# Seeding the Cloud: A Study of an Online Career Strategy Course

by

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ABSTRACT

The purpose of this study was to determine if a significant difference was found comparing posttest scores between students who took a career strategy course in a face-to-face (f2f) format (n=156) and students who took the same course in a new online format (n=64). A review of literature pertaining to online learning, career services on college campuses, and career classes was provided. Data was collected via an action research design utilizing an intervention of an online delivery format. A quasi-experimental design allowed descriptive data to be collected which was analyzed by use of independent-samples t-tests, comparison of means, and frequency analysis to gain data pertinent to the research question. Quantitative results in four areas: posttest scores, pretest scores, learning gain, and course evaluation data were provided. Pretest and subgroup analysis were also utilized to add richness to the data. Results found that the career strategy course delivered in an online delivery format resulted in no significant differences in posttest scores when compared to the f2f delivery method posttest scores. This result is in agreement with the literature in online learning delivery formats compared to f2f delivery formats. The results of this study showed evidence to support the continuation of new iterations of the online delivery method for the career strategy course used in the study. Implications of these findings were discussed for the researcher's local community of practice, the larger community of practice, collegiate career services, as well as possibilities for future experimentation in career services and strategic career courses with other online formats in the future.

DEDICATION

To my wife, Diana Burns, *do lámh i mo lámh, a ghrá.*

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## Chapter 1 Introduction

In the minds of most students, going to college is inextricably bound to the idea of gaining a good job after graduation. Pope and Fermin (2003) document that three of the five highest ranking objectives of high school seniors for pursuing a college education are related to career and employment at graduation. The 2010 College Bound report, *The Truth about College Rankings,* lists career goals as the second most important factor in making a college decision (Kessler, 2010). Both Pope and Fermin and Kessler show that a very significant proportion of the reasons that propel undergraduates to go to college is motivated by getting a college level job at graduation.

According to the National Association of Colleges and Employer's (NACE) National Salary Survey from 2010, just 25% of all new college graduates had new jobs that required a college education at graduation. No industry anywhere can survive for long providing customers just a 25% chance that the product or service they purchased will perform as expected. Colleges will prove no different in time. This is a severe problem for higher education and for the nation economically, socially, and politically. Media commentators and academics have both cited lack of employment for younger college degree holders as having some impact on both the Arab Spring and Occupy Wall Street movements (Friedman, 2011; Knickmeyer, 2010; Toby, 2011).

Even if a student does eventually get a job after graduation, it often does not require college level skills according to The Center for College Affordability and Productivity (Vedder, Denhart, Denhart, Magournanic & Robe, 2010). This

group issued a study in 2010 which claimed that 60% of the college graduates between 1996 and 2008 were employed in jobs that did not require the skill sets received in obtaining a college degree; this phenomenon was defined by the authors as "underemployment." Adding insult to underemployment injury, nationally the average student loan debt of a college student at graduation in 2010 was $20,200 at public institutions and $27,650 at private institutions (The Student Debt Project, 2010). Going to college looks to be at best a gamble, and, at worst, a fool's errand.

This dismal at-graduation and underemployment data suggests that students should be flocking to the career centers on campuses all over the nation to launch their career exploration and job search. Unfortunately, in a NACE benchmark study at mid-size colleges (10 to 20,000 students), only 9% or fewer of their undergraduate students visited or used the campus career center office in any given year (NACE 2009). Visiting the campus career office is not much different at large institutions (25,000 students) where 3% or fewer visit. Colleges do not seem able to attract students to their career services centers. This lack of engagement by students with their school's career center certainly does not help relieve the poor outcomes in gaining college level employment at graduation.

Arizona State University's W. P. Carey School of Business (WPC) is not immune to the problem of unacceptably low at-graduation employment rates. NACE (2010) reports that the WPC, with over 9,000 students, reported at-graduation employment rates of 42.3%, 69.2% higher than the national employment rate of 25%. Unfortunately, underemployment figures have never

been collected in the WPC, so cannot be reported. In 2010, the WPC career center was visited by 33% of the school's total student population which is 3.5 times more than the national average for a school its size which was reported by NACE to be at 9% (NACE, 2010).

The W. P. Carey School of Business takes the employment of its students very seriously. In fact, in 2006, the school created and staffed a new career center, the Business Career Center (BCC), to foster high levels of at-graduation employment exclusively for students in the School of Business. Since that time, the BCC has been recognized as one of the top 20 business career centers in the nation and was a significant factor in a *Wall Street Journal* ranking of ASU as the number five best college in the nation to recruit students in 2010 by major national recruiters. In addition, the W. P. Carey School was ranked in 2010 as the $17^{th}$ best return on investment schools among all business schools in the nation. These rankings concerning the reputation of the career center, while productive, fail to meet the BCC's internally generated goal of no less that 85% employment of the total number of students at graduation. This means that 85% of those current students seeking employment at graduation had employment at graduation. The remaining students, traditionally about 15%, choose not to pursue employment, attend graduate school, start their own businesses, or choose to remain in their current professional positions. These other categories, while supported by the BCC, are not within the focus of this study which is at-graduation employment.

In order to reach the goal of 85% employment at graduation, the WPC seeks to provide its students with all of the career preparation services needed to realize the goal of assisting every student gain employment at graduation. As part of achieving that mission, the Business Career Center offers all of the services typical of a normal collegiate career center--one-on-one counseling, career workshops, career fairs, electronic library, etc--as described by the NACE 2009 Benchmarking Report of standard services (NACE 2009). In addition to those services, the BCC offers a relatively uncommon career service option, a one credit, required career course. According the NACE Benchmarking Report, only 31.9% of career centers nationally offer a for-credit career class (NACE, 2009). The WPC elected to not only offer the credit-bearing career class, but went further and included the course as a core curriculum requirement that all WPC students are required to take in order to graduate. The course, WPC 301, is offered face-to-face (f2f) with the purpose of educating students with the fundamental skills needed to execute an effective career launch at graduation. This emphasis on career education and preparation is a key building block in achieving the 85% employment rate goal at graduation. The course dynamics and learning goals are addressed specifically in the Study Design.

The leverage behind the large effort to offer the WPC 301 course is for two reasons: ethics and competitiveness. First, the most important reason for this strong emphasis on employment at graduation at the WPC is the simple ethical imperative to do all that is within reason to enhance the future lives and business

success of the students of the W. P. College of Business, in this case through career services.

Second, pragmatically, in the not too distant future, an at-graduation rate of 85% will soon be mandatory in order to compete, much less thrive, in the higher education marketplace. One of the key competitive drivers in this competition between schools for students is employment rate statistics. The reason for this is blindingly obvious; very few students want to attend and very few parents want to send their college-bound student to a college where the return on investment (a college level job at graduation) has a low probability (25%) of occurring (NACE, 2010). Employment and salary data are a major component in business school rankings as suggested by the information requested by ranking organizations. Appendix E contains an example of part of a data request by a major ranking organization. Because these rankings are essentially a product to sell or a promotional device for publishers, ranking calculation methods are closely guarded by each ranking organization in order to maintain their unique position in the college attendance choice marketplace. These rankings play a significant role in reflecting the reputation of a college or school nationally, and W. P. Carey is certainly no exception. As can be readily understood, rankings can provide a significant competitive advantage. For example, attracting the best students based on high school grade point average, standardized test scores, and other university specific metrics is part of every school's mission. According to The Institute for Higher Education Policy (2007), students who used school rankings as an important choice factor were those who tended to be from high-

achieving, high-income families, with college educated parents. As such, attaining a level of at-graduation employment of 85% is a survival imperative for many business schools, and certainly for WPC.

**Statement of Problem**

The W. P. Carey School of Business's at-graduation employment rate for students is not meeting the goal of 85% employment at graduation.

**Purpose of the Study**

The purpose of this study was to compare how posttest scores differ in a career strategy course between the traditional face-to-face (f2f) delivery format and a new online delivery format of WPC 301. In support of this purpose, pretest scores, learning gain, and data from course evaluations were analyzed to determine if there are significant differences between the f2f delivery method and the online delivery method. As a required course, it plays a pivotal role in educating all students of the WPC in the best practices available to obtain employment at graduation. This will clearly improve the probability of meeting the school's goal of 85% at-graduation employment.

**Study Design**

This study used an action research model to study how posttest scores in a new online career strategy course compared with the traditional face-to-face (f2f) course delivery method currently in use by the W. P. Carey School of Business posttest scores.

The course, WPC 301: *Business Forum,* is a career strategy course that teaches students to think critically about their career future by using cognitive

skills and strategies beyond simply focusing only on the tactical aspects of writing resumes and learning about interviewing skills. Topics include strategic thinking, design thinking, systems theory, scenario development, product attribute design, decision making tools, direct marketing, and persuasive content design to increase the probability of gaining at-graduation employment. The course, as seen in the syllabus provided in Appendix D, is 8 weeks in duration. The f2f course met twice per week for 50 minutes and enrolled 377 students; the online section received voice-over-slide presentations each week and enrolled 166 students in six sections, averaging approximately 27 students per section. One method for moving closer to the 85% at-graduation employment goal for students in the School of Business is improvement in a career strategy course taught by the BCC.

Action research is a process designed to plan, implement, review, and reflect on an intervention designed to solve a particular problem in the researcher's everyday community of practice (Cohen, Manion and Morrison, 2007). In this study, the community of practice is collegiate career services, specifically in business, but generally across all majors.

The researcher is a member of the community of practice of collegiate career services, specifically in the majors related to business. The researcher began a career in career services as Director of Career Services for the Working Professional programs--Executive, Evening and Online--of the WPC School of Business MBA program 11 years ago. Most recently, the researcher is the founding director of the WPC Business Career Center for undergraduate students for the last five years. In that period of time, staff supervised by the researcher has

grown from two to nine full-time employees comprised of career coaches, corporate relations managers, and administrative staff. The success of this new career center was cited earlier in this chapter.

During both his MBA and undergraduate tenures, the researcher continued to develop new perspectives on teaching career development and execution topics. Having previously spent nearly 20 years in business successfully building and managing large company divisions focused on operations, marketing, and creative design in the global entertainment and apparel fields, the researcher brings a unique, strategic planning, and new product development perspective to the career field. In addition, the researcher's responsibility in those years included hiring for hundreds of positions from senior executives to manufacturing and distribution personnel. This experience gives the researcher a balanced view of both supply side and demand side hiring perspectives. In addition, the researcher obtained a Master Degree from Arizona State University in Instructional Design in 2002.

Specific to this study, the researcher applied these supply and demand side characteristics along with extensive business experience in strategic planning and new product development with instructional design principles to create the course that was the focus of this study, WPC 301. Thus far, no other career center has been found to offer a course which utilizes this perspective on career strategy and execution.

Dick (2002) suggests that using a data-driven approach to analyzing situations and its participants can rightfully be implemented in an action research

process. Particularly compelling in the action research model is the emphasis on implementable solutions (Creswell, 2008). The researcher, therefore, utilized an action research design to conduct applied research in the area of instructional delivery methods.

This action research study utilized a quasi-experimental design which is commonly found to be acceptable in action research (Wiersma & Jurs, 2008). This design allowed the study to be conducted with students in the course who were not randomly selected. With over 9,000 enrolled students in the School of Business who may register for this class in any given semester, it would prove impossible to control for the myriad of factors in a study of this type. In this study, students enrolled in the course, WPC 301: *Business Forum*, the focus environment of this study, were asked to voluntarily participate in this study. This non-random assignment of subjects does not preclude the study from being generalizable or transferable, with caution, to other populations or environments outside of this particular study's environment, the W. P. Carey School of Business (Cohen, et al., 2007).

From this sample, descriptive quantitative data were obtained in three ways. First, pretest and posttest scores from WPC 301 both administered in the spring semester of 2011, second, faculty evaluations for WPC 301 in that same semester were included, and finally, student survey data from a required WPC 301 survey were used to identify two sub-populations, swirl and first-generation status.

This data was analyzed to determine whether the following research question and hypothesis were supported by evidence that was descriptive of what occurred in the study:

How do student posttest scores between f2f delivery and online delivery differ in the WPC 301 career strategy course in an undergraduate school of business?

The study examined the following hypothesis:

$H_o$: There will be no significant difference in posttest scores between f2f delivery and online delivery in WPC 301 in an undergraduate school of business.

Constructivism was the researcher's theoretical orientation in this study. In this case it is cognitive constructivism that focuses the study (Doolittle & Camp, 1999). Since this study looked at a course, WPC 301, which is experienced by all students in some way, it fulfilled the requirement by Doolittle and Camp (1999) of having a knowable reality in the physical world, i.e. that meaning is gained through lived experience.

A non-systematic process of testing online learning was done in a prior iteration of the course in the fall of 2010 with a small sample of 17 students. This testing process was conducted by the researcher to determine if online delivery of a career class was a useful service to pursue. This exercise fulfilled the criteria specified that refer to "scouting parties" as non-systematic data analysis exercises and suggest that these are acceptable as an equivalent of a pilot study (Cohen, Manion, & Morrison, 2009). In addition, the researcher/instructor has seven years of experience in teaching WPC 301, and the course content, pretest, posttest, and

delivery schedule remain unchanged from previous semesters. Therefore the previous data analysis exercise served as the pilot study in this study.

