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Business internships and their relationship with retention, academic performance, and degree completion

by

Robert Bruce Walker II

A dissertation submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Education (Educational Leadership)

Program of Study Committee:
Larry H. Ebbers, Major Professor
Sharon K. Drake
Frankie S. Laanan
Daniel C. Robinson
Mack C. Shelley

Iowa State University

Ames, Iowa

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ABSTRACT

The purpose of this study was to understand the relationship between internships and grade point average, retention, and persistence to degree completion for business students in a private, not-for-profit, 4-year, liberal arts baccalaureate institution. Research has indicated benefits for students and schools involved in internship programs. Student retention and persistence has become an important measure of institutional efficiency. Student involvement, as well as academic and social integration, have been linked to increased retention and degree completion. A well-structured internship should increase student involvement and academic and social integration leading to increased retention, persistence, and degree completion.

This study sought to answer the following research questions:

Does participation in a student internship impact overall, final GPA?

Does participation in a student internship significantly improve GPA for the semesters following an internship compared to prior semesters?

Does participation in a student internship have an impact on GPA for the area of study as opposed to the GPA for other courses?

Does participation in a student internship impact persistence or the probability of completion to graduation?

Does participation in a student internship impact the timeliness of graduation?

If an internship is beneficial, when in a student's academic career is the optimal time to complete an internship?

Studies on the effects of student performance, as measured by grade point average, have been limited and have shown mixed results. If it is determined that internships play a

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strong role in success for business students, such experiences would give confidence and weight to making internships a requirement in an undergraduate curriculum in business majors.

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CHAPTER 1. INTRODUCTION

Background and Overview

Internships provide students an opportunity to gain working knowledge and on-the-job training for a profession while in college. Internships also provide many benefits to students, employers, and schools (Gault, Redington, & Schlager, 2000; Schambach & Dirks, 2002). Research has indicated that approximately 90% of colleges offer for-credit internships or work related experience (Divine, Linrude, Miller & Wilson, 2007). Weible (2010) stated that "94 percent of colleges of business offer some form of internship opportunity for their students, but only 6 percent require students to participate in an internship program" (p. 59).

In today's literature, internships and cooperative education are often combined and simply referred to as "internships." Sides and Mrvica (2007) also included apprenticeships in their definition of internships as they adopted a historical view in relating work with education. Internships differ from cooperative education; internships provide temporary employment with an emphasis toward on-the-job training, whereas cooperative education is a structured method of combining classroom-based education and practical work experience. For this research study, internships will include cooperative education and apprenticeships.

Modern day internships and cooperative education, learning by doing, can trace their roots back to the Middle Ages when apprenticeships were controlled by guilds to promote interests in their trades (Sides & Mrvica, 2007). Apprenticeships provided a path for serfs to

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rise to the middle class and for indentured people to gain their freedom. The apprentice would engage in theory and practice for a number of years to learn a trade or craft.

Apprenticeships provided industrial education in America from colonial times until the industrial revolution. In the 18th century, apprenticeships fell out of favor because they "could not meet the growing needs for technological knowledge and skills that were developing during the Industrial Revolution" (Sides & Mrvica, 2007, p. 7). Simultaneously during this period, school education began to replace apprenticeships as a way to educate the masses and to promote and preserve democracy (Sides & Mrvica, 2007).

Modern internships can be traced back to 1906 when the University of Cincinnati started its internship program (Weible, 2010). Internships are now a requirement for licensure toward professional certification in the United States. Undergraduate education programs for K–12 teaching education, nursing, and social work majors all have internships; student teacher and clinical rotations are a requirement to obtain a professional license. These required work and field experiences are more popular with applied or professional degree majors than with liberal arts majors.

Advantages of internships for students are increased career opportunity, higher salaries, quicker job offers, faster promotion rates, job satisfaction, ease of transition from college to work, better communication skills, working, and applying the knowledge gained from the classroom (Clark, 2003; Gault, Leach, & Duey, 2010; Gault et al., 2000; Hymon-Parker & Smith, 1998; Weible, 2010). The 2008 National Association of Colleges and Employers (NACE) *Job Outlook Report 2008* stated that 40% of new hires had internship experience and the NACE *2010 Internship & Co-op Survey* reported that 44.6% of the of their class of 2009 hires came from their own internship programs. Sides and Mrvica (2007)

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argued that "not until would-be professionals begin to live the occupational life they have chosen (and we would advocate that they begin this as interns) do they really start to understand how their formal knowledge is applied" (p. 33). Internships help students identify careers that they would like to pursue and eliminate others, thus providing direction in the students' studies.

Internships provide advantages for colleges and universities. By offering internship opportunities, the institution builds a relationship with businesses that may eventually hire their graduates. These relationships also provide feedback to the institution on the application of the student's curriculum in the college or university and thus helps in keeping curriculum current to the demands for industry. The internship coordinator normally receives evaluation from the employer on the preparedness of the student, which can lead to discussions on curriculum to meet the demands of industry. The student intern normally evaluates the internships on how the classroom learning translated to the workplace. This information allows the internship coordinator to make or propose changes to keep the curriculum current to meet demands of industry.

Proper promotion of internship opportunities and partnering with businesses where interns are placed can provide increase enrollments, prestige, and financial support to colleges (Divine et al., 2007). Students seeking internship experience will be drawn toward colleges and universities offering internships. Internships with prestigious companies can attract students and lends prestige to the business program. The mutually beneficial relationship between college or university and businesses employing interns can lead to financial support in the forms of scholarships, equipment, and grants (Divine et al., 2007).

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Colleges and universities struggle with student retention and persistence to degree completion. The present study was intended to explore to what extent, if any, participating in an internship experience has an impact on student retention, grade point average (GPA), and degree completion. Approximately 34% of students entering higher education will leave without completing a college degree. This statistic has not changed significantly among 1972, 1982, and 1992 cohorts (Horn & Berger, 2004). Three quarters of these students leave college in the first 2 years, and the greatest proportion withdraw in the first year (Tinto, 1987). Persistence and degree attainment for first-time full-time students after 6 years for private not-for-profit institutions for the 2003–2004 cohort at any institution is 64.6%, and persistence and degree completion at students' first institution is 57.0% for the same cohort (Radford, Berkner, Wheeless, & Shepherd, 2010)

According to the American College Testing (ACT, 2010) *Institutional Data File*, the first- to second-year retention rate for 4-year private not-for-profit institutions offering only bachelor's degrees with traditional admission selectivity is 66.3%. The persistence to degree for these institutions is: 34.5% in 4 years, 43.6% in 5 years, and 45.2% in 6 years (ACT, 1010). Traditional admissions selectivity is defined as an 18–24 ACT score and/or 1290–1650 SAT score from the middle 50% and a majority of students admitted from the top 50% of their high school class (ACT, 2010). These data support Tinto's (1987, 1993) findings that 54.8% of students leave a private institution without completing a college degree

Students have direct contact with a faculty member or internship coordinator during an internship program. Vincent Tinto's (1975, 1987, 1993) academic and social integration model and Alexander Astin's (1975, 1977) involvement model contend that this contact should increase persistence, retention, and degree completion due to the involvement of a

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faculty advisor for the internship. This contact can involve, but not be limited to, faculty interaction with the student in the evaluation of an internship, a site visit by the faculty member to the intern's place of employment, and correspondence with the faculty member about the internship.

Student learning in the classroom is relatively passive (Fischer & Grant, 1983; Tinto, 1997), whereas learning during an internship is considered active and learning by doing. During an internship, students have the opportunity to relate classroom learning to a business application (Hymon-Parker & Smith, 1998). These experiences allow for greater understanding when students can relate their personal experiences to course activities (Tinto, 1997).

Factors in student persistence and retention moves from social integration and involvement at the beginning of college to academic involvement in the junior and senior years (Neumann & Neumann, 1989). Student involvement and a student's view of the quality of teaching, advising, coursework, and contact with faculty provide significant predictors of junior and senior persistence (Neumann & Neumann, 1989; Tinto, 1997). Internships provide academic involvement and contact with faculty, which should increase persistence.

Purpose of the Study

Student retention and persistence to degree completion are factors by which colleges and universities, in part, measure their success. Do internships make a difference in business student retention, GPA, and persistence to degree completion? If there is a correlation between internships and persistence, retention, and GPA that is measurable and significant, should internships be required? Divine et al. (2007) argued that the benefits of internships

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are so compelling that colleges should consider mandating internships in marketing programs. Kuh, Kinzie, Schuh, Whitt, and Associates (2005) recommended that "if an activity or experience is important to student success, consider requiring it" (p. 315).

The purpose of the present study was to determine if internships improve retention, GPA, and degree completion by examining business students at a private, not-for-profit, 4-year, liberal arts baccalaureate institution in the Midwest. Research was conducted by comparing first-time full-time students in the 2000–2003 entering cohorts who declared or graduated with a business major. Data provided by the institution were used first to determine if a student took an internship and then when the student elected to take an internship in relationship to his academic career. These students were compared to other first-time full-time students in the 2000–2003 entering cohort who declared or graduated with a business major to see if the internship had an impact on GPA, retention, and degree completion. The data then were further analyzed to see if the timing of the internship had an impact on GPA, retention, and degree completion.

This private, faith-based institution was founded as a woman's 2-year college in 1928 for women to earn the first two years of a baccalaureate degree. It received accreditation from the Higher Learning Commission of the North Central Association of Colleges and School and became a baccalaureate degree-granting institution in 1960. This accreditation was retroactively applied to 1958 graduates. In 1969, it admitted men for the first time and officially became a coeducational college (Roth, 1980).

During the time of the present study, this institution was solely an undergraduate degree-granting institution with enrollment of over 1,500 undergraduate, transfer, and adult accelerated students. It is in the peer group of 4-year, not-for-profit, private institutions

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offering only bachelor's degrees with traditional admission selectivity. Business majors offered during the time of the present study were accounting, management, marketing, and business interdisciplinary. All business majors at during the time of study were required to complete the following business core courses: Business Statistics, Financial Management, Principles of Accounting I and II, Principles of Law I, Principle of Management, Principles of Marketing, Macroeconomic Principles, Microeconomic Principles, Senior Seminar in Business, and Technology and Communications in Business.

