

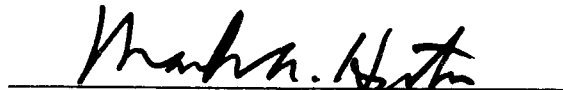
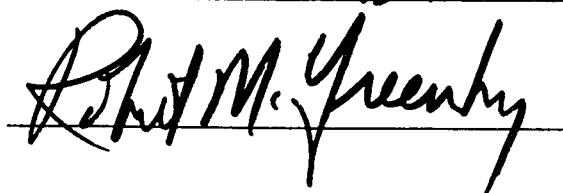
To the Graduate Council:

I am submitting herewith a thesis written by Nancy Lancaster Mlekodaj entitled "A Baseline Study of Career Information on the Internet at State Universities and Land-Grant Colleges." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Educational Psychology.



Marla P. Peterson, Major Professor

We have read this thesis
and recommend its acceptance:

Accepted for the Council:



Associate Vice Chancellor
and Dean of The Graduate School

A Baseline Study of Career Information on the Internet
at State Universities and Land-Grant Colleges

A Thesis
Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville

Nancy Lancaster Mlekodaj

August 1995

DEDICATION

This thesis is dedicated to my husband, Ronald, and my sons, Lee and Michael: Thank you for your understanding and your support. It is also dedicated to my wonderful mother, who did not live long enough to see me complete this endeavor. Thank you.

ACKNOWLEDGMENTS

I would like to express my sincere appreciation to Dr. Marla Peterson, my major professor, for her creative ideas and never ending encouragement. A special thank you goes to Dr. Mark Hector and Dr. Robert Greenberg for serving on my committee.

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ABSTRACT

Colleges and universities are presently making decisions on the use of the Internet in assisting individuals with their career development. The purpose of this study was to gather and analyze baseline data on how institutions use the Internet to deliver career information. Gopher and World Wide Web servers of land-grant institutions were examined for categories of career information. This research revealed similarities in career related categories of information found on the Internet at the institutions, as well as variations in breadth and depth of such information, and ease in locating it. Recommendations that may be useful to institutions developing ways to access career information on the Internet are included in the study.

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CHAPTER I

Introduction

Background

Career development programs began in the late 1800s when first established as vocational guidance in the public schools (Zunker, 1989). Since these early beginnings, writing and research on career development has targeted a variety of interest levels--from texts and journals for professionals to self-help books and magazine/newspaper articles for the general population.

As vocational guidance and career development programs became more widespread, so did the growth of types of career information for those seeking assistance. Career information mediums have moved along a continuum of printed material, film, video, and interactive computer-based software systems, to today's international electronic networks. One of these international networks is the Internet. Through this interconnection of highly sophisticated computer technology, individuals are able, with relative ease, to glean enormous amounts of information through computer terminals connected to the Internet (Krol, 1994). This study is one of the first to gather baseline data on how State Universities and Land-Grant Colleges (SUL-GCs) are providing career information on the Internet.

Internet, as we know it today, had its beginnings around 1972 in United States (US) defense research. Access to the Internet was limited to only a few individuals involved in US defense research. However, in the early 1980s the National Science Foundation (NSF) funded the development of a new network allowing for universal access by educational institutions. Users realized its tremendous value and soon created a crippling overload for the NSF network to a point where it no longer worked. To solve the overload problem, contracts were awarded in 1987 to upgrade the network to provide faster service and more accessibility.

By passage of Public Law 102-194, the High Performance Computing Act of 1991, the US government has shown a strong commitment to the building of a universal high speed network that will enable people all over the US to access and share information never before possible (Gore, 1991).

Today the demand for access to the Internet continues to grow. New information is being added to the Internet daily as private and public organizations/institutions come online. For those institutions already online, updating information is a continuous process.

Need for and Purpose of The Study

Many university Career Services Units are asking questions like: What types of career information are already available on the Internet? Should we develop local data files of career information? What types of career

information should we include in our local data files to supplement what is already on the Internet? For example, in March of 1995, representatives met to discuss the organization of a 21 school consortium (Southeastern-Atlantic Coast Career Network) for the development of career services World Wide Web (WWW) homepages. In a follow-up memo dated April 14, 1995, from Jim Neumeister of the University of Virginia, issues were addressed concerning the need for a solid, agreed-upon outline for a WWW site; direct links to be included on a student menu; and how to handle schools that do not yet have WWW sites (Neumeister, 1995).

This study will gather and analyze baseline information at SUL-GCs that may be useful as Career Services Unit staff try to answer the question, "What direction do we need to take in developing access to career information using the Internet?" Research questions answered as a result of the data presented in this study, are as follows:

Research Questions

1. How many SUL-GCs are currently offering their students career services information on the internet?
2. What categories of career services information are currently offered at SUL-GCs on the Internet?
3. What levels of career information specificity are found in the data files at SUL-GCs on the Internet?

4. What are the five institutions having the greatest breadth of information in their career services data files accessed on the Internet?

Definition of Terms

This section includes the definition of terms used in this study. Terms which appear in Tables 1 and 2 (key tables that are found in Chapter IV) are indicated by an asterisk (*). The terms are defined as follows:

Campus Wide Information System (CWIS): A service maintained by the local institution for disseminating news, announcements, and other kinds of information and accessed through Gopher or World Wide Web (WWW) via the Internet.

Career Counseling Services:* Counseling assistance regarding career decision making.

Career Day/Job Fair:* Special day(s) dedicated to employment and/or career oriented activities sponsored by the Career Services Unit.

Career Decision Making Workshops/Classes:* Career information sessions, e.g., "How to Choose a Major", "What Can I Do With A Major In?". Career Workshops do not include job seeking skills workshops (see definition of Job Seeking Skills Services).

Career Services for Alumni:* Career services that specifically target graduates of a university.

Career Services for Persons with Disabilities:* Career information specifically targeting individuals with disabilities.

Career Services Resources:* Resources available for student use in the local university's Career Services Unit.

Career Services Unit:* The department/unit that is responsible for the distribution of career and placement services at a college or university--sometimes referred to as Career Center, Career Resources Center, etc.

Career Services Unit Events Calendar:* Listing by dates of Career Services Unit sponsored activities separate from the university's main events calendar (see definition of Main Events Calendar).

Career Services Unit Faculty and Staff:* Listing of the Career Service's personnel.

Co-op* Experiential education, other than internships, that blends classroom learning with practical experience, normally by alternating semesters.

Data Files: Location within the university's CWIS where information is stored.

Employment Opportunities at the University:* Job openings at the local institution.

Gopher: An instrument designed to search, retrieve, and display documents from remote sites on the Internet (University of Tennessee Computing Center, 1994).

Graduate School: Career related:* information about graduate school, e.g., how to choose, etc. (excluding admission information).

Homepage:* The document users see when they first enter the World Wide Web.

Hypertext: "A method of presenting information where selected words in the text can be 'expanded' at any time to provide other information about the word" (Krol, 1994, p. 288)

Internet: "A network of many different types of computers located throughout the world that are able to communicate with each other through a set of protocols called TCP/IP" (University of Tennessee Computing Center, 1994, p. 3).

Internship:* Experiential opportunities other than co-op that blend classroom learning with practical experience, normally one semester in length.

Internship/Summer Job/Co-op - Listed:* Listing of specific experiential opportunities.

Job Seeking Skills Services:* Services provided to enhance job placement, e.g., resume writing, how to interview, etc. (including workshops/information sessions).

Listing of Other Internet Resources--Jobs/Employment:*

A local institution data file described as job, employment, or career related that offers direct access to a collection of career information found at remote locations

on the Internet. Such a collection might include: Academe This Week/Chronicle of Higher Education, Online Career Center, MedSearch America, etc.

Lynx: A WWW browser that allows user to access text only (not able to display graphics).

Mentoring/Shadowing:* Matching students with professionals to observe and discuss mutual career interest.

Career Services for Racial Minority Students:* Career services specifically targeting minority students.

Menu: A list from which a user may choose items that allows the user to navigate through "Gopher-space" and/or World Wide Web (WWW).

Mosaic: A WWW browser presenting a multimedia interface to the Internet including: hypertext, audio, pictures and video.

On-Campus Interviewing/Recruiting/Placement:* Employment services available to recent graduates.

Out-of-Date Information:* The continued listing of university activities that are more than one semester old.

Protocol: "A definition of how computers will act when talking to each other. Standard protocols allow computers from different manufacturers to communicate; the computers can use completely different software, providing that the programs running on both ends agree on what the data means" (Krol, 1994, p. 512).