The foundation of this study was the development of an action research study to determine the effectiveness of WPC 301 in an online format. It was necessary to understand how the implementation of an online version of its career strategy course, WPC 301, addresses the needs of the W. P. Carey School of Business in providing excellence in career education given resource limitations coupled with the problem of at-graduation rates far below the goal of 85%. Similar to the researcher's local community of practice, these issues face the rest of the researcher's larger community of practice, collegiate college career services.

This study was limited by the fact that participants in the sample were not selected at random, resulting in an experimental design of a pretest-posttest, non-equivalent control group design (Wiersma & Jurs, 2008). According to these authors, the result of such a design precludes causation to be determined. However, it does not preclude the researcher or others from making inferences from these findings to situations that are similar in nature. It should be noted the the researcher is also the Director of the W. P. Carey School of Business and is keenly interested in utilizing the results of this study. In addition, the researcher also served as the instructor for all classes. An additional limitation was the relatively small sample size of the online course (n=64). This small number of students were valid in large comparisons where a sample size of 30 or more is

considered valid (Creswell, 2008) , but precluded the ability to analyze at a more granular level.

This study focused on a convenience sample of Arizona State University, ASU W. P. Carey School of Business undergraduate students in their freshman, sophomore, junior or senior year enrolled in WPC 301 in the spring of 2011. The focus of analysis was related to understanding how posttest scores from the traditional f2f format were different when compared to the posttest scores of students in the new online format of the course.

**Key Terms**

There are a number of terms used in this study which are defined as:

At-graduation employment: acceptance of a job that requires a college degree (Business Week, 2011);

College level skill job: skills in the job require technical, critical thinking and communication skills required in satisfactory completion of college level courses (Gardner, 2011);

Career services: Career services must support the mission, academic and experiential programs, and advancement of the institution to promote student learning and student development. Within this context, the primary purpose of career services is to assist students and other designated clients in developing, evaluating, and/or implementing career, education, and employment decisions and plans (NACE, 2011);

Career Strategy Course: a course emphasizing principles of strategic thinking and new product development rather than traditional trait analysis and tactical resume and interview preparation (K. Burns, personal communication, April, 2006);

Online delivery method: at least 80% of all content is delivered via the World Wide Web (Schlosser & Simonson, 2009);

Face to face delivery method: at least 95% of all content is delivered in person by an instructor (Schlosser & Simonson, 2009);

Employment data: a statistic derived by comparing all students who volunteer data about their employment situation. The normal calculation defines the number of students who report having a job at graduation by the total number of students who responded to the survey (NACE, 2010);

Underemployment: working in a job that does not require the skill set normally acquired gaining a college diploma. Often suggests work that is not well compensated (Gardner, 2011);

At-Graduation: jobs accepted prior to the school's graduation day (NACE, 2010);

The literature in Chapter Two informs the reader on the current scholarship in online learning, current practices and issues in career services, and the effectiveness of career classes. The design of the study detailed in Chapter Three illustrates how descriptive data including independent samples t-tests among other data tools were gathered and utilized in collecting data and its

subsequent analysis. Results provided in Chapter Four were derived in four areas: posttest scores, pretest scores, learning gain, and course evaluation data. The primary result of this study supports the literature; there was no significant difference between f2f delivery and online delivery of WPC 301. Chapter Five offers research-based suggestions, which include how the researcher/director of the Business Career Center might use these study findings to improve the use of online courses in the future, how these findings could be utilized in the local and national community of practice of collegiate career centers, and finally, how the findings of this study might be utilized in a better career strategy course to meet the need for new skills required by future employers.

## Chapter 2 Review of the Supporting Scholarship

The purpose of this study was to determine if a significant difference existed in final test scores between students who took a career strategy course in a face-to-face (f2f) delivery format and students who took the course in a new online delivery format. A literature review was conducted to determine the research previously done by scholars which could illuminate the topics of online learning in general, specifics of online learning, career services, and career classes, as well as literature relating to two subgroups, swirl (de los Santos and Wright, 1990) and first-generation status (Olson, 2010). The results of this literature review were used to support the design, analysis, and interpretation of the results of this study in order to gauge whether the results of this specific action research study supported or did not support the literature as it exists.

### Online Learning Overview

According to the yearly report on online learning published by the Sloan Consortium, online education is one of the fastest growing instructional options in four year colleges and universities in the United States (U.S.). Over 5.6 million students have taken at least one online course in college which is an increase of 21% from 2008 to 2009 (Allen & Seaman, 2010). That is compared to a paltry increase in overall enrollment for the same year of only 2%. In the fall of 2002, approximately 9.6% of total enrollment was in online learning courses in colleges and universities. In contrast, fall 2009 enrollment in online courses at colleges and universities skyrocketed to a 29.3% proportion (Allen & Seaman, 2010). According to the Sloan Consortium, 63% of all reporting colleges and universities

view online learning as critical to their strategic plan. Online learning is certainly a fixture in 21st century U.S. higher education.

**Online Learning**

Distance education has most recently been defined as instruction where class participants are separated and interactive communication is used to allow learners, learning assets, and instructors to connect beyond the confines of a traditional classroom (Schlosser & Simonson, 2009). Pure online learning meets the requirements of the previous definition but also specifies that 80% of the course content must be delivered via World Wide Web (i.e., online) and no face to face meetings can be held (Allen & Seaman, 2010). The use of distance education as a concept can be traced back to the use of technology, such as postal service-delivered correspondence courses, educational television, and video-conferences (Means, Toyama, Murphy, Bakia & Jones, 2010). Distance learning moved into the computer age with Computer Based Instruction (CBI) and Computer Aided Instruction (CAI), beginning in the 1960's with the utilization of computers in delivering educational content via software or CD-ROMs (Moore, 2008). Beginning with the introduction of Netscape in 2004, the availability of the World Wide Web to a large public audience kicked off the era of online learning with current estimates of 300 million users (Simonson, Smaldino, Albright, & Zvacek, 2011). Therefore, online learning is classified as a subset of distance education, although the terms are normally used interchangeably in common speech (Means et al., 2010). Allen and Seaman (2010) for the Sloan Foundation divided online learning into sub-categories based on the proportion of

content delivered exclusively online: Traditional – 0% delivered online, Web Facilitated – 1% to 29%, Blended/Hybrid – 30% to 79%, Online - 80+%.

Research related to online learning supports that online instruction could be just as impactful on student learning and could attain equivalent excellence in execution and results as face-to-face instruction (Bach, Haynes & Smith, 2006; Means, et al., 2010; Russell, Carey, Kleiman, Venable, 2009; Tallent-Runnels et al., 2006). These studies, which include several meta-analyses covering hundreds of distance education studies, have concluded that distance education, including online learning, is as effective as or slightly more effective than other forms of instruction, including face to face instruction. Currently at public U.S. institutions, over three-quarters of academic leaders believe that online learning is as good as or better than face-to-face instruction (Allen & Seaman, 2010). A meta-analysis of 182 studies that focused on online learning courses taught in various business school disciplines showed that online instruction was again judged as effective, and in some cases, just slightly more effective than other forms of instruction, including face-to-face instruction (Arbaugh, Godfrey, Johnson, Pollock, Niendorf, & Wresch, 2009). However, no specific research on comparative methods of instruction was found related to a business career course, which was the topic of this study.

Access to online learning appears to be a factor supporting online learning's rise in usage as it becomes available to anyone with a computing device. Web access is available in almost 100% of the public schools, and 77% of private individuals in the U.S. also have access of some type. In addition,

access to a mobile network which can access the web is now available to 90% of the world population, according to the information and technology agency for the United Nations (International Telecommunications Bureau, 2010). Access also seems to be a minor issue when looking at the demand for U.S. online learning in 2009. At that time, statistics showed that over 2,500 U.S. higher education institutions reported a 74% increase in demand for online courses compared to only a 50% increase in demand for face-to-face courses (Allen & Seaman, 2010).

**Career Services**

Frank Parsons is traditionally credited with being the 'Father of Career Counseling" as he founded the Bureau of Vocational Guidance in 1908 in Boston. The Bureau was subsequently moved to Harvard College a few years later (Schmidt, 2003), and became the model for what would become decades later the modern college career services office. Over the course of time, the practice of career services has largely been focused on personal traits and psychological foundations, which emphasized matching an individual's traits and personality characteristics with the specific traits necessary for a job or a series of highly related hierarchical jobs (Patton & McIlveen, 2009). This precedent has created career centers that largely still follow the three primary directives for career counseling success espoused by Parsons over a century ago: awareness of self and strengths/weaknesses, knowledge of job requirements, and matching self traits with job requirement traits to make a decision (Agnew, 1998).

Career centers and the services they offer seem to follow this logical and historical path centered on counseling. According to the National Association of

Colleges and Employers (NACE, 2009), 78.7% of the staff of career centers nationally were certified as counselors by the National Board for Certified Counselors (NBCC). The statistics regarding the services offered by campus career centers also indicate a strong preference for counseling. According to the NACE Benchmarking Report (2010), one-on-one career counseling is the most available service offered to students by career services offices on college campuses of all sizes. In a list of the services offered by the career centers in the Benchmark Report, 99.3% of the career centers offer career counseling as their primary activity, 92.4% of those offices also offer workshops, 84.5% provide drop-in counseling, and 68.5% provide online counseling. Career classes for credit were offered by just 31.9% of the career centers in the U.S. Of the top 14 activities occurring in campus career centers in 2010, career classes rank near the bottom, at number 13.

Nevertheless, Haney and Howland (1978) claim that non-credit career classes or workshops are viewed as less valuable and less respected by college students than career classes that carry academic credit. Halasz and Kempton (2000) claim the long battle between student affairs and academic affairs within universities have directly impacted the number of career classes that are offered for credit. So today's college student in the U.S. is presented with career services delivered primarily in either one-on-one counseling or within small, but not highly valued, career workshops.

The significant focus on counseling and providing low-value workshops could be a significant reason why today's college students are less likely to

engage with their college's career center. For instance, the NACE Benchmark Survey (2009) found that an institution with approximately 10,000 students could only entice about 9% of the student population to utilize the career center on campus. Comparatively, at a campus of 25,000 plus students, only about 3% or less of the total student body connected with the institution's career center in a given year (NACE, 2009).

Although researchers (Benko & Anderson, 2010; Krumboltz, 2009; Pink, 2002) noted that there is still a need for counseling individuals for standardized employment through an assessment of personal traits and job skills, the trend toward a globally competitive, post-industrial workplace (Bell,1976) suggests that there is much more to the career process than simply matching traits and skills. Pink (2002) claims that the concept of the traditional career is obsolete and is being replaced by workers who must understand the "value" that they can bring to a project or organization, and that in the 21st century, leaders in society will be comprised of individuals who know and "sell" their value best in the marketplace. Benko and Weisberg (2007) suggest there is already a demise of the vertical career ladder in society. Likewise, Krumboltz (2009) argues that the entire idea of linear progress through work life is much diminished, and the focus is becoming more of a strategic positioning of oneself for the unpredictable intersection of luck, colloquially defined as proper preparation meeting appropriate circumstance. These scholars' works indicate that there is a strong need for more than just career interventions focused on trait-matching in college career centers. They also suggest that the need for focus on the strategic development of career

planning more in line with the realities of today's global marketplace is now required for college students to be successful in work after graduation.

**Career Courses**

Career courses have been a part of the college campus since the 1920's (Folsom & Reardon, 2003). The important question is whether they are effective in delivering what could be defined as employability skills (McQuaid & Lindsey, 2005). Scholars define employability skills as the skills required for performance in a job, as well as competence in self and career management to gain and sustain employment (McQuaid & Lindsey, 2005). Reese and Miller (2010) relate that as far back as a survey study in 1993, 82% of entering college freshmen stated that a major reason they entered college was to prepare for a higher paying career (Astin, Korn & Riggs, 1993). Specifically, in the career management area, the skills required are the skills needed to create realistic personal goals, make strategic decisions, and implement a plan of action to obtain a job (Bridgstock, 2009).

The research indicates that on the whole, career classes are effective career interventions (Folsom & Reardon, 2003; Fouad, Cotter & Kantamneni, 2009; Reese & Miller, 2010). In addition, career courses have additional positive effects on educational outcomes such as degree major selection, course satisfaction improvement, and improvement in retention and graduation rates as reported by Folsom and Reardon's (2003) analysis of 46 earlier studies of career class effectiveness. Numerous studies (Rottinghaus, Lindley, Green & Borgen, 2002; Scott & Ciani, 2008) claim that career-related self-efficacy, occupational

decidedness, and occupational interests all positively relate to a college student's overall academic success. Additionally, Reardon, Leierer and Lee (2007) found in a 25-year study that a student who participated in a career learning class showed a higher overall grade point average (GPA) than students who did not have a career learning class.