In addition to completing the above business core courses, students were required to take required general education courses and complete 18–24 credit hours of courses in their chosen major. The liberal arts general education requirements consisted of a total of 12 courses, comprising 1 course each in English, literature, fine arts, history, mathematics, multicultural studies, natural science, philosophy, religious studies, speech and 2 courses in social sciences, for a total of 37 semester hours. All major courses were similar in academic rigor.

Internships were encouraged, yet not required in the Department of Business at this institution. Internships were advertised and promoted by faculty and the career development office. The internships were supervised by the business faculty members in the discipline of the internship if taken for college credit. Students were responsible for applying and interviewing for the internships, and the hiring decision was left up to the business recruiting interns.

Theoretical Framework

This quantitative study sought to determine if participation in internships has an impact on retention, degree completion, and GPA for students enrolled in business degrees at

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private, not-for-profit, liberal arts, baccalaureate institutions. Correlation analysis was implemented allowing the researcher to evaluate the extent of the relationship between the dependent variable of student internship and the pattern of behavior for the independent variables of retention, degree completion, and GPA (Gall, Gall, & Borg, 1996).

This study was organized around the theoretical framework that student internships are viewed as guided, preprofessional experiences that combine academic and professional components, readying students for professional careers. Internships, including experimental learning, cooperative education, and apprenticeships, have been relied upon for professional preparation for centuries, dating back to the earliest documentation in the Middle Ages (Sides & Mryica, 2007). Internships are a common requirement among healthcare and education professions, yet are a requirement in only 6% of business programs (Weible, 2010). If it can be determined that internships have an impact in success for business students, as measured by GPA, retention, and persistence to degree completion, it would give confidence and weight to making such experiences a requirement in business degree programs.

Tinto's (1975, 1987, 1993) academic and social integration model and Astin's (1975, 1977) involvement model both support the theory student involvement, engagement and integrations in college lead to retention and persistence. Internships should therefore increase persistence, retention, and degree completion due to involvement with a faculty advisor and the integration of academic learning to work application.

Research Questions

To better understand the benefits of internships to students and to the institution, the research question is: What impact do internships in business degree programs have on

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retention, persistence to graduation, and GPA in a private, not-for-profit liberal arts college before and after an internship experience? The question is broken into six segments:

Question 1: Does participation in a student internship impact overall, final GPA?

Question 2: Does participation in a student internship significantly improve GPA for the semesters following an internship compared to prior semesters?

Question 3: Does participation in a student internship have an impact on GPA for the area of study as opposed to the GPA for other courses?

Question 4: Does participation in a student internship impact persistence or the probability of completion to graduation?

Question 5: Does participation in a student internship impact the timeliness of graduation?

Question 6: If an internship is beneficial, when in a student's academic career is the optimal time to complete an internship?

Significance of the Study

If there is a significant difference in retention, persistence to degree completion, or GPA between students who take internships for credit and those who do not, an argument can be made for requiring internships in business programs. If there is a measurable difference, can an optimal time in the student's academic career that has the greatest impact for the student be found and be recommended?

By increasing retention and persistence to degree completion, not only does it benefit the students by reaching their educational goals, but it can also benefit institutions by increasing enrollments through retention and increasing revenues. According to Noel-Levitz (2009) the 2009 the median cost to recruit one student for 4-year private institutions was

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$2,143, 4-year public institutions' costs were $461, and 2-year public institutions' costs were $263.

If the present research shows a correlation between internships and retention, persistence, or GPA, this study will provide increased evidence for the argument of requiring internships in business degree programs and will advocate there should be internship experiences early in a student's academic career.

Definitions of Terms

To facilitate better understanding of this study, definitions of significant terms have been provided:

4-year private institution: A postsecondary school that offers baccalaureate degrees in liberal arts or science or both and is not administered by local, state, or national governments.

Cooperative education: A structured method of combining classroom-based education with practical work experience. For this study, cooperative education will be referred to as internships.

New to college: First-time, full-time beginning students.

Independent Variable

Internship: Supervised, temporary employment in partnership between an academic institution and professional organizations, with an emphasis on on-the-job training.

Dependent Variables

Completion rates: The percentage of students successfully finishing a desired degree in 4, 5, or 6 years.

Persistence: Continuing education to degree completion.

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Retention: Continued enrollment in courses attempted with a 2.0 or higher GPA in one semester.

Delimitations and Limitations of the Study

Using transcripts to determine those who had internships may not have reflected all students who had had internships. Students were not required to take internships for college credit; therefore, not all instances may have been recorded on a student's transcript. Students may also have had part-time jobs that would be similar to an internship experience without faculty involvement. This reality would also not have been recorded on the official transcripts.

Another clear limitation was measuring only those internships taken for credit. Although this was a limitation, it allowed for the examination of the effect of interaction with faculty and of reflective assignments tying classroom learning to the internship experience. The pedagogy of the structured internship experience forces the student to give greater meaning to the relationship between academic learning and real-world experience while in college thereby allowing for reflection and allowing for greater learning to occur than in a part-time job.

Other factors, such as student involvement with clubs and activities, could influence a student's retention in accordance with academic and social integration models and involvement models. An attempt was made to minimize this effect by incorporating all business majors who were new to college at the institution in a sampling of 4 consecutive years.

The homogenous nature of the institution's student body was reflected in this sampling. Of the business majors used in this research, 91% were White, 53% were female

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and 47% were male, 74% resided in the state of the institution, and 100% were 18 or 19 years old when entering college. This limitation provided value for this study by reducing the variability that would have been seen in a more diverse group, but it limited the transferability of the results to other ethnic, regional, and social economic backgrounds.

A delimitation of the study is that the sampling was drawn from only one, 4-year, private, not-for-profit, liberal arts educational institution. Being in a centralized, specific geographical area, the study population may not have been representative of other private, not-for-profit, 4-year liberal arts institutions' populations.

The nature of the independent variable provided another delimitation of the study. The effect of internships alone may have been difficult to measure, as other variables may have had a role. The sample size may have served to mitigate this limitation.

A final delimitation is that the observed data was limited to full-time, first-time students who began in the academic years of 2000 to 2003. The findings of this study, for this given time period, may lack the ability to be generalized to other time frames.

Summary

Personal and professional benefits of internship programs have been well documented for students engaged in such activities. Yet what extent do internships have on retention, persistence, and GPA? The purpose of this study was to understand the impact of internships on retention, GPA, and persistence to degree completion for business majors. GPA was measured before and after the internship experience for students in a private, not-for-profit, 4-year liberal arts college. Retention and degree completion for students who had completed an internship was measured against students who had not complete an internship. If an

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internship plays a strong role in success for the student, confidence and weight will justify making it a requirement for business degree programs.

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CHAPTER 2. LITERATURE REVIEW

Overview

Chapter 1 described internships, stated the problem and the purpose of the study, introduced the research questions and the significance of the study, defined terms used as the basis for this study, and outlined the study delimitations and limitations. Internships and apprenticeships have been documented since the Middle Ages. The modern internship has been documented to 1906 at the University of Cincinnati and continues to have an impact on learning and job performance. This literature review will discuss in greater detail the benefits and limitations of internships and the major theories and practices in student retention.

Historical Perspective

The history of on-the-job learning and training dates back to as early at 600 BCE with the Greeks, Romans, Chinese, and Vedic communities showing employment of interns to learn a craft as an entry into skilled fields (Sides & Mrvica, 2007). During the Middle Ages, serfs and indentured people bought their freedom through apprenticeships in crafts and trade professions, which helped give rise to a middle class. These apprenticeships taught the apprentice the skills needed to create a product or perform a service and educated the apprentice on how to conduct business and be profitable in society. In the settling of the United States, apprenticeships and internships were a staple for learning crafts and trades, helping expand business, and educating the citizenship.

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As the United States grew and the Industrial Revolution took place, internships and apprenticeships fell out of favor for educating the citizenship. Due to their focus on manual labor and not on classroom learning in internships, it was thought that the

> classical approaches to internships could not, therefore, provide requisite knowledge and thinking skills that were being increasingly required in modern industry. Another reason for the failure of internships in the United States has been attributed to the democratic ideology that is fundamental to American society. Schools, rather than internships have been promoted as guarantors of democracy. (Sides & Mrvica, 2007, p. 7)

Since the early 20th century, there has been a refocus on internships in which students pair classroom learning with workplace application to increase student learning and performance. The University of Cincinnati started the modern internship program in 1906 in the College of Engineering; it became mandatory in 1929 (University of Cincinnati, 2011; Weible, 2010). The University of Cincinnati was the first to offer business internship programs in 1919 (University of Cincinnati, 2011). Now, approximately 90% of colleges and universities offer for-credit internships or work-related experience (Divine et al., 2007), and over 94% of business schools offer internships (Weible, 2010).

Modern-day internships involve the college or university, the student, and the business or organization where the student is placed. In 1980, only 1 in 36 students (2.7%) completed internships; in 2000, 3 out of 4 (75%) of students completed internships (Coco, 2000). Despite the widespread use of internships in business programs, there is limited research and literature on the effects of internships (Narayanan, Olk, & Fukami, 2010; Weible, 2010). Much of the research reflects the benefits to the student for job placement

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and student satisfaction (Cook, Parker, & Pettijohn, 2004; D'Abate, Youndt, & Wenzel, 2009; Divine et al., 2007; Rothman, 2007). In recent literature, Weible (2010) examined how internships benefit an educational institution in its "economic development, recruitment and reputation" (p. 60). Narayanan et al. (2010) developed a "conceptual model for understanding the determinants of internship effectiveness" (p. 65). Gault et al. (2010) examined the effect of business internships on job marketability from the employer's perspective.

Benefits of Internships

Students who participate in internships benefit by increased marketability (Divine et al., 2007; Swift & Kent, 1999) and higher salaries (Coco, 2000; Gault et al., 2000). Students who took internships reported receiving job offers about 10 weeks sooner and starting salaries that were 10% higher than students who did not participate in an internship (Gault et al., 2000). Students who participate in internships have been shown to be better prepared for a career and experience improved critical thinking (Gault et al., 2000; Maskooki, Rama, & Raghunandan, 1998), relating what they learned in the classroom to real-world settings (D'Abate et al., 2009; Divine et al., 2007; Hymon-Parker & Smith, 1998; Maskooki et al., 1998; Weible, 2010), and bridging the gap between career expectation developed in the classroom and the reality of career employment (Gault et al, 2010). Interns demonstrate enhanced time management skills, communication skills, and self-discipline (Wesley & Bickle, 2005) and higher job satisfaction (Divine et al., 2007; Gault et al., 2000).