Search <?>: A prompt that allows the user to do a key word search through a database to locate documents containing that key word.

Server: (a) A software that allows a computer to offer a service to another computer. (b) The computer on which the server software runs (Krol, 1994).

State Universities and Land-Grant Colleges (SUL-GC): Institutions designated by state legislatures to receive benefits of the Morrill Acts of 1862 and 1890. The original mission of these acts, was to offer a liberal, practical education for the working class in the areas of agriculture, military tactics, mechanic arts, and classical studies. In 1890 the Second Morrill Act restricted funds to those land-grant institutions that did not make distinctions of race in admissions. States that provided a separate land-grant institution for Blacks, however, were eligible. Today, SUL-GC students study every academic discipline, and many of these universities are considered the nation's most distinguished public research institutions (National Association of State Universities and Land-Grant Colleges, 1994).

Telnet: "A 'terminal emulation' that allows you to log in to other computer systems on the Internet." (Krol, 1994, p. 514).

World Wide Web (WWW):* "A hypertexted-based system for finding and accessing Internet resources, sometimes referred to as the Web" (Krol, 1994, p. 515).

Limitations of the Study

Limitations of the study include:

1. Some career data files could have been overlooked. Every effort was made to locate hard-to-find files. If a keyword search <?> prompt was available, a search of the local university data files was carried out to locate hidden career information. However, not all topics are accessible through a keyword search <?>.

2. Gopher menus versus WWW homepages. In this study, Gopher was the instrument of choice used to search the Internet for career information (Exceptions to Gopher usage are explained in Chapters 3 and 5). This decision was made, because the Gopher servers at most institutions are presently more developed than their WWW counterparts. This is, however, rapidly changing, and although still in the developmental stages, the Web promises to be the tool of the future for locating and delivering information on the Internet. The advanced capabilities of WWW (hypertext, graphics, motion pictures, and sound) provide seemingly limitless possibilities for Internet use, and institutions are moving quickly to establish their WWW homepages.

3. Internet information is constantly changing. Institutions are developing and adding to their data files

continuously; what is depicted in Tables 1 and 2 and in the appendixes of this thesis may no longer be completely accurate. However, the purpose of this study was to offer baseline information on how major universities are using the Internet in career development so that other institutions might have options to consider when making their decisions about how to use the Internet. Slight changes in the data, therefore, should not be of concern.

Background information will now be presented in Chapter II. Emphasis will be on the historical development of career information systems and ethical considerations involved in their use.

CHAPTER II

Literature Review

① A review of the development of computerized career information systems from 1960 to 1990 will be presented first and will be followed by a discussion of what is happening in the 1990s. This chapter will conclude with a review of ethical considerations that guide the use of computerized career information systems.

Computerized Career Information Systems - 1960 to 1990

Career information has been delivered in a variety of ways. Career information in the 1960s and 1970s, excluding printed materials and direct experience, was delivered by audio visual aides, e.g., films and/or film strips. These aids were later replaced by newer technologies such as video tapes, audio tapes, microfilm, and microfiche. Such career delivery systems allowed individuals to learn quickly (Isaacson & Brown, 1993). Institutions then began developing their own audio and video career aids which, according to a 1975 study reported by Johnson, Korn, and Dunn, were more effective than the same information presented orally or in writing (cited in Isaacson & Brown, 1993).

In the mid-1960s, there was another type of career information delivery system that was coming on the scene, the computer based system (storage and retrieval mechanized

systems). These computer based systems required some degree of participation (interacting with the computer) on the part of the user.

Some early computerized career information systems (CCIS) included: Computerized Vocational Information System, whose main developer was JoAnn Harris-Bowlsby; Education and Career Information System, created by Donald Super, Roger Myers and Frank Minor; and Information System for Vocational Decisions, developed by David Tiedeman (Isaacson & Brown, 1993). Harris stated in 1974, that at least 30 such systems had been designed (cited in Isaacson, 1977). These systems were of two types: information systems, used to search for information about occupations and educational institutions; and career planning systems, used for self-evaluation, decision making, and planning (Isaacson & Brown, 1993).

Early CCISs, however, were not cost effective. Before 1980, use of computers was mainly through a mainframe system which made user time very expensive. Because CCISs required a considerable amount of computer time, such programs were not widely adopted. By the 1980s, computers were more efficient: greater capacity, faster, and less expensive to operate. Because of these improvements in computer technology, CCISs were finally considered a practical resource, and are used extensively in career development today (Isaacson & Brown, 1993).

Computerized Career Information Systems - 1990 to 1995

In the 1990s, CCIS are very popular among institutions of higher learning because of the advantages they have over other career resources such as books, videos, etc. One advantage is the interactive capabilities of the CCIS in which users realize they have options and choices about their education and occupational future, and that they have been empowered through a structured, individualized process, to make important career decisions (Herr, 1985). Unlike early CCISs where there was a one-to-two week delay in receiving results (Isaacson, 1977), today's systems give immediate feedback which studies (Zunker, 1989) have shown help sustain user motivation.

CCISs of the 90's make it possible for clients to tap into vast amounts of up-to-date educational and occupational information expanding user knowledge about career choice (Hinkle, 1992). Such systems also free counseling professionals from the time consuming tasks of up-dating occupational files and staying abreast of ever-changing job market information (Walsh, 1990). Time required to administer and score career assessments has also been reduced (Herr, 1985). All of these time saving attributes of CCISs allow counselors more time to deal with client problems requiring more personal interaction and sensitivity

(Walsh, 1990). It has also been revealed in Sampson and Reardon's 1984 review of the literature (cited in Hinkle, 1992), that clients like using CCISs.

Sampson, Shahanasarian, and Reardon's comprehensive review of research studies (cited in Sampson et al., 1992) shows most institutions use CCISs as a component of their broader career development program. Garis and Niles among others (1992) have found desired outcomes to career guidance are most likely to occur when CCISs are used in this fashion. There are, however, still concerns about the use of CCISs including: (a) the misuse of technology, (b) excessive dependence on technology, and (c) restriction of the of counseling process (Sampson, 1986). With these concerns in mind, counselors continue to make important decisions about the use of new technology as a resource for delivering career information.

The latest career delivery system to be incorporated into career counseling in the 1990s is the Internet. Through the connection of computers around the world holding vast amounts of information, Internet allows users instant access to this information (Krol, 1994). Krol (1994) calls the Internet the second and most important revolution, the first taking place 15 years ago when computers began to find their way into our personal lives.

Institutions of higher learning are finding their way on the Internet through their Campus Wide Information

Systems (CWIS) as a way of disseminating news, announcements, and other kinds of information to the university community. Departments, including career services units, easily maintain control over their data through a "delivery document system" in which data physically resides on multiple computers in multiple locations across campus. The local university community as well as anyone having access to the Internet can acquire this up-to-date information with relative ease (gopher.uiuc.edu, 1994).

Gopher and World Wide Web (WWW) are applications used to navigate the Internet gaining access to, among other things, career resources on the CWISs of universities around the world. WWW, the newest Internet tool, is similar to Gopher in that they are both menu based and easy to use. However, WWW with its browsers presents a multimedia interface to the Internet (Krol, 1994). These exciting multimedia capabilities include hypertext, audio, pictures, and video. The browsers have been referred to as "the Internet's 'Swiss Army knife:' just about all the tools you need, wrapped into one package." (1994, p. 295). Largely because of the capabilities of such browsers that are emerging, WWW could easily become the most popular method for accessing the Internet.

Ethical Considerations and Computerized Information Systems

This study shows that computer technology is being used in career development programs at major universities by providing access to educational and occupational information on the Internet. It is the responsibility of professional organizations to provide ethical guidelines for the use of computer technology in career development. Section A.13 from the "Proposed Revision to the American Counseling Association Code of Ethics and Standards of Practice," ("Proposed Code & Standards," 1994) addresses the use of computer technology as a component of counseling services to ensure that computer applications are appropriately used.

The American Psychological Association (APA) has no guidelines that address the use of computer technology in the area of career development according to Diane Brown, Director of Testing and Assessment at APA. Ms. Brown stated in a conversation on April 7, 1995, that APA guidelines addressing the use of computer technology refer only to testing and assessment.

The National Career Development Association (NCDA) has published Career Literature, Software, and Video Review Guidelines to inform individuals what constitutes good career and occupational literature, and to ensure quality control (1994). The Association of Computer-Based Systems for Career Information, has published a Handbook of Standards for the Operation of Computer-Based Career

Information Systems to assist those operating or preparing to operate a computer-based system of career information (1993). Although, neither publication refers directly to the use of the Internet in career development, their principles do apply.