Reese and Miller (2010) have determined there are five key factors in career course effectiveness: written exercises, feedback specific to each individual, gaining knowledge about the world of work, the ability to learn and model professional behavior and thinking, and the techniques in building relationship support networks. Reese and Miller (2010) also found that courses which contain three or fewer of these characteristics had significantly less effectiveness than did courses which contained at least four and ideally all five of the key factors. The WPC 301 course, which is the focus of this study, contains all five of the key factors listed above in both the face-to-face and online courses. All of these factors are pivotal inflection points in determining the success of future college graduates successfully gaining employment at graduation (Gladwell, 2002). Further those attributes listed above directly match the needs of college students (Bridgstock, 2009). According to Bridgstock's (2009) study of college graduates, a student must develop the following attributes to ensure success in today's global economy:

- the ability of a college educated individual to find and use information about the potential world of work;
- locating and gaining college skill-level employment knowledge;

- a commitment to lifelong learning to retain employment value;
- ability to create relationships that create current and future value.

These four skills provide college graduates with the foundation for success to adapt to a world of rapidly changing work requirements, economic conditions, and ever-evolving technologies (Friedman, 2009). This world of work most resembles an anarchic economy which exists in an action-based world, surrounded by a network of possibilities rather than the codified linear pathways of the past industrial age (Amster, DeLeon, Fernandez, Nocella & Shannon, 2009; Butterwick & Benjamin, 2006; Meister & Willyerd, 2010).

**Subgroup Literature**

Based on five years of teaching the WPC 301 course and observing the student population in that course as part of the researcher's local community of practice, two secondary features were selected for specific review: student swirl and first-generational status. Literatures on those topics were consulted to inform the analysis of these two sub-groups.

According to Borden (2004), the term 'student swirl' was originally created by Alfredo de los Santos and Irene Wright who originally referred to the "swirling patterns of concurrent enrollment, reverse transfer, etc." (de los Santos & Wright, 1990) to describe the phenomenom of students enrolling in multiple institutions of higher education either sequentially or simultaneously. Popular belief suggests that the college experience tends to occur in one school; however, McCormick (2003) found that more than half of all college graduates attended more than one college on their way to graduation. In fact, it was found in one

study on the topic of student attendance patterns that there were 48 distinct ways students could move through higher education in pursuit of graduation (Bach, Banks, Kinnick, Ricks, Stoering, & Walleri, 2000). Unfortunately, transfer students tend to perform less well academically than their peers who have not transferred (Li, 2010). According to Li's results, transfer students appeared to be 1% to 9% percent less likely to be retained within the first year and earned 0.1 to 0.2 lower GPAs than students who did not transfer into the school. At the national level, Enzi, Boehner, and McKeon (2005) showed statistics indicating that four-year-institution to four-year-institution transfer students take eight to nine months longer to graduate with their bachelor's degrees compared to students who did not transfer. This study also showed statistics that claimed that compared to students continuously enrolled in the same institution, a transfer student's probability of graduating was 33.4% lower.

Student swirl may be a contributing factor within the current study's survey results, as between 600 to 800 students transfer from other colleges to the W. P. Carey School of Business each year. Understanding whether this factor supports the research of lower GPA and longer time to graduation will be of assistance in developing ways to deal with the very large transfer population that is required to take WPC 301. Understanding ways to assist transfers, perhaps through the curriculum in WPC 301, could be important to school administration in assisting transfer students in a general way.

Equally intriguing as swirl, first-generation status of students is a topic of increased interest in the research (Olson, 2010). Olson cites the original research

in the topic as traceable to Hsiao in 1992, but which disappeared as a topic until resurrected again by Bui in 2002. According to Chen and Carroll (2005), 22% of students entering postsecondary education between 1992 and 2000 could be considered first-generation students. In 2005, statistics derived from the National Center for Education Statistics cited by Hudson, Kenezle, and Diehl (2007), indicate that 27% of students entering four-year institutions were first-generation students, and that for all forms of postsecondary education, the number had increased to 50% first-generation students. Since 2010, 39.3% of all students who have taken the ACT standardized test have parents without a college degree (Carter, 2011). Unfortunately, these first-generation college students tend to receive lower grades and have higher dropout rates than students who are not first-generation college students (Stephens, 2010). In addition, Chen and Carroll (2005) report that first-generation students were 51% less like likely to graduate in four years and 32% less likely to graduate in their fifth year than their non-first-generational peers. According to Pascarella et al. (2004) first-generation students tend to receive lower grades as a group. One research study in the area contradicts this finding, concluding that even with the lower rates of involvement in extra-curricular activities, a marker for higher grades, first-generation student grades were not lower. Similar to swirl, first-generation status cuts across all traditional categories of racial, ethnic and socioeconomic factors (Wheeler, 2008). The definition of first-generation status is highly variable throughout the literature (Carter, 2011; Chen & Carroll; Pascarella, 2004; Stephens, 2010). This study

chose the most inclusive definition defined by Stephens (2010) as “parents did not attend college”.

With approximately 20 to 25% of the W.P. Carey School of Business students classified as first-generation students, it would be highly beneficial to understand how these students perform in WPC 301, and whether there are differences in final test scores between the populations that experienced the course in a face to face environment versus an online environment. Folsom, Peterson, Reardon and Mann (2002) claimed that students in a career planning course had higher rates of graduation than similar students who did not take such a course. If this is true in the case of this study, it might prove to be a useful tool in counteracting the previously cited lack of graduation success for first-generation students in general and, by extension, in the W.P.C. School of Business.

**Summary**

The results of this literature review were used to determine the most effective design for this action research study. The literature included in this chapter was used to determine if the results of this specific study supported or did not support the literature as it currently stands. This literature review details the pertinent research done previously by scholars to inform the researcher on the topics of: an online learning overview; specifics of online learning, career services, and career classes; and literature relating to two subgroups swirl (de los Santos and Wright, 1990) and first-generation status (Olson, 2010).

The purpose of this study was to determine if a significant difference existed in final test scores between students who took a career strategy course in a face-to-face (f2f) format and students who took the course in a new online format. The contents of this literature review will be utilized in following chapters to inform the Methodology of the study in Chapter Three, the Results in Chapter Four, and finally, the Discussion contained in Chapter Five.

## Chapter 3 Methodology

The purpose of this study was to determine if a significant difference existed between final test scores of students who took a career strategy course in a face-to-face (f2f) format and students who took the course in an online format. This study answers that question by providing quantitative results in four areas: posttest scores, pretest scores, learning gain, and course evaluation data.

The W.P.C School of Business seeks to provide its students with the career preparation needed to realize the goal of a successful career launch at graduation. To accomplish this, the researcher must explore new ways of delivering career information that is useful, engaging, and fiscally viable. The attainment of high levels of new employment at graduation for students of the W.P.C. School of Business at ASU is a major metric in the measurement of the success of the Business Career Center internally and externally. Development of an action research study to determine the effectiveness of WPC 301 in an online format was undertaken to understand how the implementation of an online version of its career strategy course WPC 301, addresses the needs of the W. P. Carey School of Business in providing excellence in career education with limited resources. Within the researcher's community of practice, collegiate college career services, there is an urgent need to serve ever-increasing numbers of students with diminished or stagnant resources. This study hoped to show the community of practice a way to meet that need.

The researcher utilized an action research design to conduct applied research in the area of instructional delivery methods. Gay, Mills and Airasian

(2006) define action research as a disciplined inquiry conducted by teachers or others to systematically gather data about their classrooms to provide them insight into possible methods to improve student learning. Dick (2002) suggests that if a researcher wants to employ a data-driven approach to analysis that deals with a situation and its participants as they exist in that situation, then action research is a proper research method; more specifically, action research focuses on actionable solutions (Creswell, 2009).

Utilizing Denzin and Lincoln's (2005) description of Kemmis and McTaggart's model for action research, the researcher used three components that distinguish action research from the other similar problem-solving activities of a teacher: 1) the research called for a systematic evidence collecting process, 2) improvement in the current situation by implementing innovative systemic change, and 3) utilizing innovation to improve the current situation of all of those involved in the study.

The researcher's theoretical orientation is constructivism; in the case of this study, it is cognitive constructivism (Doolittle & Camp, 1999). Creswell (2008) claims constructivism is knowledge attainment through an adaptive process and is the result of active cognitive action of the individual. This version of constructivism was chosen specifically for the unique feature that cognitive constructivism implies that there is a knowable reality in the physical world (meaning gained through experience). This particular feature distinguishes cognitive constructivism from its cousins, social (meaning created by culture) and radical constructivism (brain-wiring created meaning, Doolittle & Camp, 1999).

Cohen et al. (2011) refer to non-systematic data analysis exercises as "scouting parties" and condone their use in place of a pilot study when a pilot study is not feasible or useful. Given that the researcher/instructor has seven years of experience in teaching WPC 301 and that the course content, pretest, posttest, and delivery schedule remain unchanged from previous semesters in the last two years, a pilot study was not deemed necessary. While a pilot study is inherent to action research, based on the scope of this study and because a non-systematic process of testing online learning was done in a prior iteration of the course in the fall of 2010 with a small sample (n=17 online, n=1230 lecture), it was further determined a pilot was not necessary in order to conduct the study. The result of the 2010 informal test indicated further study needed to be undertaken to more fully document the promising preliminary findings that showed online learning posttest scores were equivalent with f2f posttest scores. The results led the researcher to engage in this current systematic action research study to fully test a much larger sample with the online delivery intervention

The study focused on Arizona State University, ASU W. P. Carey School of Business undergraduate students in their freshman, sophomore, junior, or senior year, who were enrolled in WPC 301 in the spring of 2011. The course in the study consisted of seven sections with a total of 543 students enrolled. Of the seven sections studied, one section of 377 students was in the traditional f2f format. The remaining six sections of the course with a total enrollment of 166 were in the online format. In the online format, more sections with fewer students, ranging from 22 through 47 in each section, were offered to spread the unknown

workload amongst the largest number of BCC professional staff persons who were trained to facilitate these online course sections.

Table 1

*Study Participants by Group*

| Group | N |
|---|---|
| Control (f2f) | 377 |
| Experimental (online) | 166 |
| Total | 543 |

From this population, a convenience sample was drawn based upon voluntary consent from students to have their pretest and posttest results included in the study data set. Convenience sampling requires choosing the subjects from those who are available and accessible at the time (Cohen et al., 2011). Another and somewhat more useful term for a convenience sample is a non-probability sample (Wiersma & Jurs 2008). This term is useful as it makes clear that the design of the research is not purely experimental. Therefore, results are only generalizable or transferable with caution outside of the specific group being studied at the time. The use of a non-random sampling technique was sufficient according to the requirements of action research (Gay, Mills & Airasian, 2006). In addition, Salkind (2010) and Creswell (2008) claim the number of participants in a sample for use in a test for significance type analysis to be no less than 30 in order to be statistically representative of a larger sample population. The figures cited in Table 1, satisfy that requirement.

The sample was obtained according to the requirements of the Institutional Review Board (IRB), at Arizona State University. Permission was sought by submitting a proposal detailing the data collection and data management procedures required by the IRB. After review and revisions of all materials, IRB approval was granted. The IRB approval is contained in Appendix C of this study. The researcher provided each student with a copy of the Institutional Review Board required permission document and obtained consent to the agreement by all students willing to participate.

**Participant Recruitment**

The pool of possible study participants was drawn from all registered students who completed WPC 301 in one of the seven course sections previously identified in the spring of 2011. This group was emailed an informed consent letter (see Appendix B) 10 days after completion of the posttest requesting their consent to use their data in this study. The informed consent letter had been approved by the ASU Institutional Review Board (see Appendix C). Participation was voluntary and had no effect on a student's grading. No other inducements were offered for participation. After 5 to 7 days, the same email was sent to any students of the WPC 301 population that did not respond (Creswell, 2008; Diaz De Rada, 2005; Dillman, Smyth, & Christian, 2008).

**Data Collection**

The two groups of participants consisted of one treatment group that received the intervention of an online learning delivery method and a control group that utilized the traditional f2f learning method. An online course was

defined according to the two requirements generated by Allen and Seaman (2005), which required that, most or all of the content is delivered in an online format and secondly, there are typically, no face to face meetings. These requirements are met in the online version of WPC 301. Conversely, according to the standard set by Allen and Seaman (2005), the f2f course received 95% of the course content via f2f lectures. The remaining 5% in the traditional f2f course material in WPC 301 consisted of articles to be read on the course's online Blackboard Learning Management System (Blackboard). This is consistent with previous versions of the traditional WPC 301 f2f course procedures.

Quantitative data were obtained in three ways: pretest and posttest scores from WPC 301 both administered in the spring semester of 2011, course evaluations for WPC 301 in that same semester, and survey data from a student survey required in WPC 301 from the same semester.

Powell and Kalina (2009) suggest that it is only by being fluent in the basic concepts and terminology of a subject that a student is able to move beyond mere recitation and progress to problem solving abilities. For this reason, posttest results, which measure the basic fluency level of students in WPC 301 subject matter, are the foundational point of data in this study.

