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Online delivery of career choice interventions: Preferences of first-year students in higher education

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Online Delivery of Career Choice Interventions:

Preferences of First-Year Students in Higher Education

by

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Dedication

This dedication page seems like little recognition for people who have provided critical support to me during the long process of pursuing an advanced degree. Thankfully, however, it presents the opportunity to put their names in print so that others will be able to appropriately recognize them for their efforts.

Adam was there from start to finish providing all the positive encouragement anyone could ever need to succeed. He took care of all the little details of life that made focusing on this endeavor a bit easier. Not the least of which were keeping me healthy – always finding the next race and reason to keep exercising, and keeping me fed – making sure I was eating well even after classes that ended at 9:00pm.

My father, Paul, and sister, Allison, played major roles of support. They offered assurance that life went on before, and would go on after this project was finished. They kept me focused on what should really be the priorities of life. Dad, "the paper" is finished! My mother, Brenda, would have loved to have seen this I think. She was always positive and encouraging about anything I chose to do, especially endeavors related to school, and I think she has been cheering me along even though she couldn't be here.

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ABSTRACT

Career services professionals are increasingly involved in decisions regarding the use of technology to perform their jobs. The millennial generation, increasingly enrolling in distance education, is characterized as being comfortable with technology, expecting efficient services, and valuing convenience. Understanding the technology-related preferences of today's students is fundamental for those planning and developing student career services.

Brown and Ryan Krane (2000) identified five critical interventions important to career decision-making: (a) Written Exercises, (b) Individualized Interpretations and Feedback, (c) Information on the World of Work, (d) Modeling, and (e) Attention to Building Support. This study investigated the following questions: (1) what are first-year students' preferences for the delivery method of critical career choice interventions and (2) to what extent are there differences in first-year students' preferences for delivery method based on their prior experience. Specific areas of prior experience included online courses, career counseling, and technology.

Participants included 318 undergraduate students enrolled in a two-credit first-year student seminar. A web-based survey was distributed to students via their

instructors. Students selected e-mail most frequently as a preferred delivery method for career choice activities followed by in person delivery. Students were most interested in participating in activities related to Modeling and Information on the World of Work. They were least interested in participating in activities related to Attention to Building Support.

Overall, participants reported a high level of previous experience with e-mail, Internet text chat, and Internet websites. Participants reported low levels of experience with discussion boards, podcasts, and virtual rooms. Participants also reported low levels of previous experience with online courses and career counseling.

While no significant differences in preferences for delivery were found based on previous experience, a comparison of students' experiences and preferences did provide interesting information. E-mail is the only technology with which there were high levels of experience and preference. Students also reported high level of experience with text chat, but a low level of preference for text chat as a delivery mode for career choice activities.

Chapter One

Introduction

This descriptive survey study explored the perspectives of first-year university students regarding their preferences for online delivery of five critical career choice interventions. These critical interventions are (a) Written Exercises, (b) Individualized Interpretations and Feedback, (c) Information on the World of Work, (d) Modeling, and (e) Attention to Building Support. These elements are traditionally offered through face-to-face interaction with career services professionals in an on-campus university Career Center. Data regarding student preferences were collected, quantified, and analyzed using quantitative methods.

Data were collected from first-year students at a higher education institution with a Carnegie classification of "very high research activity". Students enrolled in the first-year student seminar, SLS 1101 The University Experience, were surveyed using an online instrument. In addition to demographic information, this instrument included quantitative items seeking student preferences for the delivery methods of five critical career choice interventions. Students were also asked to respond to items seeking their experience level with the specific delivery options presented, as well as previous experience with online courses and career counseling.

This research has implications for university career center directors and staff members who want to extend delivery of their services to students beyond what is currently offered at a physical location on campus. Technology support personnel and

instructional designers, who are increasingly being called upon to assist student service professionals with the process of development and issues of integrating technology, may also benefit from the results of this study. In addition, identification of the potential needs of students who are to be served informs the development of student support services.

Problem

Professionals working in traditional on-campus Career Centers are increasingly involved in decisions regarding the use of technology to perform their jobs. Two trends are shaping a new direction in student services, which is to broaden these services by developing web-based versions and offering them online. First, the higher education environment is changing as a result of increased distance enrollment. Students are choosing online classes for a number of reasons, which means that fewer students are coming to campus. Second, the characteristics of college students are changing. The millennial generation, including those students born since 1982, prefers efficiency of services, use of technology, and instant gratification (Howe & Strauss, 2003; Kleinglass, 2005; Lowery, 2004; Moneta, 2005). Providing services to students effectively may be enhanced by understanding what services and interactions they prefer from a Career Center.

Student support services are beginning to react to the preferences and expectations of millennial generation students (Lowery, 2004). Also labeled "information age learners," these students are accustomed to multitasking and view staying connected as a priority (Howell, Williams, & Lindsay, 2003). As Kleinglass asserts, "the technological expectations of students, though powerful and uncomfortable at times, are forcing a new direction regarding the provision of services, communication, and sharing

of information" (2005, p. 27). This "new direction" is a direction that is described further in chapter two.

Purpose

Understanding the technology-related preferences of students is fundamental to the planning and development of online student services. These services are provided to students by their institutions to support their academic programs. The development and provision of student services in higher education requires a significant commitment of effort and resources, which include time, funding, and provision of training and support for staff. This is also the case when planning for the conversion, adaptation, and development of alternative forms of service delivery, such as web-based options. By initially focusing on the potential needs of audience members, instead of the resources available, websites for counseling and career centers can increase the likelihood that clients can find and use resources that are available (Sampson, Carr, Makela, Arkin, Minvielle & Vernick, 2003).

As technology continues to advance and evolve, universities need to find the most efficient and effective ways to leverage their resources to provide support services for students. Establishment of online career services support may be a way to not only further assist in this effort at the administration level, but also provide high quality alternative access to both traditional and non-traditional students in an effort to help them realize greater academic achievement (Visser & Visser, 2000).

Research Questions

This study seeks an understanding of first-year university students' perspective on the delivery of career services in an online environment. The following research questions were addressed:

- What are first-year university students' preferences for the delivery method of critical career choice interventions?
- To what extent are there differences in first-year university students' preferences for the delivery method of critical career choice interventions based on their prior experience with the following: (a) online courses; (b) career counseling; (c) e-mail; (d) Blackboard discussion boards; (e) audio and video recordings or podcasts; (f) Internet websites, wikis, and blogs; (g) Internet text chat or instant messaging; and (h) virtual rooms?

Rationale

Student Services

Little research has been conducted on what nonacademic support, and more specifically career services support, is expected and preferred by students (Shivy & Koehly, 2002). Student support services, such as advising, career counseling, tutoring, mentoring, and library services, relate not only to academic achievement but also to retention (Cain & Lockee, 2002).

This study builds on the previous research study of Shivy and Koehly (2002) that examined student preferences and expectations for career services in a higher education setting. Shivy and Koehly (2002) sought to map students' preferences and perceptions of career services through a customer service approach that explored which career services

students preferred. Individual characteristics of students were also taken into consideration and differences were found based on students' previous experience with career services. Shivy and Koehly (2002) found an overall preference for off-campus interactions, such as internships. This was particularly evident in students who had previous experience with career counseling. Participants also preferred assistance that involved working directly with a career services professional, or career counselor.

The results of this study reported here not only impact the decision to offer or not offer a particular service but also inform higher education administrators of the students' perceived need for specific services. This study also included the component of online delivery, and was limited to the specific population of first-year university students.

Technology Integration

Miller and McDaniels (2001) view technology as a resource that is available and practically unavoidable in this age of information. Career services professionals will increasingly be involved in decisions regarding the use of technology to perform their jobs. They ask "what will our constituents expect of us if we are to continue to perform our jobs effectively" (Miller & McDaniels, 2001, p. 206).

Levy (2003) presents a future in which technology is integrated with the educational process and the provision of student support services. Vision and planning are key elements of this integration (Kvavik & Handberg, 2000; Levy, 2003). Vision and planning become especially important as Career Centers are asked to "justify cost of services, document effectiveness and need, increase use of technology, [and] provide a broader range of services" (Hammond, 2001. p. 187). Career Centers, like other student

support offices on campus, continue to be identified by upper level administration officials as an area for budget cuts and reallocations (Hammond, 2001).

Distance Education Trends

There is a growing trend nationally in distance education at the undergraduate level. Increasingly, students are enrolling in online or distance courses. This rise in choosing distance courses is increasingly mirrored in the choice of distance services. According to Shea, "today, even campus-based students prefer the convenience of online services" (2005, p. 16). In a study of student use of web-based library resources, Kelley and Orr (2003) found that college students are indeed "relying more heavily on online resources" than those found in the traditional campus library over a five year timeframe (p. 176). In addition, Kruger (2005) asserts that more than 85% of students access the Internet on a daily basis and that more than 80% of students use e-mail and instant messaging tools on a daily basis.

Today's undergraduate students are looking for educational programs that allow them the flexibility they desire to meet their busy schedules. These students also want to incorporate the tools they use to communicate into their learning environments. These students have preferences for multitasking and module based curricula (Howell et al., 2003). These preferences move beyond coursework extending into the realm of student services. Career Center directors are noticing changes in student expectations of these services, such as 3:00 am e-mail messages to career counselors. This shift in student behavior is affecting a shift in how courses, support services, and resources are being marketed to students (Career Libraries React to Change, 2006).

At the researcher's institution, the 2004-2005 academic year saw an enrollment of 30,180 undergraduate students in distance courses. This is an increase from a distance undergraduate enrollment of 10,980 in 2000-2001 (Distance Learning Trends and Information, 2005). Significantly, this institution does not currently offer online degree programs at the undergraduate level. Seats in online undergraduate classes are being filled by undergraduate students who are considered to be traditional, on-campus students.

Also of note, all undergraduate students at this institution are required to complete a 36 credit hour General Education Liberal Arts curriculum that is traditionally completed in the first two years of college. These courses are categorized as English composition, quantitative methods, natural sciences, social sciences, non-western culture, fine arts, and historical perspectives. These courses are completed in addition to courses in the student's major. The General Education Liberal Arts curriculum could be completed through enrollment in online courses if the student chose to do so through careful course selection (General Education Liberal Arts Requirements, 2006). These students are choosing online options in a traditional campus setting. This preference for online delivery of courses may also be seen in the students' preferences for delivery of support services.

Researcher's Perspective

The author's personal interest in this study stems from a professional background in higher education administration, specifically career services and academic advising, and an interest and experience in distance education and the development of web-based instructional material. Through participation on a team redesigning the Career Center

website at her current institution, the author became interested in what services other Career Centers were offering online. Using nine critical elements of career services found in the literature, an analysis of 54 University Career Center websites revealed that over 50% of these websites included online student access to four typical career services: (a) assessments, (b) ongoing support and services, (c) consultation, and (d) job placement and labor market information (Venable, 2006).

Summary

New demands face higher education today. The millennial generation of students has arrived bringing with it specific characteristics, as well as a preference for and comfort level with technology. Higher education is also experiencing a growth in distance education enrollment (Dare, Zapata, & Thomas, 2005). The results of this study add to the fields of career services, higher education administration, and distance education by examining what preferences first-year university students possess for online delivery of career services in support of their education. The results inform those making decisions about the development, funding, and marketing of online delivery of career services and programs to undergraduate students.

Conceptual Framework

Brown and Ryan Krane (2000) and Brown, Ryan Krane, Brecheisen, Castelino, Budisin, Miller et al. (2003) identified the services deemed to be most important in an individual's career decision-making process. The work of these authors yields five critical career choice interventions, which frame the approach of this study. These interventions are (a) Written Exercises, (b) Individualized Interpretations and Feedback,

(c) Information on the World of Work, (c) Modeling, and (d) Attention to Building Support (Brown & Ryan Krane, 2000).

The five career choice interventions listed above traditionally take place within the career development process. These elements, which are key to successful face-to-face career development, may transfer well to the realm of online career development as led by a professional career services staff member. This list of five critical components provides a framework for the development of the survey items used in this study. Study participants were asked to provide information on their preferences for the delivery of these five critical components.

Definitions

The following definitions are provided to foster understanding of these terms in the context of this study. The definitions without a citation were developed by the researcher.

Preferences

"The desires regarding the occurrence of an event or the existence of a condition" (Tinsley, Bowman & Ray, 1988, p. 100).

First-Year Student

A student currently enrolled in his or her first year of college after graduating from high school. The term "freshman" is often used to describe a first-year student.

Online Course

For the purposes of this study, an online course is defined as a course that is offered predominantly through the Internet and does not require students to meet in a traditional classroom on a regular basis.

Online Services

Services that are available to students through the use of the Internet and, in the case of this study, accessed through a support office's website.

Career Services

"A variety of vocational services" traditionally offered by University Career Centers to students seeking information about and assistance with issues related to career decision-making (Shivy & Koehly, 2002, p. 40).

Career Counseling

Working individually or as part of a group with a professional career counselor trained to "help people make and carry out decisions and plans related to life/career directions" (National Career Development Association, 2007).

The following definitions serve to address and further clarify the five critical career choice interventions that frame this study.

Written Exercises

"Requiring [students] to commit their career goals and plans in writing" (Brown & Ryan Krane, 2000, p. 748) and including activities that "encourage clients to record reflections, thoughts, or feelings concerning their career development" (Brown & Ryan Krane, 2000, p. 746). This can be achieved through the use of various worksheets and templates as well as journals and diaries.

Individualized Interpretations and Feedback

"One-on-one dialogue between counselor and client concerning vocational issues and career development" (Brown & Ryan Krane, 2000, p. 746). Examples of this include

getting feedback on jobs search skills and feedback provided to a student on his or her decision making strategies.

Information on the World of Work

"The provision of practical information on earnings, opportunities, outlook, work activities, advancement opportunities, and training requirements" (Brown & Ryan Krane, 2000, p. 746-7). Examples of this type of information include job vacancy announcements, projected outlook for growth of career field, and salary surveys.

Modeling

"Exposing clients to individuals who have attained success in the process of career exploration, decision-making, and implementation" (Brown & Ryan Krane, 2000, p. 747). Modeling of this nature can occur through interaction with guest speakers, shadowing professionals in the workplace, as well as video presentations of working professionals.

Attention to Building Support

"Helping clients build support networks" (Brown & Ryan Krane, 2000, p. 747). Building a network can mean involving others, such as parents, teachers, and peers in one's own career-related decisions. Support of this nature can also be provided by addressing the student's cultural context(s) and how that may affect career decisions and development. Networking can also mean teaching students how to make appropriate contact with potential employers.

Limitations and Threats

Threats to Statistical Conclusion Validity

Depending on the final sample size, statistical power could be low, thus threatening the ability to draw appropriate inferences from the results. Creswell (2002) recommends using sample size tables and sample error formulas for determining desired sample size in survey research. Using these tools, estimates of desired sample size range from 300 to 400. The target population included 1849 students. The sample size realized by this study was 318 students.

Threats to Internal Validity

One survey was administered. The primary threat to internal validity is related to selection. The students who chose to return completed surveys may not be representative of the larger population. Since the survey instrument itself was delivered to participants online, it is possible that students who had an affinity or experience with computer technologies were more likely to respond. History may also be a threat if at the time of this study there were events taking place at the institution that would have affected the students' attitudes overall. An example of this might be the introduction of a new course management system university-wide or introduction of new technology within certain colleges or academic programs that affect only a portion of the students participating in the study. No such threats are known to have taken place.

Threats to Construct Validity

Threats in this category are related to the measures used in the study. Efforts have been taken to validate the instrument through a series of activities, including a pilot test. The items used in the instrument should not lead the participant toward specific

responses. The participants should not have expectations about what the researchers hope to find. In this case, the items should not lead the students to be in favor of or opposed to the use of technology. Bias in the data would result if participants responded in a way that they thought they were expected to, rather than providing candid information about their preferences.

Threats to External Validity

The results of this study will be difficult to generalize to students who were not enrolled at the university at which the study takes place, who are not involved in the study or who do not share the same characteristics as the respondents. Temporal validity threats also exist. The results of this study will be difficult to generalize over the course of time, even to students at the university being studied. Technology development and advances happen rapidly. The emergence of new technologies, and the adoption of them by the University at a point in the future, may affect student preferences.

Delimitations

This study was limited to first-year students enrolled in the SLS 1101 University Experience course during the fall semester of 2007. Generalizability of the findings is limited by the characteristics of the final participants. The final participants were primarily full-time students who were Caucasian and between the ages of 17 and 19. The majority of participants indicated having already declared a major and were also not employed. At the time of this study, all of the participants were enrolled in their first semester of college after graduating from high school.

Organization of the Study

Chapter one provided an introduction to this study that included background information, the research problem, the purpose of the study, research questions addressed, rationale for the study, the conceptual framework, and the limitations and delimitations of the research. Chapter two contains a review of the literature related to student preferences and online career services. The literature review is organized by the following subject areas: student preferences, online career services, career choice interventions, and technology integration. In Chapter three, the overall research design and methodology are presented as well as the details of the pilot study conducted in preparation for the larger study. Participants are described and data collection and analysis stages are presented in detail. Chapter four outlines the results of the study collected through the web-based instrument. Chapter five presents a discussion of what the results reveal about the target population, as well as implications for practice and recommendations for future research.

Chapter Two

Literature Review

Student support services are part of a greater learning system that is the University. The integration of non-academic services with academic programs creates a more holistic approach to the students' needs while engaged in formal higher education pursuits (Gordon & Habley, 2000). Higher education institutions are beginning to broaden the services offered to students by making them web-based and available online. This is a reaction to the changing delivery of courses, as well as the changing needs of the students (Dodson & Dean, 2003; Gordon & Habley, 2000).

The literature review for this study is presented in four sections. The first section provides an overview of two national trends in higher education. These trends involve student preferences for distance enrollment and student characteristics, including preferences for technology and efficiency of services. The second section presents a background of online career services. Developing online versions of traditional career services involves consideration of integration issues such as strategic planning, student needs, as well as training and support. The third section of the literature review provides a more thorough description of the five career choice interventions that serve as a framework for this study. The fourth and final section of the literature review outlines the current use of a variety of asynchronous and synchronous technologies in the context of career services in a higher education environment.

Trends in Distance Enrollment

According to Dare, Zapata, and Thomas (2005) during the 2000-2001 academic year, 56% of degree granting institutions in the United States offered distance courses. Of this group, 34 % offered degree programs that could be completed entirely through distance delivery options. Distance education is growing and expanding to reach students even before they reach college. Recently the Michigan Department of Education announced a requirement for all high school students to complete an "online course or learning experience" before graduation. This new requirement began with the students entering the eighth grade in 2006 (Michigan Virtual University, 2006).

In quick response to the Michigan announcement, the National Career Development Association Electronic Forum initiated an online discussion thread on this topic. A reply from a Michigan educator indicates that the development of a course titled "Career Development in a Global Economy" is already in progress as an option for students to satisfy the new requirement (Kowen, 2006). This course would not only familiarize students with online learning but also with online career development and services. Students will likely emerge from this experience with a familiarity with distance education and perhaps an expectation for similar experiences in higher education.

The line between on-campus students and distance students is quickly fading. Even students thought of as traditional are likely to take an online course at some point in their undergraduate programs (Howell et al., 2003). Higher education is becoming less of a transition from high school than that experienced by previous generations. It is more and more likely that first-year students will have completed online courses before they

even begin college (Howell et al., 2003). Setzer and Lewis (2005) report that in the 2002-2003 academic year, 36% of public secondary school districts had students involved in distance education. This shift is advanced by the desire of administrators at all levels to get students through academic programs in faster, more efficient timeframes (Howell et al., 2003).

In addition, "the distinction between distance and local education is disappearing" (Howell et al., 2003, p. 14). Blended and hybrid approaches, online assignments, use of portals and course management systems such as Blackboard are all ways that instructors are incorporating technology. These approaches are often not considered to be online, even though they have an online component (Howell et al., 2003).

The biggest high school class in the history of the United States will graduate in 2009. In anticipation of this population resulting in a rise in higher education enrollment, many institutions are developing more distance options for students as an alternative to building larger physical facilities (Howell et al., 2003). Distance enrollment is indeed on the rise. Stokes (n.d.) reports that "in 2005, 1.2 million higher education students were enrolled in fully-online certificate or degree programs" (p.4). This enrollment is expected to increase to approximately 1.8 million students in 2007 (Stokes, n.d.).

Trends in Student Demographics/Characteristics

According to Collins (2006) "demographics are important…to effective career services programming, as they enable professionals to model their programs to a portrait of the candidate/student" (p. 16). The millennial generation, those born since 1982 and in college since 2000, is a generation characterized by convenience. They have an expectation for efficiency of service (Lowrey, 2004). This efficiency is defined as service

that is of high quality, with responses that are fast and provided when they are needed or requested (Kvavik & Handberg, 2000, p. 32). Howe and Strauss (2003) also note that millennial generation students expect to use technology and to have the tools necessary to "streamline their educational experience" (p. 81).

Millennial students generally consider technology to be an "advantage" (Howe & Strauss, 2003, p. 78). They seek structured, module based coursework and have a preference for active learning techniques. This group of students can also be characterized as multitaskers with "zero tolerance for delays" (Career Libraries Adapt to Changes in Student Expectations, 2006; Howell et al., 2003, p 3).

The continuous advancement of technology makes the delivery of a wide variety of online student services more possible than ever. The existence of effective online career services may help students with the difficult task of balancing life and work by offering these services in alternative time frames and delivery modes. Mancuso (2001) stated that "convenience and accessibility characterize the structure of student services which, like delivery of instruction, breaks time and place barriers" (p. 176). Mancuso's "convenience and accessibility" could be successfully addressed through online delivery (2001).

Shea (2005) states that students expect that support services will be accessible online and that this delivery mode is "no longer an option for colleges and universities" (p. 15). For students of this generation using technology has become, or always has been, a part of their everyday existence. This level of familiarity with technology breeds a level of expectation for availability of services and information at any-time and in any-place (Shier, 2005).

Convenience seems to be a recurring theme in the literature surrounding the issues related to distance education. Timm (2006) states that "students (and other customers) look for convenience and ease of use in . . . technology" options (p. 35). "Many students with full-time jobs can take classes only in the evening and often find . . . offices closed at that time" (Gordon & Habley, 2000, p. 400). Students who choose to take online or distance courses, regardless of their physical location to campus, often find that they are not able to access support services (Gordon & Habley, 2000; Howell et al., 2003). These students seek convenience, efficiency, and a student-centered approach (Shea, 2005).

Katz (2002) presents a study of first-year students and their preferences for distance learning, videoconferencing and online delivery, as affected by student characteristics. This study found that students who scored high on "independence" preferred less structured, less interactive online delivery as opposed to more interactive videoconferencing with lectures and tutoring (Katz, 2002).

Higher education is faced with a number of trends related to technology and delivery of education and services. One of these trends is a shift in student needs. This shift requires a reaction that is service oriented with the student in the role of customer (Howell et al., 2003). Krauth and Carbajal (1999) advocate that online student services appeal to all students, distant and traditional (Dodson & Dean, 2003; Shea, 2005; Smith, 2005).

Characteristics of a "typical" student are becoming harder to define as the student population becomes increasingly diverse in all aspects. Students in higher education today are very different from those in past decades. Stokes (n.d.) offers the following numbers: 40% of students in higher education are part-time students, 40% of higher

education students are over 25 years of age, and 58% of higher education students are over 22 years of age. Having an understanding of the characteristics of this population is important in understanding not only how to approach this group, but also how this group will interact with the Baby Boomer generation, born 1946 to 1954 and Generation X, born 1965 to 1977. Members of the Baby Boomer and Generation X generations are currently members of faculty and student services offices in higher education, including career centers (DeBard, 2004).