Cook et al. (2004) found that students believed their internship helped them learn to work with a variety of people in different work environments. The experience enabled them to get along with others, to become mature, and to relate theories learned in the classroom to

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work. These same students had increased confidence in obtaining a job after graduation and, internships had influenced their career choices. Money was not the primary reason students chose an internship; the largest perceived benefits to internships were the development of social skills and enhanced personal maturity, and they found that their internship program was valuable (Cook et al., 2004).

According to Divine et al. (2007) an internship's benefits to a student are: work experience that strengthens their resume, a better understanding of the working world, and a better foundation for making adjustments from the academic world to the work environment. Interns have the opportunity to learn about work in a guided and mentored environment. The opportunity allows students to see the application of college learning and theories, bringing "real world" experiences back to the classroom and sharing with others about their internship activities. Interns can improve their job-related skills, increase leadership skills, and clarify their career goals. They are then better prepared for a job after graduation, which increases their marketability compared to students lacking internships.

Divine et al. (2007) also stated that an internship's benefits to employers are a source of qualified, low-cost motivated workers. Internships also provide opportunities for employers to evaluate potential long-term employees without long-term commitments. When hiring for a full-time, permanent position, the internship experience provides employers with better hiring decisions and the first choice of the best students (Coco, 2000; Gault et al., 2000; Weible, 2010). If the employer hires an intern for a permanent position, there is reduced turnover because the student has adjusted to the work environment and experiences less "culture shock" in the work environment (Maskooki et al., 1998). Employers also benefit from using interns for peak load periods, reducing labor cost.

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Internship experiences strengthen relations with schools, helping in recruiting the best students for internships and full-time positions (Coco, 2000).

Internships provide employers with a well-qualified trained pool of potential full-time employees. The 2008 NACE *Job Outlook Report* stated that 40% of new hires had internship experience, and the NACE 2010 *Internship & Co-op Survey* reported that 44.6% of their class of 2009 hires came from their own internship programs. Converting an intern into an entry-level full-time employee can save the employer from $6,200 to as much as $15,000 per person when including training and recruiting costs (Gault et al., 2010).

For schools, the benefits of internships include increased recruiting and reputation when compared to programs that do not offer internships (Weible, 2010). As students recognize the competitive advantage and benefits that an internship provides, they seek colleges that provide such opportunities. Colleges strengthen their business connections by providing qualified interns; the relationship can lead to increased support to the college (Divine et al., 2007), translating into new scholarships, equipment donations, and grant funding (Fit & Heverly, 1992; Thiel & Hartley, 1997; Weible, 2010).

The relationship the faculty member builds with the internship provider allows the faculty access to businesses where future graduates may be employed. This access allows faculty members to more accurately provide career expectations to the students in the classroom and better prepare students for their post-graduation employment (Gault et al., 2010).

Studies on the effects of student performance, as measured by GPA, have been limited and have mixed results. Robert W. Koehler (1974) tested the hypothesis that students improved academically, when measured by GPA, following participation in internship

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programs. Koehler looked at the cumulative GPA of students prior to their internship and then compared it to their cumulative GPA at graduation. He also analyzed the student's GPA in accounting courses prior to an internship experience and at graduation. He concluded, based on his study of Pennsylvania State University students, that both accounting and general grades improved following an internship experience.

Knechel and Snowball (1987) researched academic performance, as measured by GPA, to evaluate the effects of accounting internships using matched pairs of noninterns and interns, based on grade point average and number of credit hours of coursework completed prior to the internships, at the University of Florida. These pairs were then compared after the internship; the results were contrary to Koehler's (1974) study and showed no significant difference between interns and noninterns in GPA after completing an internship. Ketchel and Snowball also found no significant difference between interns and noninterns in GPA for nonbusiness courses. Only in auditing courses did students who participated in internships significantly outperform students who had not participated in internships.

Kwong and Lui (1991) performed a similar study, using accounting students from the Chinese University of Hong Kong from 1984 to 1988. During these years, the university had only 19 students accepted for internships and 236 students with no internship. Kwong and Lui did not used matched pairs; they compared only GPA and degree to measure academic performance. Those with an internship showed an increase of 4.52% in GPAs after the internship experience, increasing from a 3.1 GPA in year 3 to 3.24 GPA by graduation, based on a 4.0 grading scale. Those without an internship also showed an increase in GPA, from a 2.77 to a mean of 2.87, an increase of 0.10, or 2.5%. Kwong and Lui concluded that "this research presents evidence that the internship program in the Chinese University of Hong

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Kong provides incremental educational merits to participating students" (p. 115) as evaluated by GPA.

Other benefits of internships should be greater retention and persistence due to involvement and integration. Internships for academic credit provide faculty involvement in the student's activities and better integration into the overall curriculum (Maskooki et al., 1998). The real-world experience of the internship allows the student to apply the academic knowledge gained in the classroom.

Student Retention

"Student retention is significant for measuring institutional effectiveness in the prevailing environment of accountability and budgetary constraints" (Wild, & Ebbers, 2002, p. 503). In difficult funding situations, the effectiveness of an institution is increasingly important for all stakeholders and for continued institutional financial viability. All avenues of increasing retention should be explored for their benefits to the student, benefits to the institution, and long-term effectiveness.

In accordance with the academic and social integration model (Tinto, 1975, 1987, 1993) and involvement model (Astin, 1975, 1977), student retention and degree completion should be greater for those completing internships. For-credit internships are generally coordinated through a faculty member or an internship director. The intern corresponds with and/or meets one-on-one with faculty or an internship director to assess the learning that has occurred. This direct tie to the institution can provide a sense of college culture and expectations for the student.

Students' participation in college classrooms is relatively passive, in that learning appears to be a "spectator sport" where the faculty perform through lecture (Tinto, 1997).

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"Generally speaking, the greater students' involvement in the life of the college, especially its academic life, the greater their acquisition of knowledge and development of skills. This is particularly true of student contact with faculty" (Tinto, 1997 p. 600). An internship is one way to increase student contact with faculty, thereby increasing involvement and engagement. One-on-one, student-to-faculty interaction that transpires over the course of the internship is an opportunity to overcome a students' passive relationship to the academic experience.

Research has suggested that the more students are involved, academically and socially, in shared learning experiences that link them in learning with their peers, the more likely the students are to invest their time and energy in learning and persist to graduation (Tinto, Goodsell, & Russo, 1993). An internship can take the form of active applied learning and can increase academic involvement in classroom learning. Without academic involvement, students typically do not succeed academically and are forced to depart (Tinto, 1997).

Predictors of student persistence go from social integration and involvement in the beginning of one's college career to academic involvement in junior and senior years. "The significant predictors of junior and senior persistence proved to be student involvement in learning activities, students' view of the quality of teaching, advising, and course work, and their contact with faculty" (Tinto, 1997, p. 618).

The graduation rate within 6 years for first-time, full-time bachelor's degree-seeking students graduating from the institution where they first began their studies was 57% for the 2002 and 2003 cohorts. Graduation rates were highest at private not-for-profit intuitions (64.6% and 65.1% for the 2002 and 2003 cohorts, respectively) and lowest at private for-

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profit intuitions (22.0% and 20.4% for the 2002 and 2003 cohort, respectively). In public institutions, the percentage of students who graduated within 6 years from the institution where they started was 54.9% for the 2002 cohort and 55.7% for the 2003 cohort (Knapp, Kelly-Reid, & Ginder, 2010, 2011). Knapp et al. (2011) reported that tuition and fees account for 19.6% of the operating revenue at public institutions, 77.8% at private not-for-profit institutions, and 88.7% at for-profit institutions. Private for-profit and private not-for-profit intuitions would have the greatest impact in revenue by increasing retention and persistence to degree completion.

Summary

On-the-job learning and training dates back to as early as 600 BCE, however modern internship programs in higher education can be traced back to 1906 and the University of Cincinnati. Recent data indicate that 94 business schools offer internship programs for their students, and research has indicated the benefits for students, schools, and businesses involved in internships. Students benefit through higher salaries; improved critical thinking skills; being better prepared for their career; relating the classroom to real-world experience; enhanced time management, communication, and self discipline skills; as well as higher job satisfaction upon graduation. Schools benefit through increased recruiting and reputation and through better relationships with the business community, which can lead to increased support through new scholarships, equipment, and grant funding. Businesses benefit by having a source of qualified, low-cost, motivated workers and a pool of qualified candidates for full-time employees.

Research has shown mixed results as to whether an internship improves student performance as measured by GPA. Based on student involvement and academic and social

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integration theories, student retention and persistence to graduation should increase for students who have taken internships. Student retention and persistence has become an important measure of institutional efficiency. Student tuition and fees are a major source of revenue for not-for-profit and for-profit private intuitions. Increasing retention and persistence to degree completion for students at these institutions will increase revenues.

A well-structured internship should increase student involvement, should increase academic and social integration, and therefore should lead to increased retention, persistence, and degree completion; however, this topic has not been researched. The present study examined the effect of internships on retention, persistence to degree completion, and GPA. The following chapters show the results of examining the effect of internships on business students at a small, Midwestern, private, not-for-profit college on retention, persistence to degree completion and GPA.

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CHAPTER 3. METHODOLOGY

Overview

The purpose of this study was to understand the relationship between internships and GPA, retention, and persistence to degree completion for business students in a private, not-for-profit, 4-year, liberal arts baccalaureate institution. The methodology used was a deductive form of logic wherein theories and hypotheses are tested in a cause-and-effect order. Concepts, variables, and hypotheses were chosen before the study began and remained fixed throughout the study. The intent of the study was to develop generalizations that would contribute to the theory and enable one to better predict, explain, and understand the phenomenon (Creswell, 1994).

Hypotheses and Null Hypotheses

The hypothesis tested in this study is that there exists a relationship between internships and GPA, retention, and degree completion. The expected results regarding the research question were that internships contribute to a student's overall success and learning, as demonstrated through timely degree completion and higher GPA. Specifically, the expected results were that, regarding GPA (a) participation in a student internship improves overall, final GPA; (b) participation in a student internship improves semester GPA; and (c) participation in a student internship improves the core, business class GPA. The expected results regarding retention and degree completion were that (a) participation in a student internship improves persistence, the probability of completion to graduation and (b) participation in a student internship does not impact the timeliness of graduation.