(11) In summary, advances in technology have changed the way career information is delivered at colleges and universities, and are causing professional associations to address ethical considerations related to the use of networked career information systems. The current status of the use of Internet by SUL-GCs was the subject of this study. The methods and procedures used in this study will be presented in Chapter III.

CHAPTER III

Methods and Procedures

A description of the study population, software used to collect the data, procedures used in the study, and the system for classifying levels of information will be presented in this chapter. The reader may wish to consult the definitions of terms presented in Chapter I.

Study Population

④ The study population consisted of 70 SUL-GCs located in the United States and included both the 1862 and the 1890 land-grant institutions. Data files pertaining to career services and accessed through the institution's Gopher server were examined for this study. SUL-GCs' World Wide Web (WWW/Web) servers were also examined. Many of these Web servers were found to be still in the formative stages with limited career information available. However, if the institution's WWW server presented more extensive career information than the information presented on their Gopher server, the Web information was used and noted in Table 1.

Research Software

In this research, the Internet was accessed by connecting to the University of Tennessee, Knoxville (UTK) Libraries and/or UTK VAX account using SmartTerm 340 software. The UTK Gopher client was used to browse the Gopher servers of SUL-GCs registered through the University

of Minnesota. WWW homepages were accessed by a Telnet from the University of Florida Gopher server to their WWW server and connecting to a hypertexted link, "American Universities".

Gopher is a system, developed at the University of Minnesota, for providing information over the Internet. Based on the client-server model of computing, this system accesses information using a client program, and provides information using a server program (Torkington, N.,1994).

The Gopher system provides users with simple menus from which to select and retrieve information. When selecting from a menu, there are three major types of items users encounter that determine what kind of information they will retrieve. Those items include: (a) a sub-menu of additional options, (b) a document to view, or (c) a search prompt that allows the user to search a remote database.

Gopher has been adopted by hundreds of sites across the Internet allowing its users to move from one server to another without having to know network addresses, multiple software packages, or commands (1994). Although Gopher has become very popular, the WWW, a newer, and more flexible instrument for providing and accessing information on the Internet, is now available.

The WWW was developed at the European Particle Physics Laboratory, CERN. Based on hypertext technology, The WWW allows selected words presented in the text of one document

to be expanded upon in other documents. These words are highlighted, or underlined, etc., to distinguish them from other words. Selecting a word allows the user to connect or "link" to other documents including pictures, movies, files, etc., that provide more information about the topic or word. Access to the Internet through WWW begins at an institution's homepage where the user selects those hypertexted "links" which are found to be of interest.

Procedures

④ The following procedures were used in the study:

1. Career Services Unit data files and other selected departmental data files found on the local Gopher and/or WWW server of the SUL-GCs listed in Table 1 were searched.
2. Data files found as a result of the search that contained information pertaining to career services were reviewed, printed, and compared.
3. A system for classifying levels of information was developed (see System for Classifying Levels of Information in this chapter).
4. Summary tables were prepared and organized in a manner that provided for ease in answering research questions.
5. Trends that seem to be occurring and that may be of interest to institutions that are in the process of developing career service data files for student access via the Internet, were summarized.

6. Appendixes showing examples of Career Services Unit data file information being offered on the Internet by SUL-GCs, were created.

System for Classifying Levels of Information

⑩ A system was devised for classifying levels of information specificity found in the data files at SUL-GCs. A faculty member in the Counselor Education and Counseling Psychology Department at the University of Tennessee, Knoxville, served as an independent rater. Randomly selecting 10 data files at three of the SUL-GCs, the rater independently classified career information categories by levels of specificity. The researcher and the rater were in 100 percent agreement in the classification of each selected career category. The levels of information specificity are described as follows, and examples of each are found in appendixes A, B, and C:

Level 1: Limited information, or information that "refers" individuals to the Career Services Unit for assistance.

Level 2: Specific information that not only "refers" individuals, but also "explains" the career information found in the data files.

Level 3: More specific information which "refers" people to Career Services, "explains" the career information offered, and "teaches" individuals in areas of career development.

It was appropriate to classify some categories by simply whether or not the information existed. A "Y" indicates the information existed among the data files at the institution; a "0" indicates such information was not located by the researcher.

Seventy institutions were examined, the information classified and organized in a summary table, and the data analyzed for purposes of answering the research questions. The finding of the study will be presented in Chapter IV.

CHAPTER IV

FINDINGS

The findings of the study were used to address the following research questions:

1. How many SUL-GCs are currently offering their students career services information on the Internet?
2. What categories of career services information are currently offered at SUL-GCs on the Internet?
3. What levels of career information specificity are SUL-GCs entering on the Internet?
4. What are the five institutions having the greatest breadth of career information accessed on the Internet?

Data in Tables 1 and 2 will now be used to answer research questions 1, 2, 3, and 4.

Research Question 1: How many SUL-GCs are currently offering their students career services information on the Internet?

A search was done to locate those SUL-GCs having a Gopher server or World Wide Web server that provided career services information on the Internet. Data in Table 1 shows that 50 of the 70 institutions examined offered at least one category of career information. Fifteen of the 70 institutions (indicated in Table 1 by blank cells for all categories) did not maintain a Gopher or WWW Server; 11 were 1890 (historically Black) land-grant colleges. One

institution maintained a CWIS via a WWW server in which unauthorized access was prohibited.

Research Question 2: What categories of career services information are currently offered at SUL-GCs on the Internet?

SUL-GC's Career Services Unit data files as well as other departmental data files from the university's CWIS were examined for categories of career information offered via the Internet. In order to specify the appropriate career data file categories, common headings were assigned to similar information found within the files at the institutions, e.g., "Career Workshops" = "Career Seminars." Tables 1 and 2 indicate the range of most common "Categories of Information" found at the SUL-GCs examined in this study.

Findings revealed those institutions offering career services via the Internet included a selection of "Categories of Information" that were of interest to all students (see Table 1). There were however two instances where the focus was primarily on employment, targeting the needs of juniors and seniors. In those instances, little attention was paid to career decision making topics of interest to freshmen and sophomores.

Research Question 3: What levels of career information specificity are encountered at SUL-GCs on the Internet?

An analysis of the Career Services Unit data files at each of the institutions listed in Table 1 reflected varying

Table 1

Information Offered on the Internet by Career Services Units at SUL-GCs: Categories and Levels of Specificity

Categories of Information	State Universities and Land-Grant Colleges						
0 = No Information Located 1 = Refers 2 = Refers & Explains 3 = Refers, Explains & Teaches Y = Yes, Data File Is Offered	Alabama A&M University* Normal	Auburn University Auburn, AL	Tuskegee University Tuskegee, AL	University of Alaska Fairbanks	University of Arizona ¹ Tucson	University of Arkansas Fayetteville	University of Arkansas* Pine Bluff
Career Counseling Services		0		1*	2		
Career Day/Job Fair		0		0	1		
Career Decision Making Workshop/Classes		2		0	1		
Career Services for Alumni		0		0	1		
Career Services for Racial Minority Students		0		0	2		
Career Services for Students with Disabilities		0		0	0		
Career Services Resources ^b		0		0	2		
Career Services Unit Events Calendar		0		0	0		
Career Services Unit Faculty & Staff ^c		1		1	0		
Employment Opportunities at the University ^b		3*		0	0		
Graduate School: Career Related		0		0	1		
Internships/Summer Jobs/Co-op		0		0	2		
Internships/Summer Jobs/Co-op - Listed		0		0	0		
Job Seeking Skills Services		2		1	1		
Listing of Internet Resources (jobs/employment) ^d		0		0	0		
Mentoring/Shadowing		0		0	0		
On-Campus Interviewing/Recruiting/Placement ^b		0		0	1		
Out-of-Date Information (more than 1 semester)		0		Y	0		
University Events Calendar (non-academic)		Y*		Y*	Y*		
World Wide Web (WWW) Homepages	0	Y	0	Y	Y	0	0

Table 1 (continued)