Role of Student Preferences in Learning and Practice

Student preferences for the use of technology and enrollment in distance, technology-delivered courses, may play a role in learning. In the academic setting, students are increasingly expecting to see technology used by faculty and support staff (Shier, 2005). Tsai (2007) studied students' perceptions of the Internet and their preferences for engaging in web-based learning. This study found relationships between preferences and perceptions. For example, students who viewed the "Internet as a tool" were more likely to prefer online learning environments that were relevant, challenging, and linked to a variety of Internet resources.

In the career services and counseling setting there are theories which relate an individual's development of work-related preferences as a form of learning. Learning theories in the career counseling profession, such as Krumboltz's Learning Theory, describe career choice as a combination of factors including an individual's learning experiences (Zunker, 2001). Viewing career decision-making as a learning process may affect the practice of providing career decision-making services, one goal of career counseling.

Galassi, Grace, Martin, James, & Wallace (1992) studied student preferences and expectations for career counseling. This study found that counseling clients preferred activities that would assist them to explore careers, explore themselves, and gain general information about careers and majors. Galassi et al. (1992) also found no significant differences in preferences based on previous career counseling experience.

Providing opportunities for learning can mean, especially for adult learners, the creation of learning communities dedicated to learning. Developing these communities includes initial analysis of the characteristics of the context in which the learning is to take place as well as the characteristics of the learners themselves (Merriam & Caffarella, 1999). Learner analysis is also documented as a critical step in the analysis that should occur as part of the design of instruction. This analysis includes finding out more about the intended learners' learning styles and preferences and taking this information into account as learning opportunities are designed (Morrison, Ross, & Kemp, 2001; Smith & Regan, 1993).

First-Year Students and Career Decision-Making

Developmental Approach

Gordon and Minnick (2002) address first-year students directly telling them that one's career is an endeavor carried out through a lifetime. This encourages a developmental approach to career development. Developmental theorists build on the assumption that a career develops over the course of one's life span. Some developmental career approaches include working with children as young as those in elementary school on the concepts related to self-knowledge and career exploration and awareness activities incorporated into class work (Zunker, 2002).

Career development specialists such as Super (1990) propose that individuals move through stages of life in which specific tasks are completed contributing to vocational development and maturity. The majority of first-year students likely fall into one of two of Super's life stages. These two stages are Adolescence, including ages 14 to 25, and Early Adulthood, including ages 25-45. Exploration is one of the tasks listed for each of these stages. For adolescents, exploration in the context of career development includes finding out about career options. For early adults, exploration includes locating opportunities to perform the type of work one is interested in performing (Super, 1990).

Career Exploration

Gordon and Minnick (2002) note that while students likely enter college with some ideas about careers, for most there is still a need for self-assessment and career exploration. The traditional four years of college are described as "a time to explore, gather information, test alternatives, and finally, make the first of many career decisions" (Gordon & Minnick, 2002, p. 180). The exploration of self and potential career fields is an early stage of career decision-making (Sampson, Reardon, Peterson, & Lenz, 2004).

With the increasing push for students to declare majors upon applying to college or soon thereafter, and thus set themselves on a career path early in their college experience, there is a need for first-year students to become involved in their own career planning as early as possible (Gordon & Minnick, 2002). Ballard (2002) instructs first-year students to "learn as much as you can about yourself and the relationship this information has to careers" (Ballard, 2002, p. 185). This is not the time to make the big decisions about careers or to put career plans into action, but to start the process and

consider all that one should think about when making decisions about careers (Ballard, 2002).

Online Career Services

Background

Moore and Kearsley (2005) outline a number of features of a distance course or program that should be addressed when planning for student success. Online delivery of student support services is one of these features. Specific suggestions in this area are listed including guidance and counseling as an important service. Integration with on-campus services is also recommended, as well as 24-hour access for students. Having a robust website that works in tandem with existing on-campus services is an important part of this integration (Carnevale, 2000; Dare, Zapata & Thomas, 2005; Moore & Kearsley, 2005).

Career centers are but one of a number of on-campus agencies offering student support services. One of the primary missions of the university career center is to help students make decisions and choices about their own careers (Hammond, 2001). Career centers established at higher education institutions are beginning to respond to the needs of various student populations that are working through the career decision-making process. Developing online versions of career centers to provide traditional career services to a wider range of students is part of this response (Davidson, 2001). One of the major services provided by career centers is career counseling (Sampson et al., 2004). Career counseling has two major goals: to decrease students' problems in making career choices and to help each student to move forward in his or her own career decision-making (Gati, Kleinman, Saka, & Zakai, 2003). Career counseling is comprised of a

series of interventions, which guide the student through the process of choosing a career field to pursue (Sampson et al., 2004).

It is not just the career services professional staff that is dealing with an increase in the use of technology. Employers that hire their students are experiencing the same shift. Today's employers are using websites, databases, and instant messaging to recruit, track, and communicate with college students. Online assessments are also popular with employers, as are, increasingly, the review of social websites like Facebook and MySpace.com to evaluate students (Giordani, 2006). In a recent survey, one in 10 employers reported using social networking websites as part of the hiring process (Giordani, 2006).

Career centers are not the only student support functions making the transition to online program delivery. Other student services are involved in this effort as well. Kelley and Orr (2003) studied student library usage at the University of Maryland, University College. They found a shift in student access in that students prefer electronic access to library resources in increasing numbers (Kelley & Orr, 2003). Other student support services are becoming more commonplace online. Students in higher education often use the Internet to apply to the Admissions office, apply for financial aid and scholarships, as well as register for courses (Kvavik & Handberg, 2000).

Advantages and Disadvantages

In a world that increasingly involves the integration of new technologies, universities and their career centers are dealing with decisions related to this integration. This is partially due to pressure to be cost-effective, be effective within their mission, and have currency in their operations with a technology-savvy population of students

(Hammond, 2001; Whiston, Brecheisen, & Stephens, 2003). Decisions about technology integration require weighing pros and cons of various technologies and development of support resources. While the expense of adding new computer hardware continuously decreases, the costs related to development and leading to initial implementation can be significant (Norris, Smolka & Soloway, 1999). Knowing what services should be developed, as well as where and how to deliver them is key to meeting the needs of the student.

Offering career interventions online has advantages and disadvantages. Among the advantages are any-time, any-place options for students; the ease of updating computerized programs and web pages; the ability to link and refer students to other relevant service organizations; and a student-centered situation where they have ownership of the process (Davidson, 2001). In addition, the integration of technologies can increase collaboration and often be established or initiated with existing technology resources, such as course management systems (Wunderlich, 2006). Students using web-based services essentially do not have to stop and request information at the office's front desk. They can instead move beyond to the information itself (Kvavik & Handberg, 2000).

The disadvantages of offering career services online include difficulty in tailoring services to individual needs. Finding a balance in offering flexible services to meet these needs with the right mix of technology and human contact can be challenging. Staffing also becomes an issue. Students with any-time, any-place access often expect feedback at the time and place of their choosing. This feedback is also expected to come from

technology-savvy career professionals (Career Libraries Adapt to Changes in Student Expectations, 2006; Smith, 2005).

Measuring outcomes of career service programs presents several challenges; this is particularly true when the services are online. Outcomes such as retention, placement, and student satisfaction are often used to measure career services (Davidson, 2001). Establishing the correct balance for the institution, program, and student population can be difficult to achieve. Using technology that is not common, is difficult to access, or hard to use, will limit the success of the program overall (Smith, 2005).

Privacy and confidentiality also become important issues with online delivery of career services, especially career counseling (Giordani, 2006; Sampson, Kolodinsky, & Greeno, 1997). Career services can include a discussion of a student's context in a way that involves personal information. There is an ethical obligation for career services professionals to ensure that a student's personal information will remain private (Shaw & Shaw, 2006).

Choosing to add technology to an existing program is choosing to add a new tool. Cahill and Martland (1995) remind us that "each technology has strengths and weaknesses and the choice depends on the task, the availability of equipment, and the cost" (p.3). There is a widespread call for a strategic approach that can address the choices involved in detail. This approach should allow for consideration of a dynamic rate of change in the technologies available as well as the changes that take place in student demographics (Howell et al., 2003).

Integration Issues

The work of Kendall, Smith, Moore, and Oaks (2001) presents a list of suggested elements of student services to be offered online. Among these are any-time, any-place access for students; a versatile staff skilled in multiple services; and services for distance students that are equal to those for traditional students. An emphasis on creating a community and connection between distance students and the university is also important. Kendall et al. (2001) also emphasize the need for a mechanism to receive feedback from students and make changes based on their input. Carnevale (2000) reports that achieving "quality" in distance learning environments means including support services for students.

As part of a three-year federally funded project to explore the creation of web-based student services for distance students, the Western Cooperative for Educational Telecommunications (WECT) found that many administrative services are already being offered online in higher education (Western Cooperative for Educational Telecommunications, 2003). Among the more common services are admissions, financial aid, and course registration. This group also found that distance students reported a need for other services, such as career counseling, advising, tutoring, and testing. This project also found that distance students' needs for services were similar to on-campus student needs (Western Cooperative for Educational Telecommunications, 2003).

The WECT study also examined distance student expectations of online services. The results revealed expectations of personalized services that were more than just simple websites offering generic information. The students wanted "integrated information" relevant to their programs and needs. This study also reported a need for integration of

services for distance and traditional students. Creating separate and duplicate services online is not the answer, but instead is an inefficient use of resources (Western Cooperative for Educational Telecommunications, 2003).

Gati et al. (2003) researched the perceived benefits of individuals who used Making Better Career Decisions (MCBD), an Internet based system designed to help students make decisions about their own careers. Their research found that the participants rated the experience of using the Internet system quite high with 84% recommending the system to friends. In addition, 50% of participants reported an increased level of "decidedness" after using the MCBD system.

As technology resources become more common on an administrative level in higher education, the integration of these resources across the student's college experience becomes more evident. Levy (2003) states that, "instruction is shifting from a model of individual use of technology to an integration of instruction and student services through technology" (p. 4). The movement toward this level of integration is often one geared toward making the distance college experience more similar to the traditional on-campus college experience (Levy, 2003).

Strategic Planning

Lent predicted in 2001 that the Internet would impact how career services would be delivered in the future. This prediction is being realized today at college and university career centers all over the country and abroad. Unfortunately, little empirical research has been conducted to guide this development (Gati et al., 2003). Long-term planning is key to the success of this kind of resource development, which can be time consuming and costly. Smith (2005) stresses the need for a strategic planning approach by institutions

that are developing online student service options. This approach includes a long-term commitment to convenient services that are equivalent to on-campus services. Smith goes on to say that needs assessment is a critical step to take early in the process (Smith, 2005).

Outsourcing of services is not a new concept to business and industry. It is a concept that is becoming more familiar in higher education as well. This is particularly the case where support services are concerned. Contracting vendors to provide specific services, i.e. academic tutoring, is a possibility (Kendall, 2005). Vendors offering career-related services are increasing and may be able to provide an administration with cost-effective options. Outsourcing should be considered as part of the strategic planning process (Brigham, 2001).

Needs Assessment

Reaching clients in a place and time that meets their needs is essential, and technology, particularly mobile technologies and wireless Internet technologies, can help career center staff to do just that (Savickas, Van Esbroeck & Herr, 2005). There is no one-size-fits-all approach. Each institution and career center must assess its own needs and those of its students to inform an approach to service delivery (Wunderlich, 2006). Timm (2006) reports that career center professionals are now facing a learning curve in technology skills and decision-making skills regarding the use of various technologies in their centers. Participants in the Timm (2006) study named "identifying customer needs and behaviors" as a major step in the decision-making process (p. 35).

Meeting the needs of the users should drive decisions, not using a particular application because it is new or popular (Krauth & Carbajal, 1999). Technology is ever-

changing and evolving. Making a decision about what to buy and support means taking a risk that the selected technology will be around awhile, as opposed to something that may be a short-lived trend (Career Libraries Adapt to Changes in Student Expectations, 2006).

Training

Technology is one of the Counseling Career Competencies outlined by the National Career Development Association (NCDA). Within the technology competency description, NCDA lists five specific areas in which career counselors are expected to use technology to aid students with their career choices. These areas include understanding the individual differences of students and clients and how these may indicate that technology will benefit the students, as well as an understanding of how to evaluate technology and make choices that "meet local needs" (National Career Development Association, 1997, p.8). Additional knowledge and skills listed in the technology competency description are computer-based guidance and information systems, standards used for the evaluation of computer-based systems and services, and the use of computer-based systems and services as they relate to NCDA ethical standards (National Career Development Association, 1997).

There is often a learning curve for professionals on a career center staff related to the use of technology. Existing staff members may not know what is currently on their center's website. Career counselors may or may not be asked to directly implement technology integration. Depending on resources and funding, it may be possible to contract someone or hire someone to join the staff with a primary responsibility of implementing technology integration (Shea, 2005).

While today's college students are known for preferring technology, and having an existing familiarity with technology in general, it is quite possible that they will need training as well. An EDUCAUSE report presents research to support the idea that students tend to overestimate their own skills with technology (Kvavik, 2005). First-year students are particularly susceptible to this kind of overestimate. The specific technologies they are familiar with may not match those being used in higher education. While today's students are likely to be skilled in the use of e-mail, instant messaging, and Internet searches, they are not necessarily skilled in the use of specific software applications. Members of the millennial generation do seem to share some overall characteristics, but there is still some diversity where technology is concerned (Kvavik, 2005).

Timm (2006) recommends the addition of technology in the education programs that are producing tomorrow's career services professionals. Graduate students in counselor education programs are indeed seeing an increased use of technology in their curricula. It is recognized that counselors in fields such as school and career counseling are increasingly required to possess technological skills not only in performing administrative tasks, but also in communicating and interacting with clients (Clark & Stone, 2002). Clark and Stone (2002) studied the use of online assignments in traditional counselor education courses and found that their graduate students welcomed the opportunity to practice their technology skills online. These students also reported an increased knowledge about the resources available online both for themselves and prospective clients.

Support

The integration of technology into career choice interventions offered by university career centers requires a certain level of support. This support comes in multiple forms, including administrative support, financial resources, and the capabilities of existing computer systems and infrastructure. Successful decision-making about technology is also dependent on human factors, such as staff members who are willing and eager to accept the changes a new technology may bring to the way the career center provides its services to students (Timm, 2006). There is a need for buy-in at all levels in a way that makes this integration a part of strategic planning (Kvavik & Handberg, 2000; Shea, 2005). In addition, it is necessary to ensure the user population knows about the services and integration through a careful and thorough marketing effort. This kind of marketing is a necessity at all levels including students, faculty, and administrators (Smith, 2005).

Blended Approach

Shea (2005) outlines four principles of effective online student services: (a) a focus on the student, (b) ability to tailor to the individual, (c) opportunities for two-way interaction, and (d) availability of services when the student needs them. A common concern of career services professionals is that the integration of technology will reduce interaction with the students. Using technology to increase student-staff interaction, instead of decreasing interaction, is in fact a primary goal of this kind of integration (Shier, 2005). It is important to keep this goal in mind while planning and training for an increase in the use of technology. Timm (2006) states that "technology has created higher service expectations in shorter time frames" as well as increased student requests for one-

on-one counseling (p. 35). While technology allows a self-help approach by students accessing general information about careers, these students often approach a point where they want to meet with someone individually to discuss their career choice options (Timm, 2006).

In a meta-analysis conducted by Whitson, Brecheisen, and Stephens (2003), modalities of career interventions were evaluated for effectiveness. This research found that, overall, "there was a general trend toward counselor-free interventions being less effective than other modalities" (Whitson et al., 2003, p. 404). This group also found that those who participated in a computer-based career intervention reported better career related outcomes if their experience included interactions with a counselor (Whitson et al., 2003).

Use of existing technology, such as learning and course management systems like WebCT and Blackboard, can support a blended approach. Many higher education institutions currently use web portals to organize information presented to students. Career centers are beginning to tap into this form of delivery (Smith, 2005). Dahl (2005) reports that the School of Information Studies at Syracuse University is using WebCT to communicate with students and provide student services information. This effort has been "cost effective and requires minimal resources," and has resulted in increased student satisfaction ratings with the support services provided (Dahl, 2005, p. 4).

Balancing high-tech and high-touch is a desired outcome of technology integration (Giordani, 2006; Shea, 2005). The Career Management Center at Old Dominion University is currently striving to ensure that all students, distant and on-campus, have access to all of the Center's services. To meet this goal, the institution has

established three separate career service delivery vehicles to serve their students. The first vehicle is a traditional, on-campus career center, referred to as the Career Management Center. This center can be accessed in person during traditional business hours and weekdays. Old Dominion's Virtual Career Center is completely online. It consists of their website and all of the resources and communication tools therein. A third vehicle, the Cyber Career Center, is a separate office space on campus described as a computer lab. It provides a blended approach and is staffed with career services professionals who open the lab during non-traditional hours and assist students on a walk-in basis to access and utilize all of the resources that are online (Wunderlich, 2006).

Career Choice Interventions Framework

Brown and Ryan Krane (2000) and Brown et al. (2003) identified services deemed to be important in the career decision-making process. The work of these authors yields five critical career choice interventions, which frame the approach of this study. These interventions are (a) Written Exercises, (b) Individualized Interpretations and Feedback, (c) Information on the World of Work, (c) Modeling, and (d) Attention to Building Support (Brown & Ryan Krane, 2000). These five career choice interventions were identified as "critical" out of a total of 18 specific career choice interventions identified in the meta-analysis studies (Brown et al., 2003).

Brown and Ryan Krane (2000) present meta-analytic data that are particular to career counseling interventions as they relate to assisting someone with the process of making a successful career choice. This meta-analysis examined 62 studies for number of career counseling sessions as well as type of interventions conducted during the sessions with career decision-making self-efficacy and vocational identity as outcome variables.

Self-efficacy theory in the field of career counseling assumes that "an individual's belief in his or her ability to perform certain tasks determines whether or not the individual will attempt those tasks and how well he or she will perform" (Zunker, 2002, p. 104.) Vocational identity is defined as "the possession of a clear and stable picture of one's goals, interests, personality, and talents" (Holland, Daiger, & Power, 1980, p.1).

The Brown and Ryan Krane (2000) meta-analysis shows a clear relationship between number of sessions and effect size, peaking at four to five sessions and a mean effect size of 1.26. Brown & Ryan Krane (2000) also found through their weighted least-squares regression analyses that "specific intervention components…accounted for between 2% and 38% unique variance in effect sizes" (p. 744). Five specific interventions, listed above, were found to contribute "significantly to effect size variability in at least one of the analyses" (Brown & Ryan Krane, 2000, p. 744).

These five career choice interventions are each important contributors on their own, and when used together have a cumulative effect on effect size. In studies where only one of the interventions was used, .45 was the average effect size. In studies where two of the five interventions were used together, the average effect size was .61. Those that used three had an effect size of .99. None of the studies used more than three of the five interventions. Again, this meta-analysis was focused specifically on career choice interventions. There are many other career counseling interventions that can be used effectively to assist students and other clients as well (Brown & Ryan Krane, 2000).

The five career choice interventions of Written Exercises, Individual Interpretation and Feedback, Information on the World of Work, Modeling, and Attention

to Building Support are further described below. The activities that make up these interventions are founded in various career development theories and models.

Completing Written Exercises

This intervention entails "requiring [students] to commit their career goals and plans in writing" (Brown & Ryan Krane, 2000, p. 748). It includes activities that "encourage clients to record reflections, thoughts, or feelings concerning their career development" (Brown & Ryan Krane, 2000, p. 746). A needs analysis conducted by Berrios-Allison, Hill, Park-Curry, Thaci, Henderson and Stevenson (2003) found that first-year students at Ohio State University were interested in getting help with their career decisions and placement, but not interested in the career exploration step that should ideally precede the decision-making process.

Taking time to do a thorough self-assessment is crucial to gaining the information one needs to continue in the decision-making process (Sampson et al., 2004) The written exercises intervention outlined by Brown and Ryan Krane (2000) can include templates and checklists to guide students through the process of self-assessment and reflection. Super (1957) identifies the importance of the developmental process of one's self-concept in deciding on a career field. Self-knowledge and self-awareness were also identified by Holland (1985) to play a significant part in finding congruence within a work environment based on six general categories of work.

Providing Individual Interpretation and Feedback

For the purposes of this study, this intervention is defined as one which includes "one-on-one dialogue between counselor and client concerning vocational issues and career development" (Brown & Ryan Krane, 2000, p. 746). This dialogue can occur in

person, in an office setting, or through the use of technology such as e-mail or the telephone. Students often post resumes online and receive critique from employers and career counselors. Mock, or practice, interviews are also a common way for students to get individual feedback in this context (Kendall, 2005; Wunderlich, 2006). According to Krumboltz (1996) the career counselor plays a key role in educating the client or student about the career decision-making process. This is a complex process in which the counselor guides the student through the stages of career decision-making by reinforcing student responses, directing exploration activities, suggesting strategies and developing interventions, and discussing possibilities (Krumboltz, 1996; Zunker, 2002).

Informing About the World of Work

Brown and Ryan Krane (2000) describe this intervention as the "provision of practical information on earnings, opportunities, outlook, work activities, advancement opportunities, and training requirements" (p. 746-7). In a study of first-year students conducted at Ohio State University, students reported that they had reasonable knowledge of the world of work, even though they also reported having completed little career exploration. While the students judged themselves to have a good deal of knowledge about careers they did not have realistic expectations for salary and initial job opportunities after graduation. In addition, salary was a major factor in students' choices of academic major and career field (Berrios-Allison et al., 2003).

Completing the career exploration step is important in grounding students' expectations early in the process. Exploration may include researching information about the requirements to enter specific careers, as well as information about current and projected labor markets. Resources such as those offered by the U. S. Department of

Labor and Bureau of Labor Statistics provide detailed information about specific careers and projections for employment in these careers in the future (Schutt, Hilleshiem-Setz, & Drescher, 1999).

Modeling

Brown and Ryan Krane (2000) define modeling as "exposing clients to individuals who have attained success in the process of career exploration, decision making, and implementation" (p. 747). Ensher, Heun, and Blanchard (2003) outline a number of ways in which a mentor can interact with a protégé via the Internet. Of importance to this study is interaction related to the protégé observing work-related skills or receiving advice, as well as receiving information about the mentors' career and career choices. Multimedia applications can allow these types of interaction to take place, in addition to the use of computer-mediated communication (CMC) alternatives like e-mail (Ensher et al., 2003).

Online mentorship programs are increasingly prevalent, particularly in corporate environments. Private agencies and foundations also sponsor online environments to encourage mentorship of college students by professionals in the workplace. One such service is MentorNet, which focuses on matching female students with professionals in math and science related careers. MentorNet interactions are conducted through e-mail (Ensher et al., 2003).

Building Support

This intervention involves "helping clients build support networks" (Brown & Ryan Krane, 2000, p. 747). These networks can include members of a student's family or social community, as well as employers, instructors, and counselors. Krauth and Carbajal

(1999) list "establish relationships with alumni and promote networking opportunities via the web" as part of their comprehensive report addressing what student services should be developed online (p. 23).

Colorado State University's CareerRAM Network is given as an example of what other institutions should aspire to achieve in the future. The CareerRAM Network actively recruits alumni to serve as mentors to current students. This mentoring relationship involves providing advice on career topics ranging from resume critiques to graduate school (CareerRAM Network, 2007).

Technology Integration

There is a seemingly endless list of technology tools available for use in educational and student services support settings. This list continues to evolve at a rapid pace. A list of currently used technologies is explored further in this section of the literature review. The list is divided into the categories of asynchronous and synchronous based on the type of interaction involved. This list was adapted from a version used in a study conducted by Lohsandt (2005). Examples of how each of the listed technologies is being integrated in career services are also provided.

Asynchronous

Asynchronous technologies allow people to communicate in an environment that is not in real-time, which is to say that there is a delay between the time when a question is asked and a response is sent (Alessi & Trollip, 2001). Examples of this include e-mail, discussion boards, video recording, audio recordings or podcasts, and web pages (Alessi & Trollip, 2001; Gordon & Habley, 2000).