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The null hypothesis (H_0) was that there is no relationship between internships and retention, degree completion, and GPA and that any differences seen are due strictly to chance. The alternative hypothesis (H_1) stated that there is a relationship between internships and retention, degree completion, and GPA—that differences are real and not due to chance. If the null hypothesis is not rejected, then, if an internship is beneficial, when, in the student's academic career, is the optimal time to complete an internship?

Research Design

This study sought to determine if an internship experience had any significant impact to improve retention, degree completion, and GPA for students enrolled in a business degree program at a private, not-for-profit, liberal arts baccalaureate institution. This quantitative research study used correlations for the analysis of the degree of the relationship between the dependent variable of student internship and the pattern of behavior seen with the independent variables of retention, degree completion, and GPA (Gall, Borg, & Gall, 1996).

This was an observational, retrospective study examining data from students who enrolled in academic programs as first-time, full-time college students in the fall terms of 2000 through the fall of 2003 at a private, Midwestern, not-for-profit, liberal arts baccalaureate college. All were students who declared a business major upon entrance or graduated with a business degree.

The control group was those full-time, new-to-college students who declared a business major and who did not have an internship on their transcripts. This subset was then compared to the comparison group, composed of full-time, new-to-college students who declared a business major and had one or more internships on their transcripts. Business

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majors included marketing, management, accounting, and interdisciplinary business. If a student doubled majored, one of the declared majors was a business major.

The students' institution currently has annual enrollments of approximately 1,600 students and has a traditional enrollment policy, as described by ACT: The middle 50% of those admitted have an ACT score ranging from 18–24 or an SAT score ranging from 1290–1650 and the majority are admitted from the top 50% of their high school class. This compares consistently with other 4-year, liberal art baccalaureate colleges as cited by ACT (2010).

During the 2000–2003 time period, there were no prerequisites to declaring a business major and all business majors were required to take a 36 semester hour business core along with 18 to 24 additional semester hours in courses in the major. The required business core courses were Business Statistics, Financial Management, Principles of Accounting I and II, Principles of Law I, Principles of Management, Principles of Marketing, Macroeconomic Principles, Microeconomic Principles, Senior Seminar in Business, and Technology and Communications in Business. The liberal arts, general education requirements consisted of a total of 12 courses, comprising one course each in English, literature, fine arts, history, mathematics, multicultural studies, natural science, philosophy, religious studies, speech and two courses in social sciences, for a total of 37 semester hours. All courses in the major were similar in academic rigor.

A series one-tailed tests were performed, where the alternative hypothesis specified the direction of the difference between the two means. For a one-tailed test, the hypothesis:

$H_{(0)}$: $\mu_1 - \mu_2 = 0$ (difference between the means of the samples is zero), and

$H_{(1)}$: $\mu_1 - \mu_2 > 0$ (difference between the means of the samples is greater than zero)

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The level of α (probability of a Type 1 error) was set at 0.05. The means and standard deviations of each sample were calculated and the differences of the means were measured. The test statistics were then derived. If the rejection region of α was less than or equal to .05, then $H_{(0)}$ was rejected. If not, $H_{(0)}$ was not rejected as it related to each of the components of the research question.

A deductive approach was employed to test the hypotheses (Creswell, 1994). An empirical–analytical inquiry process was used, which requires that "procedures are systematic and public, precise definitions are used, objectivity-seeking methods for data collection and analysis are used, and that findings are replicable" (Gage, 1994, p. 372).

Sample and Population

The cross-sectional data file came from the institution's Institutional Research Department. The target population of this study were first-time, full-time, new-to-college students who enrolled in the cohort beginning in the fall terms of 2000 through the fall of 2003 and declared a business major upon entrance or graduated with a business degree. All the students sampled in this study were from the United States, with the majority from Midwestern states (see Table 1).

Only full-time, new-to-college students with a declared business degree (either upon entrance or graduation), who started college between the years of 2000 to 2003, were included in the study. The study sample size was 113. Demographics of the sample—91% white and 9% Hispanic/Latino, African, Asian or other ethnicity (see Table 1)—were proportional to the student body population.

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Table 1

Sample by Home State and Ethnicity

State	*n*	%	Ethnicity	*n*	%
Iowa	84	74	White	103	91
Illinois	12	11	Hispanic/Latino	5	4
Minnesota	3	3	Other	3	3
Nebraska	3	3	African	1	1
Georgia	2	2	Asian	1	1
Missouri	2	2	Total	113	100
Texas	2	2			
Wisconsin	2	2			
Idaho	1	1			
Ohio	1	1			
Virginia	1	1			
Total	113	100			

The sample had a relatively even distribution of both male and female students. A proportional representation of gender was consistent through all four cohorts (see Table 2). The institution's freshman students' ages had little variance, falling between 18 and 19 years of age, with an overall mean age of 18.07 years (see Table 2). The limited range of ages helped to control the influence of age in the study.

This study compared students who completed internships to those who did not, as recorded on an official transcript. The student's grades were recorded in a spreadsheet by semester and class. Semesters described in this study were coded as outlined in Table 3. Alternately, where required, semesters were coded in relation to when a student participated in an internship: "-1" for all semesters prior to an internship, "0" for any semester during an internship, and "1" for all semesters after an internship.

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Table 2

Sample and Cohorts by Gender with Average Age at the Start of College

Cohort/gender	*n*	%	Average of age at start of college
Fall 2000 cohort	26		18.15
Female	14	54	18.21
Male	12	46	18.08
Fall 2001 cohort	34		18.06
Female	19	56	18.00
Male	15	44	18.13
Fall 2002 cohort	31		18.03
Female	16	52	18.00
Male	15	48	18.07
Fall 2003 cohort	22		18.05
Female	11	50	18.00
Male	11	50	18.09
Total sample			
Female	60	53	18.05
Male	53	47	18.09
Grand Total	113	100	18.07

Table 3

Semester Number Coding

Semester no.	Description	Semester no.	Description
0.5	Summer before first year	5	Fall semester third year
1	Fall semester first year	5.5	Winter term third year
1.5	Winter term first year	6	Spring semester third year
2	Spring semester first year	6.5	Summer term third year
2.5	Summer term first year	7	Fall semester, fourth year
3	Fall semester, second year	7.5	Winter term fourth year
3.5	Winter term second year	8	Spring semester fourth year
4	Spring semester second year	8.5	Summer term fourth year
4.5	Summer term second year	9	Fall semester fifth year
		10	Spring semester fifth year

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The number of declared business students compared each semester for the data sampled, are shown in Table 4. Students were also coded by academic class based on successful credit hours completed at the end of a semester. See Table 5 for a description of academic class.

Table 4

Student Count per Semester by Year

Year/ semester no.	No. of students	Year/ semester no.	No. of students	Year/ semester no.	No. of students
2000	26	5.5	15	6	24
1	26	6	16	6.5	2
2001	96	6.5	3	7	24
1	34	7	15	7.5	17
1.5	22	7.5	1	8	19
2	23	2004	223	8.5	2
3	17	1.5	17	9	3
2002	175	2	16	10	1
1	33	2.5	1	11	1
1.5	31	3	14	2006	97
2	32	3.5	25	5.5	12
2.5	1	4	26	6	14
3	27	4.5	2	6.5	7
3.5	16	5	24	7	14
4	17	5.5	22	7.5	20
4.5	1	6	22	8	23
5	17	6.5	6	8.5	1
2003	234	7	21	9	2
0.5	1	7.5	12	10	1
1	20	8	13	12	1
1.5	28	8.5	1	13	2
2	29	9	1	2007	28
3	26	2005	160	7.5	11
3.5	24	3.5	13	8	12
3.54	1	4	14	9	2
4	26	4.5	3	14	2
4.5	7	5	14	13.5	1
5	22	5.5	23	2008	2
				10	2

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Table 5

Description of Academic Class by Credit Hours Completed

Academic class	Credit hours completed
Freshman	0-29
Sophomore	30-59
Junior	60-89
Senior	90 and above

Data Collection and Variable Description

Access to the students' transcript data was granted by the president and registrar of the students' institution. This study was reviewed by both that institution and the Iowa State University Committee on the Use of Human Subjects in Research. Both parties concluded that the rights of the students were protected, confidentiality of the data was assured, and the potential benefits of new knowledge sought outweighed any risk to student confidentiality. Transcripts were acquired from the Registrar's Office. Necessary variables were transcribed into two Excel data sheets.

The independent variable of this study was that the student participated in an internship. The dependent variables were (a) semester GPA, (b) business-core course semester GPA, (c) non-business course semester GPA, (d) overall final GPA, (e) graduation, (f) semesters taken to graduation, and (g) the graduation semester's relationship with respect to the timing of the internship (pre, post, or during)

The intervening variables were class start and stop dates, age, race, origin, and gender. The homogeny of the sample lent itself to controlling for the influence of age, race,

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and culture differences. This structure also lent to the validity of the study but provided limitations to transfer results to other, more diverse groups.

Table 6 lists the dependent variables, along with the component of the hypothesis for which each tested. The independent variable and intervening variables applied to all hypotheses, dependent variables, and outcome evaluations.

Table 6

Dependent Variables

Hypothesis	Dependent variables	Evaluation outcomes
GPA	Semester GPA	Change in semester GPA
	Business-core semester GPA	Change in business-core semester GPA
	Non-business semester GPA	Change in non-business semester GPA
	Overall final GPA	Change in overall final GPA
Retention and degree completion	Graduation rate	Change in graduation rate
	Number of semesters taken to graduate	Change in number of semesters taken to graduate

Table 7 describes the information obtained from the student record file and the semester record file. To insure the ability to identify records within the original data sets, the student numerical IDs were retained. Any other indentifying information (other than the variables under study) were not recorded in order to preserve the confidentiality of the students.

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Table 7

Record Descriptions

Category	Coding
Student root record	
Student ID	numeric
Date of birth	
Gender	F= Female, M=Male
Race	W:White/Non-Hispanic, A:Asian/Pacific Islander, H:Latino/Hispanic, O:Other/Unclassified
Major	
Years to complete	(0=not complete)
Semester record	
Student ID	
Semester	(See Table 4)
Year	Cohort Year
Grade	Freshman, Sophomore, Junior, Senior
Semester in relationship to internship	-1 = Pre, 0 = During, 1 = Post
GPA for semester	4-point scale
GPA business core classes for semester	4-point scale
GPA of non-business classes for semester	4-point scale

Analysis

The focus of this observational study is the independent variable of an internship—comparing business majors who participated in internships to those business majors who did not, as recorded on their official transcripts. The analysis is broken into two parts: (a) cross-sectional and (b) matched pairs.

