a Master’s degree, you will get out those requiring this degree (not everything up to and including). If you choose more than one category you should choose categories that are close together. If you choose categories at opposite ends of the scale, for example occupations that do not require a high school diploma and those that require a Master’s degree, you will get a list that includes occupations from both categories.

I Prefer Occupations Which I Can Enter That:

1. do not require a high school diploma.
2. require on-the-job training (OJT) from an employer (may or may not demand a high school diploma or GED).
3. require a high school diploma or GED.
4. require a high school diploma with specific vocational classes.
5. require private career school (proprietary) training.
6. require a community college 2 year college education.
7. require training in an apprenticeship program (three - four years).
8. require a bachelor’s degree (four year college education).
9. require a master’s degree (five to six years of college education).
10. require either a professional degree in such areas as law, medicine or theology, or a Ph. D. (seven to ten years of college education).

EXAMPLE:

This Worksheet is filled out to indicate the person prefers to work with both Data and People, in the Humanities, do light work, not be required to Climb and Balance, prefers to work indoors, and wants to use a level of education equal to a Bachelor’s degree and a Master’s degree.

I A S C W E T

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Temperaments

Temperaments describe the personal characteristics or adjustments required of a worker in a specific work setting. The ability to meet these requirements will affect success and satisfaction in an occupation.

DIRECTIONS:

Select one or more temperaments which best describe the type of situation in which you would prefer to work. Enter your choices on the Virginia VIEW Occupation Search Worksheet above the letter "T". At the bottom of the next page is an example showing you where to record your temperaments choices.

I Am Most Comfortable in Work Situations That Involve:

A. Accuracy: Follow established rules and specifications precisely to meet set limits, measurements or standards. Do you like following detailed instructions?

B. Creativity: Express your original ideas to produce something new. Do you like to create things such as paintings, hair styles, editorials or songs?

C. Directing: Plan and organize work and give instructions to others. Do you like handling responsibility?

D. Evaluation: Make decisions and judgments based on your five senses (sight, hearing, smell, taste, touch) and past experiences. Do you like making decisions and judgments about things?

E. Interaction: Deal cooperatively and effectively with people. Do you like working closely with others as opposed to working alone?

F. Logic: Use logical step-by-step procedures to complete tasks, analyze and solve problems based upon accurate information. Do you like to complete tasks in a step-by-step manner?

G. Persuasion: Work with people to get them to do something. Do you like selling a product or influencing others?

H. Repetition: Repeat the same tasks many times. Do you like doing the same thing over and over?

I. Stress: Work under pressure, take risks and handle unexpected events. Do you like working and trying to perform well under pressure?

J. Variety: Use different skills at various times to do different things. Do you like doing many different things on the job?

See Example on next page
Working Conditions

Working conditions are the physical surroundings (environment) of a worker in a job. NOTE: most occupations require workers to perform their duties inside.

**DIRECTIONS:**

Select the statement which matches your preference for a particular working condition. Enter your choice on the Virginia VIEW Occupation Search Worksheet above the letter "W". At the bottom of this page is an example showing you where to write your Working Conditions choice.

**I Prefer Occupations Which Provide The Worker:**

1. **I** Inside Working Conditions: with protection from weather conditions but not necessarily from temperature changes.

2. **O** Outside Working Conditions: with little or no protection from the weather.

3. **B** Both Inside and Outside Working Conditions: with job activities both inside and outside.

**EXAMPLE:**

This Worksheet is filled out to indicate the person prefers to work with both Data and People, in the Humanities, do Light work, not be required to Climb and Balance and prefers to be indoors.
Appendix I

Virginia VIEW Worksheet
Virginia VIEW
CAREER SEARCH WORKSHEET

Directions (Micro-Computer)

Fill in rows 1 and 2 of the Worksheet as directed in the Virginia VIEW Career Search. Follow the instructions presented by the microcomputer program using the answers you have marked with an "X."