The use of e-mail accounts to communicate is becoming widespread globally. In a survey of community colleges, 46% report using e-mail to answer student questions about careers (Higher Ed Special Report, 2004). In a study conducted by Dare et al. (2005), both distance and on-campus students were surveyed about their preferences for sending and receiving information about support services. E-mail was selected as the most preferred means of communication by all students. Internet delivery of information was the third most preferred method, after regular mail.

Online discussion boards offer students the opportunity to post questions and comments to a group of people or just one person. These discussions are typically organized by topic area and can be added to at any time. This is a standard feature in learning management systems such as Blackboard. Career service professionals are using this communication tool as they tap into existing learning management systems already in widespread use on their campuses (Sampson, Kolodinsky, & Greeno, 1997).

Video presentations are not new to career service professionals. There are multiple series of videos available that address specific jobs and career fields as well as job search topics such as resume writing and interviewing. These videos are typically viewed in a career center resource library. These presentations are increasingly available on the Internet through organizations such as the U.S. Department of Labor (America's Career InfoNet, 2007). Individual institutions are also developing video options for their students that can be delivered via their own websites. For example, Florida State University is using multimedia software to present their face-to-face workshops in an optional online format. The online interface includes video and audio recording of a presenter, as well as PowerPoint slides (Florida State University, 2006).

Audio recordings, or podcasts, are increasingly being used to communicate to students. These recordings are available as downloads from the Internet in a format compatible with many portable music players. Central Missouri State University and Emerson College are just two institutions currently offering podcasts to students as a way to hear from alumni and other professionals already working in their career fields (Giordani, 2006).

Websites are also widespread in higher education. Whether used to post static information or designed as more interactive formats like wikis and blogs, the websites and web pages are used by many career centers to market services and provide information. The Internet can also be used to provide "self-serve" materials similar to traditionally printed handouts and brochures or more in-depth presentations through the addition of interactive multimedia (Wunderlich, 2006).

Synchronous

Synchronous technologies allow people to communicate simultaneously, in real-time, which is to say that responses to questions are immediate. Telephone conversations are a basic example of synchronous communication (Alessi & Trollip, 2001). Other examples of synchronous technologies are instant messaging, also referred to as text chat, and virtual classrooms, also called virtual offices or virtual learning environments (Alessi & Trollip, 2001; Utah Education Network, 2004).

Telephone counseling is not a new idea, but is still a current strategy for reaching students and clients who either cannot or choose not to come to a physical location. An example is the LearnDirect call center in the United Kingdom. This organization supplied trainers to a large number of online classes geared toward adults and career development.

Faced with financial cutbacks, LearnDirect developed a telephone call center staffed with advisors who provide career counseling and guidance on a wide array of topics ranging from interview tips to making decisions about career transitions (Jones, 2006).

Old Dominion University is one of many institutions now offering instant messaging related to career services. Through instant messaging, students can communicate with career services professionals via text chat in real-time (Wunderlich, 2006). These synchronous, text chat sessions are scheduled in advance and the hours vary to meet students' school and work schedules.

Virtual rooms are among the newest technologies available. These "rooms" offer meeting space online where students and counselors can communicate and present information to each other in real-time. Some features of virtual classrooms include whiteboards, two-way audio, and video (Schullo, Venable, Hilbelink & Barron, 2005). A 2004 report on community college distance education pointed out that 8% of community colleges were using synchronous, real-time, environments to communicate with students about their career questions (Higher Ed Special Report, 2004). Old Dominion offers "Sametime Webinars" allowing students to attend a career-related workshop or seminar from locations of their choice (Wunderlich, 2006).

Summary

Career Centers have a real-world mission. Stokes (n.d.) reports that 90% of "the fastest growing jobs require some form of postsecondary education" (p. 2). This increase in a job market requirement may result in an increase in adult and distance enrollment in postsecondary programs. This combined with the anticipated increase in college enrollment resulting from the largest U. S. high school class, occurring 2009, means that

career centers will be called on more than ever before to provide their services to a wide range of students (Howell et al., 2003).

Career centers assist students with the process of making decisions about their careers. There is a need for a customer service approach in an environment that is moving toward learner-centered student services. This move mirrors the evolution of the instructional environment. Students should be able to access self-help type services at a time and place of their own choosing (Kvavik & Handberg, 2000). Selecting and developing, as well as maintaining these services is informed through conducting a needs assessment with the population being served (Hammond, 2001).

Chapter two presented an overview of two national trends in higher education, increased distance enrollment and changing student characteristics, and how these are shaping student preferences for services. A background of online career services was discussed, as well as issues surrounding the effort to integrate technology into existing career services programs. The five critical career choice interventions that frame this research were described and examples were provided. Finally, current technologies were discussed in terms of how students and staff interact through these interventions in a career services environment.

Chapter three describes the methodology of the research study. The design of the study is outlined. The development and validation of the survey instrument are presented. The procedures and results of a pilot study are presented in detail. The impact of the pilot study on the larger study is also described to include changes made to the instrument and further review and testing. Procedures for the larger study, data collection, and data analysis are also outlined.

Chapter Three

Method

This chapter presents a discussion of the study's overall design; population and sample identification; instrument development and validation; and data collection, analysis, and presentation. The results and implications of a completed pilot study are also presented.

The purpose of this study was to explore the delivery preferences of first-year university students for career choice interventions traditionally delivered through on-campus career centers. This study also describes first-year students' previous experience. This previous experience includes online courses, career counseling, as well as specific technologies used to deliver activities and content. Differences between preferences for delivery methods and previous experience were explored. The results of this study provide information as a foundation for the planning and development of online career services in higher education. The following research questions guided the study:

- What are first-year university students' preferences for the delivery method of critical career choice interventions?
- To what extent are there differences in first-year university students' preferences for the delivery method of critical career choice interventions based on their prior experience with the following: (a) online courses; (b) career counseling; (c) e-mail; (d) Blackboard discussion boards; (e) audio and video recordings or

podcasts; (f) Internet websites, wikis, and blogs; (g) Internet text chat or instant messaging; and (h) virtual rooms?

Design

This document presents a descriptive, survey study that took place during the fall 2007 academic semester. This study explored the context of the first-year student at a large university. Data were gathered regarding student preferences for delivery of five critical career choice interventions as well as regarding student experience with specific technologies, career counseling, and online courses. The five critical career choice interventions used in the study are traditionally offered through college and university on-campus career centers. First-year students' preferences regarding online support services were sought in order to inform the development and design of the services for this population.

Participants

It was a goal of this study to explore the preferences and previous experience of students enrolled in their first semester of college. Students, enrolled in SLS 1101: The University Experience at a large public university in the southeast with a Carnegie classification of "very high research activity", were asked to respond to a web-based survey.

SLS 1101: The University Experience is a seminar course developed specifically for first-year students. The discussion format allows for a limited enrollment of 24 students per section. The established curriculum for this course includes the following topic areas: community building, transitions and transformations, technology, campus resources, campus involvement, health and wellness, understanding self, time

management, academic success skills, career exploration, academic advising, financial wellness, and diversity. The fall 2007 course schedule offered 89 sections of the course with a total of 1,849 students enrolled representing approximately 52% of first year students at the University. The University enrolled a total of 3,551 first-year students during this semester. These students were in their first year of college after graduating from high school.

Enrollment in the course was voluntary. Students entering the University as freshmen, or first-year students, were registered for this course as part of the pre-registration process completed by academic advisors during the summer. Once pre-registered by their advisors, students could elect to add or drop any of their courses, including The University Experience. Students were not required to complete The University Experience course but were highly encouraged to do so. Students' self-selection to remain in the course itself and self-selection to participate in the study may have some impact on the representative nature of the sample. The demographics of the sample are compared later in this chapter to those of overall first-year student enrollment based on information gathered by the University.

Data Collection

Instrument

QuestionPro, a fee-based online survey service, was used to develop and distribute the final survey instrument. The following four primary sections comprised the instrument.

(1) Introduction to provide background information regarding the study and modified informed consent.

(2) Demographic information to include previous experience with career counseling and online classes.

(3) Items related to participant experience levels with technology. Students were also asked to respond to modified Likert-scale type items related to their previous experience with six specific delivery technologies.

(4) Items related to participant preferences. Multiple choice format items were used to ascertain preferences for delivery of career services, in particular activities related to the five career choice interventions outlined by Brown and Ryan Krane (2000) and Brown et al. (2003).

The researcher developed the survey instrument with the advice of an expert panel, including persons with expertise in survey design, distance education, instructional technology, and career development. In a pilot study, the instrument was administered to a group of first-year university students. The details of this pilot study are presented later in this chapter. Modifications to the instrument were made with the expert panel's input based on the outcomes of the pilot study and focus groups described later in this chapter.

Several general guidelines were followed in the design and development of the web-based instrument. Efforts were made to ensure that from the student's perspective, the items and response choices were clearly stated and easily located on each screen. The survey did not include graphics, audio, or other multimedia effects. These types of additions may have increased the download time making the survey take longer than necessary to complete. Visual aspects of the survey, such as bold type, were used consistently throughout all of the sections and items of the instrument (Dillman & Smyth, 2007).

Procedure

The web-based instrument URL was distributed to students enrolled in SLS 1101 through their course instructors. The recruitment e-mail for instructors and students is located in Appendix A. This request for instructors to send the survey link out to their students was distributed via mass e-mail by the director of the University's First-Year Student program. In accordance with the guidelines presented by Umbach (2004), the initial mass e-mail request to instructors was followed-up with a reminder. This reminder e-mail to instructors was sent one week after the initial request. The reminder e-mail was personalized and sent individually to each instructor by the researcher. A sample of the reminder message is also located in Appendix A. The survey instrument was opened for student responses on August 29, 2007 and closed on September 14, 2007.

Incentives, in the form of four $25.00 gift cards redeemable at the University bookstore were used in an attempt to gain the students' attention, as well as increase the students' willingness to participate in the study and the overall response rate. According to Porter and Whitcomb (2004), a lottery-type of incentive has a minimum impact on response rates. However, the specific incentive format and amount used in this study were suggested by students in a focus group, which is further discussed in this chapter. A second incentive registration URL was linked to the last page of the survey instrument. Once the student completed the survey, he/she had the option to either submit responses without registering for the incentive drawing or to submit responses and be directed to a separate form to register for the incentive drawing.

A web-based survey was chosen primarily for convenience factors in planning for the distribution of the instrument to students through their instructors. The University

Experience program, through which the survey was distributed to students via instructors, was particularly willing to assist with survey distribution since the web-based format would not require any of the curriculum's already limited class time to complete. There is however, evidence that web-based surveys have advantages beyond convenience.

In a study of student athletes, 214 respondents participated in an effort to compare web-based and paper-based delivery modes of survey delivery. Lonsdale, Hodge, and Rose (2006) saw a higher response rate of 57% in the group that received the web-based instrument, compared to 46% in the paper-based survey group. These authors also found that they received faster responses from the web-based groups and saw fewer instances of missing data. In a comparison of web and paper-based modes of survey delivery in a corporate setting, Smither, Walker, and Yap (2004) found the differences in survey responses to be "entirely artifactual" and due to factors unrelated to delivery mode (p. 22).

Limitations and Threats

Threats to Statistical Conclusion Validity

Depending on the final sample size, statistical power could be low, thus threatening the ability to draw appropriate inferences from the results. Creswell (2002) recommends using sample size tables and sample error formulas for determining desired sample size in survey research. Using these tools, estimates of desired sample size range from 300 to 400. The target population included 1849 students. For the analyses related to one of the study's research questions, participants were divided into multiple "experience groups" based on their responses related to previous experience with technology, online courses, and career counseling.

Threats to Internal Validity.

Only one survey was administered. The primary threat to internal validity was related to selection of participants. The students who chose to return completed surveys may not be representative of the population. Since the survey instrument itself was delivered to participants online, it is possible that students who had an affinity for or experience with computer technologies were more likely to respond. History may have also been a threat if at the time of this study there were events taking place at the institution, or within specific colleges or programs, that had an effect on the students' attitudes overall. No threats of this type are known to have taken place.

Threats to Construct Validity

Threats in this category are related to the measures used in the study. In the proposed study, efforts have been taken to validate the instrument in a pilot test. The items used in the instrument should not lead the participant toward specific responses. The participants should not have expectations about what the researchers hope to find. In this case, the items should not lead the students to be in favor of or opposed to the use of technology. Bias in the data would result if participants responded in a way that they thought they were expected to, rather than providing candid information about their preferences and experience.

Threats to External Validity

The results of this study will be difficult to generalize to students who were not enrolled at the university at which the study took place, who were not involved in the study or who do not share the same characteristics as the respondents. Temporal validity threats also exist. The results of this study will be difficult to generalize over the course

of time, even to students at the university being studied. Technology development and advances happen rapidly. The emergence of new technologies, and the adoption of them by the University at a point in the future, may affect student preferences.

Ethical Considerations

Privacy and confidentiality issues for collection of student attitude and expectation information exist in this study. University Institutional Review Board (IRB) approval to conduct the study was sought and received. While the IRB approved waiver of written documentation of informed consent, IRB guidelines were followed to ensure informed consent was received from each participant and that all responses were anonymous. Those asked to participate were given every assurance that their information and responses are being used for educational research purposes only and that only aggregate data would be reported.

Pilot Study

Instrument Validation

Measurement quality is an important consideration in instrument development. The scores should be reliable, measuring responses to individual items consistently, and valid, measuring the concepts intended to be measured (Babbie, 1990; Creswell, 2002). The steps used by the researcher to validate the instrument for this study are presented below.

Faculty members were key advisors in the instrument development process. The survey instrument used in the pilot study was initially drafted by the researcher and reviewed by faculty advisors with expertise in survey development and instructional

technology. The instrument underwent multiple iterations of draft, review and revision. Modifications were made based on the feedback provided by the faculty advisors.

A small group of first-year students was then asked to review the instrument in advance of the pilot study. Nine students volunteered to meet with the researcher in a focus group-type session. In this session the students and researcher reviewed the survey instrument section-by-section. The students were provided with paper copies of the instrument and asked to read and complete one section of the survey at a time. An open discussion about the items followed each section. These students provided feedback, both written and oral, on the survey instrument in exchange for extra credit in their coursework. These students were all first-year students enrolled in SLS 1101: The University Experience during the fall 2006 semester.

The student comments helped to determine the best word choices for each item, as well as the vocabulary used overall in the survey instrument. It was important to ascertain the first-year students' understanding of career development concepts listed in the instrument. Key feedback from this group included adding the study's purpose and potential benefit to the students in the introduction.

The students' understanding of each of the technologies and delivery options presented in the instrument was also clarified, as well as their understanding of the activities included in the five career choice interventions which frame the study. The focus group students were familiar with all of the technologies listed as well as the concepts of the career choice interventions. This student group also provided valuable guidance regarding the use of an incentive to encourage participation.

Modifications were made to the instrument based on feedback received from the students. The faculty advisors were then asked to review the new version of the instrument with the student feedback included. Additional changes were made based on faculty input before the instrument was distributed to the pilot participants. The pilot instrument can be found in Appendix B.

The survey items were developed directly from the study's framework of five career choice interventions outlined by Brown and Ryan Krane (2000) and Brown et al. (2003). This framework was introduced in chapter one and further described in the literature review in chapter two. The vocabulary used by these authors to both define and provide examples of the five career choice interventions was used to present the interventions to the student participants.

The primary student preferences matrix in the survey asked students to read 15 items describing activities related to the five career choice interventions. For each item students selected a preferred mode of delivery from the following choices: (a) on campus, (b) online, or (c) not at all. The 15 items in this student preferences matrix are presented in Table 1.

A second matrix was provided in the pilot survey. This matrix asked students to again select their preferred delivery mode for the five career choice interventions. The format listed the five career choice interventions more directly, as opposed to the 15 activities listed in the previous matrix. Students were also presented with specific technologies from which to choose. Table 2 contains a list of the options provided in the survey instrument.

Table 1

Student Preference for Delivery of Career Choice Activities

Item	Item Description
Q1	Explore my own thoughts about my career choices.
Q2	Explore how the results of a career test relate to possible careers.
Q3	Find information about current job openings.
Q4	Learn from experienced professionals working in a career I am interested in pursuing.
Q5	Find techniques for including others, such as my family and friends, in my career decision-making.
Q6	Develop a list of careers I may be interested in researching further.
Q7	Get feedback from a career counselor on useful strategies for making decisions about my career.
Q8	Research typical salaries earned by those working in my career of interest.
Q9	Interview someone working in a job I am interested in pursuing.
Q10	Learn about how culture and gender related issues may affect my career choice.
Q11	Complete worksheets to identify work-related skills that I have.
Q12	Learn more about how my skills and interests relate to various career fields.
Q13	Learn about the requirements needed to work in the career I am interested in pursuing.
Q14	Find out more about how my career counselor decided on his/her career.
Q15	Learn how to network with professionals in my chosen career field.

Table 2

Student Preferences for Specific Technologies

Face-to-Face:
In-person
Asynchronous:
E-mail
Discussion Board
Video Recording
Audio Recording or Podcast
Website, Wiki, and/or Blog
Synchronous:
Telephone
Instant Messaging, Text Chat
Virtual Room with Real Time Interaction

Pilot Test Data Collection

For the pilot test, the data collection instrument was developed using Survey Monkey, an online fee-based survey system. A URL for the survey was provided to students via e-mail from the researcher and one additional University Experience instructor. The survey remained open to new responses for two weeks with a start date of December 1, 2006 and an end date of December 15, 2006.

An incentive was offered to attract student participation. Students who completed the survey were provided with a second URL to register for a prize drawing. This link was to a second instrument, also developed with Survey Monkey, which asked only for the student's name and e-mail address. The research instrument and the registration instrument were not linked. It was not possible to match student names and e-mail addresses with individual student responses. The incentive was a $25.00 gift card redeemable at the University bookstore, which was suggested by the student reviewers.

After the survey closed to new responses, one participant was chosen at random, using a web-based random number generator and the numbers assigned to the participants by the survey software based on the order in which their responses were recorded. This student was to receive the incentive. This student was notified by e-mail and the gift card was sent via the United States Postal Service.

Participants

A total of 126 participants responded to the initial request to complete the survey instrument. Of this group, 64 respondents identified themselves as first-year students and completed all of the items on the instrument. The final participant group, n = 64,

consisted of 55 (85.94%) females and 9 (14.06%) males. None of the participants identified themselves as International Students.

Data Analysis

The first section of the survey presented the participants with a series of items concerned with collecting demographic information. This information, while not directly related to the research questions, will be necessary for comparison of the sample participants to those in the larger population. This information will also be helpful in determining how generalizable the results of this study are to students outside of the study. The demographic information of the pilot participants is presented in Appendix C. The average age of participants was 18.65 years. Age of participants ranged from 17 to 24. Most of the participants, 88%, were full-time students enrolled in a minimum of 12 credits as defined by their University. The average course load was 14 credits. The number of credits students were enrolled in ranged from six to 17.

Upon completion of the data collection an exploratory factor analysis (EFA) was conducted on the 15 items of the primary student preferences matrix of the survey. Conducting an EFA assisted in determining how the 15 items loaded compared to the five overall categories of career choice intervention being used as the study's framework. The data were scored for the EFA to reflect a preference for online delivery as an indicator variable, thus responses for "online" were coded as "1" and responses for both "on campus" and "not at all" were coded as "0".

Eigenvalues were calculated as part of the EFA to determine how much variance could be explained by each item. These values are presented in Table 3. Average eigenvalue was examined as a possible cut score. Using this measure, eigenvalues larger

than the average eigenvalue would determine the number of factors represented by the survey items. With an average eigenvalue of 0.40 a total of six (6) factors should be explored. This is also supported by an examination of the scree plot (Suhr, n.d.).

Table 3

Summary of Eigenvalues and Average Eigenvalue

Item	Eigenvalue	Item	Eigenvalue
Q1	3.36	Q9	0.02
Q2	1.38	Q10	-0.07
Q3	0.72	Q11	-0.12
Q4	0.61	Q12	-0.23
Q5	0.51	Q13	-0.25
Q6	0.45	Q14	-0.28
Q7	0.17	Q15	-0.32
Q8	0.11		
Average Eigenvalue: 0.40			

In order to better understand the factor loading, the number of factors was set to correspond with the established framework of the study. Using five factors, corresponding with the five career choice interventions outlined by Brown and Ryan Krane (2000), the analysis is more consistent with our understanding of the interventions and more interpretable in this context. As a result of these analyses, five factors for the above set of items were retained for further analysis.

The data in Table 4 present the factor pattern coefficient and factor structure coefficient for each of the 15 items as assigned to each of the five factors. The numbers in bold typeface under each factor represent the items that contributed the most to each factor. Refer to Table 5 for a summarized list of the five factors and the items that are assigned to each.

Table 4

Exploratory Factor Analysis Matrix of Student Preference Items using Promax Rotation Method

	Factor 1		Factor 2		Factor 3		Factor 4		Factor 5	
Item	Factor Pattern	Factor Structure	Factor Pattern	Factor Structure	Factor Pattern	Factor Structure	Factor Pattern	Factor Structure	Factor Pattern	Factor Structure
Q2	**73**	**62**	-4	-3	0	0	-12	-11	6	6
Q3	**61**	**52**	-19	-16	-12	-11	12	11	23	21
Q13	**58**	**49**	4	4	31	28	3	3	-5	-5
Q12	21	17	**64**	**54**	15	14	-16	-15	7	7
Q11	-19	-16	**58**	**49**	-6	-5	-1	-1	10	9
Q6	37	31	**43**	**37**	9	8	9	8	1	1
Q1	13	11	**38**	**32**	-15	-14	22	21	-5	-5
Q8	**32**	**27**	36	30	-24	-22	21	19	-11	-10
Q7	13	11	-2	-2	**68**	**62**	4	4	-9	-8
Q9	-6	-5	-4	-4	**48**	**44**	11	11	0	0
Q5	8	6	-2	-1	16	15	**62**	**58**	-7	-8
Q10	-16	-13	45	38	4	4	**45**	**42**	7	6
Q14	4	3	-11	-9	28	25	**37**	**35**	33	30
Q15	27	23	13	11	-13	-12	-6	-5	**61**	**56**
Q4	-13	-11	10	8	38	34	-1	-1	**47**	**44**

Factor 1 is comprised of items 2, 3, 13, and 8. These items loaded the most on this factor (factor pattern coefficients = .73, .61, .58, and .32 respectively). These items also had the strongest positive relationship with this factor (factor structure coefficients = .62, .52, .49, and .27 respectively). These items each involve content specifically associated with the world of work, such as requirements to work in a particular career and information about salaries and current job openings. Item 8 also loaded similarly in Factor 2. After reviewing item 8 it appeared that Factor 1 was a better fit. This factor was labeled "Information on the World of Work" to correspond with the most appropriate element of the framework career choice interventions.

Factor 2 is comprised of items 12, 11, 6, and 1. The factor pattern coefficients of these items were .64, .58, .43, and .38, respectively. The factor structure coefficients of these items were .54, .49, .37, and .32 respectively. These four items directly correspond with the framework career choice intervention "Written Exercises", involving developing lists, completing worksheets, and exploring one's own skills and interests as they relate to career fields.

Factor 3 is comprised of items 7 and 9. The factor pattern coefficients of these items were .68 and .48 respectively, and their factor structure coefficients were .62 and .44. These items address receiving information and feedback about careers and decision making strategies from working professionals and career counselors. These items most closely correspond with the framework career choice intervention of "Individual Interpretation and Feedback".

Factor 4 is comprised of items 5, 10, and 14. The factor pattern coefficients of these items were .62, .45, and .37 respectively, and their factor structure coefficients were .58, .42, and .35 respectively. The items address including others in one's career decision making process, to include consideration of one's own cultural influences, as well as how others make career decisions. This factor was labeled "Attention to Building Support" as the items most closely represent the definition of this framework career choice intervention.