Categories of Information	State Universities and Land-Grant Colleges						
	University of California ¹ Davis	Colorado State University Ft. Collins	Connecticut Agricultural Experiment Sta., New Haven	University of Connecticut Storrs	Delaware State University* Dover	University of Delaware ² Newark	University of District of Columbia, Washington, DC
0 = No Information Located 1 = Refers 2 = Refers & Explains 3 = Refers, Explains & Teaches Y = Yes, Data File Is Offered							
Career Counseling Services	0	2		2		3	
Career Day/Job Fair	0	1		0		2	
Career Decision Making Workshop/Classes	0	0		2		3	
Career Services for Alumni	0	2*		0		1	
Career Services for Racial Minority Students	0	0		2		2	
Career Services for Students with Disabilities	0	0		0		0	
Career Services Resources ^b	0	2		2		2	
Career Services Unit Events Calendar	0	0		0		Y	
Career Services Unit Faculty & Staff ^c	0	1		3		3*	
Employment Opportunities at the University ^b	3*	0		3*		3	
Graduate School: Career Related	0	0		0		3	
Internships/Summer Jobs/Co-op	0	1		2		2	
Internships/Summer Jobs/Co-op - Listed	0	0		0		0	
Job Seeking Skills Services	0	1		2		3	
Listing of Internet Resources (jobs/employment) ^d	0	0		0		3	
Mentoring/Shadowing	0	0		2*		3*	
On-Campus Interviewing/Recruiting/Placement ^b	0	3		2		3	
Out-of-Date Information (more than 1 semester)	0	0		0		0	
University Events Calendar (non-academic)	Y*	Y*		Y*		Y*	
World Wide Web (WWW) Homepages	Y	Y	0	Y	0	Y	0

Table 1 (continued)

Categories of Information	State Universities and Land-Grant Colleges						
0 = No Information Located 1 = Refers 2 = Refers & Explains 3 = Refers, Explains & Teaches Y = Yes, Data File Is Offered	Florida A&M University* Tallahassee	University of Florida Gainesville	Fl. Valley State College* Fl. Valley, GA	University of Georgia Athens	University of Hawaii Honolulu	University of Idaho Moscow	University of Illinois Urbana
Career Counseling Services	0	3		0	2	2*	2
Career Day/Job Fair	0	3		0	0	0	2
Career Decision Making Workshop/Classes	0	3		0	1	0	2
Career Services for Alumni	0	3		0	2	1*	0
Career Services for Racial Minority Students	0	0		0	0	0	1
Career Services for Students with Disabilities	0	3		0	1	0	1
Career Services Resources ^b	0	3		0	2	0	2
Career Services Unit Events Calendar	0	Y		0	0	0	0
Career Services Unit Faculty & Staff ^c	0	3		0	0	0	3
Employment Opportunities at the University ^b	0	3*		3	3*	0	3*
Graduate School: Career Related	0	0		2*	3*	0	0
Internships/Summer Jobs/Co-op	2	3		0	2*	1*	1
Internships/Summer Jobs/Co-op - Listed	0	0		0	Y*	0	0
Job Seeking Skills Services	0	3		0	2	2*	2
Listing of Internet Resources (jobs/employment) ^d	0	0		2*	2	1*	0
Mentoring/Shadowing	0	0		0	0	0	0
On-Campus Interviewing/Recruiting/Placement ^b	0	3		0	1	2*	2
Out-of-Date Information (more than 1 semester)	0	0		0	0	0	0
University Events Calendar (non-academic)	0	Y*		Y*	Y*	0	Y*
World Wide Web (WWW) Homepages	Y	Y	0	Y	Y	Y	Y

Table 1 (continued)

Categories of Information	State Universities and Land-Grant Colleges						
	Purdue University West Lafayette	Iowa State University ² Ames	Kansas State University Manhattan	Kentucky State University* Frankfort	University of Kentucky Lexington	Louisiana State University Baton Rouge	Southern University System*, ¹ Baton Rouge, LA
0 = No Information Located 1 = Refers 2 = Refers & Explains 3 = Refers, Explains & Teaches Y = Yes, Data File Is Offered							
Career Counseling Services	3	2	2		1	1	0
Career Day/Job Fair	0	3	0		0	1	0
Career Decision Making Workshop/Classes	2	2	2		2	1*	0
Career Services for Alumni	0	1	0		1	0	0
Career Services for Racial Minority Students	0	1	0		0	0	0
Career Services for Students with Disabilities	0	0	0		0	0	0
Career Services Resources ^b	2	1	3		0	0	0
Career Services Unit Events Calendar	0	Y	Y		Y	Y	0
Career Services Unit Faculty & Staff	1	3	0		0	3	0
Employment Opportunities at the University ^b	3*	3*	3*		2*	0	0
Graduate School: Career Related	0	3	0		0	1*	0
Internships/Summer Jobs/Co-op	2	1	3		1	1	3
Internships/Summer Jobs/Co-op - Listed	Y	0	Y		0	0	0
Job Seeking Skills Services	0	1	3		2	0	0
Listing of Internet Resources (jobs/employment) ^d	3	2	0		0	0	0
Mentoring/Shadowing	2	0	0		0	0	0
On-Campus Interviewing/Recruiting/Placement ^b	3	1	3		1	0	0
Out-of-Date Information (more than 1 semester)	0	0	0		0	0	0
University Events Calendar (non-academic)	Y*	Y*	Y*		Y*	Y*	0
World Wide Web (WWW) Homepages	Y	Y	Y	0	Y	Y	Y

Table 1 (continued)

Categories of Information	State Universities and Land-Grant Colleges						
	University of Maine Orono	University of Maryland College Park	University of Maryland* Eastern Shore, Princess Anne	Massachusetts Institute of Technology, Cambridge	University of Massachusetts Amherst	Michigan State University ³ East Lansing	University of Minnesota Minneapolis
0 = No Information Located 1 = Refers 2 = Refers & Explains 3 = Refers, Explains & Teaches Y = Yes, Data File Is Offered							
Career Counseling Services	2	2		0	0	3	0
Career Day/Job Fair	0	2		1	0	2	0
Career Decision Making Workshop/Classes	1	2		0	0	1	0
Career Services for Alumni	0	2		1	0	2	0
Career Services for Racial Minority Students	1 ^a	2		0	0	1	0
Career Services for Students with Disabilities	0	0		0	0	1	0
Career Services Resources ^b	2	2		3	0	3	0
Career Services Unit Events Calendar	Y	0		0	0	Y	0
Career Services Unit Faculty & Staff ^c	0	0		3	0	2	0
Employment Opportunities at the University ^b	3 ^a	3 ^a		3 ^a	0	0	3 ^a
Graduate School: Career Related	1	1		0	0	0	0
Internships/Summer Jobs/Co-op	1	2		1	0	0	0
Internships/Summer Jobs/Co-op - Listed	0	0		Y	0	Y	Y ^a
Job Seeking Skills Services	1	2		0	0	3	0
Listing of Internet Resources (jobs/employment) ^d	3	3		2 ^a	3 ^a	0	1
Mentoring/Shadowing	3	0		0	0	1	0
On-Campus Interviewing/Recruiting/Placement ^b	3	2		3	0	2	0
Out-of-Date Information (more than 1 semester)	0	0		0	0	0	0
University Events Calendar (non-academic)	Y ^a	Y ^a		Y ^a	Y ^a	Y ^a	Y ^a
World Wide Web (WWW) Homepages	Y	Y	0	Y	Y	Y	Y

Table 1 (continued)

Categories of Information	State Universities and Land-Grant Colleges						
	Alcorn State University* Lorman, MS	Mississippi State University Starkville	Lincoln University* Jefferson City, MO	University of Missouri Columbia	Montana State University ^{1,3} Bozeman	University of Nebraska Lincoln	University of Nevada Reno
0 = No Information Located 1 = Refers 2 = Refers & Explains 3 = Refers, Explains & Teaches Y = Yes, Data File Is Offered							
Career Counseling Services		0		2		2	0
Career Day/Job Fair		0		0		2	0
Career Decision Making Workshop/Classes		0		2		2	0
Career Services for Alumni		0		0		1	0
Career Services for Racial Minority Students		0		0		2	0
Career Services for Students with Disabilities		0		0		0	0
Career Services Resources ^b		0		3		2	0
Career Services Unit Events Calendar		0		0		Y	0
Career Services Unit Faculty & Staff		0		1		1	0
Employment Opportunities at the University ^b		3 ^a		2 ^a		0	0 ^c
Graduate School: Career Related		0		0		0	0
Internships/Summer Jobs/Co-op		0		2		2	0 ^c
Internships/Summer Jobs/Co-op - Listed		0		Y		0	0 ^c
Job Seeking Skills Services		0		2		3	0
Listing of Internet Resources (jobs/employment) ^d		0		0		3	3 ^a
Mentoring/Shadowing		0		0		0	0
On-Campus Interviewing/Recruiting/Placement ^b		0		0		3	0
Out-of-Date Information (more than 1 semester)		0		0		0	0
University Events Calendar (non-academic)		Y ^a		Y ^a		Y ^a	Y ^a
World Wide Web (WWW) Homepages	0	Y	0	Y	Y	Y	Y