OR

Directions (Scan Sheet)

Place this worksheet on the Virginia VIEW Scan Sheet; line up the heavy black lines.

1. While sliding the worksheet down:
   A. Match only the areas that you marked with an X.
   B. Only 1 letter or number must be on both the Scan Sheet and the Worksheet for a match in each area.
   C. In Section "C," all answers on the Worksheet must be on the Scan Sheet.
   D. Record the titles and fiche #’s for the occupations which interest you.

2. Using the fiche #’s, go to the microfiche to locate information about the occupations.

<table>
<thead>
<tr>
<th>VIEW #</th>
<th>OCCUPATIONAL TITLE</th>
<th>FICHE #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Record information about occupations here:

Row 1: Record your Virginia VIEW Search chosen here._
Row 2: Think with an 1 your most important choice here._

1 2 3 4 5 6 7

I  A  S  C  W  E  T

ALERTNESS  AREAS OF WORK  PHYSICAL ABILITIES  WORKING CONDITIONS  EDUCATIONAL LEVELS  EMPLOYMENT POLITICALLY

On the back record education and training information that you find on the Virginia VIEW Microfiche.
Appendix J
Licensed Occupations in Virginia
Licensed Occupations in Virginia

Virginia Occupational Information
Coordinating Committee
P.O. Box 80
Richmond, Virginia 23218

Directory developed by:
Carl McDaniels, Project Co-Director
Dean Hummel, Project Co-Director
Lou Talburt, Research Associate

October 1, 1979 to June 30, 1989

College of Education
Virginia Tech
Blacksburg, Virginia
REQUIREMENTS

Drafters usually acquire training in technical institutes, community colleges, area vocational schools, on-the-job training combined with part-time classwork, or 1 to 4 year apprenticeship programs. Generally, employers prefer applicants with post-secondary technical education. Secondary school courses in algebra, industrial arts, drawing and design, mechanics drawing, geometry, graphic arts, printing and trigonometry are helpful.

Some school districts offer evening or weekend adult vocational education programs. For more information, check with the vocational education coordinators in the school districts.

WHAT IS LEARNED ON THE JOB

- Calculating measurements
- Routing drafting department work
- Designing architectural details

WHAT IS LEARNED IN THE CLASSROOM

- Algebra
- Geometry
- Trigonometry
- Types of machine tools
- Industrial drafting
- Machine shop practice (bench work, mill work, lathe work, and grinding)
- Estimating
- Safety practice
- Jigs and fixtures
- Applied physics
- Hydraulics and pneumatics
- Applied electricity
- Detailing design
- Technical illustration
- Strength of materials
- Elementary statistics
- Basic building codes

ADDITIONAL INFORMATION

For specific information on employment outlook, salary, and training programs see the Virginia VIEP microfiche. These files are in schools (career centers, school libraries, and guidance offices), public libraries, colleges, VEC and other state agencies.

For More Information: American Institute for Design and Drafting
102 North Em Plaza, Suite F
Broken Arrow, OK 74012

National Institute for Certification in Engineering Technologies
1420 King Street
Alexandria, VA 22314

American Institute of Architects
1355 New York Avenue, NW
Washington, DC 20005

Division of Apprenticeship and Training
Va. Department of Labor and Industry
P.O. Box 172064
Richmond, VA 23241
(804) 786-2321
Appendix K

Apprenticeship Occupations in Virginia
Apprenticeship Occupations in Virginia

Virginia Occupational Information Coordinating Committee
P.O. Box 60
Richmond, Virginia 23216

Directory developed by:
Carl McDaniel, Project Director
Jeffrey A. Wisdom, Executive Director
Las Telbitt, Research Associate

June 30, 1981
College of Education
Virginia Tech
Blacksburg, Virginia

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4/  Cabinet maker
5/  Machinist
6/  Maintenance machinist
7/  Metal patternmaker
8/  Millwright
9/  Tool & Die maker
10/ Welder