Factor 5 is comprised of items 15 and 4, with a factor pattern coefficients of .61 and .47, and a factor structure coefficients of .56 and .44 respectively. Items 15 and 4 involve gathering information from others working in a career field one may be interested in pursuing. This factor was labeled "Modeling" as it most closely reflects the modeling

framework career choice intervention. Decisions about items related to this factor, as well as the previous factors, were based on meaningfulness as they related to the study's established framework.

Table 5

Summary of Student Preference Items within Each Factor

Factor 1: Information on the World of Work
Item 2: Explore how the results of a career test relate to possible careers.
Item 3: Find information about current job openings.
Item 13: Learn about the requirements needed to work in the career I am interested in.
Item 8: Research typical salaries earned by those working in my career of interest.
Factor 2: Written Exercises
Item 12: Learn more about how my skills and interests relate to various career fields.
Item 11: Complete worksheets to identify work-related skills that I have.
Item 6: Develop a list of careers I may be interested in researching further.
Item 1: Explore my own thoughts about my career choices.
Factor 3: Individual Interpretation and Feedback
Item 7: Get feedback from a career counselor on useful strategies for making decisions about my career.
Item 9: Interview someone working in a job I am interested in.
Factor 4: Attention to Building Support
Item 5: Find techniques for including others, such as my family and friends, in my career decision-making.
Item 10: Learn about how culture and gender related issues may affect my career choice.
Item 14: Find out more about how my career counselor decided on his/her career.
Factor 5: Modeling
Item 15: Learn how to network with professionals in my career field.
Item 4: Learn from experienced professionals working in a career I am interested in pursuing.

Factor inter-correlation was also conducted to examine the relationships among all five factors. The data in Table 6 resulted from this analysis. No two factors were strongly correlated. While the majority of the factor relationships were negative, they ranged from -.45 to .11.

Table 6

Correlations for Five Factors of Student Preference for Delivery of Career Choice Interventions

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1	1.00				
Factor 2	-.45	1.00			
Factor 3	-.05	-.14	1.00		
Factor 4	-.19	-.12	-.5	1.00	
Factor 5	.11	.1	-.35	-.12	1.00

Chi-square tests of independence were performed to examine the relationship between experience in online classes and preference for delivery mode of career choice intervention activities. There are a number of assumptions to consider when using the chi-square test of independence. Both variables are measured on a nominal scale. In this study, both preference and experience were treated as nominal variables. Experience with online courses is nominal and is made up of three groups, while preference for delivery mode is also nominal and consists of two groups. The participants responded independently of each other and each participant appears in only once cell. The criterion variable, in this case item scores or responses, does not represent a random sample. This is a violation of the random sampling assumption. Students were asked to voluntarily participate. The resulting group of participants is not necessarily a random sample from the larger population. Additionally, due to the small group of participants in the pilot study, some cells had expected frequencies of less than five.

Pilot Test Results

The results of the pilot study are presented below as responses to the research questions of the larger study.

- Research Question - *What are first-year university students' preferences for the delivery method of critical career choice interventions?*

Frequencies of response for the 15 survey items in the student preference matrix were calculated. Table 7 presents the overall responses of the 64 participants regarding their preference for delivery of the activity described by each item. Bold typeface is used to identify the delivery mode preference for each item. The data in Table 7 are organized by the five factors established in the exploratory factor analysis.

In two of the five factors, there is a clear preference for online delivery of each of the activities listed. These factors are Information on the World of Work and Written Exercises. In an additional two factors, there is a clear preference for on campus delivery. These factors are Individual Interpretation and Feedback and Modeling. While online mentoring and modeling programs are evolving, traditionally, modeling takes place through direct observation and interaction between a student and a professional role-model. Students also seem to prefer working face-to-face with on campus career professionals to get feedback on their career development.

The participant responses to delivery preference for items related to the remaining factor, Attention to Building Support, are not as clearly defined. The majority of respondents preferred online delivery for one of the items, "Learn about how culture and gender related issues may affect my career choice". In contrast, the majority of respondents selected on campus delivery for the remaining two items in this factor which

are, “Find techniques for including others, such as my family and friends, in my career decision-making” and “Find out more about how my career counselor decided on his/her career”. A blended approach to this factor may be indicated where students can access information about cultural and gender issues and meet in person with a career counselor to discuss incorporating others into their own decision-making as well as finding out how others made their own career decisions.

Participants were given the option to choose “not at all” as a preference. By choosing this option, a student could indicate no interest in participating, either on campus or online, in the activity described. Interestingly, the first-year students participating in the pilot study overwhelmingly chose to participate in these career choice intervention activities. The items in Factor 4, Attention to Building Support, received the highest percentage in the “not at all” option, however, this option still scored lowest of the three preference options.

A second matrix was provided in the pilot survey in which students were presented with specific technologies from which to choose as delivery options for the five career choice interventions. Data related to frequencies of responses received are displayed in Table 8. Due to the relatively low number of respondents and large number of cells in this matrix that received no responses, it was determined that the categories should be collapsed to show response totals for Face-to-Face, Asynchronous, and Synchronous methods of delivery. The full matrix can be seen in the instrument in Appendix B.

Table 7

Frequency of Responses for Student Preference for Delivery of Career Choice Interventions

	On Campus		Online		Not at All	
	%	N	%	N	%	N
Factor 1: Information on the World of Work						
Explore how the results of a career test relate to possible careers.	31	20	**61**	**39**	8	5
Find information about current job openings.	27	17	**69**	**44**	5	3
Learn about the requirements needed to work in the career I am interested in pursuing.	39	25	**59**	**38**	2	1
Research typical salaries earned by those working in my career of interest.	12	8	**84**	**54**	3	2
Factor 2: Written Exercises						
Learn more about how my skills and interests relate to various career fields.	31	20	**61**	**39**	8	5
Complete worksheets to identify work-related skills that I have.	20	13	**66**	**42**	14	9
Develop a list of careers I may be interested in researching further.	19	12	**78**	**50**	3	2
Explore my own thoughts about my career choices.	30	19	**62**	**40**	8	5
Factor 3: Individual Interpretation and Feedback						
Get feedback from a career counselor on useful strategies for making decisions about my career.	**73**	**47**	22	14	5	3
Interview someone working in a job I am interested in pursuing	**77**	**49**	16	10	8	5
Factor 4: Attention to Building Support						
Find techniques for including others, such as my family and friends, in my career decision-making.	**42**	**27**	34	22	23	15
Learn about how culture and gender related issues may affect my career choice.	34	22	**44**	**28**	22	14
Find out more about how my career counselor decided on his/her career.	**53**	**34**	19	12	28	18
Factor 5: Modeling						
Learn how to network with professionals in my career field.	**55**	**35**	30	19	16	10
Learn from experienced professionals working in a career I am interested in pursuing.	**80**	**51**	14	9	6	4

In this section of the survey, there is an overall preference for face-to face interaction to complete the career choice interventions. This in some ways contradicts the responses received in the first matrix. Differences in delivery preferences between the two matrices were likely due to differences in the item stems. The second matrix asked students to consider how they would prefer to "interact with career specialists and career-related information". The introduction of a person, specifically a career specialist, may have led the participants to choose face-to-face delivery. Similarities of responses in the two matrices include a preference for online delivery, specifically using asynchronous technologies, for Factor 1, Information on the World of Work. Also similar to the first matrix, there is a preference for face-to-face, or on campus delivery of Factor 3, Individual Interpretation and Feedback, and Factor 5, Modeling.

Table 8

Frequency of Responses for Student Preferences for Technologies

	Face-to-Face		Asynchronous		Synchronous	
	%	N	%	N	%	N
Information on the World of Work	27	17	**69**	**44**	5	3
Written Exercises	**61**	**39**	25	16	14	9
Individual Interpretation and Feedback	**66**	**39**	25	16	14	9
Attention to Building Support	**47**	**30**	41	26	13	8
Modeling	**52**	**33**	44	28	5	3

- Research Question - *To what extent are there differences in first-year University students' preferences for the delivery methods of critical career choice interventions based on their prior experience with online courses?*

Each of the 64 respondents identified himself/herself as a member of one of the following three experience groups: (a) no previous experience with online courses (n = 37), (b)

currently enrolled in first online course (n = 13), (c) previously completed an online course (n = 14). Of those who previously completed an online course, an average of two courses had been completed. This demographic information related to previous experience with online courses is displayed in Table 9. While a majority of participants had no experience with online courses (57.8%), 42.2% of participants had either previously completed an online course or were enrolled in their first online course at the time of the survey.

Table 9

Pilot Study Student Previous Experience with Online Courses

	%	N
No – I have never taken an online course	57.8	37
No – But I am in my first online course this semester	20.3	13
Yes – I have completed an online course	21.9	14

Chi-square tests of independence were performed to examine the relationship between experience in online classes and preference for delivery mode of career choice intervention activities. This analysis failed to reveal a significant relationship in preference among the three experience groups. The participants who had no previous experience in online courses responded similarly to participants who had previous or current experience with online courses. The chi-square statistics are displayed in Table 10 for each of the 15 survey items, each representing an activity related to the five career choice interventions. The chi-square statistics ranged from X^2 (2, N = 64) = 0.0955, $p >$ .05 to X^2 (2, N = 64) = 2.5673, $p >$ .05.

Table 10

Pilot Study Chi-square Statistics

	DF	Value	*p*
Factor 1: Information on the World of Work			
Explore how the results of a career test relate to possible careers.	2	1.1025	0.5762
Find information about current job openings.	2	0.9673	0.6165
Learn about the requirements needed to work in the career I am interested in pursuing.	2	2.3543	0.3082
Research typical salaries earned by those working in my career of interest.	2	0.9441	0.6237
Factor 2: Written Exercises			
Learn more about how my skills and interests relate to various career fields.	2	2.5673	0.2770
Complete worksheets to identify work-related skills that I have.	2	1.0705	0.5855
Develop a list of careers I may be interested in researching further.	2	0.6892	0.7085
Explore my own thoughts about my career choices.	2	1.9065	0.3855
Factor 3: Individual Interpretation and Feedback			
Get feedback from a career counselor on useful strategies for making decisions about my career.	2	1.6624	0.4355
Interview someone working in a job I am interested in pursuing.	2	0.9441	0.6237
Factor 4: Attention to Building Support			
Find techniques for including others, such as my family and friends, in my career decision-making.	2	0.0955	0.9534
Learn about how culture and gender related issues may affect my career choice.	2	1.5765	0.4546
Find out more about how my career counselor decided on his/her career.	2	1.9646	0.3744
Factor 5: Modeling			
Learn how to network with professionals in my career field.	2	2.4373	0.2956
Learn from experienced professionals working in a career I am interested in pursuing.	2	0.9711	0.6154

Overall, participants in the pilot study were found to prefer on campus delivery of activities related to Individual Interpretation and Feedback and Modeling, and online delivery of activities related to Information on the World of Work and Written Exercises.

There is not a clear preference for delivery mode of Attention to Building Support. Approximately 42% of the first-year students who participated in the pilot study had some previous experience with online courses. After comparing the experience subgroups, no significant differences were found. Preferences for delivery of the five framework career choice interventions were similar for students with no online course experience and students with current or previous online course experience.

Implications for the Larger Study

The results of the pilot study indicated that several changes should be made to the data collection instrument before use in the larger study. Two matrices were used in the pilot instrument. The first matrix offered three options for delivery of 15 career choice intervention activities. These choices were (a) on campus, (b) online, and (c) not at all. The second matrix offered a similar choice but with expanded options listing specific technologies for the delivery of the five career choice interventions, which frame this study. The revised instrument used in the larger study can be found in Appendix D. The revised instrument provided a series of multiple choice items that in effect was a combination of the two matrices used in the pilot.

The new format included all 15 activities used previously in the first matrix plus two additional activities for a total of 17. These items present individual activities that relate to the five career choice interventions, which frame the study. The two additional items were developed directly from the definitions provided by Brown and Ryan Krane (2000). One of these items was designed to become a part of Factor 3, Individual Interpretation and Feedback, which was composed of only two items through the Exploratory Factor Analysis conducted in the pilot study. The second additional item was

designed to become a part of Factor 5, Modeling, which was also composed of only two items in the Exploratory Factor Analysis conducted in the pilot study. It is desirable for each factor to be composed of a minimum of three items (Suhr, n.d.).

Table 11

Career Choice Interventions and Activities

Information on the World of Work
Explore how the results of a career test relate to possible careers.
Find information about current job openings.
Learn about the requirements needed to work in the career I am interested in pursuing.
Research typical salaries earned by those working in my career of interest.
Written Exercises
Learn more about how my skills and interests relate to various career fields.
Complete worksheets to identify work-related skills that I have.
Develop a list of careers I may be interested in researching further.
Explore my own thoughts about my career choices.
Individual Interpretation and Feedback
Get feedback on useful strategies for making decisions about my career.
Interview someone working in a job I am interested in pursuing.
Get feedback on my job search skills, such as resume writing and interviewing.
Attention to Building Support
Find techniques for including others, such as my family and friends, in my career decision-making.
Learn about how culture and gender related issues may affect my career choice.
Find out more about how my career advisor decided on his/her career.
Modeling
Learn how to network with professionals in my career field.
Learn from experienced professionals working in a career I am interested in pursuing.
Receive advice from someone working in a career field I am interested in pursuing.

The revised instrument also included the delivery modes presented in the second matrix of the pilot. Participants were asked to choose their preferred delivery modes for each of the 17 items. Delivery options included the following: (a) in person; (b) e-mail;

(c) discussion board in Blackboard; (d) audio or video recording or podcast; (e) website, wiki, and/or blog; (f) telephone call, (g) Internet text chat or instant messaging, (h) virtual room with real-time interaction; and (i) I am not interested in participating in this activity. The term "podcast" refers to both audio and video recordings. Podcasts had evolved along with the changes to MP3 players to allow for video as well as audio playback or downloaded recordings in the time since the pilot study was conducted.

Another revision of the survey instrument after the pilot study came from the recommendation that the participants be given the opportunity to select more than one delivery mode preference for each of the 17 career choice intervention activities. Using multiple response items, the items on the revised instrument provided instructions to the student to "check all that apply". It was also recommended that these 17 items be presented to each student in a random order. In an effort to reduce possible effects created by the order of the presentation of the 17 items, these items were presented randomly by the survey software. Using the Question Block Rotation feature of QuestionPro, these items were set to appear on the computer screen in random order each time the survey was accessed by a respondent.

A review of the revised survey was conducted after the pilot test and the issue of viability was addressed. The viability of several of the options was questioned as they related to each of the activities. It was thought that each activity may not be viable, or even likely to occur, through each of the delivery modes presented. A further review of the viability of the options was conducted.

Three professionals representing the fields of career counseling, distance education, and instructional technology were asked to review the activities and delivery

options and identify which options were not viable, or likely, based on their practice and perspectives. This review produced very little overlap in opinion. It was noted that some options may be better than others depending on the context of the student and the career professionals delivering the services. It should also be noted that the delivery option of "audio or video recording, or podcast" was the one most questioned for viability of delivering the activities overall.

After review of the completed research proposal, revisions were made to the survey instrument and another student focus group was conducted. In this session, a small group of first-year students was asked to review the instrument in advance of the planned data collection. Seven students volunteered to meet with the researcher to review the instrument. The students were provided with paper copies of the instrument and asked to read and complete one section of the survey at a time. An open discussion about the items followed each section. These students provided feedback, both written and oral, on the survey instrument. These students were all first-year students previously enrolled in the SLS 1101 course.

The student comments, as in a previous focus group, helped to determine the best word choices for each item, as well as the vocabulary used overall in the survey instrument. Key feedback from the students in this group included clarification of their understanding of each delivery option presented, as well as their response to the instruction to "check all that apply" for the 17 activity items. None of these students selected all options for any one item. Their responses seemed thoughtful and were varied from student to student.

In addition to the second student focus group outlined above, a smaller group of students reviewed the survey instrument through completing the survey online. After completing the survey, four open-ended questions were provided regarding usability. These questions were adapted from Usability.gov (n.d.) and included items regarding overall impressions, suggested improvements, and comments, as well as an opportunity to describe any mistakes or problems found while taking the survey.

This group of users identified several areas of improvement, which were incorporated into the survey instrument. Three improvements were made based on this feedback: (a) using alternating boldface to make one block of questions easier to read on screen, (b) including validation of textbox items to ensure that numbers were entered where numerical data were expected, and (c) using progress indicators (i.e. page 1 of 3) and motivational phrases (i.e. "keep going…this is the last section!") to encourage the user to continue. These changes are also supported by the literature. Clarity and consistency of questions and response options is listed by Dillman and Smyth (2007) as an essential part of web survey design. Couper, Traugott, and Lamias (2001) studied the use of progress indicators and motivational screens in web-survey design to see if there was any effect on response rate. The study concluded that these additions may lead to increased response rate if they do not add to download time.

Data Analysis

For the larger study, the analyses of data responding to the established research questions are outlined below.

- Research Question - *What are first-year students' preferences for the delivery method of critical career choice interventions?*

A series of 17 career choice activities was presented. Each of these activities is associated with one of the five career choice interventions as determined through the pilot test for this study. The 17 activities were presented with multiple choice type survey items for which participants were asked to choose delivery mode preferences from the following: (a) in person; (b) e-mail; (c) discussion board in Blackboard; (d) audio or video recording or podcast; (e) website, wiki, and/or blog; (f) Internet text chat or instant messaging; (g) telephone call; (h) virtual room; and (i) I am not interested in participating in this activity. Students were instructed to "check all that apply" for each of these 17 multiple choice items. Results related to this question are presented in chapter four. Responses were summarized with frequencies. Included are the 95% confidence intervals.

- Research Question - *To what extent are there differences in first-year university students' preferences for the delivery method of critical career choice interventions based on their prior experience with each of the following: (a) online courses; (b) career counseling; (c) e-mail; (d) Blackboard discussion boards; (e) audio and video recordings or podcasts; (f) Internet websites, wikis, and/or blogs; (g) Internet text chat or instant messaging; and (h) virtual rooms with real-time interaction?*

Data regarding student previous experience with online courses were collected through a multiple choice questions provided in the demographic portion of the survey instrument. Respondents were asked to choose one statement which best described his or her previous experience with online courses. The response options provided included (a) I have never taken an online course, (b) I am enrolled in my first online course this

semester, (c) I have completed one or two online courses, and (d) I have completed three or more online courses. The response options were presented in a modified Likert-scale format. Responses to this item were summarized with frequencies for each of the four "experience groups" with online courses. A series of Chi square tests of independence were conducted to explore differences in preferences for technology delivery of career choice interventions among these experience groups.

Data regarding previous experience with career counseling were also collected through a multiple choice question with a modified Likert-scale set of response options in the demographic portion of the survey. Respondents were asked to choose one response to the following question: "Have you ever participated in career advising or guidance activities? (Examples of these activities include identifying your skills and career interests, exploring career options, and developing a career plan.)" The response options were (a) I have no experience with career advising, (b) I have very little experience with career advising, (c) I have some experience with career advising, and (d) I have a lot of experience with career advising. Responses to this item were summarized with frequencies for each of the four "experience groups" with career counseling. A series of Chi-square tests of independence were conducted to explore differences in preferences for technology delivery methods of career choice interventions among these experience groups.

Data regarding previous experience with each of the six specific technologies listed as possible delivery modes for career choice activities in the survey were collected with a separate survey item. This item required each student to select his or her experience level with each of the technologies. A modified Likert-scale type format was

used. The item presented students with the following question: "What is your experience level with the following types of technology?" Students selected their experience levels from these statements: (a) I am not familiar with this technology at all, (b) I am familiar with this but have no experience, (c) I have very little experience with this, (d) I have some experience with this, and (e) I have a lot of experience with this. Responses to this item were summarized with frequencies and percentages. A series of Chi square tests of independence were also conducted. These tests explored group differences regarding technology delivery mode preferences of each of the 17 career choice activities.

Data regarding preference for technology delivery mode were coded for the analyses related to previous experience. The design of the survey items allowed each participant to select more than one delivery method for each of the career choice activities presented. Participant data were combined for the various technology options offered, including e-mail, discussion board, recording or podcast, website, telephone, text chat, and virtual room. Participants who selected at least one technology delivery option were coded with a "1" response for that activity. Participants who selected no technology delivery options or indicated no interest in participating were coded with a "0" for that activity regarding preference for delivery.

When conducting the chi-square test of independence, several assumptions should be taken into consideration. In this study, both preference and experience were treated as nominal, categorical variables. The participants responded independently of each other and each participant appears in only once cell. The criterion variable, in this case preference responses, does not include a random sample. This is a violation of the random sampling assumption. Students were asked to voluntarily participate and the

resulting group of participants may not represent a random sample of the population. Additionally, due to the small group of participants in several of the comparisons, specifically looking at experience in the areas of career counseling, e-mail, and text chat, several cells had expected frequencies of less than five.

These analyses involve hypothesis testing. In testing group differences, the null hypothesis states that there are no differences among or between groups (O'Rourke et al., 2005). With multiple hypothesis testing there is the possibility of Type I error, or rejecting the null hypothesis when it is true. In this situation, finding a difference where there is none can lead to the presentation of misleading results and the drawing of erroneous conclusions (Creswell, 2002). The Bonferroni inequality technique was used to "estimate the maximum probability of a Type I error in any set of significance tests" (Glass & Hopkins, 1996, p. 456.). The possibility of Type II error also exists and can be increased by making a very conservative correction procedure such as the Bonferroni adjustment (O'Rourke, Hatcher, & Stepanski, 2005). This type of error occurs when a null hypothesis is accepted when it is actually false. Raising the alpha level reduces the level Type II error. Larger sample size reduces the occurrence of Type II error (Glass & Hopkins, 1996).

Summary

Chapter three outlined the methods and procedures of the study. A pilot study was conducted, which included development and validation of the survey instrument and results after administration to a small group of students in the target population. Recommendations for changes to the survey instrument were made based on the validation process conducted through the pilot study. The steps taken to make revisions to

the survey instrument subsequent to the pilot study were outlined. Data analysis procedures conducted in the larger study were also outlined. Chapter four presents the results of the study.

Chapter Four

Results

This chapter presents the analyses of responses received through the web-based survey instrument used in this study. The survey was distributed to students enrolled in the SLS 1101: The University Experience course during the fall semester of 2007. This chapter includes sections reporting the response rate, participant demographic data, and findings relevant to each of the established research questions. The purpose of this study was to explore first-year students' delivery mode preferences for critical career choice interventions. This study also explored differences in delivery preferences based on students' previous experience with online courses, career counseling, and specific technologies.

Response

The population for this study included 1,849 first-year students enrolled in SLS 1101: The University Experience during the fall semester of 2007 as of the drop/add registration date at the University. A total of 334 completed surveys were received. Each returned survey was judged to be "usable" if it was complete and the respondent selected "yes" in response to the question "is this your first year of college since graduating from high school?" In this study, surveys that were judged to be "unusable" were submitted by students who selected "no" in response to this question. While SLS 1101 is designed for first-year students, continuing and transfer students are not barred from registering for the

course. A total of 318 surveys were used for the analysis. These surveys were complete, with no missing data, and submitted by first-year students.

An incentive was offered to students in an effort to increase their participation in the study. After completing the survey, each student had the option to submit his or her responses or to submit responses and move to a registration page. Of the 318 study participants, 233 (73.27%) elected to register for the incentive drawing. At the completion of data collection, four students were selected randomly to receive the gift cards. These students were notified by e-mail.

Demographic Data

Demographic characteristics of the study participants are shown in Table 12. Of the 318 participants, 73 (22.96%) were male and 245 (77.04%) were female. The age of respondents ranged from 17 to 28 with an average age of 18. A majority of respondents 206 (64.78%), identified themselves as White, followed by 38 (11.95%) Hispanic, 30 (9.43%) African American or Black, 25 (7.86%) Other, and 19 (5.97%) Asian or Pacific Islander. The majority of those who responded "other" indicated "mixed race", "multi-racial".