A cross-sectional analysis was performed first with the subset population of the institution's students who were entering college for the first time to college and enrolled full-

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time in the academic cohorts beginning in Fall 2000 through Fall 2003; all were declared business majors during their time as a student. Internships were documented for 32 (28%) of the students; 81 (72%) had no internship noted on their transcripts. Only internships noted on transcripts were considered to control for the appropriate student experience.

Examining only students who had internships officially recorded on their transcripts increased the link to integration and involvement in the student's academic career. Official internships have specific requirements of reflective exercises tying work experience to classroom learning and vice versa as well as specific interaction with faculty. Other students who may have had work experience or internships that were not recorded on their transcripts would not have had assigned reflection exercises nor have specific faculty interaction.

One-way analysis of variance was used to examine if the independent variable of a student internship was able to significantly impact a change in overall GPA, the business-core GPA, graduation rate, or the number of semesters to graduate with a level of significance (α) of .05. Any findings with a level of significance .05 or lower resulted in the null hypotheses being rejected.

A series of two-sample *t*-tests were executed to determine whether or not two independent populations had different mean values. For the cross-sectional analysis, the Welch's *t*-test was used (unequal sample sizes, unequal variance). This test is used only when the two population variances are assumed to be different (the two sample sizes may or may not be equal) and must be estimated separately. The *t* statistic to test whether the population means are different can be calculated as:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{s_{\overline{X}_1 - \overline{X}_2}},$$

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where $s_{\overline{X}_1-\overline{X}_2} = \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$. and s2 is the unbiased estimator of the variance of the two samples, *n* = number of participants, 1 = group one, and 2 = group two.

The *t*-test produces the *p*-value (probability value), which indicates how likely these results are by chance. By convention, if the *p*-value is less than .05 (less than 5% chance of obtaining observed differences by chance), the null hypothesis is rejected, because there is a statistically significant difference between the two groups. The *t*-test helps to assess the statistical significance between two sample means; it also assists in the construction of confidence intervals for the difference between the means and linear regression analysis where the sample size is small (Lind, Marchal, & Wathen, 1994).

To further assess the impact of student internships on academic performance, a matched-pairs test was performed. The control group was composed of students who did not complete a student internship. Pairs were matched both on gender and on the student's GPA at the end of the first year. Factors compared were the final GPA at graduation, persistence (did graduate), and timeliness of graduation. The matching procedure: (a) filtered only for those students who attended the institution for at least six semesters; (b) dismissed all students who took an internship in their final semester, as they would not have had a semester GPA following the internship to compare; and (c) sorted the remaining student records first by gender then by overall GPA at the end of the 1st year. Gender was used as a matching criterion, as earlier analysis indicated that there was a range in performance, based on gender, with this specific sample. Using gender as an element helped control for any possible gender bias in the outcome.

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Students who had not participated in an internship were paired with students had participated in an internship based on closest matched, first-year, overall GPA. Where multiple possible pair options existed based on gender and GPA, the closest match for the number of semesters to graduate was used as the "tie-breaker." For example, if Student X graduated in 8.5 semesters and two control candidates matched on gender and GPA, but Student Y had dropped out after six semesters and Student Z graduated in 8.5 semesters, then Student Z would be selected as the control match. The appendix shows the details pertaining to matched pairs.

Trustworthiness and Verification

Data were provided by the institution's institutional research office. The data and analysis of the data were considered to be objective and reliable, and the role of the researcher was one of objective observation. The data set was analyzed for both missing data and outliers prior to running the regression analysis. Records with incomplete fields were omitted so as to not distort the findings. The data were analyzed using multiple regression analysis and standard statistical tools within Microsoft Office's Excel 2007.

Summary

The purpose of this study was to understand the relationship between internships and GPA, retention, and degree completion. Participants were first-time, full-time business majors enrolled in a small, private, Midwestern, not-for-profit, liberal arts, baccalaureate-granting institution. The study period spread across 4 cohort years, with initial enrollment beginning in the fall of 2000 and the last cohort group's initial enrollment starting in the fall of 2003. Analyzed variables were overall GPA, graduation rate, and the number of semesters to graduation; all were to determine how a student internship impacts retention rates,

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persistence to degree completion, and GPA. Access to the data was provided by the president and registrar of the institution and approved by both the institution's and Iowa State University's Institutional Review Board for study on human subjects.

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CHAPTER 4. RESULTS AND DISCUSSION

Overview

To better understand the benefits that internships have to students and to the institution, it is necessary to ascertain what impact student internships have on retention, persistence, and GPA. The hypothesis tested in this study is that there exists a relationship between internships and GPA, retention, and degree completion. The expected results for the research question were that internships are able to contribute to a student's overall success and learning, as demonstrated through timely degree completion and a higher GPA.

The null hypothesis (H_0) is that there is no relationship between internships and retention, degree completion and GPA; that any detected differences are due strictly to chance. The alternative hypothesis (H_1) states that there is a relationship between internships and retention, degree completion, and GPA; here differences are real and not due to chance. The expected results for the research question were vetted through the following research questions:

Does participation in a student internship impact overall, final GPA?

Does participation in a student internship significantly improve GPA for the semesters following an internship compared to prior semesters?

Does participation in a student internship have an impact on GPA for the area of study as opposed to other-course grade point average?

Does participation in a student internship impact persistence or the probability of completion to graduation?

Does participation in a student internship impact the timeliness of graduation?

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If the null hypothesis is not rejected, then:

If an internship is beneficial, when in a student's academic career is the optimal time to complete an internship?

Cross-Sectional Analysis

Cross-sectional analysis was performed to assess the relationship of student internship across the sample, as a whole.

Question 1: Does Participation in a Student Internship Improve Overall, Final GPA?

Figure 1 shows a graphic comparison of the number of years taken to graduate by GPA of intern participants versus those who had not participated in an internship, The graph shows the number of students in each stratum.

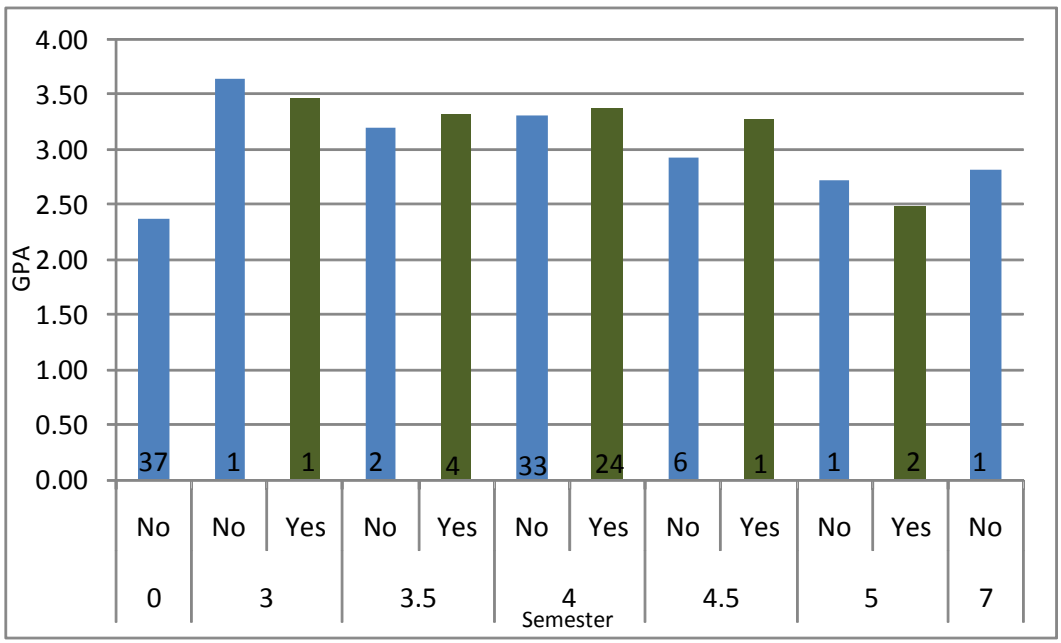

Figure 1. GPAs of students who had participated in an internship (Yes) with those who had not (No) within years taken to graduate. Number in bar denotes count of students represented.

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Figure 2 shows a comparison of the GPA of the study group (internship participants) and the control group (no internship participation) by class status regardless of the timeliness of pursuit of graduation. Table 8 shows a comparison of the final semester GPA of internship participants with that of the control group (those without an internship) for the entire sample.

In a comparison of the descriptive statistics for the final semester of those who had participated in an internship versus those who hadn't, the GPA of students without an internship was on average 2.84 (±0.09), compared to the GPA of 3.31 (±0.07) for those who did have an internship. On average, students who had an internship had a 0.471 better final GPA. Table 9 shows the t-test summary of the significance for this difference. The *t*-test produced a *p*-value *of* .00005 (highlighted), meaning there is less than a 0.005% probability that the improved final GPA of those who had an internship occurs by chance. With a probability of less than .05, there is enough evidence to reject the null hypothesis.

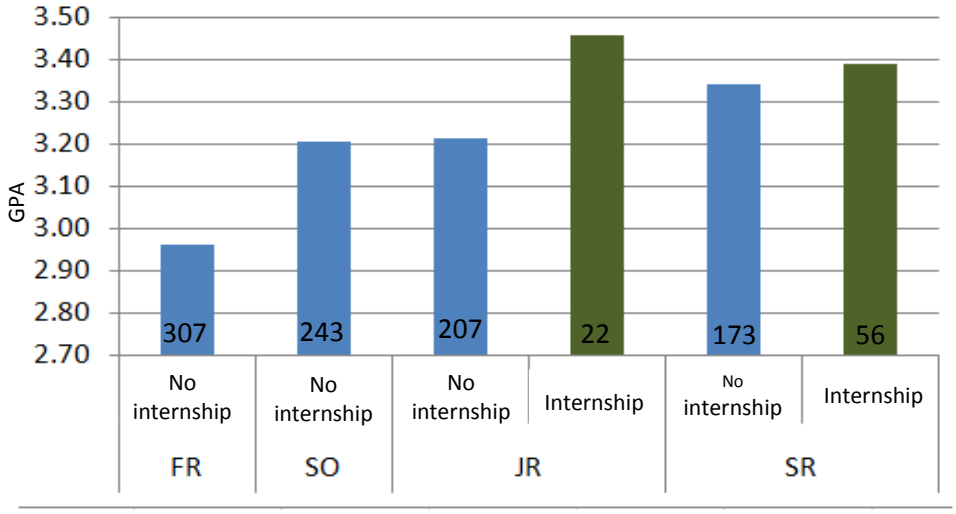

Figure 2. Count and semester GPA by class status and internship experience. Number within each bar denotes count of student semesters represented.