## SERVICE OCCUPATIONS
11/ Barber
12/ Cook
13/ Cosmetologist
14/ Mill Cutter

## CONSTRUCTION OCCUPATIONS
15/ Bricklayer (or Mason)
16/ Carpenter
17/ Insulation worker (asbestos)
18/ Painter
19/ Sheet-metal worker
20/ Structural steel (iron) worker
21/ Electrician
22/ Plumber & Pipefitter

## OCCUPATIONS IN TRANSPORTATION ACTIVITIES
23/ Shipbuilding
24/ Shipfitter
25/ Shipwright
26/ Ship Electrician
27/ Ship Painter
28/ Ship Pipelayer
29/ Ship Rigger

## SCIENTIFIC & TECHNICAL OCCUPATIONS
30/ Drafters
31/ Art & Printing occupations
32/ Lithographer
33/ Photoengraver
34/ Roto gravure press operator
35/ Web press operator
36/ Electronics occupations
37/ Electronic mechanic
38/ Electronic technician
39/ Line installer (Erector)
40/ Surveyor (party chief)

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41/ Air-conditioning and Refrigerator mechanic
42/ Auto body repairer
43/ Auto mechanic
44/ Construction Equipment mechanic
45/ Diesel mechanic
46/ Instrument mechanic
47/ Maintenance mechanic

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49/ New Apprenticeship Programs
50/ Others

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51/ Definitions
52/ Selected Wage Scales
53/ Selected Outlook Data
54/ Bibliography

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Apprenticeship Occupations in Virginia

Carl M. Daniels
Project Director

Lou A. Albright
Research Associate

Jeffrey P. Windham
Executive Director
APPRENTICESHIP OCCUPATIONS
IN VIRGINIA

VIRGINIA OCCUPATIONAL INFORMATION
COORDINATING COMMITTEE

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with permission. Copyright 1987 Michigan State Board of Education,
Lansing, Michigan.
## Table of Contents

1. General Information

5. Air Conditioning, Heating, & Refrigeration Mechanic
6. Auto Body Repairer
8. Auto Mechanic
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11. Barber
12. Boilermaker
14. Bookbinder
15. Brickmason/Stonemason
17. Cabinetmaker
19. Carpenter
20. Construction Painter
22. Cook/Chef
24. Cosmetologist
25. Diesel Mechanic
27. Dispensing Optician
28. Drafter
30. Dry-wall Applicator
31. Electrical & Electronics Technician
33. Electrician
35. Furniture & Wood Finisher
36. Heavy Equipment Mechanic
38. Instrument Repairer
39. Insulation Worker
41. Machinist
42. Maintenance Mechanic
44. Meat Cutter
45. Millwright
47. Office Machine Repairer
48. Pattern & Model Maker
50. Photograver & Lithographer
51. Plumber & Pipefitter
53. Printing Press Operator
55. Psychiatric Aide
56. Rigger
57. Sheet Metal Worker
59. Shipfitter
59. Shipwright
59. Ship Electrician
59. Ship Outside Machinist
59. Ship Painter
59. Ship pipefitter
59. Ship Rigger
61. Small Engine Repairer
62. Structural Iron Worker
64. Surveyor (Party Chief)
65. Tool & Die Maker
67. Utilities Lineman
68. Wastewater Treatment Operator
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75. Virginia Employment Commission Job Services Offices
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79. Joint Apprenticeship Committees
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83. Additional Apprenticeship Programs
85. Definition of Terms

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Electrician

SOC Code 8422
DOT Code 224 261-010
WTQ# 05.05

Job Description

Electricians lay out, install, assemble, and maintain electrical fixtures, control equipment, and wiring for heating, refrigeration, lighting, and power systems. They also install and maintain electrical systems in homes and commercial buildings. Electricians often specialize in construction or industrial maintenance. Electricians may work indoors or outdoors. They must stand, squat, stretch, climb on ladders and scaffolds. Tools used in this occupation include pliers and soldering guns.