A small number of respondents, 12 (3.77%), indicated that they were International Students. When asked how many credits they were enrolled in at the time of the survey, 312 (98.11%) indicated full-time student status enrolled in a minimum of 12 credit hours. The remainder of respondents, 6 (1.89%) reported a part-time credit load of 11 credit hours or less. The credit load of participants ranged from 4 to 18 with an average credit load of 14.37.

When asked to select statements identifying current employment situation students were given the option to check all that apply. Most students selected only one response. The majority of students, 219 (67.80%), responded that they were currently not working. Of the students completing the survey, 256 (80.50%), indicated that they had already declared a major. These students listed 44 different major areas that together represented all of the university's colleges.

Table 12

Demographic Characteristics of Survey Respondents

	Characteristics	N	%
Gender	Male	73	22.96
	Female	245	77.04
Race	African American or Black	30	9.43
	Asian or Pacific Islander	19	5.97
	Hispanic	38	11.95
	Native American	-	-
	White	206	64.78
	Other	25	7.86
International	No	306	96.23
	Yes	12	3.77
Credit Load	Part-time	6	1.89
	Full-time	312	98.11
Employment	Off-campus part-time	77	23.84
	Off-campus full-time	6	1.86
	On-campus part-time	20	6.19
	On-campus full-time	1	.31
	Not working	219	67.80
Declared Major	No	62	19.50
	Yes	256	80.50

Available demographic characteristics of all first-year students enrolled in the participants' institution are presented in Table 13. These data were available from the University via an online reporting feature of the university's website (New Student Headcount, 2007). A series of Chi-square Goodness of Fit tests were conducted to compare the characteristics of the sample students and population students in the areas of gender, international status, credit load, and race.

The group of first-year students who chose to complete the survey is similar to the larger population of first-year students at the institution in that the majority of students were female, from the United States, enrolled full-time, and Caucasian. A closer examination of these characteristics of the sample as compared to those of the population does, however, reveal the magnitude of differences between the two groups.

While the majority of students in both the sample and larger population were female, the disparity between female and male is less in the larger group (X^2 = 45.8643, 1 d.f., p = <.0001) with a small effect size of .11. International students appeared as a larger percentage of the sample than of the larger population (X^2 = 10.7767, 1 d.f., p = .0010) with a small effect size of .05. Part-time students were not represented in the sample in as large a percentage as they appear in the larger population (X^2 = 5.1842, 1 d.f., p = .0228) with a small effect size of .04. While proportion of students reporting race as "White" in both the sample and population was similar, there were differences in the two groups in other categories. The sample included larger percentages of students reporting race as "African American or Black" and "Other", while the population included larger percentages of students reporting race as "Asian or Pacific Islander", "Hispanic", and

"Native American or American Indian" (X^2 = 13.5517, 4 d.f., p = .0089) with a small effect size of .06.

Table 13

Demographic Characteristics of Population

Characteristics		N	%
Gender	Male	1505	42.38
	Female	2041	57.47
	Not reported	5	.01
International	No	3502	98.62
	Yes	49	1.38
Credit Load	Part-time	164	4.61
	Full-time	3387	95.38
Race	Black	255	7.18
	American Indian	18	.51
	Asian/Pacific Islander	254	7.15
	Hispanic	535	15.07
	White	2197	61.87
	Other/Not reported	143	4.03

Preferences for Delivery of Career Choice Interventions

The results of the data analysis conducted to respond to the established research questions are outlined below.

- Research Question - *What are first-year students' preferences for the delivery method of critical career choice interventions?*

Through pilot testing, a list of 17 activities was developed with each of the activities representing one of the five career choice interventions. In a series of multiple choice questions, each of the 17 activities was presented with a choice of nine response options

including “in person”, seven specific technologies, and “not interested”. Students were instructed to “check all that apply”.

Frequencies of responses for each of the 17 survey items were calculated. These activities are organized by the five career choice interventions that frame this study. The tables included in this section include rata related to the overall responses of the 318 participants regarding their preferences for the delivery mode of each activity. The delivery modes for each activity are listed from highest response to lowest response. Confidence intervals are also presented.

Overall e-mail and in person were the two most selected delivery options. E-mail was the most selected delivery mode for 12 of the 17 activities. In person was the most selected delivery mode for the remaining five activities. Audio/video recordings or podcasts, and virtual rooms were the two least selected delivery options for each of the 17 activities.

There are several findings to report related to overall reaction to the career choice activities. Students were given the option to indicate that they were not interested in participating in each activity. The activities associated with Attention to Building Support received the highest number of “not interested” responses. The percentages of students selecting “not interested” for these activities ranged from 29.87% to 34.91%. The activities associated with Modeling received the least number of “not interested” responses ranging from 14.47% to 20.75%. The activities associated with Information on the World of Work also received low numbers of “not interested” responses ranging from 14.47% to 25.79%.

A group of 26 (8.18%) students selected "not interested" for each of the 17 activities presented. An average of 2.04 delivery methods per activity was selected by the remaining 292 (91.82%) participants. The number of student selections for any one activity ranged from one to eight. A small group of 3 (.94%) students selected only "in person" delivery for all of the activities presented. A group of 25 (7.86%) participants selected only technology options. These students did not select "in person" for any of the activities. None of the participants selected all of the delivery options for all of the activities.

Information on the World of Work

Preferences for delivery of the four the activities related to Information on the World of Work were similar. E-mail was selected most frequently for each of these activities. In person and website, wiki, and/or blog, were selected either second or third most frequently for the four activities. Students selected "not interested" most frequently for the first activity, regarding exploration through career tests and assessments. The results related to the career choice intervention of Information on the World of Work are presented in Tables 14 through 17.

Table 14

Delivery Preferences for Information on the World of Work – Explore How the Results of a Career Test Relate to Possible Careers

Delivery Option	N	%	95% CI
E-mail	145	45.60	40.21, 51.09
In person	127	39.94	34.71, 45.41
Website, wiki, blog	83	26.10	21.58, 31.19
Telephone call	47	14.78	11.30, 19.10
Discussion board	41	12.89	9.65, 17.02
Text chat	26	8.18	5.64, 11.72
Recording/Podcast	7	2.20	1.07, 4.47
Virtual room	5	1.57	.67, 3.62
Not interested	82	25.79	21.29, 30.87

Table 15

Delivery Preferences for Information on the World of Work – Find Information about Current Job Openings

Delivery Option	N	%	95% CI
E-mail	189	59.43	53.95, 64.68
In person	124	38.99	33.79, 44.45
Website, wiki, blog	93	29.25	24.52, 34.47
Telephone call	72	22.64	18.38, 27.55
Discussion board	50	15.72	12.13, 20.12
Text chat	35	11.01	08.02, 14.93
Recording/Podcast	13	4.09	02.41, 06.87
Virtual room	9	2.83	1.50, 5.29
Not interested	62	19.50	15.52, 24.21

Table 16

Delivery Preferences for Information on the World of Work – Learn About the Requirements Needed to Work in the Career I am Interested in Pursuing

Delivery Option	N	%	95% CI
E-mail	190	59.75	54.28, 64.99
In person	176	55.35	49.86, 60.72
Website, wiki, blog	89	27.99	23.34, 33.17
Telephone call	63	19.81	15.80, 24.54
Discussion board	52	16.35	12.69, 20.81
Text chat	37	11.64	8.57, 15.63
Recording/Podcast	17	5.35	3.37, 8.40
Virtual room	14	4.40	2.64, 7.25
Not interested	46	14.47	11.03, 18.76

Table 17

Delivery Preferences for Information on the World of Work – Research Typical Salaries Earned by Those Working in My Career of Interest

Delivery Option	N	%	95% CI
E-mail	162	50.94	45.47, 56.39
Website, wiki, blog	112	35.22	30.18, 40.62
In person	103	32.40	27.49, 37.73
Discussion board	48	15.09	11.57, 19.44
Telephone call	41	12.89	9.65, 17.02
Text chat	34	10.69	7.75, 14.57
Recording/Podcast	11	3.46	1.94, 6.09
Virtual room	10	3.14	1.71, 5.69
Not interested	71	22.33	18.10, 27.22

Written Exercises

Preferences for delivery of the four the activities related to Written Exercises were also similar. E-mail was selected most frequently for three of activities. In person was selected most frequently for the fourth activity. In person and website, wiki, and/or blog, were also selected frequently for the four activities. Students selected "not interested"

most frequently for the activity related to completing worksheets to identify skills. The results related to the intervention of Written Exercises are presented in Table 18 through 21.

Table 18

Delivery Preferences for Written Exercises – Learn More about How My Skills and Interests Relate to Various Career Fields

Delivery Option	N	%	95% CI
E-mail	152	47.78	42.35, 53.26
In person	148	46.54	41.13, 52.03
Website, wiki, blog	82	25.79	21.29, 30.87
Discussion board	47	14.78	11.30, 19.10
Telephone call	31	9.75	6.95, 13.51
Text chat	26	8.12	5.59, 11.65
Recording/Podcast	18	5.66	3.61, 8.77
Virtual room	7	2.20	1.07, 4.47
Not interested	73	22.96	18.68, 27.89

Table 19

Delivery Preferences for Written Exercises – Complete Worksheets to Identify My Work-related Skills

Delivery Option	N	%	95% CI
E-mail	141	44.34	38.40, 49.84
In person	124	38.99	33.79, 44.45
Website, wiki, blog	69	21.70	17.52, 26.55
Discussion board	41	12.89	9.65, 17.02
Text chat	21	6.60	4.36, 9.88
Telephone call	20	6.29	4.11, 9.52
Virtual room	10	3.14	1.71, 5.69
Recording/Podcast	7	2.20	1.07, 4.47
Not interested	85	26.73	22.17, 31.85

Table 20

Delivery Preferences for Written Exercises – Develop a List of Careers I May be Interested in Researching Further

Delivery Option	N	%	95% CI
E-mail	154	48.43	42.99, 53.91
In person	129	40.57	35.32, 46.05
Website, wiki, blog	68	21.38	17.23, 26.21
Discussion board	46	14.47	11.03, 18.76
Telephone call	27	8.49	5.90, 12.07
Text chat	21	6.60	4.36, 9.88
Recording/Podcast	8	2.52	1.28, 4.89
Virtual room	7	2.20	1.07, 4.47
Not interested	80	25.16	20.71, 30.21

Table 21

Delivery Preferences for Written Exercises – Explore My Own Thoughts about My Career Choice

Delivery Option	N	%	95% CI
In person	138	43.40	38.06, 48.89
E-mail	114	35.85	30.78, 41.26
Website, wiki, blog	81	25.47	20.99, 30.53
Discussion board	48	15.09	11.57, 19.44
Telephone call	34	10.69	7.75, 14.57
Text chat	29	9.12	6.42, 12.79
Recording/Podcast	11	3.46	1.94, 6.09
Virtual room	10	3.14	1.71, 5.69
Not interested	76	23.90	19.54, 28.88

Individual Interpretation and Feedback

Preferences for delivery of the three activities related to Individual Interpretation and Feedback are presented in Tables 22 through 24. E-mail was selected most frequently for two of the activities. In person was selected most frequently for the remaining activity regarding interviewing someone. Telephone call was also selected frequently for each of

these activities, particularly the activity regarding interviewing. Students' reaction to these three activities was similar concerning overall interest. Approximately 20% of students reported being not interested in activities related to individual interpretation and feedback.

Table 22

Delivery Preferences for Individual Interpretation and Feedback – Get Feedback on Useful Strategies for Making Decisions about My Career

Delivery Option	N	%	95% CI
E-mail	189	59.43	53.95, 64.68
In person	139	43.71	38.37, 49.21
Discussion Board	53	16.67	12.98, 21.16
Telephone call	53	16.67	12.98, 21.16
Website, wiki, blog	50	15.72	12.13, 20.13
Text chat	36	11.32	8.30, 15.27
Recording/Podcast	10	3.14	1.71, 5.69
Virtual room	7	2.20	1.07, 4.47
Not interested	66	20.75	16.66, 25.54

Table 23

Delivery Preferences for Individual Interpretation and Feedback –Interview Someone Working in a Job I am Interested in Pursuing

Delivery Option	N	%	95% CI
In person	205	64.47	59.07, 69.53
E-mail	103	32.29	27.39, 37.61
Telephone call	68	21.38	17.23, 26.21
Text chat	29	9.12	6.43, 12.79
Discussion board	22	6.92	4.61, 10.25
Website, wiki, blog	14	4.40	2.64, 7.25
Virtual room	8	2.52	1.28, 4.89
Recording/Podcast	6	1.89	.87, 4.06
Not interested	64	20.13	16.09, 24.88

Table 24

Delivery Preferences for Individual Interpretation and Feedback – Get Feedback on My Job Search Skills, such as Resume Writing and Interviewing

Delivery Option	N	%	95% CI
E-mail	162	50.94	45.47, 56.39
In person	158	49.69	44.23, 55.16
Telephone call	52	16.35	12.69, 20.81
Discussion board	46	14.47	11.03, 18.76
Website, wiki, blog	44	13.84	10.47, 18.07
Text chat	24	7.55	5.13, 10.99
Recording/Podcast	13	4.09	2.41, 6.87
Virtual room	7	2.20	1.07, 4.47
Not interested	66	20.75	16.66, 25.54

Attention to Building Support

Preferences for delivery of the three activities related to Attention to Building Support are presented in Tables 25 through 27. These three activities received the highest number of "not interested" selections of the total 17 activities ranging from 28.9% to 34.9% of participants. E-mail was selected most frequently for two of the activities. In person was selected most frequently for the remaining activity regarding a career advisor's career decision-making. E-mail and in person were the top two delivery preferences for each of these activities.

Table 25

Delivery Preferences for Attention to Building Support – Find Techniques for Including Others, such as My Family and Friends, in My Career Decision-making

Delivery Option	N	%	95% CI
E-mail	123	38.68	33.50, 44.14
In person	119	37.42	32.28, 42.90
Telephone call	59	18.55	14.66, 23.19
Website, wiki, blog	43	13.52	10.19, 17.72
Discussion board	41	12.89	9.65, 17.02
Text chat	35	11.01	8.02, 14.93
Recording/Podcast	9	2.83	1.50, 5.29
Virtual room	6	1.89	.87, 4.06
Not interested	111	34.91	29.88, 40.30

Table 26

Delivery Preferences for Attention to Building Support – Learn about How Culture and Gender Related Issues May Affect My Career Choice

Delivery Option	N	%	95% CI
E-mail	115	36.16	31.07, 41.58
In person	98	30.82	26.00, 36.10
Website, wiki, blog	91	28.62	23.93, 33.82
Discussion board	58	18.24	14.38, 22.86
Telephone call	31	9.75	6.95, 13.51
Text chat	28	8.81	6.17, 12.44
Recording/Podcast	17	5.35	3.37, 8.40
Virtual room	8	2.52	1.28, 4.89
Not interested	95	29.87	25.10, 35.12

Table 27

Delivery Preferences for Attention to Building Support – Find Out How My Career Advisor Decided on His/Her Career

Delivery Option	N	%	95% CI
In person	156	49.06	43.61, 54.53
E-mail	128	40.25	35.01, 45.73
Telephone call	33	10.38	7.49, 14.22
Discussion board	30	9.43	6.69, 13.14
Website, wiki, blog	20	6.29	4.11, .9.52
Text chat	16	5.03	3.12, 8.01
Recording/Podcast	7	2.20	1.07, 4.47
Virtual room	4	1.26	.49, 3.19
Not interested	97	30.50	25.70, 35.77

Modeling

Preferences for delivery of the three activities related to Modeling are presented in Tables 28 through 30. As in previous interventions, e-mail and in person were the two most selected delivery options for each of the Modeling activities. In person was selected most for two of these activities. Website, wiki, and/or blog, and telephone call were also highly selected for each of these three activities. These activities as a group saw the lowest selection of "not interested" by participating students.

Table 28

Delivery Preferences for Modeling – Learn How to Network with Professionals in My Chosen Field

Delivery Option	N	%	95% CI
E-mail	155	48.74	43.29, 54.22
In person	154	48.43	42.99, 53.91
Website, wiki, blog	61	19.18	15.23, 23.87
Telephone call	53	16.67	12.98, 21.16
Text chat	41	12.89	9.65, 17.02
Discussion board	40	12.58	9.38, 16.68
Virtual room	12	3.77	2.17, 6.48
Recording/Podcast	10	3.14	1.71, 5.69
Not interested	66	20.75	16.66, 25.54

Table 29

Delivery Preferences for Modeling – Learn from Experienced Professionals Working in a Career I am Interested in Pursuing

Delivery Option	N	%	95% CI
In person	212	66.67	61.32, 71.63
E-mail	130	40.88	35.62, 46.36
Telephone call	51	16.04	12.42, 20.48
Website, wiki, blog	34	10.69	07.75, 14.57
Discussion board	28	8.81	6.17, 12.44
Text chat	26	8.18	5.64, 11.72
Recording/Podcast	11	3.46	1.94, 6.09
Virtual room	9	2.83	1.50, 5.29
Not interested	53	16.67	12.98, 21.16

Table 30

Delivery Preferences for Modeling – Receive Advice from Someone Working in a Career Field I am Interested in Pursuing

Delivery Option	N	%	95% CI
In person	196	61.64	56.19, 66.82
E-mail	188	59.12	53.64, 64.38
Website, wiki, blog	51	16.04	12.42, 20.48
Telephone call	45	14.15	10.75, 18.41
Discussion board	45	14.15	10.75, 18.41
Text chat	42	13.21	9.92, 17.37
Recording/Podcast	12	3.77	2.17, 6.48
Virtual room	8	2.52	1.28, 4.89
Not interested	46	14.47	11.03, 18.76

Group Differences in Preferences for Delivery of Career Choice Interventions

Results related to the second established research question are presented below.

- Research Question - *To what extent are there differences in first-year university students' preferences for the delivery method of critical career choice interventions based on their prior experience with each of the following: (a) online courses; (b) career counseling; (c) e-mail; (d) Blackboard discussion boards; (e) audio and video recordings or podcasts; (f) Internet websites, wikis, and/or blogs; (g) Internet text chat or instant messaging; and (h) virtual rooms with real-time interaction?*

Previous Experience with Online Courses

Each of the 318 respondents identified himself/herself as a member of one of the following four experience groups: (a) no previous experience with online courses (n = 195), (b) currently enrolled in first online course (n = 40), (c) previously completed one or two online courses (n = 73), or (d) previously completed three or more online courses

(n = 10). This demographic information related to previous experience with online courses is presented in Table 31. While a majority of participants had no experience with online courses (61.32%), 38.68% of participants had some experience either through previously completed online courses or enrollment in their first online course at the time of the study.

Table 31

Previous Experience with Online Courses

	N	%
I have never taken an online course	195	61.32
I am in my first online course this semester	40	12.58
I have completed 1 or 2 online courses	73	22.96
I have completed 3 or more online courses	10	3.14

Chi square tests of independence were performed to examine the relationship between experience in online classes and preference for technology delivery of each of 17 career choice activities. The chi-square statistics are displayed in Table 32 for each of the 17 career choice activities. Using .05 as the preset alpha value, three items in the list of 17 seem to show a significant difference in preferences across the experience groups. These three items are (a) Learn about the requirements needed to work in the career I am interested in pursuing, (b) Research typical salaries earned by those working in my career of interest, and (c) Get feedback on my job search skills, such as resume writing and interviewing.

When performing multiple significance tests, the probability of Type I error or finding significance when there is none, increases. The Bonferroni inequality technique was adopted to control for Type I error for this set of tests. The alpha level was adjusted

to .0029 for each of the tests (α =.05/17 = .0029). This adjusted value was then used to determine significance. This analysis failed to reveal a significant relationship in preference for technology delivery and level of experience with online courses. Students responded similarly no matter their experience with online courses.

Effect size is also reported for each comparison. Cramer's V was used to determine the strength of the association between experience with online courses and preference for delivery mode. The effect sizes range from .07 to .16 indicating weak associations.

Table 32

Chi square Statistics – Previous Experience with Online Courses

	DF	Value	*p*	Effect
Information on the World of Work				
Explore how the results of a career test relate to possible careers.	3	1.5497	0.6709	0.07
Find information about current job openings.	3	5.2858	0.1520	0.13
Learn about the requirements needed to work in the career I am interested in pursuing.	3	8.2066	0.0419	0.16
Research typical salaries earned by those working in my career of interest.	3	9.5708	0.0226	0.17
Written Exercises				
Learn more about how my skills and interests relate to various career fields.	3	3.8681	0.2761	0.11
Complete worksheets to identify work-related skills that I have.	3	1.8890	0.5958	0.08
Develop a list of careers I may be interested in researching further.	3	3.8676	0.2761	0.11
Explore my own thoughts about my career choices.	3	4.7303	0.1926	0.12
Individual Interpretation and Feedback				
Get feedback on useful strategies for making decisions about my career.	3	6.4212	0.0928	0.14
Interview someone working in a job I am interested in pursuing.	3	4.3232	0.2286	0.12
Get feedback on my job search skills, such as resume writing and interviewing	3	8.4244	0.0380	0.16
Attention to Building Support				
Find techniques for including others, such as my family and friends, in my career decision-making.	3	1.4089	0.7034	0.07
Learn about how culture and gender related issues may affect my career choice.	3	5.9288	0.1151	0.14
Find out how my career advisor decided on his/her career.	3	2.3233	0.5081	0.09
Modeling				
Learn how to network with professionals in my career field.	3	2.1403	0.5438	0.08
Learn from experienced professionals working in a career I am interested in pursuing.	3	7.3387	0.0619	0.15
Receive advice from someone working in a career field I am interested in pursuing.	3	6.3122	0.0974	0.14

Previous Experience with Career Counseling

Each of the 318 participants identified himself/herself as a member of one of the following four experience groups: (a) no previous experience with career counseling (n = 161), (b) very little experience with career counseling (n = 93), (c) some experience with career counseling (n = 62), or (d) a lot of experience with career counseling (n = 2). This demographic information related to previous experience with career counseling is presented in Table 33. While a majority of participants (50.63%) selected the "no experience with career counseling" option, 49.38% of participants indicated previous experience in this area on some level, ranging from "very little" to "a lot", at the time of the study.

Table 33

Previous Experience with Career Counseling

	N	%
I have no experience	161	50.63
I have very little experience	93	29.25
I have some experience	62	19.50
I have a lot of experience	2	0.63

Chi square tests of independence were performed to examine the relationship between experience with career counseling and preference for technology delivery of each of 17 career choice activities. The chi-square statistics are displayed in Table 34 for each of the 17 career choice activities. This analysis failed to reveal a significant relationship in preference for technology delivery and level of experience with career counseling. Students with no experience and those who had some level of experience with career counseling responded similarly regarding their preferences. Effect size is also

reported in Table 34 to measure the strength of the association between experience with career counseling and preference for delivery mode. The effect sizes range from .04 to .14 indicating weak associations.

It is interesting to note that 236 (74.22%) of the study participants indicated that career planning was either "important" or "very important" to them during their first semester in college. A post hoc comparison of preferences for delivery and perceived importance of career planning was conducted. Chi-square tests of independence revealed that there were some significant differences in preference based on perceived importance of career planning. This was the case with five of the 17 activities. These activities were (a) Explore how the results of a career test relate to possible careers, (b) Find information about current job openings, (c) Learn more about how my skills and interests relate to various career fields, (d) Develop a list of careers I may be interested in researching further, and (e) Learn about how culture and gender related issues may affect my career choice. The *p* values of these five items ranged from .0002 to .0029. Effect sizes for these items ranged from .21 to .25 indicating small or weak associations.