Pretest and posttest scores were aggregated independently into mean scores according to each delivery method utilizing the statistical software package SPSS (PASW - 18). The scores for those calculations were obtained from the automatic scoring mechanism built into the online testing system within Blackboard. In the final sample, only students from each group who completed all

requirements of the course, including the pretest and posttest, all questions on the survey in the course, and consented in writing to be included in the study were included in the final sample. The final sample consisted of 220 total students: 156 online students and 64 online students. A comparison of means in an independent samples t-test analysis was used to determine if a significant difference in posttest scores existed between the two independent samples, online and f2f. In addition, independent samples t-test analysis was used on two subgroups within the total sample, swirl and first-generational status.

Standardized course evaluation forms are made available to students in WPC 301 and all School of Business courses to allow students to rate various aspects of the course. Students were not required to complete a course evaluation. Normal response rate is between 45 to 55% of enrolled students responding. This course evaluation was available in all sections of WPC 301. Data from these institutional documents was used to determine overall satisfaction by students who participated in the survey. Privacy issues precluded including only students who were part of this study's sample population. However, the overall satisfaction level of students can still be used as a possible lens in which to view student satisfaction with the course. Using the data, mean scores were defined for the following five standard categories in the WPC course evaluation form: Course Structure, Learning Climate, Instructor Involvement, Academic Rigor and, Evaluation were calculated. The data derived can provide a window on the students' overall satisfaction in specific categories and can serve to refine the study's view of its sample data. Scores for the six online sections were combined

and a weighted mean score was derived. In addition, scores from the benchmark report for all undergraduate courses in the WPC undergraduate curriculum were included to serve as a baseline for analyzing mean scores in the f2f and online courses.

Another source of data from the standard WPC course evaluation form was student comments for each format, f2f and online. Again, these scores represented all the students enrolled in WPC 301 and were not limited by the participants of this study. However, this institutional document data can be used in gaining a fuller understanding of the sample data in this study. This data was managed using a frequency chart of the comments from the section of the standard course evaluation form requesting student comments. According to Wiersma and Jules (2005), interviewing can take a variety of forms, one of which is "open ended" interviews. In the case of WPC 301, there is a single open ended question posed in the course evaluation process that asks: "What feedback would you like to provide to the instructor; for example, what practices would you like this instructor to continue, start, stop using in the future?" By utilizing responses to this question, data might be used to understand course participants' thoughts on both favorable and unfavorable aspects of the course according to participating students. By applying this method, students were free to express their thoughts without the possible limitation of an uneasy social situation in which they may have limited their open responses due to the interviewer/researcher also being the instructor of the course.

The results of all responses to the open-ended survey question were divided first into the major subcategories present in the course evaluation rating section: Course Structure, Learning Climate, Instructor Involvement, Academic Rigor, and Evaluation. Comments were then rated as either favorable or unfavorable concerning the pertinent category by the researcher. Finally comparative percentages were generated to determine the ratio of favorable to unfavorable comments. This ratio was then compared with the numeric ratings of the five major categories in order to see if the comments supported or did not support the numeric results for each category. These major category comment percentages were also compared as F2F only and online only scores to see if there were trends to be found in the data.

This study's intervention was the implementation of a new online delivery method for WPC 301. Differences between pretest scores and posttest scores were then used to compute gain scores for each sample group which were also compared between the two sample groups: online and f2f (Wiersma & Jur, 2005). However, it is imperative to remember that this score is only useful for illustrative purposes in this study since the two sample populations were not randomly selected and pre-existing variables were not controlled (Cohen et al., 2011). Pretest and posttest mean scores were analyzed for the study samples in each format according to each delivery method utilizing the statistical software package SPSS (PASW - 18). This data format is known commonly as a paired data analysis, meaning that the pretest is a baseline measurement of the group on

a variable prior to an intervention and the posttest is a measurement given after the administration of the intervention (Bonate, 2000; Dallal, 2000).

From the twenty-three questions asked on both the pretest and posttest, differences in mean scores (pretest scores subtracted from the posttest scores) were calculated. These differences were also reported as percentages. The net differences in means were compared using an independent samples t-test analysis to determine if there was a difference in these scores from the f2f format to the online format. This method allowed for the determination of differences in knowledge between the two groups entering the course and any differences in post-course learning. Most pertinent, this method allowed for a comparison between learning outcome levels between the two course formats, f2f and online. As suggested by Salter (2008), use of a t-test provides evidence of any differences in tested knowledge between the two groups. If one group exhibits significantly higher levels of pre-existing knowledge, posttest score comparisons between the two delivery method groups can still be made. The pretest consisted of 25 questions (see Appendix A). The posttest consisted of the same 25 questions used in the pretest. The exact same tests were given to both groups, online and f2f, to insure reliability as equivalent tests (Cohen et al., 2011). The test was delivered online in both delivery methods via Blackboard.

**Data Management**

All original pretest and posttest data was housed on the ASU Blackboard Learning System, and the survey data was housed on the SurveyMonkey online survey tool. SurveyMonkey is the world's leading provider of web-based survey

solutions and provides encrypted survey provision and storage to millions of clients. Consenting students' data was subsequently downloaded to Excel on the researcher's computer. All personal identification was permanently removed from the Excel file. Back-up copies were stored in a portable hard drive in the possession of the researcher and in two secure online data storage systems, Zotero and Amazon Cloud Drive, which are only accessible by the researcher via a secure password.

**Research Design**

The goal of this action research was to determine if online delivery of the WPC 301course provided equivalent posttest scores when compared to the traditional f2f delivery method of the WPC 301course. This determination required the following:

- The utilization of online delivery as a new innovation/intervention in instructional methodology for WPC 301 course;
- The use of data to measure the effect of the intervention as a possible solution for a professional practice-based problem;
- A systematic comparison of posttest scores of students in a f2f delivery format and a new online delivery format.

For example, if equivalent test scores were found, this would indicate that the knowledge from the WPC 301 course was gained equally by both delivery methods. This would then allow the BCC to re-adjust its staff allocation scheme to significantly ease the strain on resources that f2f-delivered courses require.

The research design was an action research model with the primary purpose to plan, implement, review, and reflect on an intervention designed to solve a particular problem in the researcher's everyday community of practice, collegiate career services in business (Cohen et al., 2011). The study compared student posttest scores between online and f2f delivery methods. The intent of the study was to understand whether the action, the implementation of a new course delivery method for WPC 301, resulted in different posttest scores for students in an undergraduate school of business. The analysis of the data collected was designed to answer the following research question:

How do student posttest scores between f2f delivery and online delivery differ in the WPC 301 career strategy course in an undergraduate school of business?

The study examined the following hypothesis:

$H_o$: There will be no significant difference in posttest scores between f2f delivery and online delivery in WPC 301 in an undergraduate school of business.

Coghian (2001) claims that the value in action research in not so much in the success or failure of a particular iteration in a process, but in the exploration of the data generated, i.e. how the process was managed. This understanding of a process via the data collected fundamentally can contribute to learning about possible solutions going forward (Barton, Stephens & Haslett, 2009). In this study, a quantitative research design was used to determine if there was a difference in student posttest scores between two instructional delivery methods. This quantitative approach sought to understand the size and direction of any

variance between the two groups in these posttest scores in WPC 301. According to Morrison et al. (2010), a quantitative assessment of instructional strategies significantly lessens researcher bias or loss of objectivity in interpreting the benefits of new forms of instruction. In addition, these authors contend that quantitative results allow for a comparison of the efficiency of learning.

Measured efficiency in the delivery of learning between f2f methods and online methods is a key driver in this study. Reporting these findings in a quantitative format allowed the intervention of an online delivery method to be compared to known cost structure of the existing f2f course delivery methods. Also, understanding the results of this study in a quantitative way allows for the replication of this study by practitioners within the researcher's community of practice, collegiate career services. Finally, since much of the data such as posttest/pretest scores and course evaluation were already available to the researcher in quantitative format, a significant savings in research time and resource costs were realized.

This action research study utilized a quasi-experimental design which is commonly found to be acceptable in action research, and allowed the study to be conducted when based on subjects who were not selected at random (Wiersma & Jurs, 2008). This non-random assignment of subjects does not preclude the study from being generalizable or transferable with caution to other populations or environments outside of this particular study's environment, the W. P. Carey School of Business (Cohen, et al., 2011).

Wiersma and Jurs (2008) describe the type of experiment that was utilized in this study as a *Pretest-Posttest, Nonequivalent Control Group Design*. Table 2 illustrates this research design:

Table 2

*Research Design*

| | Pretest | Experimental Variable | Posttest |
|---|---|---|---|
| Group | $O_1$ | | $O_2$ |
| | $O_3$ | $X_{Online}$ | $O_4$ |

X = Variable/Intervention O = Data Collection Event

The subject of this study, WPC 301 was an open system, which did not allow for a true experimental design utilizing two experimental groups based on control of all or most factors within the sample (Creswell, 2008). The students who enrolled in the online course had a choice between online and f2f making random design impossible. After the online courses filled, remaining students had to enroll in the f2f course. Wiersma and Jurs (2008) cite that students' selection of one delivery method (E.g. f2f or online course) over another might suggest that unknown potential factors are at play in a student's decision making. According to these authors, factors could include common characteristic such as previous experience with online courses in college or high school, positive outcomes from previous online courses at their current or previous institutions, and/or a

preponderance to do well in the course based upon perceived feelings of freedom. These unknown biases of subjects have the potential to influence the data. Fortunately, in an action research design which is a quasi-experimental design, control of these factors is not required for the study to have utility in studying an intervention (Wiersma and Jurs, 2008).

**Descriptive Analysis**

A comparison of means in an independent samples t-test analysis was used to determine if a significant difference in posttest scores existed between the two independent samples, online and F2F (Pearson, 2010). A t-test does not infer or predict any relationship between groups. It is used strictly to determine if there are significant differences between the means of two groups (Cohen, et al., 2011). Since the null hypothesis has been chosen, a two-tailed test was used (Pearson, 2010). According to Cohen, et al. (2011), the two-tailed test is appropriate when a prediction of difference is sought.

Cohen et al. (2011), claim that a descriptive analysis can be comprised of the mode, mean, median, minimum and maximum scores, range of scores, variance from the mean, standard deviation, standard error, skewness, and kurtosis. A statistical analysis utilizing these descriptive statistics was also used in this study to describe what happened. These statistical tools do not infer or predict any relationship between groups but rather are simply used to describe the data in different ways in a sample. A common feature of action research is the general requirement for the researcher to make suggestions for future action based on a systematic analysis of the data collected and analyzed (Creswell, 2008; Dick,

2002; Weirsman & Jurs, 2008). Analysis from this action research study using these tools where appropriate facilitated the researcher in the development of new solution iterations for use in the future, as suggested by Dick (2002).

In order to add to the richness of the data, the researcher conducted a frequency analysis of comments derived from the course evaluations completed by students in the WPC courses in both the f2f format as well as the online format. This analysis helped the researcher understand how students used the course, why they behaved as they did, and possibly how they suggest the course can be improved. The intent of this analysis was to develop a more thorough understanding about the environment and experiences involved with the online version of WPC 30l and also note any differences in frequency or category of comments between the f2f course and the online course. This allowed the researcher to reflect in an informed way on further action to enhance the utility of WPC 301 online.

To secure information about possible sub-population variations on posttest scores, use of survey data obtained as part of WPC 301, was analyzed to determine if the sub-population factors of student attendance patterns in multiple institutions, known as swirl (Bach et al., 2000; Borden, 2004; de los Santos & Wright, 1990; Li, 2010), and first-generation status (Belcastro, 2009; Olson, J. S. (2010), Pascarella, Pierson, Wolniak, & Terenzini, June 2004) were analyzed since both pertain to significant factors that affect all students in the entire sample group and are important in understanding possible future interventions to the whole student population.

The results of the pretest and posttest scores of students participating in this study were not viewed by the researcher prior to the report being written in order to limit any researcher bias. Also, the researcher is also the director of the BCC and is keenly interested in finding solutions for the problems of inordinate resource drain required in teaching WPC 301 in the f2f manner. To reduce researcher bias, the researcher has complied with Winter's notion of reflexive critique which is the process of becoming aware of one's perceptual biases as a researcher (Cohen, et al., 2011). By use of the systematic analysis of data in the case of an online WPC 301 option, any bias in determining the comparative value of either delivery method is minimized. The results found were neither good nor bad. What the researcher hopes for are results that will guide informed professional practice forward to new iterations of solutions to the problems and issues detailed in this study.

A primary limitation of this study was the lack of a true control group. This can create a limit on the transferability and generalizability of the study's findings.

**Summary**

The purpose of this study was to determine if a significant difference in final test scores existed between students who took a career strategy course in a f2f delivery format compared to students who took the course in an online format. This chapter details how the study gained data via an action research design utilizing an intervention of an online format for WPC 301. A process to secure reliable data from multiple sources within the WPC 301 course were described in

order to provide quantitative results in four areas: posttest scores, pretest scores, learning gain, and course evaluation data. A quasi-experimental design approach was provided in detail which allowed data to be collected which could be analyzed by use of independent samples tests, comparison of means, and frequency analysis as tools to gain data pertinent to the research question in this study. Chapter Four details the results of the analysis of the data which resulted from this research design as described in this chapter.