Training

Many Virginians learn this trade through apprenticeship programs. However, some people learn the trade through working as an electrician's helper. Generally, apprenticeship programs are 4 years in length with 144 hours of classroom instruction in blueprint reading, electrical theory, electronics, mathematics, and safety. Some school districts offer evening or weekend adult vocational education programs. For information, check with the vocational education coordinators in the school districts.

Education and Other Requirements

Employers prefer apprentices with high school or vocational school diplomas. Courses in algebra, electricity, electronics, mechanical drawing, science, and industrial arts are helpful. Also, good color vision is important because electricians must be able to identify wires by color. In addition, agility and dexterity are necessary.

Employment Outlook

On the national level, the employment of electricians is expected to increase as fast as the average employment in other occupations through the 1980's. In Virginia there were 10,000 electricians employed in 1978. The projected employment for 1982 is 12,000. An average of 500 job openings is expected annually with 340 due to growth and 160 needed to replace those who quit working. Additional openings occur when electricians are promoted or change occupations.

Wage and Salary

Earnings depend upon experience, education, and place of employment. On the national level, construction electricians averaged $1.25 an hour in 1978 in nonmetropolitan areas, with union hourly rates somewhat higher. Maintenance electricians averaged about $3.40 an hour in 1978, based on a survey of metropolitan areas.

In Virginia, earnings for maintenance electricians depend upon experience, education, and place of employment. Four Virginia areas illustrate approximate earnings for maintenance electricians.

<table>
<thead>
<tr>
<th>Area</th>
<th>Usual Entry Level</th>
<th>Usual Top Level</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern VA</td>
<td>$2.00</td>
<td>$3.00</td>
<td>$2.50</td>
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<td>Gates/Virginia</td>
<td>$4.00</td>
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<td>Norfolk/Portsmouth/Virginia</td>
<td>$6.40</td>
<td>$8.00</td>
<td>$7.25</td>
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<td>Beach/Cheapeake</td>
<td>$8.00</td>
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<td>$8.00</td>
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For more information: International Brotherhood of Electrical Workers
1125 15th St. NW
Washington, D.C. 20005
Insulation Worker

SCC Code 548-7
DOT Code 889.664-014
WTO# 05.10

Job Description

Homes, buildings, refrigeration, and pipes must be insulated to prevent heat loss. Insulation workers paste, wire, tape, or spray insulation to appropriate surfaces. They cover walls, pipes, and other surfaces. In some situations, they "blow-in" insulation or use a hose to spray foam insulation into a wire mesh. Insulation workers have to bend and square and may be required to work on ladders or scaffolds. Common tools used in this occupation are trowels, brushes, scissors, stapling guns, and powersaws.

Training

Insulation workers usually learn their trade through on-the-job training or through an apprenticeship program. Generally, the apprenticeship programs are 4 years in length with related instruction in blueprint reading, shop math, and general construction. Some school districts offer evening or weekend adult vocational education programs. For information, check with the vocational education coordinators in the school districts.

Education and Other Requirements

Generally, employers prefer high school or vocational school graduates. Also, insulation contractors often require that employees be licensed to drive. Courses in blueprint reading, shop math, and general construction provide helpful background for this occupation.

Employment Outlook

On the national level, employment of insulation workers is expected to increase faster than the average employment in other occupations through the 1980's. In Virginia, there were about 180 insulation workers employed in 1978. The projected employment for 1982 is 979. An average of 40 job openings is expected annually with 30 due to growth and 10 needed to replace those who quit working. Additional openings occur when insulation workers are promoted or change occupations.

Wage and Salary

Earnings depend upon experience, education, and place of employment. On the national level, insulation workers in metropolitan areas had average wages of $10.90 an hour in 1978.