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Table 8

Descriptive Statistics Comparison of Final Average GPA and Internship Experience

	Average GPA	
Descriptive statistic	No internship	Internship
Mean	2.839	3.310
Standard Error	0.090	0.073
Median	3.030	3.383
Standard Deviation	0.813	0.413
Sample Variance	0.661	0.171
Kurtosis	1.293	1.508
Skewness	-1.141	-0.905
Range	3.932	1.950
Minimum	0.000	2.028
Maximum	3.932	3.979
Count	81	32
Largest	3.932	3.979
Smallest	0.000	2.028
Confidence level (95%)	0.180	0.149

Table 9

Final GPA t*-Test of Two Samples (No Internship Versus Internship)*

	Average GPA	
Statistic	No internship	Internship
Mean	2.8388	3.3100
Variance	0.6608	0.1709
Observations	81	32
Hypothesized mean difference	0	
Degrees of freedom	104	
t statistic	-4.05489	
$P(T \leq t)$ 1-tail	0.00005	
t critical 1-tail	1.65964	
$P(T \leq t)$ 2-tail	0.00010	
t critical 2-tail	1.98304	

Note. *t*-test: Two-sample assuming unequal variances.

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The results are statistically significant, and the research hypothesis is supported by the data. Internships do have a positive impact on learning, as measured by improved final GPAs.

In Figure 3, the dependent variable of final GPA is scaled on the Y axis; the independent variable of student internship is scaled on the X axis. When looking at the data graphically, the final average GPA has a greater range for those without an internship (-1). The phenomenon tightens up if an internship was experienced in the final semester (0); the GPA is overall higher and tighter if the internship had been taken prior to the final semester (1). The figure provides a graphical view of the tighter standard deviation for those with an internship (from Table 9); without internship ($\sigma = 0.813$) and with internship ($\sigma = 0.413$).

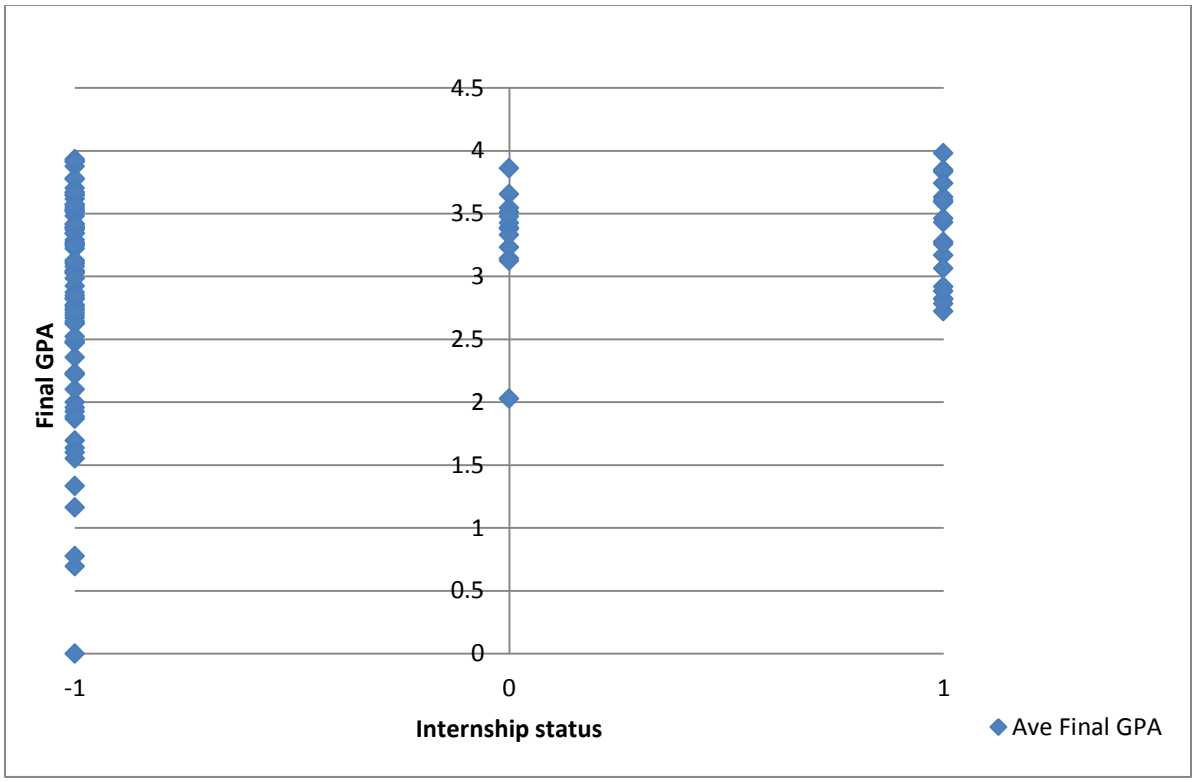

Figure 3. Scatter plot of final average GPA in relationship to internship participation.

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Question 2: Does Participation in a Student Internship Significantly Improve GPA for Semesters Following an Internship Compared to Prior Semesters?

Table 10 shows the entire sample by semester and compares all semester GPAs (per semester for semesters 4 through 10) among students who had not yet experienced an internship and those who had. Of note, a student who participated in an internship in semester 5 would be in the "Pre" (–1) group in semester 4 and the "Post" (1) group in semester 6. This test reduces student type bias as the same student could fall in both Pre and Post, depending on the semester. The difference in GPA is that those students who had the experience of an internship had, on average, a 0.24 higher GPA (or about 6% greater, based on a 4.0 scale).

Table 11 reflects the outcome of the *t*-test (two samples, assuming unequal variances) when comparing the mean of all pre-internship semesters' GPA to the mean of all post-internship semesters' GPA. The *t*-test produced a *p*-value of 0.0236 (highlighted), meaning the probability that the improvement of the semester GPA by chance is less than 2%. With a *p*-value less than .05, there is enough evidence to reject the null hypothesis; results are statistically significant and the research hypothesis is supported by the data. Therefore, internships have a positive impact on learning, as measured by improved, semester GPA averages.

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Table 10

Pre- vs. Post-Internship Semester GPA Comparison by Semester

	GPA						Pre/Post
Semester	*M*	*SD*	Variance	Min	Max	Count	diff
4 (spring semester 2nd yr)	3.14	0.52	0.27	1.42	4.00	80	
Pre (–1)	3.13	0.52	0.27	1.42	4.00	79	
Post (1)	3.73	0.00	0.00	3.73	3.73	1	0.60
4.5 (summer term 2nd yr)	2.96	0.79	0.63	1.67	4.00	12	
Pre (–1)	2.75	0.70	0.49	1.67	3.84	10	
Post (1)	4.00	0.00	0.00	4.00	4.00	2	**1.25**
5 (fall semester, 3rd yr)	3.17	0.51	0.26	1.83	4.00	74	
Pre (–1)	3.14	0.51	0.26	1.83	4.00	69	
Post (1)	3.56	0.29	0.09	3.00	3.80	5	**0.42**
5.5 (winter term 3rd yr)	3.51	0.76	0.57	0.00	4.00	71	
Pre (–1)	3.50	0.78	0.61	0.00	4.00	63	
Post (1)	3.57	0.49	0.24	2.67	4.00	8	**0.07**
6 (spring semester 3rd yr)	3.19	0.59	0.35	1.27	4.00	72	
Pre (–1)	3.17	0.61	0.37	1.27	4.00	63	
Post (1)	3.37	0.39	0.15	2.83	3.93	9	**0.20**
6.5 (summer term 3rd yr)	3.05	0.56	0.31	2.00	4.00	16	
Pre (–1)	3.09	0.66	0.44	2.00	4.00	10	
Post (1)	2.97	0.34	0.11	2.67	3.67	6	-0.12
7 (fall semester, 4th yr)	3.29	0.53	0.28	2.09	4.00	69	
Pre (–1)	3.30	0.56	0.31	2.09	4.00	55	
Post (1)	3.24	0.42	0.18	2.67	4.00	14	-0.06
7.5 (winter term 4th yr)	3.65	0.60	0.36	0.00	4.00	61	
Pre (–1)	3.61	0.64	0.42	0.00	4.00	48	
Post (1)	3.80	0.36	0.13	3.00	4.00	13	0.19
8 (spring semester, 4th yr)	3.22	0.63	0.40	1.59	4.00	56	
Pre (–1)	3.20	0.67	0.44	1.59	4.00	41	
Post (1)	3.26	0.52	0.27	2.34	4.00	15	0.06
8.5 (summer term 4th yr)	3.67	0.41	0.17	3.00	4.00	4	
Pre (–1)	3.56	0.42	0.17	3.00	4.00	3	
Post (1)	4.00	0.00	0.00	4.00	4.00	1	0.44
9 (fall semester, 5th yr)	2.56	1.05	1.11	0.60	4.00	8	
Pre (–1)	2.50	1.20	1.45	0.60	4.00	6	
Post (1)	2.75	0.25	0.06	2.50	3.00	2	0.25
10 (spring semester, 5th yr)	2.62	0.22	0.05	2.33	2.86	3	
Pre (–1)	2.76	0.09	0.01	2.67	2.86	2	
Post (1)	2.33	0.00	0.00	2.33	2.33	1	-0.43
GRAND SUMMARIES	3.27	0.64	0.41	0.00	4.00	526	0.24

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Table 11.

T-Test Comparing Pre- and Post-Internship Semester GPAs

Statistic	Pre	Post
Mean	3.210170178	3.501287409
Variance	0.06128474	0.101989417
Observations	9	9
Hypothesized mean difference	0	
Degrees of freedom	15	
t statistic	-2.161376579	
$P(T \leq t)$ 1-tail	0.023622128	
t critical 1-tail	1.753050325	
$P(T \leq t)$ 2-tail	0.047244257	
t critical 2-tail	2.131449536	

Note. *t*-test: two-sample assuming unequal variances.