## Chapter 4 Results

The purpose of this study was to determine if a significant difference existed in final test scores between students who took a career strategy course in a face-to-face (f2f) format and students who took the course in an online format. This chapter will provide results of this study in four areas: posttest scores, pretest scores, learning gain, and course evaluation data.

Analysis of the data from the final exam grades of each group was used to determine if a significant difference in test scores existed which could indicate a variation in learning performance between the two groups. Pretest scores were also utilized to determine if pre-course knowledge levels were similar between the two samples. Comparison between pretest and posttest mean scores was utilized to indicate whether similar changes in learning occurred in the overall sample between the two populations. Included beyond tests of significance, the study used additional demographic data provided by a survey administered in the course to determine if certain subgroups of interest might show significant differences in posttest scores within that subgroup. Additionally, results from institutional data derived from student's course evaluations were used in two ways, statistical responses and interview responses. This data was used in understanding overall satisfaction level differences as a way to provide additional data about student's thoughts about their particular delivery format, f2f or online.

**Research Question**

How do student posttest scores between f2f delivery and online delivery differ in the WPC 301 career strategy course in an undergraduate school of business?

The study examined the following hypothesis:

$H_o$: There will be no significant difference in posttest scores between f2f delivery and online delivery in WPC 301 in an undergraduate school of business. $H_{0,}$ indicates the null hypothesis. Pearson (2010) suggests the null hypothesis is essentially saying there is no difference or a very small difference between the two variables. Data collected in this study was to either confirm or deny whether the hypothesis of this study was true or not.

**Participants**

The participants in this study were students at the W. P. Carey School of Business at Arizona State University who enrolled in and completed WPC 301, the required career strategy course. In the spring 2011, there were 543 students enrolled in the course, with 377 (69.4%) enrolled in the f2f group and 166 (30.6%) enrolled in the online group.

In the final sample only students from either group who completed the course, completed all questions on the survey in the course, and consented to be included in the study, were included in the final sample.

A sample of 220 students was obtained after eliminating all students who did not meet these criteria. The total sample consisted of 156 students in the f2f format and 64 students in the online format (Table 3). Within the f2f and online

samples, females comprised 67 (42.9%) students of the total f2f sample and 27 (42.2%) students of the total online sample. Men comprised 89 (57.1%) of the students students in the f2f sample and 37 (42.2%) of the students in the online sample (Table 4). These ratios of female/male population are relatively comparable to the ratio of females to males in the total school population, which is males 5,221 (61.9%) and females 3,215 (38.1%).

Table 3

*Number of Students Enrolled in F2F Compared to Online*

| | FSF | | Online | |
|---|---|---|---|---|
| Enrolled | *n* | % | *n* | % |
| Totals | 156 | 70.9 | 64 | 29.1 |

Table 4

*Gender of Students Enrolled in F2F Compared to Online*

| | FSF | | Online | |
|---|---|---|---|---|
| Gender | *n* | % | *n* | % |
| Female | 67 | 42.9 | 27 | 42.2 |
| Male | 89 | 57.1 | 37 | 57.8 |
| Totals | 156 | 100.0 | 64 | 100.0 |

**Posttest**

The posttest analysis of both sample groups resulted in the descriptive statistics detailed in Table 5. These scores were based on the full final test which had a total high score of 35. Of particular interest is the statistic for kurtosis which indicates that the distribution curve for posttest scores was highly truncated to the higher end of the distribution curve. A histogram (Figure 1) is provided to show both the skewness and kurtosis of the posttest visually.

Table 5

*Posttest, Descriptive Statistics*

| | Statistic | Std. Error |
|---|---|---|
| Category | | |
| N | 220 | |
| Range | 12.00 | |
| Minimum | 23.00 | |
| Maximum | 35.00 | |
| *M* | 32.31 | 0.18 |
| Std Deviation | 2.67 | |
| Variance | 7.15 | |
| Skewness | -1.24 | 0.16 |
| Kurtosis | 1.19 | 0.33 |

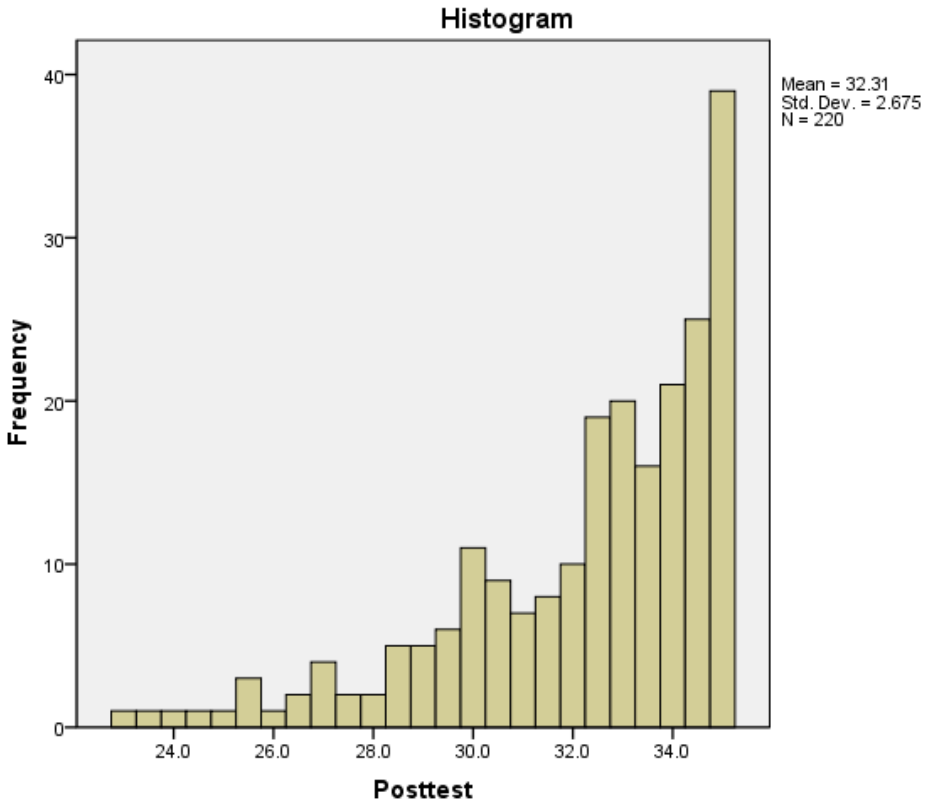


*Figure 1.* Histogram – posttest

The focus of this study was determining if a significant difference in final test scores between students who took a career strategy course in an f2f format and students who took the course in an online format existed. To accomplish that goal, an independent samples t-test was conducted to compare the final test scores for students in the f2f format and students in the online format. Results from that analysis indicated that there was no significant difference in scores for students in the f2f format ($M$ = 32.40, $SD$ = 2.61) and students in the online format

($M$ = 32.07, $SD$ = 2.82; $t$ (218) = 0.84, $p$ = 0.40, two-tailed (Table 5). The magnitude of the differences in the means (mean difference =0.33, 95% confidence interval: –0.45 to 1.12) was very small (eta squared = 0.003).

**Subgroup I: Swirl Students**

The student survey administered to all students described six types of enrollment patterns. These included students who:

- Transferred after obtaining an Associate of Arts degree (T-Post AA);
- Transferred to W. P. Carey from another four year institution after freshman year (T-4 yr/Fr);
- Transferred to W. P. Carey from another four year institution after sophomore year (T-4 yr/So);
- Attended W. P. Carey from since freshman year (ASU/Fr);
- Attended W. P. Carey from since sophomore year (ASU/So);
- Other (Other) refers to other pattern of enrollment not covered by the previous five possible choices.

Swirl refers to the multi-institutional attendance patterns of students as they progress toward their degree (de los Santos & Wright, 1990). The swirl patterns, while not a primary focus of this study, are of concern as a substantial number of transfer students enter the W. P. Carey School of Business every year. This group of approximately 600 to 800 students in a graduating class of approximately 2,000 annually could have significant impact on student career preparedness of the school as a whole. Table 6 shows figures relating to the student swirl factor in both sample groups.

Table 6

*Swirl Status of Students Enrolled in F2F Compared to Online*

| | FSF | | Online | |
|---|---|---|---|---|
| Swirl | *n* | % | *n* | % |
| T-Post AA | 12 | 7.7 | 7 | 10.9 |
| T -4 yr/Fr | 0 | 0.0 | 0 | 0.0 |
| T-4 yr/So | 8 | 5.1 | 9 | 14.1 |
| ASU/Fr | 102 | 64.4 | 33 | 51.5 |
| ASU/So | 20 | 12.8 | 9 | 14.1 |
| Other | 14 | 9.0 | 6 | 9.4 |
| Totals | 156 | 100.0 | 64 | 100.0 |

An independent samples t-test was conducted to compare the final test scores for students who had attended ASU since freshman year and students who transferred from another four year institution. There was a significant difference in scores for students who had attended ASU since freshman year ($M$ = 32.62, $SD$ = 2.59) and students who transferred from another four year institution after sophomore year ($M$ = 30.75, $SD$ = 2.60; $t$ (150) = 2.88, $p$ = 0.005, two-tailed). The magnitude of the differences in the means (mean difference = 1.87, 95% confidence interval: –0.59 to 3.16) was moderate (eta squared = 0.048). This finding is consistent with the literature discussed in Chapter Two.

An independent samples t-test was conducted to compare the final test scores for students who had attended ASU since sophomore year and students

who transferred from another four year institution after sophomore year. There was a significant difference in scores for students who had attended ASU since sophomore year ($M$ = 32.05, $SD$ = 1.63) and students who transferred from another four year institution after sophomore year ($M$ = 30.75, $SD$ = 2.60; $t$ (46) = 2.12, $p$ = 0.040, two-tailed). The magnitude of the differences in the means (mean difference = 1.30, 95% confidence interval: 0.064 to 2.54) was moderate (eta squared = 0.09). This finding is also consistent with the literature discussed in Chapter 2.

**Subgroup II: First Generation Students**

Table 7 illustrates the first generation status of students in the WPC 301 f2f and online delivery method sample groups. While not a central focus of this study, with 25% of students in both f2f and online formats self-identifying as first generation students (Table 4), the impact of such a significant subpopulation is certainly of value in terms of retention and academic success of this group of students.

Table 7

*First Generation Status of Students Enrolled in F2F Compared to Online*

| | FSF | | Online | |
|---|---|---|---|---|
| Generation | *n* | % | *n* | % |
| First | 39 | 25.0 | 16 | 25.0 |
| Non-first | 117 | 75.0 | 48 | 75.0 |
| Not Sure | 0 | 0.0 | 0 | 0.0 |
| Totals | 156 | 100.0 | 64 | 100.0 |

The literature suggests that first generation students tend to perform lower academically than their peers (Belcastro, 2009; Olson, 2010; Pascarella et al., 2004). In the case of an online career course, an analysis of an independent samples t-test was conducted to compare the final test scores for students who were first generation students and those who were not first generation. There was no significant difference in scores for students who were first generation ($M$ = 32.42, $SD$ = 2.29) and students who were not first generation ($M$ = 32.27, $SD$ = 2.80; $t$ (218) = 0.36, $p$ = 0.722, two-tailed). The magnitude of the differences in the means (mean difference = 1.48, 95% confidence interval: -0.064 to 0.970) was very small (eta squared = 0.006). These findings do not support the literature discussed in Chapter 2.

**Pretest**

To determine whether these scores are consistent given the level of knowledge present in each sample, f2f and online, scores for the pretest in WPC 301 are displayed in Table 8. The pretest was 23 questions in length, and the posttest scores were derived from the longer final test to select only the pretest questions. Thus, all students answered the 23 questions in both the pretest and posttest. Noteworthy is that overall pretest scores show a distribution which approaches a standard curve in terms of score frequency as indicated by the thin black line representing a standard distribution curve (Figure 2). This would indicate that students in both groups entered WPC 301 with approximately the same level of pre-existing knowledge about the subject of career strategy.