In Virginia, earnings for insulation workers also depend upon experience, education, and place of employment. Three areas illustrate approximate hourly wages for union insulation workers. Fringe benefits are in addition to the wages listed.

<table>
<thead>
<tr>
<th>Area</th>
<th>Year</th>
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<tr>
<td>Richmond area</td>
<td>1979</td>
<td>$10.00</td>
</tr>
<tr>
<td>Washington, D.C. area</td>
<td>1980</td>
<td>$13.00</td>
</tr>
<tr>
<td>Norfolk/Portsmouth area</td>
<td>1980</td>
<td>$11.00</td>
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For More Information:
International Association of Heat and Frost Insulation and Asbestos Workers
1300 Connecticut Avenue, NW., Suite 335
Washington, D.C. 20036

Division of Apprenticeship Training
Va. Department of Labor and Industry
P.O. Box 12984
Richmond, Va. 23241
(804) 785-2361
<table>
<thead>
<tr>
<th>Local Office</th>
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<th>Usual</th>
<th>Top</th>
<th>Average</th>
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<tr>
<td>Alexandria/Savan Corner</td>
<td>4.00</td>
<td>10.34</td>
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<tr>
<td>Danville/Alamance</td>
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<td>5.88</td>
<td>6.38</td>
<td>5.97</td>
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<tr>
<td>Emporia/South Boston/South Hill</td>
<td>3.10</td>
<td>9.23</td>
<td>5.23</td>
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<tr>
<td>Esmore</td>
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<tr>
<td>Farmville</td>
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<td>3.70</td>
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<td>8.60</td>
<td>7.99</td>
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</tr>
<tr>
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<td>7.14</td>
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<td>Wrenshaw</td>
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<td>8.39</td>
<td>6.98</td>
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</tr>
</tbody>
</table>

Source: VEC (1986 Wage Rates and Fringe Benefits)
Appendix I

Bibliographies
REFERENCES FOR A CAREER INFORMATION HOTLINE

Call 1-800-542-5870 for further information

July 1991

Virginia VIEW, Virginia Tech
205 W. Roanoke Street
Blacksburg, Virginia 24061-0527

Primary Sources


Peterson's Graduate and Professional Programs 1991. (26th Ed.).

Peterson's Graduate Programs in Engineering & Applied Sciences. (26th Ed.).


Peterson's Graduate Programs in the Biological and Agricultural Sciences. (25th Ed.).

Peterson's Graduate Programs in the Humanities & Social Sciences. (25th Ed.).


Three basic reference College Entrance Examination Board, New York.


Secondary Sources


Secondary Sources (continued)


Other Useful Sources


Toll Free Numbers

Military Service Recruiters

NAVY 800-327-NAVY
ARMY 800-438-ARMY
Marines 800-323-9968
Air Force 800-351-9600
Coast Guard 800-424-4003
Appendix M

Bookmarks
**Virginia VIEW**

- Job Outlook
- Occupational Licensing
- Educational Financial Aid
- Occupational Requirements
- And Outlook
- Postsecondary Educational Opportunities

**Call Toll Free**
1-800-542-5870

<table>
<thead>
<tr>
<th>Book Mark</th>
<th>Compliments of Virginia VIEW</th>
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<tbody>
<tr>
<td>notes</td>
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<table>
<thead>
<tr>
<th>Career Information Hot Line</th>
</tr>
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<tbody>
<tr>
<td>Call Toll Free</td>
</tr>
<tr>
<td>1-800-542-5870</td>
</tr>
</tbody>
</table>

In Virginia

306
Appendix N

Tabloid Covers
The 1991 Virginia VIEW Job Hunt

Looking for a job? Remember these resources!