Table 1 (continued)

Categories of Information	State Universities and Land-Grant Colleges						
	University of New Hampshire Durham	Rutgers, State University of ^{1,2} New Jersey, New Brunswick	New Mexico State University Las Cruces	Cornell University ⁴ Ithaca, NY	North Carolina A&T State [*] University, Greensboro	North Carolina State University, Raleigh	North Dakota State Univ., Fargo
0 = No Information Located 1 = Refers 2 = Refers & Explains 3 = Refers, Explains & Teaches Y = Yes, Data File Is Offered							
Career Counseling Services	2	2	2	2	0	3	2
Career Day/Job Fair	2	3	2	0	0	2	1*
Career Decision Making Workshop/Classes	2	2	1	2	0	2	0
Career Services for Alumni	1	2	1	0	0	1	0
Career Services for Racial Minority Students	0	2	0	1	0	0	0
Career Services for Students with Disabilities	0	1	0	0	0	0	0
Career Services Resources ^b	2	2	2	0	0	2	0
Career Services Unit Events Calendar	0	Y	Y	Y	0	0	0
Career Services Unit Faculty & Staff ^c	2	1	0	0	0	2	0
Employment Opportunities at the University ^b	3*	0	3*	3*	0	3*	3*
Graduate School: Career Related	0	2	0	0	0	0	0
Internships/Summer Jobs/Co-op	3	3	1	2	0	0	0
Internships/Summer Jobs/Co-op - Listed	Y	Y	Y	Y	Y	0	0
Job Seeking Skills Services	2	2	2	2	0	2	0
Listing of Internet Resources (jobs/employment) ^d	0	0	3	0	0	3	0
Mentoring/Shadowing	2	2	0	3	0	0	0
On-Campus Interviewing/Recruiting/Placement ^b	3	2	2	3	0	0	0
Out-of-Date Information (more than 1 semester)	0	0	0	0	0	0	0
University Events Calendar (non-academic)	Y*	Y*	Y*	Y*	Y*	Y*	Y*
World Wide Web (WWW) Homepages	Y	Y	Y	Y	Y	Y	Y

Table 1 (continued)

Categories of Information	State Universities and Land-Grant Colleges						
	Ohio State University Columbus	Langston University* ¹ Langston, OK	Oklahoma State University Stillwater	Oregon State University ¹ Corvallis	Pennsylvania State University University Park	University of Rhode Island Kingston	Clemson University Clemson, SC
0 = No Information Located 1 = Refers 2 = Refers & Explains 3 = Refers, Explains & Teaches Y = Yes, Data File Is Offered							
Career Counseling Services	2	0	2	0	3	2	0
Career Day/Job Fair	3	0	0	0	1*	2	0
Career Decision Making Workshop/Classes	2	0	0	0	2	2	0
Career Services for Alumni	0	0	0	0	0	0	0
Career Services for Racial Minority Students	1	0	0	0	2*	0	0
Career Services for Students with Disabilities	0	0	0	0	0	0	0
Career Services Resources ^b	2	0	0	0	2	2	0
Career Services Unit Events Calendar	Y	0	0	0	Y*	Y	0
Career Services Unit Faculty & Staff ^f	0	0	1	0	1	1	0
Employment Opportunities at the University ^b	3*	0	0	0	3*	0	0
Graduate School: Career Related	0	0	0	3*	3	2	0
Internships/Summer Jobs/Co-op	0	0	1	0	3*	3	0
Internships/Summer Jobs/Co-op - Listed	0	0	0	0	0	0	0
Job Seeking Skills Services	2	0	0	3*	3	2	0
Listing of Internet Resources (jobs/employment) ^d	3	1*	0	3*	0	0	0
Mentoring/Shadowing	1	0	0	0	0	0	0
On-Campus Interviewing/Recruiting/Placement ^b	3	0	0	2*	3	3	0
Out-of-Date Information (more than 1 semester)	Y	0	0	0	0	0	0
University Events Calendar (non-academic)	Y*	0	Y*	Y*	Y*	Y*	Y*
World Wide Web (WWW) Homepages	Y	Y	Y	Y	Y	Y	Y

Table 1 (continued)

Categories of Information	State Universities and Land-Grant Colleges						
	South Carolina State* University, Orangeburg	South Dakota State Univ., Brookings	Tennessee State University* Nashville	University of Tennessee Knoxville	Prairie View A&M Univ.,* Prairie View, TX	Texas A&M University College Station	Utah State University* Logan
0 = No Information Located 1 = Refers 2 = Refers & Explains 3 = Refers, Explains & Teaches Y = Yes, Data File Is Offered							
Career Counseling Services		0		0	0	0	0
Career Day/Job Fair		0		0	0	2	1
Career Decision Making Workshop/Classes		0		0	0	0	2
Career Services for Alumni		0		0	0	0	0
Career Services for Racial Minority Students		0		0	0	0	0
Career Services for Students with Disabilities		0		0	0	0	0
Career Services Resources ^b		0		0	0	0	0
Career Services Unit Events Calendar		0		0	0	0	Y
Career Services Unit Faculty & Staff ^c		0		0	0	0	0
Employment Opportunities at the University ^b		0		3*	0	3*	0
Graduate School: Career Related		0		0	0	0	0
Internships/Summer Jobs/Co-op		0		0	0	0	0
Internships/Summer Jobs/Co-op - Listed		0		0	0	Y*	0
Job Seeking Skills Services		0		0	0	0	3
Listing of Internet Resources (jobs/employment) ^d		0		0	0	0	0
Mentoring/Shadowing		0		0	0	0	0
On-Campus Interviewing/Recruiting/Placement ^b		0		0	0	0	3
Out-of-Date Information (more than 1 semester)		0		0	0	0	0
University Events Calendar (non-academic)		0		Y*	0	Y*	0
World Wide Web (WWW) Homepages	0	0	0	Y	Y	Y	Y

Table 1 (continued)

Categories of Information	State Universities and Land-Grant Colleges						
	University of Vermont Burlington	Virginia Polytechnic Institute ² & State Univ., Blacksburg	Virginia State University* Petersburg	Washington State University Pullman	West Virginia University Morgantown	University of Wisconsin Madison	University of Wyoming Laramie
0 = No Information Located 1 = Refers 2 = Refers & Explains 3 = Refers, Explains & Teaches Y = Yes, Data File Is Offered							
Career Counseling Services	3	2		2	0	3	0
Career Day/Job Fair	0	2		1	0	0	0
Career Decision Making Workshop/Classes	2	2		1	0	2	0
Career Services for Alumni	2*	2		0	0	1	0
Career Services for Racial Minority Students	0	0		0	0	0	0
Career Services for Students with Disabilities	0	1		0	0	0	0
Career Services Resources ^b	1	3		2	0	2	0
Career Services Unit Events Calendar	Y	Y		0	0	0	0
Career Services Unit Faculty & Staff ^c	0	0		0	0	0	0
Employment Opportunities at the University ^b	3*	3*		3*	0	3*	3*
Graduate School: Career Related	3	0		1	0	1	0
Internships/Summer Jobs/Co-op	3	2		1	0	0	0
Internships/Summer Jobs/Co-op - Listed	0	Y		Y	0	Y	0
Job Seeking Skills Services	3	2		2	0	2	0
Listing of Internet Resources (jobs/employment) ^d	0	0		3*	0	1	0
Mentoring/Shadowing	2	2		1	0	0	0
On-Campus Interviewing/Recruiting/Placement ^b	2	3*		1	0	0	0
Out-of-Date Information (more than 1 semester)	0	0		0	0	0	0
University Events Calendar (non-academic)	Y*	Y*		Y*	Y*	Y*	Y*
World Wide Web (WWW) Homepages	Y	Y	0	Y	Y	Y	Y

*1890 (historically Black) land-grant institution.

¹Institution examined via WWW.

Table 1 (continued)

²One of the top five institutions revealed in this study to have the greatest variety (breadth) of career information offered via Internet.

³Unauthorized access to university CWIS prohibited.

⁴Career information is placement oriented.

⁵Information located in data files of other departments at university.