Question 3: Does Participation in a Student Internship Have an Impact on GPA for the Area of Study As Opposed to the GPA for Other Courses?

To answer question 3 the variance of students' success in business core classes per semester was measured. The control group of students who had not yet experienced an internship was compared to those who had previously experienced a student internship. The business core class GPA for semesters 4, 5, 6, 7, and 8 were evaluated to more closely align the types of business classes in which the students would be progressing. Table 12 lists the outcome of the *t*-test (two samples assuming unequal variances) in comparing the means of all pre-internship semesters' GPA of business-core classes to semester GPAs of business-core classes post-internship. The difference in core business GPA reflects that those who had the experience of an internship had, on average, a 0.24 higher GPA than those without student internship experience. The *t*-test produced a *p*-value = 0.137 (highlighted in the

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Table 12

T-Test for Semester GPA of Business Core Classes Pre- and Post-Internship

	Business core class GPA	
	Pre-internship	Post-internship
Mean	3.139348	3.37256667
Variance	0.002671	0.17067461
Observations	5	5
Pearson Correlation	0.090093	
Hypothesized mean difference	0	
Degrees of freedom	4	
t statistic	-1.26667	
$P(T \leq t)$ 1-tail	0.137004	
t critical 1-tail	2.131847	
$P(T \leq t)$ 2-tail	0.274007	
t critical 2-tail	2.776445	

Note. *t*-test: paired two sample for means.

table), meaning the improvement of the semester GPAs is not statistically significant. The experiences of an internship do not necessarily improve GPA in business-core classes, specifically.

Question 4: Does Participation in a Student Internship Improve Persistence or the Probability of Completion to Graduation?

Table 13 lists the years taken to graduate, grouped by internship experience. In examining graduation rates, 100% of students who took an internship persisted to graduation. Of the students who did not participate in an internship, 46% did not persist to graduation.

To determine whether the internship experience relationship to persistence to graduation was significant, the observed frequency of graduation was compared to the

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Table 13

Years to Graduation (Persistence) Counts and Internships Participant Percentages

	No internship (72%)		Internship (28%)	
Years to graduation	*n*	%	*n*	%
Did not graduate	37	45.7	0	0.0
3 years	1	1.2	1	3.0
3.5 years	2	2.5	4	12.5
4 years	33	40.7	24	75.0
4.5 years	6	7.4	1	3.0
5 years	1	1.2	2	6.3
7 years	1	1.2	0	0.0
Total	81	100.0[a]	32	100.0[a]

[a]Columns of numbers don't add to 100.0 due to rounding.

expected frequency (see Table 14) using the following calculations:

Expected = RjCj/n (row_itotal * cd_jtotal/grand total)

$X^2 = \sum_{i,j}(O_{i,j} - E_{i,j})^2/E_{i,j} = 21.73$, p-value = .0000031, $df = 1$

Expected to not graduate and have no internship = (37*81)/113 = 26.5221

Expected to not graduate but have had an internship = (37*32)/113 = 10.4779

Expected to graduate and have no internship = (76*81)/113 = 54.478

Expected to graduate but have had an internship = (76*32)/113 = 21.522

To determine whether the difference between observed and expected frequencies was significant, the chi square value of 21.73 was compared to the critical value of 3.841 ($df = 1$, $\sigma = .05$; Gay, Mills, & Airasian, 2006). The value of 21.73 is greater than 3.841; therefore the null hypothesis was rejected, as there was a significant difference between observed and

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Table 14

Observed Versus Expected Graduation Frequencies With and Without Internship

	Observed		Expected		
	No internship	Internship	No internship	Internship	Total
Not graduated	37	0	26.522	10.478	37
Graduated	44	32	54.478	21.522	76
Total	81	32	81	32	113

expected proportions. An internship experience did relate significantly to the much improved likelihood that a student would graduate.

Question 5: Does Participation in a Student Internship Impact the Timeliness of Graduation?

Drawing out the population of only those students who did graduate, Figure 4 graphically displays years taken to degree completion of those who did not take an internship (–1), those taking an internship in their final semester (0), and those who took an internship (1). An examination of Table 14 reveals that 100% of students who had internships completed their degrees, 91% graduated in 4 years or less, and only 9% took more than 4 years to graduate. To assess if an internship may have had any impact on the timeliness of graduation, students who had an internship were compared to those graduating without having completed an internship. Table 15 shows the results of the *t*-test (two-sample, assuming unequal variances) of the average number of years to degree completion (of those who did finish). The *t* statistic of 1.24, which is less than 1.67 (the critical value), reflects 1 tail, 1 degree of freedom. The *p*-value is greater than 0.05, revealing that the difference between a timely graduation rate for those with an internship and those without is not significantly different. Thus, taking an internship does not impact timeliness to graduation.

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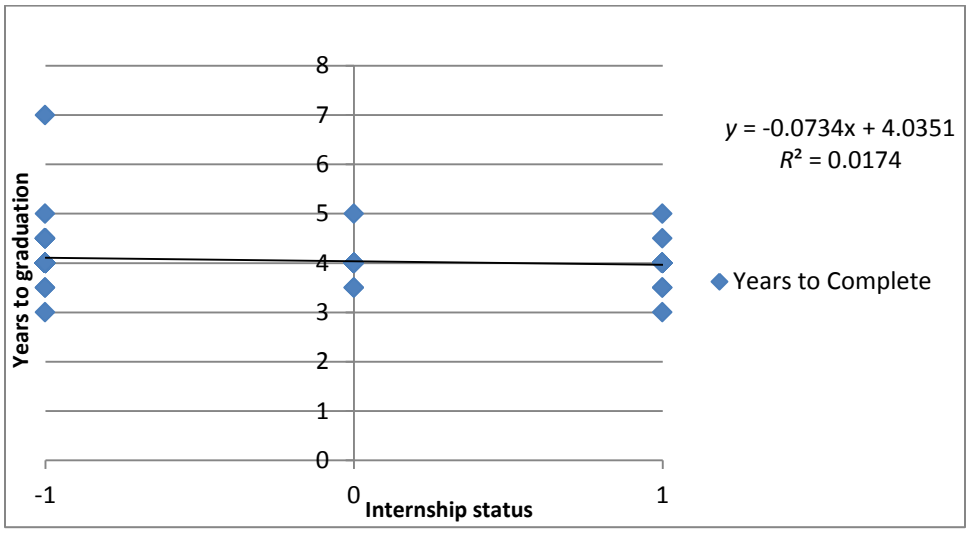

Figure 4. Scatter plot of years to graduation (persistence) in relationship to internship.

Table 15

T-Test Statistics of Years to Graduation (Persistence) in Relationship to Internship

Statistic	No internship	Internship
Mean	4.113636364	3.984375
Variance	0.289112051	0.136844758
Observations	44	32
Hypothesized mean difference	0	
Degrees of freedom	74	
t statistic	1.241113125	
$P(T \leq t)$ 1-tail	0.109242004	
t critical 1-tail	1.665706893	
$P(T \leq t)$ 2-tail	0.218484008	
t critical 2-tail	1.992543466	

Note. *t*-test = Two-sample assuming unequal variances.

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Question 6: If an Internship Is Beneficial, When in the Student's Academic Career is the Optimal Time to Complete an Internship?

Figure 5 graphically compares business-core class GPA to nonbusiness-core class GPA, as well as overall semester GPA by semester among those who had experienced an internship and those who had not. Figure 6 graphically shows the overall semester GPA for those who had participated in an internship versus those who had not.

Figure 7 displays the differences in GPA before versus after participating in an internship: in business-core classes, in nonbusiness-core classes, and in overall semester GPA. Figure 7 shows the greatest positive difference in GPA occurs after students have completed their second year of study and before they started their fourth year of study. The data indicate that semesters 4.5 to 6 are the optimal time to take an internship.

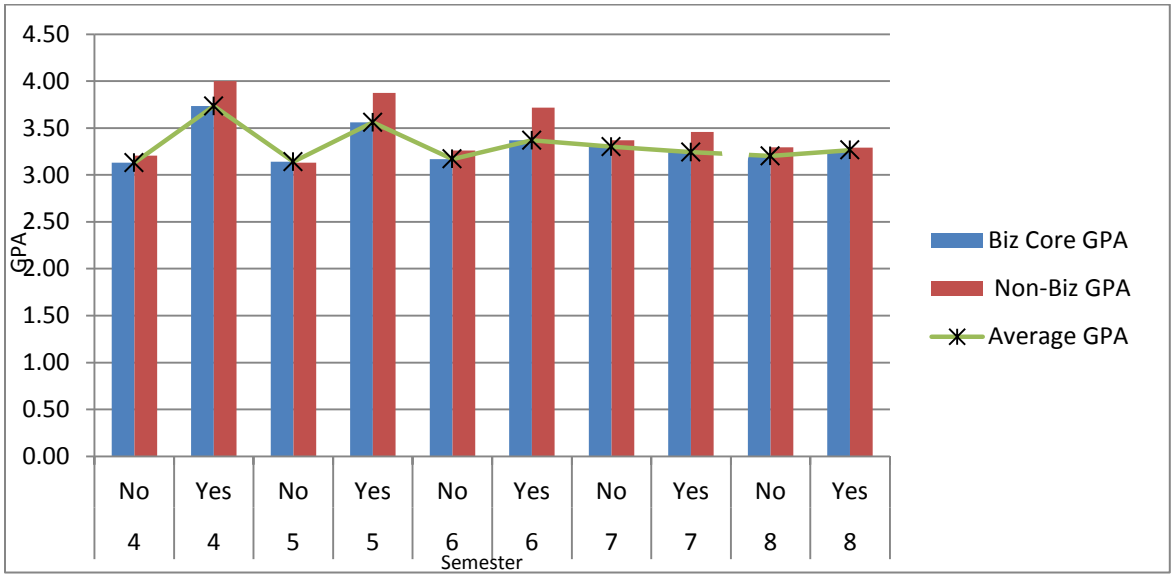

Figure 5. Business-core course and nonbusiness core course GPAs by semester for those who had participated in an internship (Yes) and those who had not (No). Semester numbers reflect spring semester, 2nd year (4); fall semester, 3rd year (5); spring semester, 3rd year (6); fall semester, 4th year (7); and spring semester, 4th year (8).