- Classified Ads
- Visiting Recruiters
- School Counselors
- Libraries
- School Placement Services
- Trade Journals
- Work-Study or Cooperative Program Coordinators

Unions
Friends, Recent Graduates, and Others in Your Field
Career or Job Fairs
Store Windows
Teachers and Principals
Bulletin Boards
Private Employment Agencies
Special Programs
Personnel Offices

LEARN JOB SEARCH SKILLS BY READING INSIDE ABOUT:

- WANT A JOB? GET AN OCCUPATION? Page 2
- WHAT EMPLOYERS WANT Page 3
- HOW TO FIND OUT ABOUT JOB OPENINGS Page 4
- LOOKING AT THE CLASSIFIED ADS Page 5
- THE VIRGINIA EMPLOYMENT COMMISSION Page 6
- JOB APPLICATIONS - NEAT AND COMPLETE Page 7
- COVER LETTERS Page 8
- RESUME MAKE-OVER MAGIC Page 9
- HAVING A WINNING INTERVIEW Page 10
- THANK YOU LETTERS Page 11
- HOW TO KEEP A JOB Page 11
- OTHER ALTERNATIVES Page 12

The 1991 Virginia VIEW Job Hunt is a product of the Virginia Career Information Delivery System, Virginia VIEW. The American Foxhound, official state dog of Virginia, is the Virginia VIEW mascot, and is used to illustrate Virginia VIEW career information materials.
The 1991 Virginia VIEW
Vocational VIEWs

Find the career words hidden in the WORD SEARCH. Words run horizontally and vertically. Key on page 8.

Learn about opportunities in vocational technical education by reading inside:

<table>
<thead>
<tr>
<th>Occupational Preparation p. 1</th>
<th>Vocational Technical Courses = Preparing for Success p. 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocational Technical Education p. 3</td>
<td>From Vocational Technical Education to Work - Grill's Stories p. 9</td>
</tr>
<tr>
<td>Meets Occupational Demand</td>
<td>Tech Prep Paves to Boost Technology Links Between Community Colleges and Secondary Schools</td>
</tr>
<tr>
<td>Vocational Technical Education = Jobs for Youth p. 4</td>
<td>Virginia's Community Colleges</td>
</tr>
<tr>
<td>The Role of Vocational Technical Education</td>
<td>Area Vocational Centers - Vocational Technical Education Available for Adults Too</td>
</tr>
<tr>
<td>Rockbridge High and Floyd S. Key Tech Center: Programs of Study that Lead to Work</td>
<td>Jointly Operated Vocational Technical Centers</td>
</tr>
<tr>
<td>Vocational Technical Education Preparation In the Classroom and In the Work Place p. 6</td>
<td>Vocational Technical Education = Classes, Co-Op, Co-Curricular Organizations p. 12</td>
</tr>
</tbody>
</table>

The 1991 Virginia VIEW Vocational VIEWs is a product of the Virginia Career Information Delivery System. Virginia VIEW. The American Foxhound, official state dog of Virginia, is the Virginia VIEW mascot, and is used to illustrate Virginia VIEW career information materials. Questions or comments about the 1991 Vocational VIEWs should be directed to: Virginia VIEW, Virginia Tech, 205 W. Roanoke Street, Blacksburg, VA 24061-0527. Phone: (703) 231-7571 or toll free (in Virginia) 1-800-542-5870.
1995 Virginia VIEW Career Hunt
Appendix O

Hotline Call Summary
The following is a sample of calls in the 1993-94 program year from the hundreds of calls received.

A man in his 30's from Roanoke called the hotline because he was deliberating between becoming a psychiatrist or a psychologist. The hotline operator gave him salary, educational, and licensure information from the VIEWscripts. She also gave him the names of schools near to him where he could begin his studies.

A college student in respiratory therapy from Standardsville inquired about training programs in respiratory therapy. She had several questions as she was not clear on the difference between training programs and duties for the respiratory therapist and the respiratory therapy technician. The hotline operator was able to give her this information using the VIEWscript as well as information about pediatric respiratory therapy hospital based training programs. She was interested in information about related professional associations which the hotline operator was able to supply. The young woman said that she had not known how to get these addresses, and she was most grateful.