Table 34

Chi square Statistics – Previous Experience with Career Counseling

	DF	Value	*p*	Effect
Information on the World of Work				
Explore how the results of a career test relate to possible careers.	3	3.9345	0.2686	0.11
Find information about current job openings.	3	2.6185	0.4542	0.09
Learn about the requirements needed to work in the career I am interested in pursuing.	3	2.1203	0.5478	0.08
Research typical salaries earned by those working in my career of interest.	3	2.5183	0.4720	0.09
Written Exercises				
Learn more about how my skills and interests relate to various career fields.	3	4.5070	0.2117	0.12
Complete worksheets to identify work-related skills that I have.	3	4.4824	0.2139	0.12
Develop a list of careers I may be interested in researching further.	3	4.0982	0.2511	0.12
Explore my own thoughts about my career choices.	3	0.6322	0.8890	0.04
Individual Interpretation and Feedback				
Get feedback on useful strategies for making decisions about my career.	3	1.0838	0.7810	0.06
Interview someone working in a job I am interested in pursuing.	3	2.1635	0.5392	0.08
Get feedback on my job search skills, such as resume writing and interviewing	3	3.5969	0.3084	0.11
Attention to Building Support				
Find techniques for including others, such as my family and friends, in my career decision-making.	3	2.6865	0.4425	0.09
Learn about how culture and gender related issues may affect my career choice.	3	6.3159	0.0972	0.14
Find out how my career advisor decided on his/her career.	3	3.2905	0.3490	0.10
Modeling				
Learn how to network with professionals in my career field.	3	1.9572	0.5813	0.08
Learn from experienced professionals working in a career I am interested in pursuing.	3	4.0622	0.2548	0.11
Receive advice from someone working in a career field I am interested in pursuing.	3	1.0399	0.7916	0.06

Previous Experience with Technology

Each of the 318 participants identified his/her experience level with each of six specific technologies. These technologies included: (a) e-mail, (b) discussion boards, (c) audio and video recordings and/or podcasts, (d) Internet websites, wikis, and/or blogs, (e) Internet text chat and/or Instant Messaging, and (f) virtual rooms with real-time interaction. Students chose their level of experience from the following options presented in a modified Likert-scale: (a) I am not familiar with this technology at all, (b) I am familiar with this but have no experience, (c) I have very little experience, (d) I have some experience, and (e) I have a lot of experience.

Students were most familiar with e-mail followed by Internet text chat or instant messaging. Students were least familiar with audio/video recordings or podcasts and virtual rooms. It is also important to note that of the 318 survey respondents, 260 (81.76%) reported owning an iPod or other MP3 player. When asked if they had access to a personal computer, other than on campus, 311 (97.80%) reported that they did have access.

E-mail. While a majority of the 318 participants, 264 (83.02%), indicated having "a lot of experience" with e-mail, an additional 52 (16.35%) indicated previous experience in this area on some level. Only 2 students (.63%) indicated no previous experience with this technology. Student responses regarding experience level with e-mail are presented in Table 35.

Table 35

Previous Experience with E-mail

	N	%
Not familiar with the technology at all	-	-
No experience	2	0.63
Very little experience	7	2.20
Some experience	45	14.15
A lot of experience	264	83.02

Chi square tests of independence were performed to examine the relationship between experience with e-mail and preference for technology delivery of each of 17 career choice activities. The chi-square statistics are displayed in Table 36 for each of the 17 career choice activities. Using .05 as the preset alpha level, one item in the list of 17 seems to show a significant difference in preferences across the experience groups. This item is "Find out how my career advisor decided on his/her career".

Using the Bonferroni adjustment, the significance level of .0029 is used to determine significance. This analysis failed to reveal a significant relationship in preference for technology delivery and level of experience with e-mail. Students with no experience and those with some level of experience responded similarly regarding their preferences.

Effect size is also reported for each comparison. Cramer's V was used to determine the strength of the association between experience with e-mail and preference for delivery mode. The effect sizes range from .05 to .18 indicating weak associations.

Table 36

Chi square Statistics – Previous Experience with E-mail

	DF	Value	*p*	Effect
Information on the World of Work				
Explore how the results of a career test relate to possible careers.	3	1.2425	0.7428	0.06
Find information about current job openings.	3	2.2499	0.5222	0.08
Learn about the requirements needed to work in the career I am interested in pursuing.	3	1.5811	0.6637	0.07
Research typical salaries earned by those working in my career of interest.	3	0.7969	0.8502	0.05
Written Exercises				
Learn more about how my skills and interests relate to various career fields.	3	2.6410	0.4503	0.09
Complete worksheets to identify work-related skills that I have.	3	1.0881	0.7799	0.06
Develop a list of careers I may be interested in researching further.	3	1.4543	0.6929	0.07
Explore my own thoughts about my career choices.	3	3.4398	0.3286	0.10
Individual Interpretation and Feedback				
Get feedback on useful strategies for making decisions about my career.	3	3.2028	0.3614	0.10
Interview someone working in a job I am interested in pursuing.	3	3.4296	0.3300	0.10
Get feedback on my job search skills, such as resume writing and interviewing	3	1.5726	0.6656	0.07
Attention to Building Support				
Find techniques for including others, such as my family and friends, in my career decision-making.	3	1.9281	0.5875	0.08
Learn about how culture and gender related issues may affect my career choice.	3	3.6609	0.3005	0.11
Find out how my career advisor decided on his/her career.	3	10.4785	0.0149	0.18
Modeling				
Learn how to network with professionals in my career field.	3	2.1161	0.5487	0.08
Learn from experienced professionals working in a career I am interested in pursuing.	3	1.8564	0.6027	0.08
Receive advice from someone working in a career field I am interested in pursuing.	3	3.4112	0.3325	0.10

Discussion boards. Of the 318 participants, only 139 (43.71%), indicated that they had "some" or "a lot of experience" with discussion boards, while 102 (32.08%) students responded that they were either unaware of discussion board technology or were aware of it but had no experience. Student responses regarding experience level with discussion boards are presented in Table 37.

Table 37

Previous Experience with Blackboard Discussion Boards

	N	%
Not familiar with the technology at all	30	9.43
No experience	72	22.64
Very little experience	77	24.21
Some experience	98	30.82
A lot of experience	41	12.89

Chi square tests of independence were performed to examine the relationship between experience with Blackboard discussion boards and preference for delivery of each of 17 career choice activities. The chi-square statistics are displayed in Table 38 for each of the 17 career choice activities. This analysis failed to reveal a significant relationship in preference for delivery of career choice activities and level of experience with Blackboard discussion boards. Students with no experience and those with some level of experience responded similarly regarding their preferences. The effect sizes range from .03 to .14 indicating weak associations between experience with discussion boards and preference for delivery mode.

Table 38

Chi square Statistics – Previous Experience with Blackboard Discussion Boards

	DF	Value	*p*	Effect
Information on the World of Work				
Explore how the results of a career test relate to possible careers.	4	3.1843	0.5275	0.10
Find information about current job openings.	4	0.9303	0.9202	0.05
Learn about the requirements needed to work in the career I am interested in pursuing.	4	2.1644	0.7055	0.08
Research typical salaries earned by those working in my career of interest.	4	5.6879	0.2237	0.13
Written Exercises				
Learn more about how my skills and interests relate to various career fields.	4	3.4819	0.4806	0.10
Complete worksheets to identify work-related skills that I have.	4	3.5868	0.4648	0.11
Develop a list of careers I may be interested in researching further.	4	4.0773	0.3956	0.11
Explore my own thoughts about my career choices.	4	3.6562	0.4545	0.11
Individual Interpretation and Feedback				
Get feedback on useful strategies for making decisions about my career.	4	4.1103	0.3913	0.11
Interview someone working in a job I am interested in pursuing.	4	2.2647	0.6872	0.08
Get feedback on my job search skills, such as resume writing and interviewing	4	4.1798	0.3822	0.11
Attention to Building Support				
Find techniques for including others, such as my family and friends, in my career decision-making.	4	0.2326	0.9937	0.03
Learn about how culture and gender related issues may affect my career choice.	4	2.7422	0.6018	0.09
Find out how my career advisor decided on his/her career.	4	2.9803	0.5611	0.10
Modeling				
Learn how to network with professionals in my career field.	4	6.2016	0.1846	0.14
Learn from experienced professionals working in a career I am interested in pursuing.	4	1.8193	0.7689	0.08
Receive advice from someone working in a career field I am interested in pursuing.	4	2.3755	0.6671	0.09

Audio/video recordings or podcasts. Of the 318 student participants, only 113 (35.53%), indicated that they had "some" or "a lot of experience" with this type of technology. An additional 66 students (20.75%) responded that they had "very little" experience with recordings and podcasts. Student responses regarding experience level with audio/video recordings or podcasts are presented in Table 39.

Table 39

Previous Experience with Audio/Video Recordings or Podcasts

	N	%
Not familiar with the technology at all	62	19.50
No experience	77	24.21
Very little experience	66	20.75
Some experience	74	23.27
A lot of experience	39	12.26

Chi square tests of independence were performed to examine the relationship between experience with audio/video recordings and podcasts and preference for delivery of 17 career choice activities. The chi-square statistics are displayed in Table 40 for each of the 17 activities. This analysis failed to reveal a significant relationship in preference for delivery of career choice activities and level of experience with audio/video recordings or podcasts. Students with no experience and those with some level of experience responded similarly regarding their preferences for delivery mode. Effect sizes are also reported to measure strength of the associations between experience with recordings or podcasts and preference for delivery mode. The effect sizes range from .06 to .17 indicating weak associations.

Table 40

Chi square Statistics – Previous Experience with Audio/Video Recordings or Podcasts

	DF	Value	*p*	Effect
Information on the World of Work				
Explore how the results of a career test relate to possible careers.	4	2.0487	0.7268	0.08
Find information about current job openings.	4	3.5652	0.4680	0.11
Learn about the requirements needed to work in the career I am interested in pursuing.	4	3.6463	0.4560	0.11
Research typical salaries earned by those working in my career of interest.	4	4.3485	0.3609	0.12
Written Exercises				
Learn more about how my skills and interests relate to various career fields.	4	1.5415	0.8193	0.07
Complete worksheets to identify work-related skills that I have.	4	3.3207	0.5057	0.10
Develop a list of careers I may be interested in researching further.	4	4.8975	0.2980	0.12
Explore my own thoughts about my career choices.	4	1.3244	0.8572	0.06
Individual Interpretation and Feedback				
Get feedback on useful strategies for making decisions about my career.	4	2.5047	0.6438	0.09
Interview someone working in a job I am interested in pursuing.	4	3.5051	0.4771	0.11
Get feedback on my job search skills, such as resume writing and interviewing	4	4.4656	0.3466	0.12
Attention to Building Support				
Find techniques for including others, such as my family and friends, in my career decision-making.	4	2.6039	0.6261	0.09
Learn about how culture and gender related issues may affect my career choice.	4	7.0916	0.1311	0.15
Find out how my career advisor decided on his/her career.	4	9.4511	0.0508	0.17
Modeling				
Learn how to network with professionals in my career field.	4	2.0240	0.7313	0.08
Learn from experienced professionals working in a career I am interested in pursuing.	4	3.2614	0.5151	0.10
Receive advice from someone working in a career field I am interested in pursuing.	4	2.8535	0.5826	0.09

Websites, wikis, and/or blogs. A majority of the participants, 248 (78.30%), indicated that they had "some" or "a lot of experience" with websites, wikis and/or blogs. A small group of students 30 (9.43%) responded that they were either unaware of this type of technology or were aware of it but had no experience. There may have been some confusion in the wording of this item in that a few students, who were familiar with websites, but not wikis or blogs, may have indicated a lower level of overall experience than was anticipated by the researcher. Student responses regarding experience level with websites, wikis, and/or blogs are presented in Table 41.

Table 41

Previous Experience with Websites, Wikis, and/or Blogs

	N	%
Not familiar with the technology at all	4	1.26
No experience	26	8.18
Very little experience	39	12.26
Some experience	96	30.19
A lot of experience	153	48.11

Chi square tests of independence were performed to examine the relationship between experience with websites, wikis, and/or blogs, and preference for delivery of career choice activities. The chi-square statistics are displayed in Table 42 for each of the 17 activities. This analysis failed to reveal a significant relationship in preference for delivery of career choice activities and level of experience with websites, wikis, and/or blogs. Students with no experience and those with some level of experience responded similarly regarding their preferences. The effect sizes of these comparisons range from .03 to .11 further indicating weak associations.

Table 42

Chi square Statistics – Previous Experience with Websites, Wikis, and/or Blogs

	DF	Value	*p*	Effect
Information on the World of Work				
Explore how the results of a career test relate to possible careers.	4	2.1712	0.7043	0.08
Find information about current job openings.	4	2.5373	0.6380	0.09
Learn about the requirements needed to work in the career I am interested in pursuing.	4	1.2597	0.8682	0.06
Research typical salaries earned by those working in my career of interest.	4	1.1510	0.8861	0.06
Written Exercises				
Learn more about how my skills and interests relate to various career fields.	4	3.4273	0.4890	0.10
Complete worksheets to identify work-related skills that I have.	4	3.3283	0.5045	0.10
Develop a list of careers I may be interested in researching further.	4	0.4680	0.9765	0.04
Explore my own thoughts about my career choices.	4	1.4248	0.8399	0.07
Individual Interpretation and Feedback				
Get feedback on useful strategies for making decisions about my career.	4	0.2205	0.9944	0.03
Interview someone working in a job I am interested in pursuing.	4	3.9494	0.4129	0.11
Get feedback on my job search skills, such as resume writing and interviewing	4	1.2166	0.8754	0.06
Attention to Building Support				
Find techniques for including others, such as my family and friends, in my career decision-making.	4	1.4684	0.8322	0.07
Learn about how culture and gender related issues may affect my career choice.	4	0.2947	0.9902	0.03
Find out how my career advisor decided on his/her career.	4	1.2704	0.8664	0.06
Modeling				
Learn how to network with professionals in my career field.	4	3.0107	0.5560	0.10
Learn from experienced professionals working in a career I am interested in pursuing.	4	1.5610	0.8158	0.07
Receive advice from someone working in a career field I am interested in pursuing.	4	3.1330	0.5358	0.10

Internet text chat or instant messaging. Students' responses to this technology were similar to those for e-mail. Internet text chat is a technology with which the respondents had more experience. A majority of the participants, 245 (77.04%), indicated that they had "a lot of experience" with Internet text chat or instant messaging. A small group of students, 12 (3.77%) responded that they were either unaware of this technology or were aware of it but had no experience. Student responses regarding experience level with Internet text chat or instant messaging are presented in Table 43.

Table 43

Previous Experience with Internet Text Chat or Instant Messaging

	N	%
Not familiar with the technology at all	2	0.63
No experience	10	3.14
Very little experience	15	4.72
Some experience	46	14.47
A lot of experience	245	77.04

Chi square tests of independence were performed to examine the relationship between experience with Internet text chat and preference for delivery of career choice activities. The chi-square statistics are displayed in Table 44 for each of the 17 activities. Using .05 as the preset alpha value, two activities in the list of 17 seem to show a significant difference in preferences across the experience groups. These activities are (a) Develop a list of careers I may be interested in researching further, and (b) Get feedback on useful strategies for making decisions about my career. Using the Bonferroni inequality technique, the significance level of .0029 is used to determine significance. This analysis failed to reveal a significant relationship in preference for delivery of career choice activities and level of experience with Internet text chat. Students with no

experience and those with some level of experience responded similarly regarding their preferences. The effect sizes range from .08 to .19 also indicating weak associations.

Table 44

Chi square Statistics – Previous Experience with Internet Text Chat or Instant Messaging

	DF	Value	*p*	Effect
Information on the World of Work				
Explore how the results of a career test relate to possible careers.	4	5.3348	0.2546	0.13
Find information about current job openings.	4	4.2018	0.3794	0.11
Learn about the requirements needed to work in the career I am interested in pursuing.	4	8.7172	0.0686	0.17
Research typical salaries earned by those working in my career of interest.	4	8.0510	0.0897	0.16
Written Exercises				
Learn more about how my skills and interests relate to various career fields.	4	8.9206	0.0631	0.17
Complete worksheets to identify work-related skills that I have.	4	4.6880	0.3208	0.12
Develop a list of careers I may be interested in researching further.	4	11.1371	0.0251	0.19
Explore my own thoughts about my career choices.	4	4.7434	0.3146	0.12
Individual Interpretation and Feedback				
Get feedback on useful strategies for making decisions about my career.	4	10.4709	0.0332	0.18
Interview someone working in a job I am interested in pursuing.	4	6.1936	0.1851	0.13
Get feedback on my job search skills, such as resume writing and interviewing	4	2.8923	0.5760	0.10
Attention to Building Support				
Find techniques for including others, such as my family and friends, in my career decision-making.	4	2.0467	0.7272	0.08
Learn about how culture and gender related issues may affect my career choice.	4	3.2718	0.5134	0.10
Find out how my career advisor decided on his/her career.	4	0.6607	0.9561	0.05
Modeling				
Learn how to network with professionals in my career field.	4	2.9652	0.5637	0.10
Learn from experienced professionals working in a career I am interested in pursuing.	4	0.5034	0.9732	0.04
Receive advice from someone working in a career field I am interested in pursuing.	4	4.6915	0.3204	0.12

Virtual rooms with real-time interaction. Virtual rooms are the technology with which students seemed to have the least experience overall. Of the 318 participants, 106 (33.33%), indicated that they were not familiar with this technology. An additional 88 (27.67%) responded that they were familiar with the technology but had no experience with it. A small group of students, 55 (17.30%) responded that they had "some" or "a lot of experience". Student responses regarding experience level with virtual rooms are presented in Table 45.

Table 45

Previous Experience with Virtual Rooms with Real-time Interaction

	N	%
Not familiar with the technology at all	106	33.33
No experience	88	27.67
Very little experience	69	21.70
Some experience	32	10.06
A lot of experience	23	7.23

Chi square tests of independence were performed to examine the relationship between experience with virtual rooms and preference for delivery of career choice activities. The chi-square statistics are displayed in Table 46 for each of the 17 activities. This analysis failed to reveal a significant relationship in preference for delivery of career choice activities and level of experience with virtual rooms. Effect size is also reported for each comparison. The effect sizes range from .04 to .14 further indicating weak associations. Students with no experience and those with some level of experience responded similarly regarding their preferences.

Table 46

Chi square Statistics – Previous Experience with Virtual Rooms with Real-time Interaction

	DF	Value	*p*	Effect
Information on the World of Work				
Explore how the results of a career test relate to possible careers.	4	1.3314	0.8560	0.06
Find information about current job openings.	4	4.3754	0.3576	0.12
Learn about the requirements needed to work in the career I am interested in pursuing.	4	1.7673	0.7785	0.07
Research typical salaries earned by those working in my career of interest.	4	0.7299	0.9476	0.05
Written Exercises				
Learn more about how my skills and interests relate to various career fields.	4	2.5014	0.6444	0.09
Complete worksheets to identify work-related skills that I have.	4	2.3325	0.6749	0.09
Develop a list of careers I may be interested in researching further.	4	3.4247	0.4894	0.10
Explore my own thoughts about my career choices.	4	0.5324	0.9703	0.04
Individual Interpretation and Feedback				
Get feedback on useful strategies for making decisions about my career.	4	3.4713	0.4822	0.10
Interview someone working in a job I am interested in pursuing.	4	6.6007	0.1586	0.14
Get feedback on my job search skills, such as resume writing and interviewing	4	3.7327	0.4434	0.12
Attention to Building Support				
Find techniques for including others, such as my family and friends, in my career decision-making.	4	1.4947	0.8276	0.07
Learn about how culture and gender related issues may affect my career choice.	4	1.2330	0.8726	0.06
Find out how my career advisor decided on his/her career.	4	4.4478	0.3488	0.12
Modeling				
Learn how to network with professionals in my career field.	4	5.1719	0.2701	0.13
Learn from experienced professionals working in a career I am interested in pursuing.	4	5.2892	0.2589	0.13
Receive advice from someone working in a career field I am interested in pursuing.	4	5.3545	0.2528	0.13

Summary

The web-based survey was distributed to the instructors of 1,849 first-year students through a URL sent via e-mail. The survey collected a total of 318 usable responses. Participants were all enrolled in SLS 1101: The University Experience during the fall 2007 semester. All participants indicated that they were in their first semester of college after having graduated from high school.

Overall, participants in the study were found to prefer both traditional, in person, and technology modes of delivery for all of the 17 career choice activities. In person and E-mail, specifically, were chosen most frequently as preferred delivery modes. These two options were the first or second most selected options for each of the activities. Websites, wikis and/or blogs was also selected frequently, followed by telephone call and Blackboard discussion board. Students were the least interested in participating in the three activities associated with Attention to Building Support. Students were the most interested in participating in activities associated with Modeling and Information on the World of Work.

Of the 318 participants, the majority had a high level of experience with e-mail and Internet text chat or instant messaging. Student respondents had the least experience with audio/video recordings or podcasts, and virtual rooms with real-time interaction. Students also indicated a low level of previous experience with career counseling, however a majority indicated that career planning was important to them. Students also had limited experience with online courses.

Chi square tests of independence were used to analyze the relationship between previous experience and preference for delivery mode of 17 career choice activities. No

significant differences were found. Preferences for delivery of the 17 activities, related to five framework career choice interventions, were similar for students with no previous experience and students with previous experience. This was found when examining experience with online courses, career counseling, and six specific delivery technologies.

Chapter five concludes this report. The discussion includes the results presented in this chapter as well as their implications for future practice. Lessons learned through the implementation of this study are outlined. Recommendations for future research related to student preferences for delivery of support services and their previous experiences are also presented.

Chapter Five

Conclusions

This chapter begins with a review of the purpose of the study. A discussion of the study's findings is then presented. Implications of the findings for practice are outlined as well as lessons learned and recommendations for future research.

The purpose of this study was to explore the preferences of first-year university students for different delivery modes of five critical career choice interventions. These interventions are typically offered through on-campus career centers and include the following: (a) written exercises, (b) individualized interpretations and feedback, (c) information on the world of work, (c) modeling, and (d) attention to building support (Brown & Ryan Krane, 2000; Brown et al., 2003). This study also investigated differences in student preferences for the delivery mode of these career choice interventions based on past experience. Specifically of interest were students' past experience with online courses, career counseling, and technology. The following research questions were asked.

- What are first-year university students' preferences for the delivery method of critical career choice interventions?
- To what extent are there differences in first-year university students' preferences for the delivery method of critical career choice interventions based on their prior experience with the following: (a) online courses; (b) career counseling; (c) e-mail; (d) Blackboard discussion boards; (e) audio and video recordings or

podcasts; (f) Internet websites, wikis, and blogs; (g) Internet text chat or instant messaging; and (h) virtual rooms?

Overall Findings

The results of this study represent the preferences and prior experiences of a group of 318 undergraduate students surveyed during the Fall semester of 2007. All of these students were in their first year of college after graduating from high school at the time of the study. The majority of students participating in this study were Caucasian, female and from the United States. Most were also full-time students who were not employed and who had declared an academic major.

Study participants indicated high levels of experience with certain technologies, specifically e-mail; text chat or instant messaging; and websites, wikis and/or blogs. Kvavik (2005) presented evidence that while students were susceptible to overestimating their own technology skills, they are most likely to have skills with technologies that are not widely used in higher education settings. Kvavik (2005) also found that students were most likely to be skilled with e-mail, instant messaging, and Internet searches.

Study participants reported lower levels of experience for Blackboard discussion boards, audio/video recordings or podcasts, and virtual rooms. The participants also reported low levels of previous experience with online courses and career counseling.

Discussion of Preferences of Delivery for Career Choice Interventions

Overall, technology was a preferred means of delivery for the majority of the 17 career choice activities presented to the students. E-mail specifically was the most frequently selected delivery mode for 12 these activities. In the activities where e-mail was not selected most frequently, it was often the second most frequently selected. In

person was also very highly preferred overall for the delivery of these activities. In person was chosen most frequently for the five activities in which e-mail was second. Website, wiki and/or blog was also a highly selected delivery option for the career choice activities presented to the students, followed by telephone call and Blackboard discussion board.