^bIf information in this category was at a specificity level 3, it refers, explains, and "lists."

^cIf information in this category was at a specificity level 3, it refers, explains, and "identifies responsibilities."

^dInformation specificity Level 1: direct access to one remote career related Internet resource.

Level 2: direct access to two remote career related Internet resources.

Level 3: direct access to three or more career related Internet resources.

[Best Bets from the Net (Ray & Taylor, 1995) was used to identify career related resources accessed from remote sites on the Internet.]

^eListed on menu, but information was not found in data files.

Table 2

Levels of Specificity by Categories of Career Information

Categories of Information	Levels of Specificity			
	Level 1 %	Level 2 %	Level 3 %	Total (N=70)
Career Counseling Services	9	67	24	33
Career Day/Job Fair	35	48	17	23
Career Decision Making Workshop/Classes	23	70	7	30
Career Services for Alumni	58	37	5	19
Career Services for Racial Minority Students	46	54	0	13
Career Services for Students with Disabilities	83	0	17	6
Career Services Resources	7	70	22	27
Career Services Unit Faculty & Staff	50	15	35	20
Employment Opportunities at the University	0	6	94	32
Graduate School: Career Related	40	20	40	15
Internships/Summer Jobs/Co-op	33	43	23	30
Job Seeking Skills Services	19	53	28	32
Listing of Internet Resources (jobs/employment)	20	20	60	20
Mentoring/Shadowing	25	50	25	12
On-Campus Interviewing/Recruiting/Placement	17	31	52	29

Note: This table does not include the following categories: Out of Date Information, University Events Calendar, World Wide Web (WWW) Homepages. These categories did not lend themselves to assignment of levels of specificity.

levels of information specificity according to the levels defined in Chapter III. This study found 86 of the 341 data files examined for levels of specificity, "referred" (Level 1) the user to the Career Center for assistance, while 144 provided career information that "explained", some more descriptive than others, the services (Level 2). In 111 instances, the career files included "how-to" information which has been described in this study as "teaching" (Level 3). Examples of Levels of Information Specificity 1, 2 and 3 are in Appendix A, B and C respectively.

Table 2 shows that those categories pertaining to career decision making at schools offering such information were most often a Level 2. Those categories are: "Career Counseling" with 67 percent at that level; "Career Decision Making Workshops/Classes", 70 percent; and "Mentoring/Shadowing", 50 percent.

Only 22 percent of those institutions providing information on "Career Services Resources" included a bibliography/listing of resources (Level 3). Seventy percent offered a general overview of the resources available (Level 2). Also information regarding the "Career Services Unit Faculty and Staff" was found with 50 percent merely "referring" students to the Career Center. Thirty five percent provided the names of Career Center personnel as well as their designated responsibilities (Level 3).

The "Career Services Unit Events Calendar" and the "University Events Calendar" were also sources for locating career information. No evaluation of information specificity was made in this study in terms of calendar postings, only whether or not a calendar was offered. It was mainly these calendars that were assessed for the category of "Out-of-Date Information (more than 1 semester)". Thirty six percent of the 50 institutions offering at least one category of career information offered career services calendars; 94 percent provided a university main events calendar. There were only two instances where outdated information was found (see Table 1).

"On-Campus Interviewing/Recruiting/Placement" information data files were discovered at 29 SUL-GCs in this study. Of those institutions, 52 percent posted descriptions of job opportunities (Level 3), while 31 percent provided information such as interview sign-up, recruitment calendars, employer information, etc, (Level 2). At colleges providing information on "Job Seeking Skills Services", 53 percent addressed such information at a specificity Level 2 (see Table 2).

Forty three percent of the 30 universities providing information on "Internships/Summer Jobs/Co-op" services were a Level 2. However, 23 percent actually "taught" Internet users the importance of experiential opportunities, and how such experiences could be obtained (Level 3). The category

"Internships/Summer Jobs/Co-op - Listed" was examined only for whether or not specific opportunities were posted on the Internet, rather than level of specificity. Table 1 shows that 16 colleges post experiential opportunities. Table 2 shows data files pertaining to "Employment Opportunities at the University" were located at 32 SUL-GCs with 94 percent offering a list of specific job openings (Level 3).

This study found few institutions offering career information targeting special groups. Of those 19 schools indicated in Table 2 that offered information of specific interest to "Alumni", 58 percent were a Level 1, "referring" individuals to the Career Center. Only six institutions provided information specifically for "Individuals with Disabilities", and five of those were a Level 1. Thirteen universities offered career information targeting "Racial Minorities", seven of which "explained" (Level 2) the services offered at their institution.

Career related information in terms of "Graduate School (how to choose, etc.)" was found at 15 schools in this study; Level 3 information was most (43 percent) often provided.

And finally, there is a multitude of resources accessible on the Internet specifically pertaining to career topics--some better than others in terms of "comprehensiveness; ability to serve the needs of a particular discipline; ease of navigation; timeliness; or the overall quality of the resources." (Ray & Taylor, 1995,

p. 1). A resource guide, Best Bets from the Net (1995), was used in this study to evaluate the level of information specificity for the category, "Listing Other Internet Resources (Jobs & Employment)". Sixty percent of the institutions offering such a data file provided Level 3 kinds of information (see Table 1 for explanation of Levels 1, 2, and 3 in this category).

Research Question 4: What are the titles of the five institutions having the greatest breadth of career information accessed on the Internet?

The five SUL-GCs offering the greatest variety of career categories were determined from the data in Table 1. Since the purpose of this question was to learn how career information was being organized, rather than the depth of the information, levels of specificity were not considered. The top five institutions were: (1) The University of Delaware, Newark, DE; (2) Iowa State University, Ames, IA; (3) Michigan State University, East Lansing, MI; (4) Rutgers, The State University of New Jersey, New Brunswick, NJ; and (5) Virginia Polytechnic Institute & State University, Blacksburg, VA. These institutions are indicated in Table 1.

Chapter V contains a discussion of results found in this study. The discussion includes a summary, additional observations, and recommendations.

CHAPTER V

Summary, Additional Observations, and Recommendations

The summary, conclusions, and recommendations included in this chapter will focus primarily on the data that were compiled in this study. However, the compiling process also yielded additional observations, and recommendations that may be useful when Career Services Units are considering developing or modifying the ways in which students can access career information on the Internet.

Summary

The purpose of this study was to gather and analyze baseline information that might be useful to Career Services personnel in making future decisions on how they might use the Internet as a career resource instrument. Career Services Unit data files of SUL-GCs were studied via Gopher menus and/or WWW homepages to determine how many of the institutions were providing career information on the Internet, and to consider the depth and breadth of the information provided. An evaluative index identifying the level of information specificity (depth) was assigned to categories of career information found in the data files at each institution, and recorded in Table 1. The data were analyzed, and five SUL-GCs were chosen as a result of the variety (breadth) of career topics being offered on the Internet. Those five institutions are indicated in Table 1.

Additional Observations

In addition to the findings discussed in Chapter IV, two other observations should be mentioned: a) ease in locating career information on the Internet, and b) maintenance of career related information on the Gopher/WWW servers at SUL-GCs. These observations are discussed below.

Variations in ease in which career data files at SUL-GCs were located were observed in this study. Career Services Units that listed data files on their CWIS's root menu under obvious titles, e.g., "Student Services," were most easily accessed. There were instances, however, where career data files were located three sub-menus away from the root menu, listed under a heading not easily interpreted, e.g., "Administrative Services". In these instances, it was a tedious process to find the career information, and sometimes almost missed because of the time and effort required to locate it. A keyword search <?> was conducted whenever possible for Career Services Unit data files and/or career information not included in the Career Services files. Trying to identify the keyword for which to search, proved laborious at times.

Because keyword searches proved productive in locating career information, the researcher concluded that not all career information data files at the SUL-GCs were being maintained by the Career Services Units. For instance,

career related subject matter at one institution consisted of a coordinated network of seven individual colleges at the university, each college being responsible for providing their own career information on the Internet. This was in addition to a separate university Planning and Placement Unit that also disseminated relevant information. Although it was found that Career information was most often provided and maintained by Career Services Units, where career related information was offered by other departments, a notation was made in Table 1.

Recommendations resulted from this study. They are as follows.

Recommendations

There are several recommendations that can be made as a result of this study. These recommendations include those related directly to data compiled for the study and to the manner in which data were accessed.