A female in her mid-twenties called to receive information regarding apprenticeships. She was particularly interested in on-the-job training for occupations in the construction realm. Several VIEWscripts in the Interactive VIEW program were read for her as
well as trade association information. She was also provided with the number and contact person at the apprenticeship information center nearest to her.

A caller inquired about becoming a certified employee benefits worker. While researching this occupation for the caller, she was able to identify interests in related occupations. The occupational outlook for this field was explored as well as salary ranges and educational programs in Virginia.

A young female called the hotline to inquire about educational programs in a nursing midwife occupation. By researching this information it was discovered that in order to be certified as a nurse mid-wife an individual must first complete certification as a registered nurse. The caller was unaware of this requirement. A list of institutions that have nursing programs near the caller was provided for her.

An older male called the hotline in an agitated state. He had recently been laid off from his job as a mechanical engineer. He requested any job leads from the hotline operator that could be provided to him. Several job line phone numbers were provided to him as well as contact information for trade associations. The caller was also given information regarding the Virginia Employment Commission for job leads, registry, and unemployment benefits. The
Calling stated that he felt he had a good base for his job search as a result of the information he obtained from the Hotline.

A Danville 10th grader requested information about "Dental Hygienist" and she was given the current salary, outlook, and educational information. As a result, she asked about the merits of a four year degree compared to a two year degree. The hotline operator shared the salary scale for a four year degree as compared to the two year degree and suggested she contact her guidance counselor who might be more familiar with the training required in her specific geographic area. Additionally, she was informed about the military training available in the various services. She had not thought of the military as an alternative and seemed pleased to discover that possibility.

A Carroll County resident noticed the hotline number in her State representative's newsletter. She had gone back to school and received her degree in civil engineering after raising her family. However, she had not had any success in obtaining employment in her new field. The hotline operator told her that the fine points of job hunting can change and asked if she would like some tips recently compiled by Virginia VIEW. She suggested an article on "How to Capitalize on a Job Rejection." The caller commented that scarcely a day goes by that she doesn't receive a rejection letter and she thanked the hotline operator enthusiastically.
Recently, a call came from a mother in the Virginia Beach area who was looking for an alternative means of educating her 15 year old son. The guidance counselor at her son's public high school had given her the hotline number and she was looking for information on military or religious schools in Virginia. Virginia VIEW staff members provided her with numerous referrals from the 1992 Virginia Education Directory. The caller was delighted as she had been unable to find this information anywhere else.

A caller from Richmond found the hotline number featured in an article in the Richmond Times Dispatch. He explained to the hotline operator that he had been laid off from the job he had held for the last 22 years. He had been unemployed for eight months and he was beginning to think about retraining as a tractor trailer truck driver. He was told about two programs operated by Virginia's Community College system and several private training schools.

A man from Newport News called the hotline for information on state job opportunities. He is currently employed in the private sector but is considering a transition to the public sector as the present company is experiencing a wave of downsizing. A variety of informational resources were pooled for the caller. The caller thanked the hotline operator for the information which he felt would bolster his job search.
A female college student called seeking information about nursing programs in the state. She had completed the coursework for a BS in Nursing, but was running into financial difficulties and needed to transfer to a less expensive college to complete her clinical requirements.
Appendix P

Vitae
OBJECTIVE

A position to challenge and enhance my experience in Counseling, Information Handling, Education, and Administration.