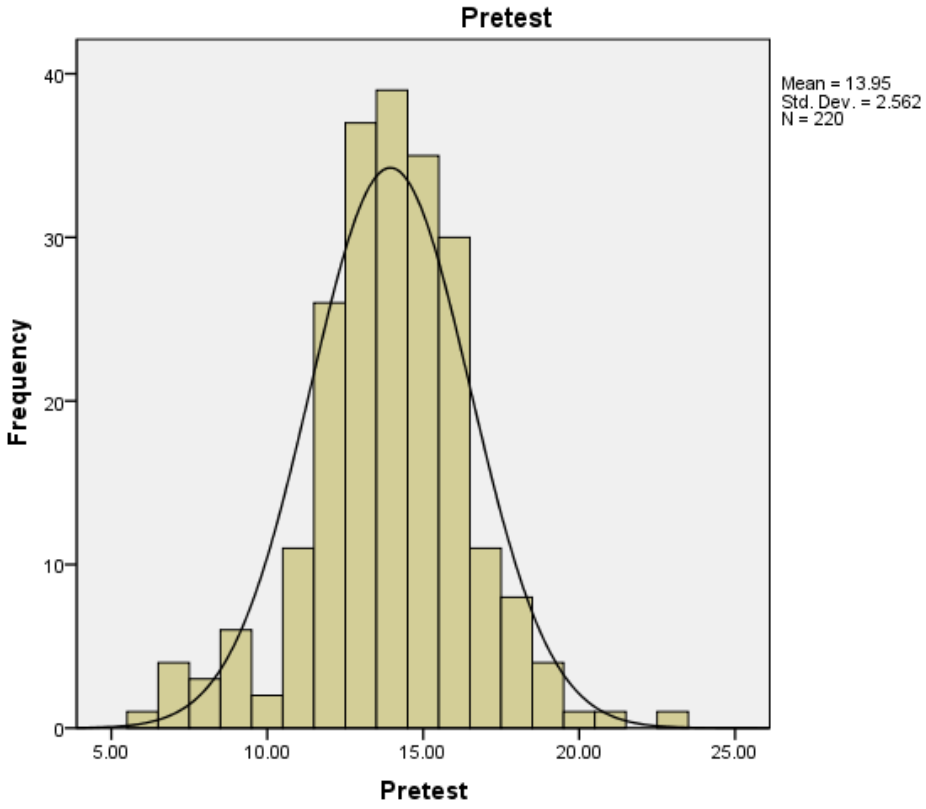


*Figure 2. Pretest*

Specifically, an independent samples t-test was conducted to compare the posttest scores for students in the f2f delivery method compared to the online delivery method. Results of that statistical analysis indicated that there was no significant difference in scores for students who were in the f2f delivery method (*M* = 13.87, *SD* = 2.73) and students who were in the online delivery method (*M* = 14.12, *SD* = 2.12; *t* (218) = - 0.665, *p* = 0.51, two-tailed). The magnitude of the differences in the means (mean difference = -0.5, 95% confidence interval: -1.00 to 0.497) was very small (eta squared = 0.001). This data supports that both sample groups entered WPC 301 with essentially equal levels of prior knowledge.

Due to the significant differences found in the posttest scores, t-tests were run to determine if any significant differences in prior knowledge existed between the two student groups noted earlier. An independent samples t-test was then conducted to compare the pretest scores for students who had attended ASU since freshman year and students who transferred from another four year institution. There was a significant difference in scores for students who had attended ASU since freshman year ($M$ = 13.96, $SD$ = 2.49) and students who transferred from another four year institution after sophomore year ($M$ = 13.72, $SD$ = 2.16; $t$ (150) = 0.390, $p$ =0.697, two-tailed). The magnitude of the differences in the means (mean difference = 1.87, 95% confidence interval: –0.59 to 3.16) was very small (eta squared = 0.001). There does not seem to be any significant difference in prior knowledge between these two samples.

An independent samples t-test was conducted to compare the pretest scores for students who had attended ASU since sophomore year and students who transferred from another four year institution after sophomore year. There was a significant difference in scores for students who had attended ASU since sophomore year ($M$ = 14.03, $SD$= 2.24) and students who transferred from another four year institution after sophomore year ($M$ = 13.72, $SD$ = 2.16; $t$ (46) = 4.70, $p$ = 0.641, two-tailed). The magnitude of the differences in the means (mean difference = 0.312, 95% confidence interval: -1.03 to 1.65) was very small (eta squared = 0.03). There does not seem to be any significant difference in prior knowledge between these two samples.

**Gain**

Statistics concerning gains in learning can be derived by comparing pretest scores with posttest scores if both measure exactly the same questions. Table 8 shows a summation of gain scores for both sample groups. As can be seen in the table, gain in knowledge measured after the course climbed by approximately 38% for each of the sample groups. The pre-existing knowledge bases in both samples as they entered the course were very similar and continued to generally mirror each other until the end of the course where there were no real differences between the two groups in terms of learning gain.

Table 8

*Gain Scores, Pretest to Posttest*

| Means | FSF | Online |
|---|---|---|
| Pretest Score | 13.87 | 14.12 |
| Posttest Score | 22.79 | 22.76 |
| Score Gain | 8.92 | 8.64 |
| % Gain | 39.14 | 37.96 |

**Course Evaluation – Numeric**

Course evaluations are a standard for every course in the W. P. Carey School of Business. These forms are unique to the School of Business. Comparative data from these sources may prove useful in understanding specific differences in student satisfaction between students in the f2f delivered format

and the online delivery format. It should be noted that this data is derived from all participating students and was not reduced to only members of the student sample used in the rest of this study due to university privacy restrictions.

Table 9 shows the rankings on a seven point scale of student satisfaction / dissatisfaction within the specific areas measured by the course evaluation. It can be seen from this data that both the f2f and online satisfaction ratings were relatively equal in all categories. In addition, it can be seen that student satisfaction scores in both sample groups are roughly equivalent to the benchmark statistics made up of all course evaluation data for all undergraduate courses in the School of Business as well; the one exception is in academic rigor. That result is not surprising in that a career strategy course at the 300 level is being compared to highly quantitative courses in both the business core and in senior level quantitative and capstone courses at the 400 level. In fact, it might be more surprising that the career course was rated as highly in academic rigor as the data show against such competition.

Table 9

*Course Evaluation Scores (total course enrollment)*

| Category | FSF | Online | All U-grad Bench |
|---|---|---|---|
| Course Structure | 6.06 | 6.07 | 5.89 |
| Learning Climate | 5.75 | 5.42 | 5.71 |
| Instructor Involvement | 5.73 | 5.78 | 5.76 |
| Academic Rigor | 5.49 | 5.61 | 5.95 |
| Evaluation | 6.41 | 6.37 | 6.17 |

*Note:* 1 - 7 scale - 7 highest

**Course Evaluation - Student Comments**

Table 10 details the results of the frequency of favorable and unfavorable comments derived from the course evaluations required in WPC 301. The open-ended question: 'What feedback would you like to provide to the instructor; for example, what practices would you like this instructor to continue, start, stop using in the future?,' were divided first into the major subcategories present in the course evaluation rating section: Course Structure, Learning Climate, Instructor Involvement, Academic Rigor, and Evaluation. Comments were then rated as either favorable or unfavorable concerning the pertinent category. These major category comment percentages were also compared as F2F only and online only scores to see if there were significant differences.

Significantly higher percentages of favorable comments were found for the online course format in the areas of Course Structure (31.7%) and Learning

Climate (36.6%) compared to f2f Learning Climate (23.5%) and for f2f Course Structure (22.1%). Not unexpectedly Instructor Involvement was much higher as a percentage of favorable comments in the f2f classes (27.9%) compared to the online classes for the same category (9.8%). Also, as a percentage, almost twice as many rated the learning climate unfavorably in the online delivery format as compared to the f2f delivery format.

Table 10

*Course Evaluation Comments Frequency & Quality*

| Category | F+ | % | F- | % | O+ | % | O- | % |
|---|---|---|---|---|---|---|---|---|
| Course Structure | 16 | 23.5 | 8 | 11.8 | 13 | 31.7 | 4 | 9.8 |
| Learning Climate | 15 | 22.1 | 4 | 5.9 | 15 | 36.6 | 4 | 9.8 |
| Instructor Involvement | 19 | 27.9 | 3 | 4.4 | 4 | 9.8 | 1 | 2.4 |
| Academic Rigor | 1 | 1.5 | 1 | 1.5 | 0 | 0 | 0 | 0 |
| Evaluation | 1 | 1.5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Totals | 52 | 76.5 | 16 | 23.5 | 32 | 78.0 | 9 | 21.9 |
| Totals Group Comments | 68 | | | | 41 | | | |

*Note:* (+) reflects favorable comments, (-) reflects unfavorable comments about the category. f2f, (n) = 377, online (n) = 166.

**Summary**

The focus of this study was to determine if a significant difference in final test scores between students who took a career strategy course in an f2f format and students who took the course in an online format occurred. This chapter

provided data-driven results of this study in four areas: posttest scores, pretest scores, learning gain, and course evaluation data. For posttest scores, the null hypotheses was accepted; there was no significant difference in final test scores between f2f and online delivery formats as shown by an independent samples t-test. In the two subgroups studied, results were mixed. Independent samples t-tests showed that there were significant differences in posttest scores, but not pretest scores, between students that transferred to ASU from other four year institutions in freshman and sophomore year. Independent samples t-tests revealed that there was no significant difference between first-generation students and non-first-generation students on either the posttest scores of the pretest scores. This finding was contrary to the literature on the topic of first-generation students' academic achievement.

An independent samples t-test was also used to show that there was not a significant difference in pre-existing knowledge for students enrolled in either course delivery format, f2f or online. Analysis of learning gain data clearly indicates that not only were the learning gains by students in both delivery formats closely equivalent, they were impressively large, approaching a 40% increase in test scores on the posttest over the pretest scores on identical test questions.

Finally course evaluation data indicated that student satisfaction was relatively equal for both the f2f and the online delivery formats. Frequency analysis of data from the same course evaluations show approximate equality in favorable versus unfavorable comments from students regardless of their

respective delivery formats. Clearly higher percentage scores were recorded for the online format over the f2f format in Course Structure and Learning Climate, although Instructor Involvement was much higher in favorable comments for the f2f delivery method as compared to the online delivery method.

Chapter 5 will discuss in more detail the implications of these findings on the community of practice in collegiate career services, will highlight how future iterations of this action research topic might be carried out to improve the research about strategic career courses, and will discuss future directions for strategic career development.

## Chapter 5 Discussion

The W. P. Carey School of Business has yet to attain its goal of 85% employment at graduation for its students. In this action research study, an intervention was created which called for the existing WPC 301 career strategy course to be redesigned from a traditional face-to-face (f2f) lecture course into a totally online delivery format.

The focus of this study was to determine if a significant difference in posttest scores between students who took the WPC 301 career strategy course in an f2f format and students who took the WPC 301course in an online format occurred. The study provided data-driven results of this study in four areas: posttest scores, pretest scores, learning gain, and course evaluation data. For posttest scores, the null hypotheses was accepted; there was no significant difference in final test scores between f2f and online delivery formats as shown by an independent samples t-test.

In the two subgroups studied, transfer and first-generation students, results were mixed. Independent samples t-tests showed that there were significant differences in posttest scores, but not pretest scores between students that transferred to Arizona State University (ASU) in freshman and sophomore years from other four year institutions. This data supported the literature (Bach, Banks, Kinnick, Ricks, Stoering & Walleri, 2000; Enzi, Boehner, & McKeon, 2005; Li, 2010) that claim that transfer students from a four year institution to another four year institution have greater academic and time-to-graduation difficulties than students who have been enrolled at one campus continuously

Independent samples t-tests revealed that there was no significant difference between first-generation students and non-first-generation students on either the posttest scores of the pretest scores. This finding was contrary to the literature on the topic of first-generation students' lower academic achievement (Olson, 2010; Pascarella, Pierson, Wolniak, & Terenzini, 2004)

An independent samples t-test was also used to show that there was not a significant difference in pre-existing knowledge for students enrolled in either course delivery format, f2f or online. Analysis of learning gain data clearly indicates that not only were the learning gains by students in both delivery formats closely equivalent, they were impressively large, approaching a 40% increase in test scores on the posttest over the pretest scores on identical test questions.

Finally, W. P. Carey School of Business (WPC) course evaluation data indicated that student satisfaction was relatively equal for both the f2f and the online delivery formats. Frequency analysis of data from the same course evaluations showed approximate impartiality between favorable versus unfavorable comments from students regardless of their respective delivery formats. Higher percentage scores in Course Structure and Learning Climate were recorded for the online format over the f2f format. Instructor Involvement was much higher in favorable comments for the f2f delivery method as compared to the online delivery method.

This chapter will discuss in more detail the implications of these findings in three areas; first, it will explore future iterations of this action research study in

the local community of practice; second, it will discuss how this study's findings might be utilized within the larger community of practice in collegiate career services; and third, it will consider what the results of this action research study might suggest about future implications for professional practice in improving strategic career development for new college graduate and employers in the global marketplace for highly skilled talent.

**Online Learning**

As discussed in Chapter Two, over 5.6 million students have taken an online course, a 21% increase from 2008 to 2009 (Allen & Seaman, 2010). Allen and Seaman (2010) also report in their Sloan Consortium report that the proportion of students enrolled in online learning increased to 29.3% in 2009 within colleges and universities in the United States. Access seems to be a minor issue when looking at the demand for U.S. online learning in 2010. Statistics show that in 2009 over, 2,500 U.S. higher education institutions reported a 74% increase in demand for online courses compared to a 50% increase in demand for face-to-face courses (Allen & Seaman, 2010). Further, 90% of the world population now has access to a mobile network which can access the web according to the United Nations agency for information and technology issues, the International Telecommunications Union (IAU, International Telecommunications Bureau, 2010). The IAU confirms that almost 100% of public schools and 77% of individuals in the US have private access to the web. Within the higher education sphere, this access has translated to a 74% increase in

demand for online courses compared to a 50% increase in demand for face-to-face courses in 2009 (Allen & Seaman, 2010).