Career Services Units that are interested in modifying ways in which students access career information should examine the data in Table 1 to:

1. Determine the level of specificity (Level 1, Refers; Level 2, Refers and Explains; Level 3, Refers, Explains, and Teaches) that would best serve users for each category of information to be included on a WWW homepage or Gopher menu.

2. Determine data currently available by level of specificity at other institutions to which users can link (eliminating those files that contain information specific to that particular institution) via WWW or Gopher.

3. Select titles for career information files that are in consort with other widely used titles.

4. Consider ease of navigation so that users can quickly get to the information they desire.

5. Advocate for the development of a career development thesaurus that would include terms for career information data files and which would eliminate some of the ambiguity found in key word searches.

6. Consider providing direct access links from the Career Services Unit Gopher menu (WWW homepage) to other career related information, e.g., employment opportunities at the local institution, located in other local departmental data files.

7. Consider providing a search <?> prompt on the Career Services Unit menu to allow for keyword searches of local institutional data files.

It is beyond the scope of this study to make specific recommendations regarding the fact that of the 15 land-grant institutions found to have no Gopher or World Wide Web server, 11 were 1890 (historically Black) institutions.

However, issues related to accessing information should be of major concern to policy makers and governing boards of these 1890 land-grant institutions.

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APPENDIXES

APPENDIX A

Example: Level 1 Information Specificity

Events.....Career Center Upcoming Events/General Information [1995.01100%
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Call or visit: UK CAREER CENTER
201 MATHEWS BUILDING
257-2746

Career Center hours for the Spring 1995 semester:

Mondays & Thursdays 8:00am - 6:00pm
Tuesdays, Wednesdays & Fridays 8:00am - 4:30pm

Individual career consultations may be scheduled by calling or visiting
our office. Please stop by for a complete listing of all our services.

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APPENDIX B

Example: Level 2 Information Specificity

CAREER DEVELOPMENT PROGRAM

Question 1: Where are you located? What is your telephone number?

Answer 1: Career Exploration is located in Room 108,
Aylesworth Hall NE, 491-1756.

Question 2: What are your office hours?

Answer 2: Monday through Friday from 8 a.m. to 5 p.m.

Question 3: What are your services?

Answer 3: Career Exploration offers individual and group
appointments to assist students in exploring
interests, values, skills, decision making, majors
and careers.

Question 4: Who is eligible for services?

Answer 4: All full-time, fee-paying students are eligible for
the services. Alumni may use our services during
Summer free-of-charge for 1 year after their

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Career Development, Program of (3k)

61%

graduation date.

Question 5: Is there a fee for services?

Answer 5: There is no fee for services for full-time, fee-
paying students. Alumni taking interest inventories
pay a fee for the inventory and scoring.

Question 6: What is the difference between the Aylesworth Hall and
Lory Student Center locations?

Answer 6: The Aylesworth location works with students in the
process of deciding a major, changing a major, or
exploring occupational applications for their major.
The Lory Student Center location assists students in
resume writing, interviewing techniques and job-
search strategies for students looking for
internships, co-op, career-related Summer jobs, and
entry-level professional positions.

Question 7: What services are available for adult learners?

Answer 7: Choices CT a Computer Assisted Guidance Program,

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Career Development, Program of (3k)

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CISS (Campbell Interests and Skills survey) and CCRI
(the Career Change Readiness Inventories).

Question 8: How do I get started?

Answer 8: Stop by or call to make an appointment with a career
counselor.

Question 9: Is there a limit to the number of times I can use the
Career Exploration services?

Answer 9: Students may utilize our services as often as the

need arises.

Question 10: Can I check out materials from the Resource Library?

Answer 10: We do not check out materials from the Resource Library. Students are welcome to use library materials anytime during office hours.

Who can a person contact for more information about your office?

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Career Development, Program of (3k)

100%

+-----+
Name Melissa Bornhoft
Email MBornhoft@VINES.COLOSTATE.EDU
Phone 303 491-7744
Fax 303 491-1134
Department The Career Center
Paper mail address 176 Lory Student Center
Colorado State University
Fort Collins, CO 80523, USA

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APPENDIX C

Example: Level 3 Information Specificity

YOUR CAREER IS YOUR LIFE

A special project undertaken and completed by a task force of the Career Planning and Placement Council.

AS A FRESHMAN

Assess yourself and broaden your horizons.

ACADEMIC PREPARATION

After the Academic Orientation Program (AOP) and the Meet Your College Program of Welcome Week, you should meet with an adviser in the college of your major preference to learn more about that unit. If you have not declared an academic major, visit your no-preference adviser and meet with the academic advisers in the colleges and or departments that interest you. Keep an open mind. Explore! Review your precollege testing results with an adviser as they may affect your academic and career choices. Review all materials from the Academic Orientation Program including the University Catalog. The sections entitled Undergraduate

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Education, General Information, and the materials on your preferred college are particularly recommended. Workshops on study skills, test taking, memory, time management, and speed reading are offered by the Learning Resources Center, 201 Bessey Hall. You can always benefit from fine-tuning skills. If you earn low grades on papers and/or examinations, seek immediate assistance from the course instructor to explore reasons and ways to improve performance. Do not procrastinate!

PERSONAL AWARENESS

Ask and seek the answers to the questions. Who am I? What are my strengths?...my weaknesses?...academic interests?...hobbies? How do I want to grow intellectually?...as a human being? What have I accomplished in the past? How can this influence my future? Seek individual counseling sessions at the Counseling Center to work on personal and career development concerns. Use computerized self-assessment programs to identify your competencies, interests, strengths, and weaknesses; learn more about yourself. Inquire at the Counseling Center, 207 Student Services Bldg., how to use these programs most effectively.

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List the major challenges anticipated in your college experiences. Discuss your changing relationships with family, friends, counselors, resident assistants, and minority aides. Do not underestimate the stress of leaving home and making the transition to college.

SOCIAL DEVELOPMENT

Plan time for developing leisure activities, recreational interests, hobbies, and other extracurricular activities. Initiate contacts with student government organizations in residence halls and participate in campus government groups or clubs. Consider

Greek organizations.
 Join student organizations in career and interest areas. Contact the Student Organizations Office, 101 Student Services Bldg., for a directory.
 Take advantage of the many plays, musicals, and chamber and symphonic music performances at Wharton Center, the Auditorium, Breslin Student Events Center, and the Music Bldg. Tickets are often priced at special student rates.
 Visit Kresge Art Museum, the Abrams Planetarium, and the MSU Museum.

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APPENDIX B (Continued)

YOUR CAREER IS YOUR LIFE (Continued)

AS A FRESHMAN (Continued) CAREER PLANNING AND PLACEMENT

Explore career options or choices. Consider associated work environments, career paths, and lifestyles.
 Vocational interest surveys and other selected instruments may provide clues to your academic goals. The Counseling Center, 207 Student Services Bldg. offers these tests.
 Attend career fairs and programs sponsored by colleges and student organizations to increase your knowledge of the full range of jobs that people perform.

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 CAREER PLANNING GUIDE (17k)

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 Talk with parents, friends, professors and individuals already employed about your career interests.
 Volunteer for work experiences related to your career interests by contacting the Service-Learning Center, 27 Student Services Bldg.
 Pursue part-time and summer employment opportunities to gain work experience and to learn more about your work preferences. Develop positive work attitudes.
 If you need to clarify your thinking about careers, you can schedule an appointment at the Counseling Center or Career Development and Placement Services, 113 Student Services Bldg., for career counseling.

AS A SOPHOMORE

Explore options and establish short-term and long-term goals.

ACADEMIC PREPARATION

Continue to meet with your academic adviser every term.
 Outline a plan for coursework that will satisfy your degree requirements. Make a firm commitment to work for an excellent academic record so options for the future are open.

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Practice the academic skills you developed as a result of attending workshops offered by the Learning Resources Center, 204 Bessey Hall. Check the list of center offerings for new topics. Talk with faculty members in your areas of academic interest during office hours or at programs designed for this purpose. Invite faculty to student group meetings. Talk with other students in your chosen academic major. Select courses that will complement and supplement those required for your academic program. Match these elective choices to your assessed abilities, needs, values, and interests. Consider special academic options such as overseas studies, thematic programs, or specializations related to personal career goals. Ask your academic adviser for appropriate options. Augment your academic major with language competencies to prepare yourself for this ever widening global society. If you cannot meet the admission requirements of your preferred academic major, immediately explore other options. Be positive in your attitude.