Information on the World of Work

Four of the 17 activities presented to students represented the career choice intervention of Information on the World of Work. E-mail was consistently selected most frequently for each of these activities, which include (a) explore how the results of a career test relate to possible careers, (b) find information about current job openings, (c) learn about the requirements needed to work in the career I am interested in pursuing, and (d) research typical salaries earned by those working in my career of interest. In person was the second most frequently selected delivery mode for all of these activities except for the activity regarding researching typical salaries. For this activity, website, wiki, and/or blog, was selected second, and in person was selected third.

The frequencies of selection of each of the delivery modes, for the activities representing Information on the World of Work, are presented in Figure 1. The percentages shown are those of the total number of selections made by students for the activities related to this intervention. Based on student responses to these four activities, while traditional in person delivery is a highly selected delivery mode, e-mail and website delivery may also be viable ways to encourage additional student participation in activities related to gaining Information on the World of Work. Websites are already used to distribute information related to most of these activities (Schutt et al., 1999).

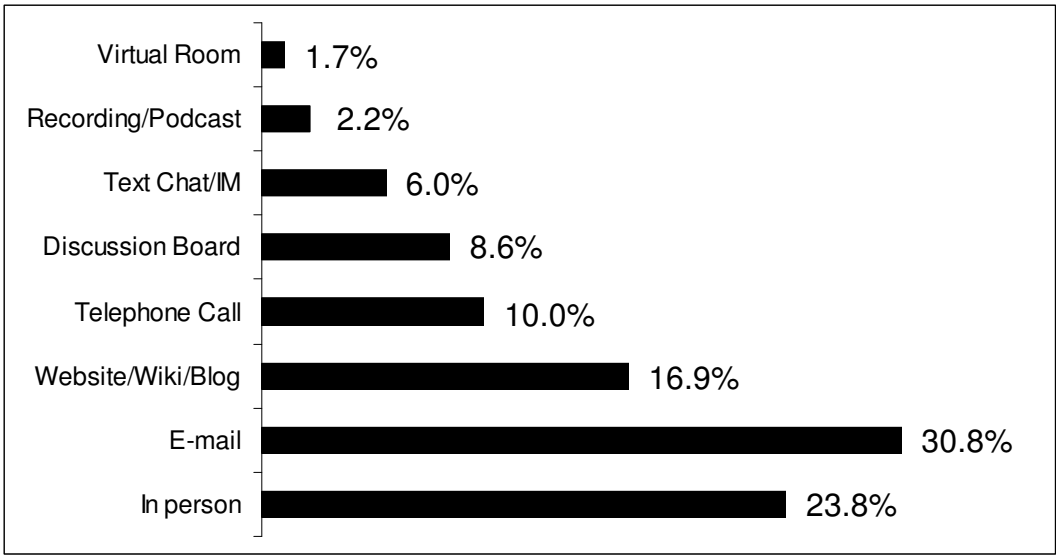

Figure 1. Frequencies of delivery mode selection – Information on the World of Work

Written Exercises

Four of the 17 activities presented to students represented the career choice intervention of Written Exercises. These activities included (a) learn more about how my skills and interests relate to various career fields, (b) complete worksheets to identify my work-related skills, (c) develop a list of careers I may be interested in researching further, and (d) explore my own thoughts about my career choice. The order of preferred delivery options for each of these activities was the same. E-mail was the most frequently selected, in person was the second most frequently selected, and website, wiki, and/or blog was the third most frequently selected.

As in the previous intervention, student responses to these activities indicate that technology delivery, in addition to traditional in person delivery, may be helpful in reaching students. E-mail and websites may encourage participation in activities related to the intervention of Written Exercises. The frequencies of selection of each of the

delivery modes, for the activities representing Written Exercises, are presented in Figure 2.

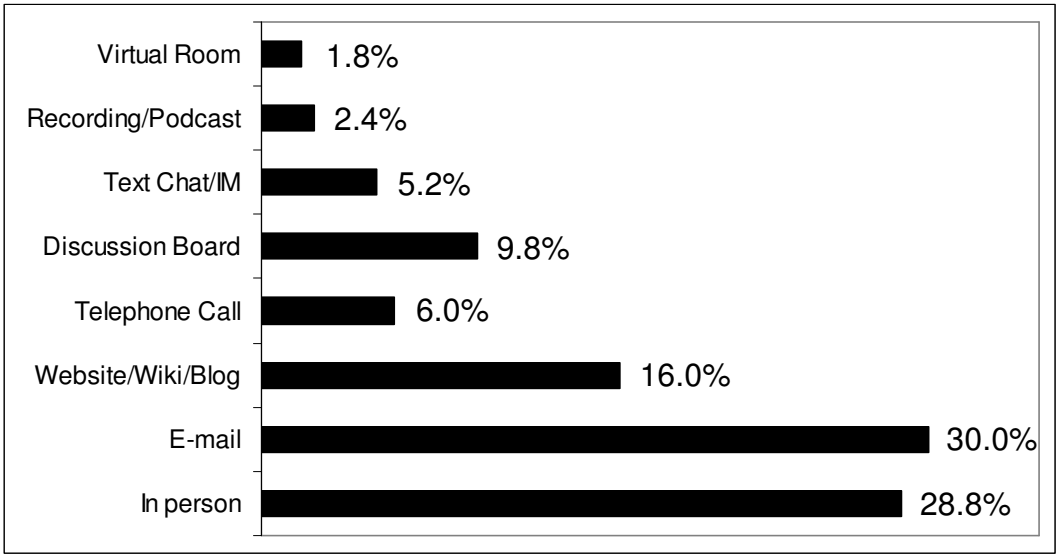

Figure 2. Frequencies of delivery mode selection – Written Exercises.

Individual Interpretation and Feedback

Three of the 17 activities presented to students represented the career choice intervention of Individual Interpretation and Feedback. These activities included (a) get feedback on useful strategies for making decisions about my career, (b) interview someone working in a job I am interested in pursuing, and (c) get feedback on my job search skills, such as resume writing and interviewing. E-mail was selected most frequently for two of the activities, while in person was selected most frequently for the activity regarding interviewing someone. In person was also frequently selected for all three of these activities. Interestingly, telephone call was selected third for each of these activities. Discussion board was selected as often as telephone call for the activity related to getting feedback on useful strategies.

The frequencies of selection of each of the delivery modes, for the activities representing Individual Interpretation and Feedback, are presented in Figure 3. Based on student responses to these three activities, students are most interested in participating both in person and through e-mail. Telephone calls may be an additional way to reach students interested in participating in activities related to Individual Interpretation and Feedback. Follow-up with students who present themselves in person may be enhanced with e-mail and telephone contact.

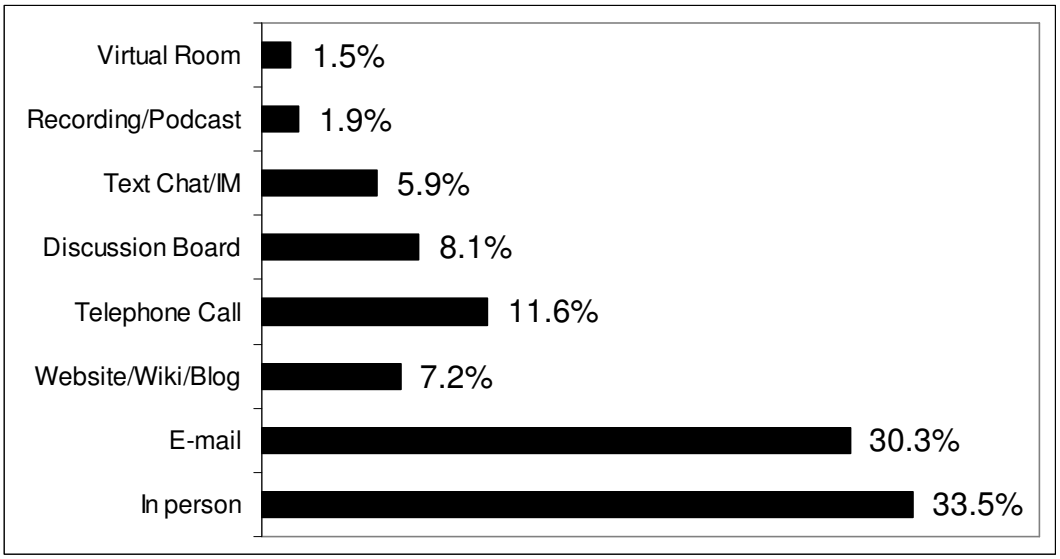

Figure 3. Frequencies of delivery mode selection – Individual Interpretation and Feedback.

Attention to Building Support

Three of the 17 activities presented to students represented the career choice intervention of Attention to Building Support. These activities included (a) find techniques for including others in my career decision-making, (b) learn about how culture and gender related issues may affect my career choice, and (c) find out how my career advisor decided on his/her career. As with previous activities, e-mail and in person were the two most selected delivery options for these activities. E-mail was the most selected

for the first two activities listed, while in person was the most selected for the activity regarding a career advisor's career choice. Telephone call was the third most selected delivery option in this section, except for the activity regarding culture and gender. Website, wiki, and/or blog was the delivery option selected third for this activity.

As described in previous interventions, in person and e-mail were highly selected by students. The frequencies of selection of each of the delivery modes, for the activities representing Attention to Building Support, are presented in Figure 4. Telephone calls and websites may also be ways to deliver activities related to Attention to Building Support to students. It is also interesting to note that of the five career choice interventions, more students were "not interested" in participating in the three activities related to building support, than any of the other activities presented. When faced with limited resources, these activities may not be the first priority for programs seeking to attract and reach first-year students.

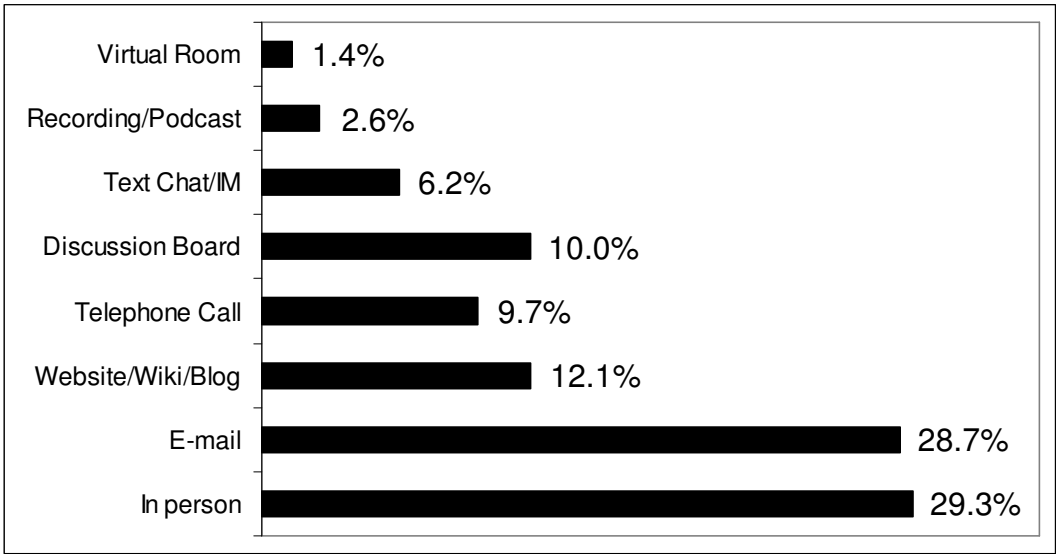

Figure 4. Frequencies of delivery mode selection – Attention to Building Support.

Modeling

The last three of the 17 career choice activities represented the intervention of Modeling. The activities included (a) learn how to network with professionals in my chosen field, (b) learn from experienced professionals working in a career I am interested in pursuing, and (c) receive advice from someone working in a career field I am interested in pursuing. As has been discussed with the four previous interventions, e-mail and in person were again the two most frequently selected options. In person was selected most frequently for the last two activities listed, while e-mail was selected most for the activity related to networking. Telephone call and websites were also highly selected delivery modes for each of these activities.

The frequencies of selection of each of the delivery modes, for the activities representing Modeling, are presented in Figure 5. In addition to e-mail and traditional in person delivery of these activities, websites and telephone calls may be used to deliver activities related to Modeling to students engaged in career decision-making. This may also be a way to attract potential mentors, such as alumni, who are interested in contributing but do not feel they have the time for face-to-face activities (Ensher et al., 2003).

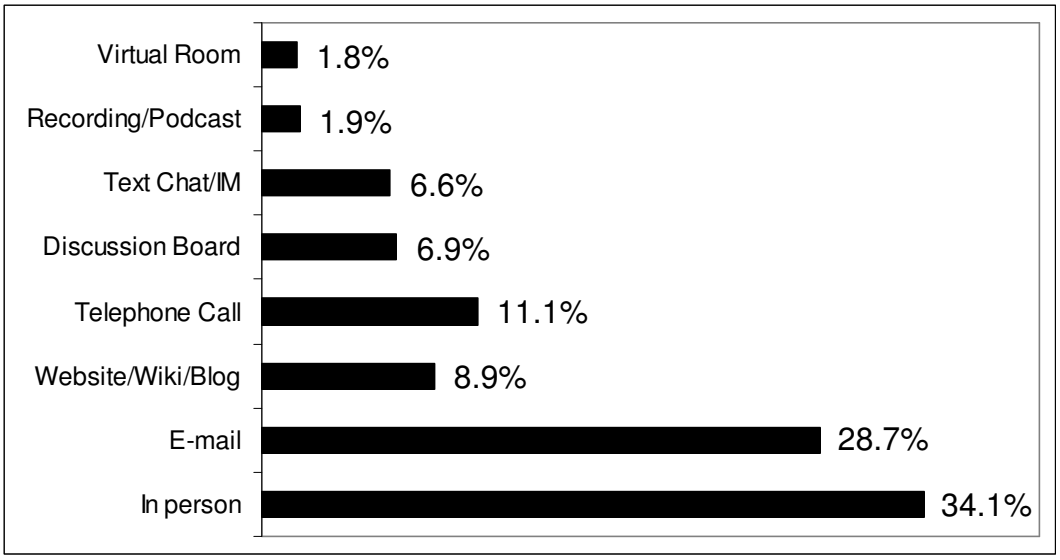

Figure 5. Frequencies of delivery mode selection – Modeling.

Discussion of Previous Experience and Differences in Delivery Preferences

The following section of this report presents information related to student preferences and previous experience. Student previous experience in the areas of online courses, career counseling, and specific delivery technologies was collected through the study's web-based survey. While no significant differences in delivery preferences were found based on previous experience, a discussion of student previous experiences and preferences for the delivery of specific activities may still inform the development of career choice interventions.

Previous Experience with Online Courses

Of the 318 first-year students participating in this study, a majority of 195 (61.32%), reported having no experience with online classes. Another 83 (26.10%) respondents indicated having completed at least one online course. These students completed online courses prior to entering the university. These numbers are in line with the reports of Howell et al. (2003) and Setzer and Lewis (2005) indicating that students

are increasingly involved in online education while still in high school. The analyses presented in chapter four failed to reveal a relationship between previous experience with online courses and preference for delivery mode of career choice interventions. These results do not indicate the need to market specific activities to or develop alternative delivery of activities for students based on their enrollment in online classes or classification as distance students.

Previous Experience with Career Counseling

Of the 318 first-year students participating in this study, a majority of 254 (79.87%) reported having no experience or very little experience with career counseling activities. The remaining 64 (20.13%) participants reported having some experience or a lot of experience with career counseling activities. These are activities that would have taken place prior to the student entering the university. The analyses presented in chapter four failed to reveal a relationship between experience with career counseling and preference for delivery mode of career choice interventions. Galassi et al. (1992) found no differences in student preferences for specific counseling activities based on previous experience with career counseling.

While participants did not indicate a lot of experience with career counseling overall, they did indicate that the process of career planning was important to them. A majority of students, 236 (74.22%) reported that career planning was important or very important to them. Only 9 (2.83%) students reported that career planning was not important to them during their first semester in college. This may be encouraging news to university career counseling and career development staff members interested in reaching students during their first semester or first year.

Students also indicated their interest in the five career choice interventions and their related activities by selecting delivery preferences. Students had the option to select "not interested" for each of the activities. A majority of students indicated that they were interested in participating in each of the 17 activities. The number of participants selecting "not interested" ranged from a low of 14.47% for activities related to learning about career requirements and receiving advice from working professionals, to a high of 34.91% for an activity related to including others, such as family and friends, in making decisions about one's own career. These results support to some degree the findings of Shivy and Koehly (2002) that students prefer activities that directly involve working professionals or career counselors.

Previous Experience with Technology

This section outlines the previous experience with specific technologies reported by the 318 study participants. Their overall level of experience with each technology is discussed in relation to how frequently each technology option was selected for the career choice activities. Students reported a high level of experience with technology overall, as well as preferences for participating in activities delivered via technology. This aligns with the work of Howe and Strauss (2003) who outlined the extensive use of technology among the millennial generation and its members' expectation for using technology in higher education as a matter of convention and convenience.

The demographic section of this study's survey instrument also asked participants to reply to items related to ownership of an MP3 player and access to a personal computer. These are two pieces of equipment necessary to potentially engage in activities delivered via the technology based delivery options presented to students. Of the 318

participants, 260 (81.76%) indicated ownership of an MP3 player and 311 (97.80%) indicated having access to a personal computer outside of campus resources. All students at this university had access to computers through computer labs on campus.

An illustration of the comparison of overall preference for technology with overall experience with technology, as reported by the student participants, is presented in Figure 6. Level of experience was gathered in five categories ranging from "not familiar at all" to "a lot of experience" with each of the six technologies listed. Level of preference was gathered as frequency of student selections for each of the technologies as a delivery mode for career choice activities. E-mail is the only technology with which students reported both a high level of experience and a high level of preference. Virtual rooms were the only technology with which students reported both a low level of experience and a low level of preference. It is also interesting to note that while students reported a high level of experience with text chat or instant messaging, their preference for participating in career choice activities through this type of delivery was low.

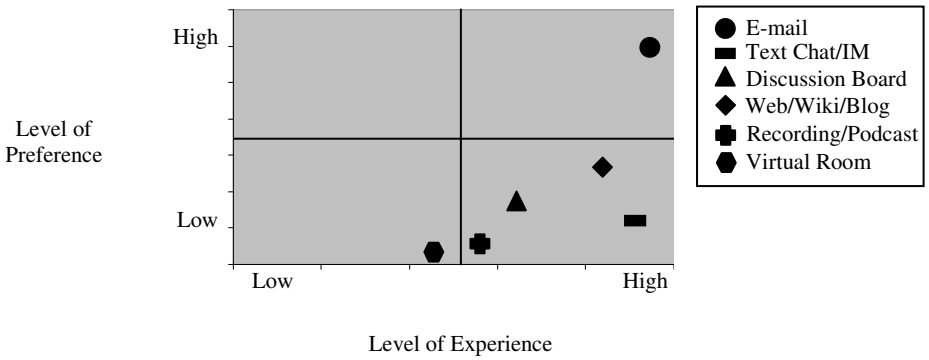

Figure 6. Overall technology preferences and experience of first-year students.

E-mail. Students indicated high levels of experience with this technology as might be expected. They also selected this delivery mode most frequently for the majority of the

career choice activities. Students are using this technology widely and may be open to using this technology to receive assistance with career decision-making in all areas of the five career choice interventions.

Blackboard discussion boards. Roughly a third of students surveyed reported having no knowledge or no previous experience with Blackboard discussion boards. This delivery option consistently appeared in the mid-range of number of selections for each of the 17 career choice activities. Its place ranged from third to sixth in the list of eight delivery options across the activities. Students participating in this study were not as familiar with this technology as they were with other delivery options, however, they may be willing to engage in its use for career planning activities. This seems to be most likely for activities related to the interventions of Written Exercises and Attention to Building Support.

Audio/video recordings or podcasts. Just over 50% of participants indicated having experience with this type of technology. This delivery option was consistently one of the two least selected for each of the 17 career choice activities. It was the least selected delivery option for three of the activities. While many students own MP3 players, they do not seem to have a high level of experience with podcasts. It does not seem likely that students would participate in downloading recordings associated with career planning.

Internet websites, wikis, and/or blogs. Unsurprisingly, students reported having previous experience with websites, wikis, and/or blogs. Of the 318 participants, 78% indicated "some" or "a lot" of experience with this delivery option. This option was selected the third most frequently, following e-mail and in person, for 10 of the 17

activities. It was the second most selected option for the activity focused on researching typical salaries. This seems to be a delivery option with which students are familiar and with which students would be interested in participating in career choice activities. This may be particularly true for the activities related to Information on the World of Work, Written Exercises, and Modeling.

Internet text chat or instant messaging. While participants expressed high levels of familiarity with text chat, they did not select this option in high numbers for any of the career choice activities. This option was selected sixth for 14 of the 17 activities. It is a technology tool they are using, but would not necessarily use for assistance in career planning activities.

Virtual rooms with real-time interaction. This particular technology is one of the newest or younger technologies, most recently emerging, presented to the students. Students indicated having a very low level of experience with this technology although they are aware of its existence. It was one of the two least selected delivery options for each of the 17 career choice activities. It was the least selected for 14 of the activities. Participants indicated low levels of experience with this technology and low preference for this technology as a way to participate in career choice activities.

Implications for Practice

The following implications are drawn from the findings of this study within the limitations and delimitations outlined in chapter one. This study asked students to indicate delivery preferences for 17 career choice activities. This is not an inclusive list of all possible activities that could be provided to students to assist them with career planning. Those working to provide career development activities to first-year university

students may want to offer other activities as well. The results of this study inform a number of areas that require consideration within the development and provision of non-academic, career development support for first-year university students. These areas include resources and planning, marketing, and counselor training.

Resources and Planning

The provision of student support services involves a great deal of resources, to include time, funding, and personnel. Developing additional services or alternative delivery of existing services requires resources as well and can add to the strain placed on available resources. Planning for the use of available resources is important to making the most effective use of them. Career Centers may be able to better commit or allot their limited resources through careful consideration of specific services and technologies to be developed or enhanced, as well as completion of needs analysis allowing for student input.

Specific services and technologies. The activities included in this study represented five critical career choice interventions outlined by Brown and Ryan Krane (2000). Career Centers in general are unlikely to be able to develop online or alternative delivery of all of their services; however, they may be able to develop alternate delivery of some of their services. Based on the responses received by 318 first-year students, regarding their preferences for delivery of each, the following services are suggested.

Students participating in this study were most interested in participating in the activities associated with Modeling and Information on the World of Work. This may be the place to start. Modeling activities offered through in person meetings, e-mail messages, telephone calls, as well as websites, wikis, and/or blogs, were preferred

delivery methods of the students. Activities associated with Information on the World of Work can already be found on many websites. Developing e-mail delivery of this type of information is also recommended. E-mail listservs may be a way to integrate this technology to reach students.

A blended approach is recommended in which face-to-face and technology enhanced delivery contribute to efforts to reach and assist students in a more collaborative and comprehensive way. Integration of on campus and online services which work to complement each other and meet student needs is the goal (Dare, Zapata, & Thomas, 2005; Moore & Kearsley, 2005). Counselor interaction is also an important part of the career decision-making process. Whitson et al. (2003) report that students who participated in technology enhanced career planning interventions reported better career related outcomes if their experiences included interaction with a counselor.

Traditional in person career counseling appointments are encouraged and a preferred way in which students want to interact with career activities. Follow-up with students may be desirable through e-mail and telephone calls. Those making decisions about the commitment of resources may want to consider the equipment and software necessary to allow secure, confidential e-mail and telephone conversations between students and counselor. Privacy and confidentiality cannot be ignored with the use of technology to conduct counseling activities (Sampson et al., 1997; Shaw & Shaw, 2006).