Online learning is a major and continuing presence on college campuses for the future. This action research study verified that the learning outcomes in a career strategy course showed no significant differences between the traditional f2f course delivery method and a new online delivery of the same course when delivered in a major university school of business. This finding indicates evidence for: 1) f2f and online delivery of the WPC301 provide similar outcomes and as such 2) the researcher is in a position to seek additional resources to advance the career strategy education in the online course delivery of WPC 301. However, this first, simple study about online learning and career strategy is not an end in and of itself. Within the local community of practice, the researcher, who is also the Director of the W. P. Carey School of Business Career Center, must continue developing more sophisticated courses, delivery methods, and evaluation processes for this course and its informational content.

As the trend toward online education continues, the challenge will be to develop more innovative ways to deliver career information. Most specifically, the researcher will develop future iterations of online learning research to study real-time simulations and game formats. These formats are capable of delivering a richer, more interactive method of teaching career strategy, and subsequently will be included in implementation tactics in future iterations of online learning projects (Michael & Chen, 2005; Gee, 2007). Following the lead of Reeves and Read (2009), it is clear that current versions of games that involve real time

analysis and strategy, communication with others, and the ability to react in real time to choices made by a player-student have significant promise in helping students explore, learn, and more fully experience the process of career decision-making, strategy, and implementation. However, as Aldrich (2009) points out, there is a tremendous amount of preparation required in terms of pre-knowledge that is required before a student-player utilizing a simulation or game can gain high levels of benefit.

The results of this study indicate that basic information about career strategy and tactics, as measured by the posttest scores, can be effectively and efficiently taught utilizing basic online learning processes. By implementing the instructional design and content of this course with the logical next step, immersive personalized career skills training (e.g. simulations and games), a relevant career learning and apprenticeship tool could be developed that is both highly effective and uniquely personalized.

**Career Services**

According to the National Association of Colleges and Employers Benchmarking Report (NACE, 2010), 99.3% percent of all college career centers report that their number one activity is one-on-one counseling. Although poorly regarded by students (Haney & Howland, 1978), workshops are the number two activity for college career centers. Only 31.9% of collegiate career services offices offered a credit-bearing career class. Further research should be done to understand how these student career services are fully realized by students as well as determine the personnel cost–benefit analysis to the institution

Given the fact that this unique online course showed no significant differences in posttest scores between the online delivery format and the f2f format, it is hoped that the approximately 32% of schools that already have career courses (NACE 2009) may be able to develop online versions in addition to their traditional f2f lecture delivery formats. For the other 68% of career centers who currently do not have career courses of some type (NACE, 2009), it is hoped that an online career course might be contemplated as a third type of career service for students in addition to one-on-one consultation or workshops.

The utilization of straightforward descriptive statics used in this study was intentional. As action research, the goal of this study was to allow career center staff who may not have deep statistical knowledge to easily replicate this study and its descriptive comparison easily in their own career center community of practice. Further, this study offers career centers that currently have a career course a possible way, through online delivery of their career course, in which to recover scarce resources that could be redeployed in other mission critical services. For career centers contemplating a career course, this study may suggest a possible pathway to developing a cost-efficient offering of a career course.

In the Business Career Center (BCC), utilization of this online course has allowed the BCC leadership and staff to meet the demand of teaching over 1,550 students in the semester following this study versus the previous semester of 543 enrolled students. This was an increase in teaching capacity of 187% from one semester to the next. This increase in ability to teach larger numbers of students reduced the need for staff to be in twelve classrooms on four different campuses

to just three f2f sections on three campuses for the following semester. By eliminating six staff to prepare and deliver seven separate f2f classes on multiple campuses through the utilization of this online delivery format resulted in a budgetary savings of tens of thousands of dollars, nearly 10% of the entire BCC budget, which was redirected to other critical career service activities.

This type of budget assistance would be helpful to many collegiate career centers as, according to the NACE Benchmark Report (2010), 91.2% or all reporting career centers saw decreases or stagnation in resources. Specifically, 60% of all career centers experienced a decrease in resource funding, 31.2% of the centers remained financially stagnant, and only 8.8 % saw an increase in funding. Few career centers can ignore this type of budget efficiency while providing services in current times of budget stagnation or budget reductions (NACE 2010). For the rest of the nearly 70% of career service centers that have not developed a career course, the results from this study may serve as an inducement to create and deliver an online career strategy course and accrue the outcomes and benefits in at-graduation employment statistics that this study suggests are available.

College students continue to enroll and engage in academic classes based on the requirements of the university and of their major. The same is not true for engagement with a typical career center according to the NACE statistics (NACE, 2009). According to NACE, at a college of 10,000 students, the career center will only interact with 9% of the student population in a given year. At a school of 25,000 or more, the number plummets to 3%. Yet, gaining employment remains a

primary reason for attending college (Kessler, 2010; Pope & Fermin, 2003). The disconnect between expected outcomes from college graduation and low interaction levels in the career center have unfortunate consequences for both students and institutions. According to the NACE (2010) National Salary Survey at graduation, approximately 25% of all new college graduates acquired new jobs that required college level skill sets at graduation.

This world of post college graduation employment can be described as an anarchic economy or ecosystem in which an action-based network of possibilities exists rather than the codified linear pathways of the past industrial age (Amster, DeLeon, Fernandez, Nocella & Shannon, 2009; Butterwick & Benjamin, 2006; Meister & Willyerd, 2010). Unfortunately, research literature and employers maintain that many of the graduates of colleges and universities are not prepared with the skill sets required for success in this anarchic global economy (Benko & Weisberg, 2007; Pink, 2002; Schrage, 2010).

As Bridgstock (2009) notes is his study of college graduate attributes, a college graduate must have the following abilities to be successful: 1) to find and use information about the potential world of work, 2) to locate and gain college skill-level employment knowledge, 3) to form a commitment to lifelong learning to retain employment value, and 4) to develop relationships that create current and future value. These skills go beyond simply writing a traditional resume and honing a few interview skills.

This is a clear description of career strategy. A review of the WPC 301 syllabus (Appendix D) indicates that these are in fact the critical thinking skills

that are the main content of the course which is the focus of the study. In WPC 301, students complete an entire section on Business Ecosystem Analysis, a learning exercise designed to show students how to gain research pertinent to the career scenarios they have already identified for themselves. These career scenarios are the result of another section on Applied Strategic Thinking, which requires students to identify in economic terms, the personal characteristics that provide them a unique competitive advantage in a globally competitive employment environment. Results of this study showed that online delivery of a course which teaches advanced career strategy critical thinking and skills verifies what Bridgstock (2009) prescribes as most the most beneficial career skills for students who are preparing to graduate.

Employers echo the need for more complex skill sets in college graduates (Bridgeland, Milano, & Rosenblum, 2011). Further, many employers claim that college graduates must have the following skill sets to be successful: 1) ability to build and sustain professional networks, 2) teamwork skills, 3) critical thinking and analytical reasoning skills, 4) communication skills, 5) decision making and problem solving skills, 6) work flow planning, organization and prioritization, 7) ability to obtain and process information, 8) quantitative analysis skills, 9) job related technical knowledge, 10) proficiency with software program usage skills, 11) written reports creation skills, and 12) skills needed influence or sell to others (Bridgeland, et al., 2011; Gardner, 2011; NACE, 2011; Pink, 2002; Schrage, 2010). Pink (2002) concurs, noting that the concept of the traditional career is obsolete and is now being replaced by workers who understand the “value” that

they can bring to a project or organization, or as Friedman (2009) emphasizes with the term, "value added". Benko and Weisberg (2007) suggest that successful individuals in the 21st century will be individuals who know and "sell" their value best in the marketplace. Certainly all of these skills cannot all be taught in a career strategy course alone. However, data on the WPC301 career course indicates several of the skills that scholars and employers designate as required for career success can be delivered with complexity and relevancy through the successful completion of this course.

**Career Classes**

The research indicates that on the whole, career classes are effective career interventions to further develop complex career skills and aptitude (Folsom & Reardon, 2003; Fouad, Cotter &, Kantamneni, 2009; Reese & Miller, 2010). In addition, career courses have additional positive effects upon educational outcomes such as degree major selection, course satisfaction improvement, and improvements in retention and graduation rates as reported by Folsom and Reardon (2003). Numerous scholars claim that career-related self-efficacy, occupational decidedness, and occupational interests all positively relate to performance and engagement with the college student's overall academic success (Rottinghaus, Lindley, Green, & Borgen, 2002; Scott & Ciani, 2008). Additionally, Reardon, Leierer and Lee (2007) found in a 25 year study, that a student who participated in a career learning class showed a higher overall GPA than students who did not have a career learning class.

This study has shown that an online class career strategy course is just as effective in learning gain as the traditional f2f delivery method of the same class. The data in this study also indicated that students could successfully comprehend advanced and complex skills, those required by employers to be successful (Bridgeland, et al., 2011; Gardner, 2011; NACE, 2011; Pink, 2002; Schrage, 2010), and which are taught in this course. Comparison in employment success between those who have taken WPC 301 and those who did not take the class was not a part of this study. However, future studies on such comparisons would be highly recommended and beneficial.

Even in the case of the career strategy course, there is a tremendous amount of work that needs to be done on topics such as curriculum, evaluation methods, student-instructor interaction, instructional goals for the course, etc. According to Zvaceck, Simonson, and Brown (2011), online courses must be carefully reviewed to insure that the learning potential is maximized. Two evaluation methods used in online learning assessment are systems used by the British Open University and a second evaluation system which utilizes the activities needed for evaluation of online courses: accountability, effectiveness, impact, organizational context, unanticipated outcomes forming the acronym AEIOU (Zvacek et al., 2011).

The British Open University system utilizes the following factors in accessing an online course: activity of students, efficiency of teaching, outcomes of the course, programmatic goal attainment, market need satisfaction, and internal organizational needs. The AEIOU program includes the activities needed

for evaluation of online courses according to the following indicators: accountability systems, effectiveness, impact, organizational context, and unanticipated outcomes. As can be seen, many of the components of each evaluation approach tend to look at similar items. What is important in the context of this action research study is the recognition that standardized and systematic course evaluation must be implemented in all online and f2f courses. This evaluation format will ensure that future iterations of WPC 301 will provide measurable outcomes of quality assurance in order for the course to remain relevant to the market needs of students and employers.

**Subgroup - Swirl**

In this study, an independent samples t-test indicated a significant difference between f2f and online delivery methods related to student swirl (de los Santos & Wright, 1990). Swirl refers to the multi-institutional attendance patterns of students as they progress toward their degree (de los Santos & Wright, 1990). The swirl patterns, while not a primary focus of this study, is of concern as a substantial number of transfer students enter the W. P. Carey School of Business every year. This group represents approximately 600 to 800 new students each year. Independent samples t-tests were conducted to compare the posttest scores for who had attended ASU since freshman year and students who transferred from another four year institution. There was a significant difference in scores for students who had attended ASU since freshman year and students who had transferred from another four year institution in either freshman or sophomore year; however, the difference was only moderate. These differences were not seen

in the pretest scores analysis. This lower performance data is supported by research on the topic by Li (2010) that transfer students tend to perform less well academically than their peers who have not transferred. However, there is little data in WPC 301 that might explain why this result may have occurred in this study. What the finding does suggest is that future iterations of WPC 301 should continue to monitor the posttest results of this subgroup closely going forward. If the results continue to be less than hoped, remedial activity would be highly advantageous for this subpopulation.

**Summary**

The W. P. Carey School of Business's rate for at-graduation employment for students is not meeting the goal of 85% employment at graduation. In part through the knowledge contained in WPC 301, it is hoped that students will learn the critical thinking skills required to seek and gain successful career employment at graduation at rates that meet the 85% at-graduation employment goal in a global economy (Bridgeland, et al., 2011; Gardner, 2011; NACE, 2011; Pink, 2002; Schrage, 2010).

The purpose of this action research study was to compare how posttest scores differ in a career strategy course between the traditional face-to-face (f2f) delivery format and a new online delivery format of WPC 301. In support of this purpose, pretest scores, learning gain, and data from course evaluations were analyzed to determine if there were significant differences between the f2f delivery method and the online delivery method.

For posttest scores, the primary feature of this action research study, the null hypotheses was accepted; there was no significant difference in posttest scores between f2f and online delivery formats as shown by an independent samples t-test. Learning gain, course evaluation comparison, and pretest scores also showed no significant differences between the two delivery methods analyzed. In subgroup analysis, there were no significant differences between first-generation students and non first generation students. There was a significant difference in only posttest scores in the two delivery methods between students who had transferred from another four year institution in freshman or sophomore year when compared to students in the two delivery methods who entered and stayed at Arizona State University.