PERSONAL AWARENESS

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Continue to place a high priority on academic honesty and integrity. Discover productive ways to manage your emotions, so you can improve the quality of your interpersonal relationships. Practice effective decision-making skills. Seek assistance from the Counseling Center if needed. Identify friends, faculty, and counselors who can offer personal/academic support and give important feedback about yourself. Begin a list of cities where you would like to live and work. Analyze your choices. What do you do like about the location? How much do you know about day-to-day life in that location? What in your interests, values, and lifestyle led to these choices?

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APPENDIX B (Continued)

YOUR CAREER IS YOUR LIFE (Continued)

AS A SOPHOMORE (Continued)

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Take advantage of opportunities offered at MSU to make friends with people from other countries. Learn from friends about other countries and people.

SOCIAL DEVELOPMENT

Expand your interpersonal communication skills through contact with diverse groups of students. Seek committee assignments or volunteer experiences on work projects

with student government, campus organizations, or community groups. Confirm your eligibility to be an event or committee chairperson. Participate on intramural or varsity sports teams. Contact Intramural Sports and Recreative Services, 205 IM Sports West; the head varsity coach of your preferred sport; or Intercollegiate Athletics, 248 Jenison Fieldhouse. Attend lively lectures, forums, or debates on campus to expand your horizons. Take advantage of interesting programs in your residence hall or living unit.

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CAREER PLANNING AND PLACEMENT

Collect more data on career options and read specific materials about careers in the Career Development Center, 6 Student Services Bldg. Schedule appointments to talk with members of the staff at the Counseling Center, 207 Student Services Bldg., or Career Development and Placement Services, 6 Student Services Bldg., about your interests.

Locate the bulletin boards in residence halls and colleges where internships, employment opportunities, and scholarship announcements are posted and review these postings on a regular basis. Attend career fairs to select a range of options within academic majors.

Continue to talk with professionals or other individuals in work areas that interest you. Spend a day on the job with a professional. Plan for part-time employment, summer jobs, or volunteer experiences related to your career interests, if possible. Use the Service-Learning Center, 26 Student Services Bldg.; the Student Employment Office, 110 Student Services Bldg.; field experience education offices of colleges; and internship offices.

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AS A JUNIOR

Start pursuing contacts that support your academic/career plans.

ACADEMIC PREPARATION

Continue to seek advice from your academic adviser and other faculty. Check progress toward achievement of degree requirements.

Ask faculty about career prospects in your chosen academic area or any questions you may have. Develop associations with faculty who could become your academic mentors.

Continue to explore elective courses that will expand your knowledge of other cultures.

Aim for outstanding academic performance, especially in your major courses.

Attend conferences, seminars, and association meetings that are targeted for professionals in your academic area. Become an active member of appropriate organizations related to your academic major.

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APPENDIX B (Continued)

YOUR CAREER IS YOUR LIFE (Continued)

AS A JUNIOR (Continued)

Use the MSU Graduate Professional School Preparation Guide & Checklist to plan for admission to graduate and/or professional school. Copies of this guide are available in your adviser's office. Check admission requirements, testing dates, and timelines for applications.

Complete required volunteer experiences for your academic major and/or professional school requirements.

PERSONAL AWARENESS

Continue to improve your communication skills.

Have you changed since your freshman year? Once again ask and answer the following questions: Who am I?...What are my strengths?...How are

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these influencing my present action? What major challenges do I anticipate for the remainder of my college career? For the future? If you have not achieved the growth you wanted, identify friends, faculty, and/or counselors who are willing to discuss personal concerns.

Discuss your decisions with a mentor, academic adviser, or counselor. Are you satisfied with your decisions?

Offer peer assistance to other students who are having problems. Develop your listening skills.

Test the answers to questions and problems that are affecting your decisions and actions now and in the future. Discuss these with individuals or groups, faculty, advisers, and counselors.

SOCIAL DEVELOPMENT

Develop management/leadership skills by seeking appointments or election to leadership positions in a campus organization. Refine your career interests and enrich your career preparation with experiences in clubs and campus organizations.

If appropriate, apply for a resident assistant position in a dormitory.

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Assess your leadership competencies and interests through coursework or workshops.

Become an active member and/or leader in organizations related to your academic major.

CAREER PLANNING AND PLACEMENT

Increase your work experiences, skills, and aptitudes for careers by finding professionally related part-time work or summer employment. Volunteer in the Service-Learning Center, 26 Student Services Bldg., for a career-related opportunity or internship (e.g., volunteer,

income tax assistant, legislative intern, psychological aide). Perhaps begin or work for a small business or entrepreneurial venture.

List your tentative decisions about work preferences, values, interests, and skills. What entry-level positions and career options relate to your aptitudes, interests, and values?

Research work environments and job responsibilities of related career areas. Read and study appropriate materials on career options.

Begin to establish a network of employer contacts in positions to become mentors or to assist your job campaigning after graduation.

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Consider graduate and/or professional school opportunities. Talk with academic advisers preprofessional advisers, and assistant directors in Career Development and Placement Services, 113 Student Services Bldg.

Attend resume writing workshops. Prepare a draft of your resume and have it critiqued by the professional staff in Career Development and Placement Services and your academic adviser.

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APPENDIX B (Continued)

YOUR CAREER IS YOUR LIFE (Continued)

Attend career fairs for summer employment and internship opportunities. Contact Career Development and Placement Services for dates, times, and locations of these programs.

AS A SENIOR

Take action and launch your career!

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ACADEMIC PREPARATION

Confirm your remaining degree requirements at the beginning of this year, so there are no surprises when you apply for your degree.

Assist a faculty member with an academic project and/or develop a special project for independent study that will enhance your knowledge and information and be attractive to prospective employers or graduate/professional schools.

Prepare and submit applications for graduate or professional school admission and take the tests required for admission.

Continue associations with mentors and faculty in your chosen academic areas.

Explore opportunities to become a tutor and/or teaching assistant, if appropriate.

Write a list of your short and long-term learning interests.

PERSONAL AWARENESS

Reflect on your preferred lifestyle and optional methods for achievement of your objectives.

Keep reviewing your values and how they affect your lifestyle and

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career.

Make a list of firm decisions you wish to implement and a tentative timeline for achievement of them.

If you have not yet attended workshops and/or self-help offerings of the Learning Resources Center, 204 Bessey Hall, or the Counseling Center, 207 Student Services Bldg., your senior year offers an excellent opportunity. You can still work on these matters: Do you need to sharpen your analytical skills? How do you handle stress? What do you think of yourself?

SOCIAL DEVELOPMENT

Provide leadership in a student organization or on a project.

Supervise other students toward attainment of a project objective.

Become a mentor and/or tutor; be a Spartan buddy; or coach high school or elementary students. Visit the Service-Learning Ctr., 26 Student Services Bldg., for listings of openings.

Seek leadership or supervisory opportunities during work experiences.

CAREER PLANNING AND PLACEMENT

Register with Career Development and Placement Services, 113 Student

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Services Bldg., interview with employers visiting campus, and attend workshops on job campaigning, resume writing, letters of application, interviewing, and job market trends.

Talk with alumni about their first years after college. What was it like during their first year on the job? What helped them most from their college experiences?

Attend career fairs. Check job listings and pursue job opportunities.

Develop lists of possible contacts for job opportunities or professional schools.

Use your network contacts for job opportunities or information about graduate/professional schools. Will you need letters of recommendation? Ask your faculty mentors and advisers to write them and file them at Career Development and Placement Services.

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APPENDIX B (Continued)

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CAREER PLANNING GUIDE (17k)

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YOUR CAREER IS YOUR LIFE (Continued)

Interview with prospective employers visiting campus and others that interest you.

Finalize plans for an entry-level position that meets your career objectives. Refine and revise your career plans if necessary.

Advise Career Development and Placement Services of your choice. An annual report is prepared on first destinations of graduating students.

VITA

Nancy Lancaster Mlekodaj completed this thesis in June, 1995 as the final requirement for her M.S. in Educational Psychology from the University of Tennessee, Knoxville. In 1968, she received her B.S. from Florida State University, Tallahassee, where she majored in Social Work.

During her graduate studies, the author served as graduate assistant in Career Services where she taught "Exploring Majors and Careers" credit courses; counseled individuals with career concerns; interpreted career assessment results for groups and individuals; and coordinated career development workshops. Prior to her graduate studies, she was employed as career resource technician at Roane State Community College, Harriman, Tennessee, where she implemented academic placement testing; presented career information sessions; and coordinated articulation agreements with state universities. The author is a member of the American Counseling Association, National Career Development Association, and Tennessee Counseling Association.