EXPERIENCE

Counseling
- Counseled nontraditional college students about career plans, course offerings.
- Counseled and offered placement assistance to diverse Employment Service applicants.
- Possess National Certified Counselor Certification (NCC), #39985, Expires 6/30/00.
- Career Development Facilitator Instructor, Oakland University, June 1996

Information Handling
- Planned and coordinated Virginia VIEW workshop activities (1990-1995).
- Developed Employability Training (ET) materials from diverse public and private resources.
- Updated information through extensive reading and information gathering in the appropriate literature.
- Introduced counselors to Virginia VIEW computer software.
- Instructed Virginia VIEW users in the applications of career information.
- Worked with the following computer programs: Microsoft Word 6.0, Word Perfect 5.1, Page Maker 5.0 and Freehand.
- Wrote articles for the Career Hunt, a tabloid dedicated to career information and job seeking skills, produced by Virginia VIEW.
- Prepared reports, position papers, and funded proposals.
- Wrote On-the-Job (O/T) and Individual Referral Contracts for participant training.

Education
- Conducted Virginia VIEW workshops to over 1,200 guidance counselors and other helping professionals.
- Coordinated and conducted Employability Training (ET) workshops for dislocated workers using Trade Act (TRA) and Economic Dislocated Worker Adjustment Act (EDWAA) resources.
- Lectured student groups on career planning and job seeking techniques.
- Made presentations to inform potential new employers about the local labor force and market.
- Counseled job seekers and changers.
- Served as Plate Development Leader (PDL) for the Job Training and Partnership Act (JTPA) Summer Youth Institute since August, 1990. Assisted youths to develop employability development plans.

Administration
- Supervised career professionals engaged in providing career information hotline services to Virginia citizens.
- Recruited and supervised volunteers involved in both clerical and professional activities.
- Conducted out-reach career counseling program, Work Incentive Program, (WIN) for Aid to Dependent Children Program (ADC) recipients for a five-county area with no on-site supervision.
- Represented cabinet-level Commonwealth agency to other agencies and private sector decision makers in formal and informal negotiations.
- Served on personnel panels and made recommendations.

Summer, 1996
Mary Anne Knobloch  P. O. Box 13841 Roanoke, VA  24037-3841  
(540) 344-6409

PROFESSIONAL AFFILIATIONS

- President, Virginia Career Development Association (VCDA), 1996.
- Secretary, VCDA, 1994. Planned award-winning Drive-in Career Development Conference
- Member, Virginia Counselors Association, (VCA), 1990-present.
- Member, American Counselors Association, (ACA) 1987-present.
- Member National Employment Counselors (NECA) 1987-present.
- Member International Association of Addictions and Offenders Counselors (IAAOC) 1993-present.
- Charter Member, Chi Sigma Iota, Tau Eta Kappa, Virginia Tech Chapter, (Honorary Academic Counseling Fraternity) 1993-present.
- Secretary, Southwest Subchapter, IAPES, 1987.

EMPLOYMENT

7/90-3/95  Virginia Tech, Virginia VIEW
2/88-6/90  Virginia Employment Commission/Covington
2/82-2/88  Virginia Employment Commission/Roanoke
3/75-2/82  Virginia Employment Commission/Roanoke
2/73-3/74  Woodrow Wilson Rehabilitation Center

User Services Manager
Dislocated Worker Counselor
Employment Interviewer
WIN Counselor
Instructor, Counselor

SKILLS

- Coordinate resources effectively to make projects and activities succeed.
- Work well with people of widely different backgrounds, education, and values.
- Assist individuals with job search correspondence.
- Make presentations to groups and individuals.
- Adapt to a wide range of situational needs on very short notice.
- Act as mentor to staff and graduate students.
- Have prepared reports, position papers, and funded proposals.
- Select and have knowledge of wide variety of career information materials.

EDUCATION

Virginia Polytechnic Institute and State University
Dissertation Topic: A History of Virginia VIEW 1980-95

Ph. D. July, 1996  Counselor Education & Student Personnel
MAEd, Student Personnel, 1988
Virginia Polytechnic Institute and State University 1978-1982 39 semester hrs. toward MSW
Virginia Commonwealth University  BA, History 1972

Summer 1996

Mary Anne Knobloch

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