This chapter has focused on the possible implications of the results of this study. Key recommendations from this study were provided in number of areas. In the area of online learning the key suggestion is continued movement into utilization of game and simulation based learning (Aldrich, 2009; Gee, 2007; Michael & Chen, 2005; Reeves & Read, 2009) using online learning for teaching the pre-knowledge needed for successful engagement in games and simulations (Aldrich, 2009). The fundamental suggestion for career services from this study's findings suggested that collegiate career centers investigate creating a career class as a way to increase at-graduation employment success as another alternative for career services information delivery beyond one-on one counseling and workshops; further information contained in such future courses should be adapted to the needs of the global employment economy (Bridgeland, et al., 2011;

Gardner, 2011; NACE, 2011; Pink, 2002; Schrage, 2010), perhaps even in an online delivery format. In the realm of the career class, two recommendations were noted, the need to use assessment in insuring course quality and consistency (Zvaceck, Simonson & Brown, 2011) and the need for further study to compare the at-graduate employment outcomes of students who took WPC 301 and those who have not.

But most importantly, it is hoped that this study which compared posttest scores in a career strategy course between a face-to-face delivery method and a new online delivery method will be a key element in quickening the pace toward achieving the goal of 85% at-graduation employment for undergraduates who attend the W. P. Carey School of Business.

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# APPENDIX A

## PRETEST/POSTTEST QUESTIONS

1. The key to building a strategic plan is:
    - Knowing what you want
    - Knowing what is currently in demand
    - Knowing what is available
    - Knowing how to interview

2. The three level process that can most effectively uncover 90 - 95% of great jobs that are never advertised is:
    - Google, industry & trade publications, informational interviewing
    - Write a resume, send out resumes to lots of possible targets, follow-up with a phone call
    - Monster.com, Careerbuilder.com, Jobing.com
    - Campus interviews, campus career fairs, club events

3. Sun Devil Career Link lists all of the job and internship opportunities for students of the W. P. Carey School of Business. Sun Devil Career Link is found where?
    - ASU Career Services website
    - Business Career Center website
    - W. P. Carey Undergraduate website
    - Student Government website

4. A thirty second commercial should not be used in which situation?
    - In a job interview
    - when you first meet a potential employer
    - At a job fair
    - In an elevator

5. At the beginning stage of my career, which of these is the least important of the required areas of research in career planning?
    - Geography
    - Occupation
    - Industry
    - Company

6. Which of these is not considered a part of a systems approach to Career Management?
    - Knowing how much the position will pay
    - Knowing where you want to go
    - Knowing what behaviors are required to get there
    - Engaging in those behaviors

7. Which of the following is NOT included in the acronym for a SMART goal?
    - Active
    - Specific
    - Time-bound
    - Measurable

8. Which of these is NOT one of the three factors that will determine what you get in life?
    - Wanting
    - Chance
    - Doing
    - Deciding

9. A simple inclusive definition of design is:
    - Applying principles that have been successful in the past and applying them to solve a current problem
    - Creating something that is unique or modern
    - Deciding to follow a certain course of action
    - Doing what appeals to you, that you think might work

10. A simple inclusive definition of strategy is:
    - Doing things on purpose
    - A series of well-planned steps
    - Deciding what you want
    - Organizing things into a plan

11. The basic structure of all interview answers is:
    - I am what you need, I can prove it, and I can do the same for you
    - I am outstanding, I can tell you how, and I can list my job experience
    - Having an entertaining story that shows you are comfortable talking to other people
    - Explaining how much you would really like to have the job and explaining how you would do the job

12. STAR stands for:
    - Situation, Task, Action, Result
    - Start, Talk, Achievements, Results
    - Strong, Tests, Are, Required
    - Situation, Target, Activity, Response

13. When I am asked in an interview to, "Tell me about yourself," the best answer to give:
    - Reviews my work experience in terms of success in three specific skills required in the new job
    - Tells the interviewer why I want the job
    - Tells the interviewer about my life, what I like to do, and why I applied for the job
    - A quick recap of what is printed on my resume

14. The best format for a resume always:
    - Puts education first
    - Puts experience first
    - Puts an objective first
    - Puts my strongest attributes for the job first

15. The best source of salary information for a position I have been offered is:
    - Someone in the company who can guide me
    - Salary surveys printed in the media
    - Salary.com and other websites
    - My friends who have offers from other companies

16. The three level process that can most effectively uncover 90 - 95% of great jobs that are never advertised is:
    - Google, industry & trade publications, informational interviewing
    - Write a resume, send out resumes to lots of possible targets, follow-up with a phone call
    - Monster.com, Careerbuilder.com, Jobing.com
    - Campus interviews, campus career fairs, club events

17. What is the highest probability activity to find the 90 - 95% of the post-graduate jobs that are never advertised?
    - Develop a research based communication network
    - Go to lots of networking events
    - Be at every career fair in the city
    - Read even more web and newspaper job advertisement sites

18. The best way to start a career is:
    - Pursuing my interests
    - Pursuing companies my friends like
    - Pursuing only the highest paying job
    - Accepting the first offer immediately

19. Making a decision about my career and first job must:
    - Be a launching pad to future growth and learning
    - Be perfect
    - Meet all my needs
    - Be easy to do

20. I will be hired for a job primarily because I have:
    - Proven I have the skills needed
    - Know the boss
    - A great GPA
    - Lots of outside activities

21. The best possible type of research is:
    - Talking with people who are doing or have done jobs in the area I am interested
    - Reading on the internet in the area I am interested
    - Reading magazines in the area I am interested
    - Asking my friends what they know about the area I am interested in

22. While not the only person to consult, a great choice if I need a critique of my resume, mock interview, research, or compensation negotiation advice or other career related advice, I should make an appointment to see which of the following people in the Business Career Center?
    - Career Coach for my major
    - 301 Instructor
    - Academic Advisor
    - An internet site

23. The best tool to help me define what interests me in thinking about what occupation or industry I might work in is:
    - The Publication Game
    - Myers - Briggs
    - Doing what my parents tell me
    - Asking my friends what they like

# APPENDIX B

## INFORMED CONSENT LETTER

**A Quantitative Comparison of Student Learning Achievement between a Traditional Lecture Delivery Method and an Online Delivery Method as Applied to Teaching Career Strategy and Tactics in a Four Year Business School.**

Consent Request for WPC 301 Research Data

February 28, 2011

Dear WPC 301 Student:

As a doctoral student in the Higher & Postsecondary Education program, I am conducting practitioner research which is research that pertains to my role as Director of the W. P. Carey School of Business Career Center at Arizona State University.

I am conducting a research study to measure differences in student learning between the traditional lecture delivery format and the new online delivery format of your course, WPC 301: Business Forum. To do this, I must compare aggregate class scores on the Pretest and Final, and also use the survey you completed to understand any reasons for possible variations in comparative scores between live lecture and online sections of WPC 301. Your scores on the Final and Pretest, and your survey responses will be grouped together to create a combined class group score only. **Your individual scores and survey responses will not be reported in the study data**. Again, individual responses will not be reported; just percentages in relation to the group as a whole, for example, the average class score as a group on the Final was X out of 100 points, or 5% of participants report X as their graduation date, etc.

The data derived from this study will be used to inform decision-making concerning the use and applicability of an online version of WPC 301. If there any difference in student learning achievement, the results of this study will be used to improve the course format that is not as effective in comparison to the other format. It is also possible that the study will find both formats deliver equal results in achieving student learning.

Your participation in this study is voluntary and anonymous. Your name and identifying information will not be captured in the study data. Your responses on the survey will also be anonymous with no name or individual data included. There will be no way to identify your individual grades on your tests or your individual survey responses.

If you choose to participate, you may withdraw from the study at any time until the end of this semester, Spring 2011, there will be no penalty. Your choice to consent or not to consent to use your test scores and survey responses for research purposes will not affect your grade in this course.

There are very minimal foreseeable risks or discomforts to your participation. I am conducting the research as a student, but also using this information for my role as Director of the W. P. Carey School of Business Career Center in order to enhance the learning experience for all future students of WPC 301 in the School of Business.

If you have any questions concerning the research study, please contact me at: kevin.burns@asu.edu . If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

To consent to allow me to use your Pretest and Final scores, and your responses to the survey you have already completed, please click on this link:

http://www.surveymonkey.com/s/301_Study_Consent

Please enter your first and last name in the spaces provided. Submission of your name on this link will be considered your consent to participate in this study. No future action will be required of you .It will only take you two minutes or less to give your consent. I will be happy to share the results of this study with you, just send an email to kevin.burns@asu.edu and I will forward the results when the study is completed.

Sincerely

Kevin Burns

# APPENDIX C

## ASU INSTITUTIONAL REVIEW BOARD APPROVAL

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

| | |
|---|---|
| **To:** | Kris Ewing<br>ED |
| **From:** | Mark Roosa, Chair<br>Soc Beh IRB |
| **Date:** | 03/04/2011 |
| **Committee Action:** | **Exemption Granted** |
| **IRB Action Date:** | 03/04/2011 |
| **IRB Protocol #:** | 1102006107 |
| **Study Title:** | A Quantitative Comparison of Student Learning Achievement Between a Traditional Lecture Delivery Method and an Online Instructional Delivery Method as Applied to Teaching Career Strategyand Tactics in aFour Year Business School |

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(1) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

# APPENDIX D

## WPC 301 SYLLABUS

**WPC 301**

| Date | Lecture | Due | Total Points | Required Articles/ Resources | N.E.A. Book Chapters |
|---|---|---|---|---|---|
| **Jan 19** | Syllabus | | | | |
| **Jan 21** | Online Survey | **SURVEY & PRETEST** Due by Jan 28th, 3pm | **10** | | |
| | Online Pretest | | **10** | | |
| | | | | | |
| **Jan 24** | Applied Strategic Thinking | | | | |
| **Jan 26** | Scenario Development & Verification | | | | |
| **Jan 28** | Online Workbook/Articles | | | Strategic Planning Articles (2) | 1-4 |
| | | | | | |
| **Jan 31** | Business Ecosystem Analysis I | | | | |
| **Feb 2** | Business Ecosystem Analysis II | | | | |
| **Feb 4** | Online Workbook/Articles | | | Vault Guides / Sun Devil CareerLink / Hoovers.com | 5-9 |
| | | | | | |
| **Feb 7** | Product Attribute Design I | | | | |
| **Feb 9** | Product Attribute Design II | | | | |
| **Feb 11** | Online Workbook/Article | | | Five Years to B-School - First Year | 10-14 |
| | | | | | |
| **Feb 14** | Strategic Decision Making | | | | |
| **Feb 16** | Business Development | | | | |
| **Feb 18** | Online Workbook/ Article | | | Do What You Love | 15-19 |
| | | | | | |

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|---|---|---|---|---|---|
| **Feb 21** | Direct Marketing Design | | | | |
| **Feb 23** | Resume Lab | | | | |
| **Feb 25** | Online Workbook/ Article | | | Career Imprinting | 20-24 |
| | | | | | |
| **Feb 28** | Persuasive Content and Design I | | | | |
| **Mar 2** | Persuasive Content and Design II | | | | |
| **Mar 4** | Online Workbook | | | What It Takes To Be Great | 25-28 |
| | | | | | |
| **Mar 7** | Negotiation/ Summary | | | | |
| **Mar 9** | Online Workbook/ Article | | | The Secrets of Storytelling | 29-31 |
| **Mar 11** | ONLINE FINAL | **FINAL:** Due by March 11th, 3pm | **35** | | |
| | ONLINE WORKBOOK | **WORKBOOK** Submit by March 11th, 3pm | **45** | | |
| | | | **100** | | |

# APPENDIX E

## RANKING DATA FORM

## CAREER SERVICES

For 2010 undergraduate business graduates for whom job offer information is known, please list the percentage that are in the following categories. The answers to the 4 questions about receiving job offers and the answers for the 4 questions about accepting job offer should each total 100%.

RECEIVED first job offer by graduation

RECEIVED first job offer AFTER GRADUATION, but within 3 months

RECEIVED first job offer more than 3 months after graduation

Did not report having RECEIVED a job offer

ACCEPTED first job offer by graduation

ACCEPTED first job offer AFTER GRADUATION, but within 3 months

ACCEPTED first job offer more than 3 months after graduation

Did not report having ACCEPTED a job offer

## CAREER SERVICES

Employment information

Percentage of 2010 graduates from the business program for whom you have information regarding employment

Among the 2010 graduates for whom you have information regarding employment, what percentage was seeking full-time professional employment in business? What percentage was not seeking full-time professional employment in business? (Should add to 100%)

Seeking full-time professional employment in business % Seeking full-time professional employment in business

Not seeking full-time professional employment in business

Number of companies that recruited undergraduate business students on campus from July 1, 2009 to June 30, 2010. Parent companies should be counted separately from their subsidiaries

Number of companies that posted full-time job offers/positions for undergraduate business students on the school's job boards from July 1, 2009 to June 30, 2010

What other activities and services does your career services office provide for undergraduate business majors?

[redacted]