Study participants were least interested in participating in activities related to Attention to Building Support. While these activities are important to the career decision-making process and should be encouraged, they may not be the most appropriate for development for first-year students. The first-year students surveyed do not seem

interested in these activities during their first semester, but may be likely to participate in them at a later stage in their career planning or college experience.

Needs analysis. The time and other resources necessary to develop career choice activities in alternative, technology enhanced ways, require forward thinking and planning. Needs analysis techniques can be used to better understand the preferences of potential customers of student services, in this case, career services (Howell et al., 2003; Smith, 2005). Other non-academic student services, such as academic advising and counseling services, may also benefit from a similarly structured assessment with activities related to their specific services and missions.

Future use of a survey instrument similar to the one used in this study may be helpful to those making decisions about resources. A web-based instrument provides a way to quickly poll students and gather their input before developing and implementing online career services. The list of delivery options can be updated as new ways to interact and communicate become available. Technology options are constantly evolving and technologies themselves are blending. Services such as Skype offer individual tools that can be used together or separately, including text chat, telephone calls, and virtual rooms.

Marketing

Activities related to career choice interventions should be marketed to all students, not just off-campus or distance students. According to Shea, "today, even campus-based students prefer the convenience of online services" (2005, p. 16). Students from all experience groups explored in this study had similar preferences for the delivery of services. Making on-campus services available to online students and online services available to on-campus students may attract students from all groups to services they

would not have engaged in otherwise (Tang, 2003). The blurring of the line between online and traditional students may be evident in the results of this study (Howell et al., 2003).

Counselor Training

The possibility exists to turn what is often perceived as threat into an opportunity. Existing counselors and career service providers may benefit from training in the use of technology to perform their duties. Members of the Baby Boomer and Generation X generations are currently serving as staff members in Career Centers. Members of these generations, particularly those of the Baby Boomer generation, may not have the same levels of interest in or experience with technology as the millennial generation they are now serving seems to be (DeBard, 2004). Providing training to these experienced counselors on how to enhance their skills and services they provide will be essential (Shea, 2005). Training in technology should also be a component of the educational process for new counselors. Effective and purposeful use of technologies can ease and often increase communication with students and enhance the profession.

Lessons Learned

A review of any research project offers the opportunity to identify areas for improvement. This project included several challenges that should be addressed. Gaining access to first-year students directly was a challenge. In order to reach the students enrolled in the seminar created for first-year students, the researcher first had to send the request for students to participate to the program director, who sent the request to seminar instructors, who sent the request to students enrolled in their classes. The endorsement of the director was surely beneficial. The initial announcement encouraged instructor to

participate, but there is no way to record which instructors or how many may have forwarded the request to their students.

A second challenge emerged with the timing of the study. Collecting data as early as possible, in this case during the first three weeks of the semester, was desirable in order to capture the perspectives of the University's newest students. However, these weeks were filled with many other requests for first-year student perspectives on a number of issues. The University Experience instructors received multiple e-mail messages in the first weeks of classes requesting them to distribute information to students. Students were in turn the recipients of a volume of e-mail requests and notices. These included weekly announcements of welcome and orientation activities, calendars of special events, and mandatory activities such as a new online alcohol education program specifically for first-year students. Competition for student attention was high.

A third challenge existed, also related to reaching students directly. Instructors were able to disseminate information about this study to their students in three primary ways: announcement made in the classroom, Blackboard posting, and E-mail. Reaching students with an online survey in the classroom has its limits. Blackboard was new to many students not used to checking their accounts for updates and announcements early in the semester. Instructors primarily use student e-mail accounts that are linked to Blackboard, the e-mail addresses that are issued to students through the university. Again, early in the semester, students are not used to checking these accounts on a regular basis.

Recommendations for Future Research

There are many areas suggested for continuing research related to the delivery of career choice interventions. A follow-up study to the one reported here might examine whether or not this group of student's thoughts about career planning activities change over the course of their time at the university. Their preferences for delivery or for participating in specific activities at all may change over time. Those who continue to enroll in online courses or engage in career counseling at the college level may or may not develop preferences different from those who do not choose online courses or to participate in career counseling.

Another area for follow-up based on the results of this study would be on the specific technology of e-mail and the timing of access of these activities. Finding out more about how much e-mail would be expected and welcome from career counselors would be helpful in the implementation of e-mail as a delivery mode for the career choice interventions. Timing is also an important factor. Knowing when students would prefer to participate in activities, weekends or weekdays, office hours or beyond, may also shape decisions about delivery.

Longitudinal studies would allow researchers to reconnect with students as they are leaving college, through exit surveys. Data regarding which activities and interventions students actually participated in, how they participated in them, and their recommendations for younger students, would further inform career services providers. Examining students' perspectives regarding satisfaction with services they received, as well as their satisfaction with their career choice, would also provide helpful and interesting information.

During the course of this study, responses were gathered from a small number of transfer students and other students not in their first-year of college. These responses were not included in analysis. A similar study examining the preferences and previous experiences of other student groups, such as transfer students, sophomores, juniors, or seniors, may reveal some differences. Examining these groups would also inform career services providers about the level of career services these students engaged in at other institutions.

Studies with experimental designs could utilize randomized trials providing technology enhanced delivery of specific interactions to one group of students and face-to-face delivery of the same interactions to a second group of students. This type of study might include pre and post assessment of preferences for career choice activities, as well as level of satisfaction with the activities at the end of the study. Periodic follow-up with these students after graduation would provide additional information about students' satisfaction with their career choices after graduation.

When considering research questions for future research, measurement must also be considered in the context of what determines if the integration of technology is effective or not effective. Measuring the effectiveness of technology can be viewed through two primary perspectives. These include the student's perspective and that of the institution or society.

The individual student may determine effectiveness in terms of his or her own satisfaction with the process and results. In the context of career planning, students may perceive the use of technology to be effective or not effective based on their satisfaction with the use of technology to assist them in exploration and decision-making. They may

also perceive effectiveness based on their satisfaction with the career field ultimately chosen.

The institution or University may perceive the use of technology as effective or not effective based on different types of goals. These goals are linked to those of society focusing on effectiveness of education, and perhaps the career planning process, that may be based more on numbers of graduates who have employment upon graduation. Issues of funding and access may also shape the way effectiveness of technology is measured in higher education at the administrator level (Howell et al., 2003).

DeBard (2004) addresses the fact that education and careers are valued differently across generations. While members of the Baby Boomer generation view education as a "freedom of expression" and Generation X members view education as something "pragmatic", Millennial students view education as a "structure of accountability" (p. 40). The generations also view career goals differently. Millennial students seek careers that are "meaningful" in some way. Generation X is focused on careers that are "portable" and involve "enterprise", while Baby Boomers work towards "title and the corner office" (p.40). These are generalizations, but help to describe the changing views of education and how it may be considered a successful process to different groups. With members of these groups in various roles as students and higher education administrators, it will be increasingly important to explore and define what is effective when researching the use of technology in the future.

Summary

This chapter concludes the report. It began with a review of the purpose of the study and the research questions. A discussion of the study's findings was then presented.

Implications of the findings for practice were outlined, as well as recommendations for future research.

Recommendations for practice include a blended approach. Students responded to the study with preferences for both traditional face-to-face and technology enhanced delivery of activities related to career choice interventions. E-mail, websites, and telephone calls were the three most selected technology delivery options across 17 career choice activities. High level of experience with a specific technology does not necessarily lead to increased preference for using that technology to engage in career development activities. While the modality of delivery of career services may or may not impact the success of career-decision making, offering technology driven delivery modes for career decision-making interventions may attract students who would not have interacted with career services activities otherwise.

It is important to know the characteristics and preferences of the population that is being served. Developing service delivery through the technologies preferred by the students and incorporating these technologies in communication with students are recommended. Career Centers considering the integration of technology should engage in careful needs analysis before committing valuable resources. Student input can help inform decisions about which services will be offered and how these services will be delivered.

Future research recommendations include longitudinal studies that assess student attitudes and preferences for career choice activities and delivery modes over time. The preferences and experiences of additional student populations, outside of the traditional first-year students, should also be explored. Experimental research could also add to the

knowledgebase by gathering feedback from groups of students who engaged in face-to-face career activities or technology enhanced career activities. Exploring ways to measure and define the effectiveness of technology integration will be an important component of the design of future research.

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Appendix A

Recruitment E-Mail to Instructors and Students

Initial Mass E-Mail

Subject: First-Year Student Survey

Dear University Experience Instructor:

I am a UE Instructor and Ph.D. student at USF currently working on a research project that would benefit from your help. This project is seeking first-year students' input on preferences for accessing career services activities. This project is also gathering information on students' prior experience with various types of technology.

Students are being asked to complete a brief online survey. Participation from all students is completely voluntary. The survey itself does not ask for any personal identifying information. Students may opt to register for a prize drawing after completing the survey.

As an incentive to participate, four $25.00 gift cards for Barnes & Noble bookstores will be given away. On September 14th, four names will be randomly drawn from those who registered.

Please consider distributing the survey link to the students in your UE classes. A sample e-mail that you can send to students is provided below. Simply cut and paste into an e-mail to your students or post in your Blackboard course area.

Thanks for your help. The information gathered from this study will help those who are developing student support services, such as career services, to better meet the needs and expectations of students. Don't hesitate to contact me with any questions or concerns you may have.

Thank you!
Melissa
--
Melissa Venable
Ph.D. Candidate - College of Education
University of South Florida
mvenable@mail.usf.edu

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Dear UE Students:

Please take a few minutes to participate in a study currently taking place at USF. This study seeks your input on your preferences for how you would like to participate in career planning activities. Your opinions will help those who are developing in these services to better meet your needs and expectations. You can participate by completing a brief online survey.

If you would like to register for a drawing associated with this study, you may do so at the end of the survey. On September 14th, a drawing will take place. By registering you will be eligible to receive one of four $25.00 gift cards for Barnes & Noble bookstores, which can be used at the USF Bookstore. If your name is drawn, you will be notified by e-mail. Your registration and survey responses cannot be linked, so your survey responses will remain anonymous.

This survey will take approximately 5 minutes for you to complete. Your participation is completely voluntary and anonymous. Click on the link below to start the survey.

Survey: http://www.questionpro.com/akira/TakeSurvey?id=766830

If you have any questions, you can contact the researcher, Melissa Venable, at mvenable@mail.usf.edu.

Thanks for your help!

Follow-up Reminder E-Mail

Subject: First-Year Student Survey - Thank You!

Hello Cynthia,

I am sure you saw my request for survey distribution that went out through Dave Campaigne last week to all UE Instructors. If you have already sent the survey link to your classes, thank you! If you haven't, please consider e-mailing the survey link (below) to students or posting it in Blackboard. I am currently collecting data for my dissertation project looking at student technology use and participation in student services. The survey will be "live" for about another week. More student input will definitely influence the results.

Thanks for your help and have a great semester!

Melissa

Melissa Venable
mvenable@mail.usf.edu

++

Dear Students:

Please take a few minutes to participate in a study currently taking place at USF. Your input will help those who are developing student services to better meet your needs and expectations. You can participate by completing a brief online survey.

After completing the survey, you can register for a drawing for $25 gift cards for Barnes & Noble bookstores.

This survey will take approximately 5 minutes to complete. Your participation is completely voluntary and anonymous, and has no connection to your courses or course grades. Click on the link below to start the survey.

Survey: http://www.questionpro.com/akira/TakeSurvey?id=766830

If you have any questions, you can contact the researcher, Melissa Venable, at mvenable@mail.usf.edu.

Thanks for your help!

Appendix B

Pilot Study Survey Instrument

I. INTRODUCTION

Dear Student,

The purpose of this survey is to find out more about college students' preferences for support services offered online via the Internet. University Career Centers all over the country are beginning to offer online services through their websites, in addition to the services they offer on campus. Your participation in this study will help those who are developing these services to better understand where they should focus on making changes, based on *your* preferences.

The survey consists of 13 items and will take approximately 15 minutes to complete. Your name will not appear on any part of the survey. Your answers are anonymous and will be used in future research as group data only.

If you have any questions about this survey and/or your participation in the study contact the researcher, Melissa Venable at mvenable @ success.usf.edu or (813) 974-4645.

Please be advised that you may decline to participate without any affect on your grade. If you choose to voluntarily participate, please indicate your consent by clicking on the **"Next"** link below.

Thanks for your participation!

Next>

II. DEMOGRAPHIC INFORMATION

Please read the following questions and select the most appropriate response for each.

1. What is your gender?
   - Male
   - Female

2. Which of the following best describes you?
   African American or Black
   - Asian or Pacific Islander
   - Hispanic
   - Native American
   - White
   - Other – please specify (textbox)

3. What is your age?
   - (textbox to enter age)

4. Are you an International student?
- No
- Yes

5. Is this your first year at USF?
- No
- Yes

6. How many credits are you taking this semester?
- (textbox for student to enter number of credits)

7. Please select the one statement below that best describes your current employment situation
- I work off campus, less than 40 hours per week
- I work off campus, 40 or more hours per week
- I work on campus, less than 40 hours per week
- I work on campus, 40 or more hours per week
- I am not currently working.

8. For the purposes of this study, an "online course" is a course that is conducted through the Internet and does not require students to meet in a traditional classroom on a regular basis. Have you ever completed an online course?
- No, I've never taken an online course
- No, but I am in my first online course this semester
- Yes, I have completed an online course

9. If you answered yes to the question above, how many online courses have you completed previous to this semester?
(textbox to enter number of courses)

10. Do you own an iPod or other portable MP3 player?
- No
- Yes

11. Would you use an iPod or MP3 player to review podcasts of your classes?
- No
- Yes
- Not sure

III. PREFERENCES

College and University Career Centers provide students with assistance in career decision-making and help students with the job search process. Now that the Internet is so accessible, some students may find it convenient to get this kind of assistance online via the Internet, in addition to being able to visit the Career Center on campus.

Please read the following questions carefully and select the responses that best reflect your own preferences.

12. Listed below are a number of activities typically offered by college and university career centers to assist students with career development and planning. Please indicate below whether you would prefer to participate in each of these services on-campus, online, or not at all

	On-Campus	**Online**	**Not at All**
Explore my own thoughts about my career choices.	❍	❍	❍
Explore how the results of a career test relate to possible careers.	❍	❍	❍
Find information about current job openings.	❍	❍	❍
Learn from experienced professionals working in a career I am interested in pursuing.	❍	❍	❍
Find techniques for including others, such as my family and friends, in my career decision-making.	❍	❍	❍
Develop a list of careers I may be interested in researching further.	❍	❍	❍
Get feedback from a career counselor on useful strategies for making decisions about my career.	❍	❍	❍
Research typical salaries earned by those working in my career of interest.	❍	❍	❍
Interview someone working in a job I am interested in.	❍	❍	❍
Learn about how culture and gender related issues may affect my career choice.	❍	❍	❍
Complete worksheets to identify work-related skills that I have.	❍	❍	❍
Learn more about how my skills and interests relate to various career fields.	❍	❍	❍
Learn about the requirements needed to work in the career I am interested in.	❍	❍	❍
Find out how my career counselor decided in his/her career.	❍	❍	❍
Learn how to network with professionals in my chosen career field.	❍	❍	❍

13. Listed below are five items considered to be critical to making decisions about careers. Read through the items and indicate how you would PREFER to interact with career specialists and career-related information to work through each one.

	On Campus – in person only	Through E-mail	Discussion Board in Blackboard	Through a Video Recording	Through an Audio Recording or Podcast	On a Website, Wiki, or Blog	Through Telephone Call	Internet Chat Room or Instant Messenger	In a 'virtual classroom or office'
Reflect on my thoughts, feelings and concerns about my career choices.	❍	❍	❍	❍	❍	❍	❍	❍	❍
Have a dialogue with a career counselor about career development issues.	❍	❍	❍	❍	❍	❍	❍	❍	❍
Get information, such as salaries and training, about careers I am interested in pursuing.	❍	❍	❍	❍	❍	❍	❍	❍	❍
Learn about careers from people already working in the them.	❍	❍	❍	❍	❍	❍	❍	❍	❍
Build a network of people who can assist me with choosing a career.	❍	❍	❍	❍	❍	❍	❍	❍	❍

IV. CLOSING

Thank you very much for participating in this study. If you have any questions about the study or this survey, please contact the researcher, Melissa Venable at mvenable@success.usf.edu or 813-974-4645.

When you click on "Done" below you will exit the survey and be taken to a page where you have the opportunity to register for a prize drawing. You will be asked for your name and an e-mail address. This information will in no way be connected to your survey responses.

Please register only once! Thanks again.

Appendix C

Pilot Study Demographic Data

Total respondents: n = 64

Demographic Information

Gender	%	N
Male	14.1	9
Female	85.9	55

Ethnicity	%	N
African American/Black	9.4	6
Asian or Pacific Islander	1.6	1
Hispanic	7.8	5
Native American	0	0
White	78.1	50
Other	3.1	2

Age *	%	N
17-20	84.3	54
21-24	15.6	10

Average Age = 18.65
Range = 17-24
Median = 18

Current Enrollment *	%	N
Part-time (<12 credits)	12.5	8
Full time (12 or > credits)	87.5	56

Average number of credits = 14 (13.5)
Range = 6-17
Median = 14

Current Employment	%	N
Off-campus Part-time	40.6	26
Off-campus Full-time	12.5	8
On-campus Part-time	9.4	6
On-campus Full-time	1.6	1
Not employed	35.9	23

* The categories in these items were created after data collection.

Previous Experience

Previous Experience with Online Courses	%	N
No – I have never taken an online course	57.8	37
No – But I am in my first online course this semester	20.3	13
Yes – I have completed an online course	21.9	14

Yes – I have completed an online course
Average number of online courses completed = 2 (1.9)
Range = 1-5
Median = 1

Own MP3 Player	%	N
No	34.4	22
Yes	65.6	42

Would use MP3 Player to review podcasts to review classes.	%	N
No	32.8	21
Yes	29.7	19
Not sure	37.5	24

Appendix D

Survey Instrument

I. INTRODUCTION

Dear Student,

The purpose of this survey is to find out more about college students' preferences for support services offered online via the Internet. University Career Centers all over the country are beginning to offer online services through their websites, in addition to the services they offer on campus. Your participation in this study will help those who are developing these services to better understand where they should focus on making changes, based on *your* preferences.

The survey will take approximately 5 minutes to complete. Your name will not appear on any part of the survey. Your answers are anonymous and will be used in future research as group data only.

If you have any questions about this survey and/or your participation in the study contact the researcher, Melissa Venable at mvenable @ mail.usf.edu or (813) 555-1234.

Please be advised that you may decline to participate without any affect on your grade. If you choose to voluntarily participate, please indicate your consent by clicking on the "Next" link below.

Thanks for your participation!

II. DEMOGRAPHIC INFORMATION

Please read the following questions and select the most appropriate response for each.

What is your gender?

- Male
- Female

Which of the following best describes you?

- African American or Black
- Asian or Pacific Islander
- Hispanic
- Native American
- White
- Other – please specify (textbox)

What is your age?

- (textbox to enter age)

Are you an International student?

- No
- Yes

Is this your first year in college since graduating from high school?

- No
- Yes

How many credits are you taking this semester?

- (textbox for student to enter number of credits)

Please select the statement(s) below that describe(s) your current employment situation (check all that apply).

- I work off campus, less than 40 hours per week
- I work off campus, 40 or more hours per week
- I work on campus, less than 40 hours per week
- I work on campus, 40 or more hours per week
- I am not currently working.

For the purposes of this study, an "online course" is a course that is conducted through the Internet and does not require students to meet in a traditional classroom on a regular basis. Have you ever completed an online course?

- No, I've never taken an online course
- No, but I am in my first online course this semester
- Yes, I have completed 1 or 2 online courses
- Yes, I have completed 3 or more online courses

Have you ever participated in career advising or guidance activities? (Examples of these activities include identifying your skills and career interests, exploring career options, and developing a career plan.)

- No, I have no experience with career advising.
- Yes, I have very little experience with career advising.
- Yes, I have some experience with career advising.
- Yes, I have a lot of experience with career advising.

How important is career planning to you at this time?

- Career planning is not important to me.
- Career planning is somewhat important to me.
- Career planning is important to me.
- Career planning is very important to me.

Have you declared a major?

- No
- Yes

If you answered yes to the question above, please type your major area of study in the textbox provided.

- (textbox for student to enter major)

III. EXPERIENCE WITH DELIVERY METHODS

What is your experience level with each of the following types of technology?

1 = I am not familiar with this technology at all.
2 = I am familiar with this but have no experience.
3 = I have very little experience with this.
4 = I have some experience with this.
5 = I have a lot of experience with this.

E-mail	1	2	3	4	5
Blackboard Discussion Boards	1	2	3	4	5
Audio and Video Recordings or Podcasts	1	2	3	4	5
Internet Websites, Wikis and/or Blogs	1	2	3	4	5
Internet Text Chat or Instant Messaging	1	2	3	4	5
'Virtual' Rooms with Real-Time Interaction	1	2	3	4	5

Do you own an iPod or other portable MP3 player?

- No
- Yes

Do you have access to a personal computer? (Other than access on campus at USF.)

- No
- Yes

IV. PREFERENCES

College and University Career Centers provide students with assistance in career decision-making and help students with the job search process. Below you will find a list of activities related this kind of assistance.

For each activity, please select the way(s) in which you would prefer to participate in each activity. Check all that apply.

Explore my own thoughts about my career choices.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Explore how the results of a career test relate to possible careers.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Find information about current job openings.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Learn from experienced professionals working in a career I am interested in pursuing.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger

- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Find techniques for including others, such as my family and friends, in my career decision-making.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Develop a list of careers I may be interested in researching further.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Get feedback on useful strategies for making decisions about my career.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Research typical salaries earned by those working in my career of interest.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Interview someone working in a job I am interested in pursuing.

- In Person
- E-Mail

- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Learn about how culture and gender related issues may affect my career choice.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Complete worksheets to identify my work-related skills.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Learn more about how my skills and interests relate to various career fields.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Learn about the requirements needed to work in the career I am interested in pursuing.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Find out how my career advisor decided on his/her career.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Learn how to network with professionals in my chosen field.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Receive advice from someone working in a career field I am interested in pursuing.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Get feedback on my job search skills, such as resume writing and interviewing.

- In Person
- E-Mail
- Discussion Board in Blackboard
- Audio or Video Recording or Podcast
- Website, Wiki, and/or Blog
- Telephone Call
- Text Chat or Instant Messenger
- "Virtual Room" with real-time interaction
- I am not interested in participating in this activity.

Thank you for taking the time to complete this survey!

At this point you have completed all of the required items. Choose one of the following options to submit your responses.

- Submit
- Submit and register for prize drawing.

V. CLOSING

Thank you very much for participating in this study. If you have any questions about the study or this survey please contact the researcher, Melissa Venable, at mvenable@mail.usf.edu or 813-555-1234.

Thanks again!

About the Author

Melissa Venable has been an Instructor at the University of South Florida since 2005. Her previous professional experience includes work in career services as an Outplacement Counselor and Career Development Coordinator. She has also worked as an Instructional Designer with KnowledgeTech, Inc., a private contractor developing computer-based training products.

Melissa received her Bachelor of Arts degree in Psychology from Wake Forest University in 1990. She continued her education obtaining her Master of Science degree in General Administration from Central Michigan University in 1993 and her Master of Education degree in Instructional Psychology and Technology from the University of Oklahoma in 1999. In 2007 Melissa completed a Graduate Certificate in Career Counseling from the University of South Florida.

Melissa has experience in diverse work environments including private industry, military, and higher education. Her varied experiences have helped her to understand the application of online tools to an array of training and educational settings including student services. Melissa plans to pursue employment and research in the areas of instructional design, student services, and distance education. For more information, visit www.melissavenable.com.