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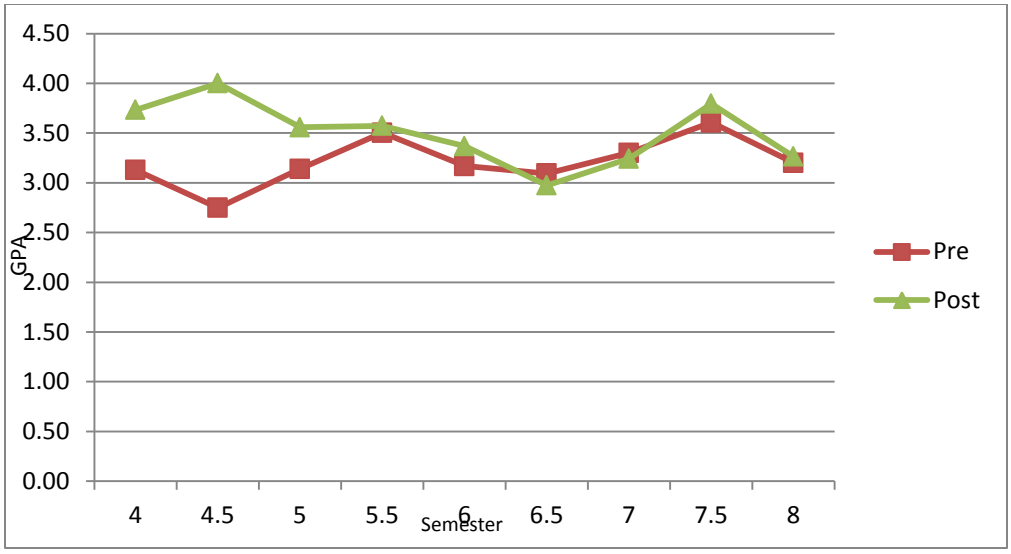

Figure 6. Semester GPA comparison by semester, by internship experience. Semester numbers reflect spring semester, 2nd year (4); summer term, 2nd year (4.5); fall semester, 3rd year (5); winter term, 3rd year (5.5); spring semester, 3rd year (6); summer term, 3rd year (6.5); fall semester, 4th year (7); winter term, 3rd year (7.5); and spring semester, 4th year (8).

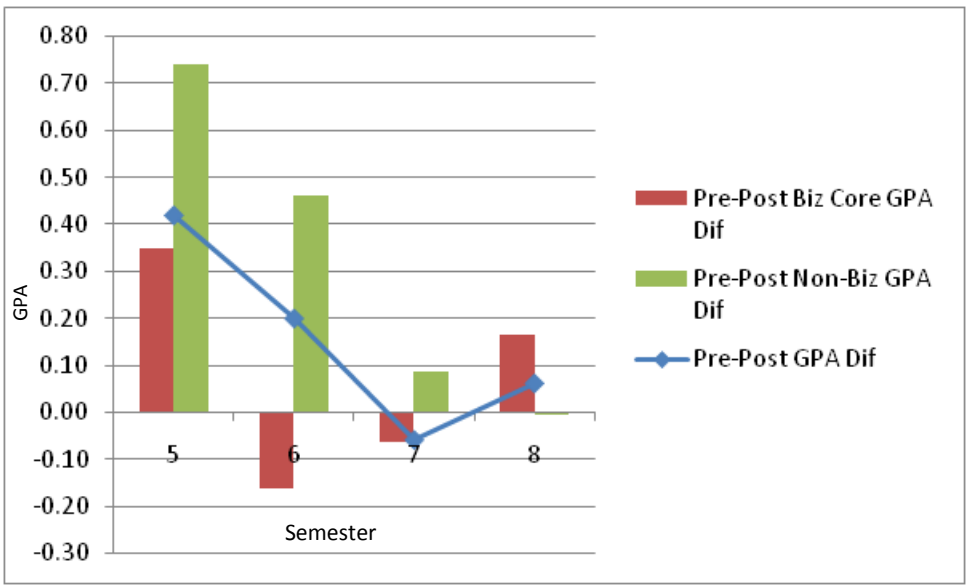

Figure 7. Differences in semester GPAs pre-internship versus post internship in business-core classes, in nonbusiness-core classes, and in overall GPA. Semester numbers reflect fall semester, 3rd year (5); spring semester, 3rd year (6); fall semester, 4th year (7); and spring semester, 4th year (8).

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Matched Pairs Analysis

To further assess the impact of student internships on academic performance, matched-pairs tests were performed. The control group consisted of students who did not participate in a student internship. Matched pairs criteria involved both gender and student GPA at the end of the first year. Items compared were the final GPA at graduation, persistence (actual graduation), and timeliness of graduation. Table 16 and Figure 8 show internships and GPA by gender.

Male students showed a greater increase in GPA post-internship than did female students. Females who had participated in an internship had a 0.34 higher GPA than women had had not. Males who had participated in an internship had a 0.54 higher GPA than men who had not, for all classes taken. To control for gender's impact on outcome, the matched pair algorithm took this criterion into account.

Table 16

Comparison by Gender of Overall GPAs of Those Who Had Participated in an Internship Versus Those Who Did Not

		GPA	
Gender/Internship	*n*	*M*	*SD*
Female	60	3.134	0.713
No	38	3.014	0.835
Yes	22	3.347	0.356
Difference		0.333	
Male	53	2.789	0.758
No	43	2.687	0.771
Yes	10	3.228	0.531
Difference		0.541	
Total	113	2.972	0.752

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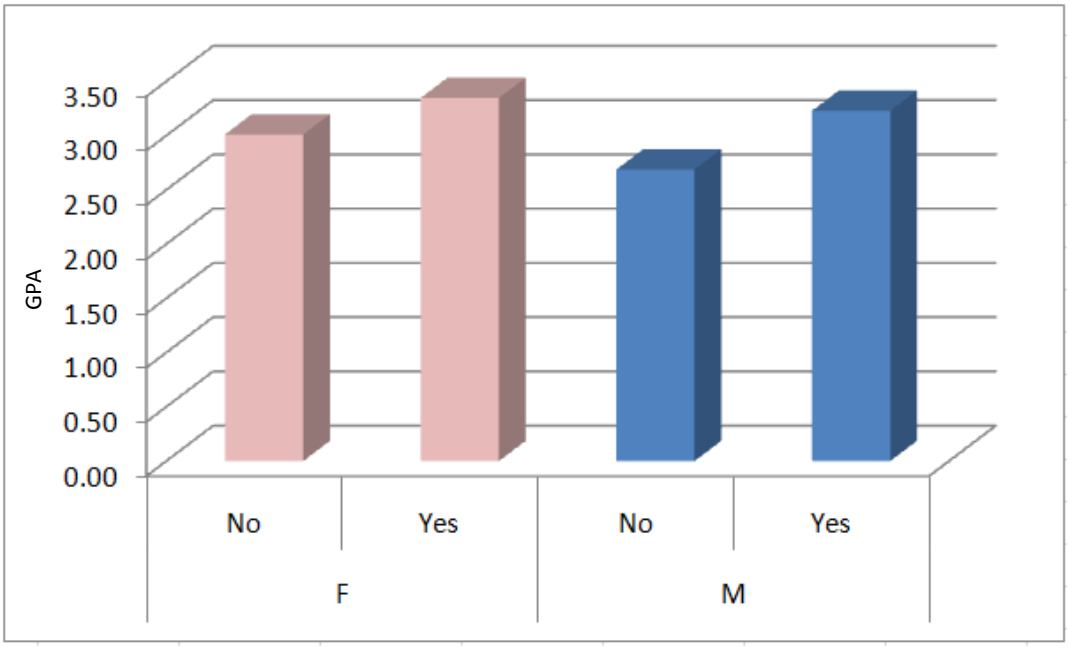

*Figure 8. C*omparison of GPA by gender of those who had an internship versus those who had not.

Table 17 reflects the resulting, paired match selections for this study. The appendix shows details of the matched pairs. Table 18 reflects the results of the differences among the matched pairs.

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Table 17

Matched Pairs (Based on Gender and Overall First-Year GPA)

Pairs	Years to graduate[a]	Cohort	Age at start of college	Gender	Race[b]	Student ID	Internship[c]	GPA[d]
1	0	Fall 2001	18	F	H/L	40890	-1	2.13
1	4	Fall 2001	18	F	W	34585	1	2.15
2	3.5	Fall 2001	18	F	W	41259	-1	2.44
2	4	Fall 2003	18	F	W	28166	1	2.49
3	4.5	Fall 2001	18	F	W	29212	-1	2.63
3	4	Fall 2001	18	F	W	31987	1	2.75
4	4	Fall 2003	18	F	W	34720	-1	3.00
4	4	Fall 2001	18	F	W	40800	1	3.00
5	0	Fall 2001	18	F	W	32976	-1	3.18
5	4.5	Fall 2003	18	F	A	25950	1	3.20
6	4	Fall 2002	18	F	W	37510	-1	3.22
6	3.5	Fall 2003	18	F	W	27515	1	3.29
7	4	Fall 2002	18	F	W	42956	-1	3.34
7	4	Fall 2002	18	F	W	36778	1	3.34
8	3	Fall 2000	18	F	W	38095	-1	3.52
8	4	Fall 2001	18	F	W	33140	1	3.49
9	4	Fall 2002	18	F	W	25401	-1	3.51
9	4	Fall 2001	18	F	W	26439	1	3.51
10	4	Fall 2000	19	F	W	28664	-1	3.54
10	4	Fall 2000	18	F	W	36292	1	3.55
11	0	Fall 2000	18	F	W	32756	-1	3.67
11	4	Fall 2003	18	F	W	36062	1	3.70
12	4	Fall 2000	18	F	W	31092	-1	3.71
12	4	Fall 2002	18	F	W	26321	1	3.73
13	4	Fall 2000	18	F	W	34485	0	3.78
13	4	Fall 2001	18	F	W	33763	1	3.94
14	4.5	Fall 2002	18	M	W	35837	-1	2.7
14	5	Fall 2003	18	M	W	24257	1	2.7
15	4	Fall 2001	19	M	W	35025	1	2.8
15	0	Fall 2003	18	M	W	25442	-1	2.8
16	4	Fall 2001	18	M	W	34044	1	2.9
16	0	Fall 2002	18	M	W	34992	-1	2.9
17	4	Fall 2001	18	M	Other	32066	1	3.2
17	4	Fall 2002	18	M	W	24201	-1	3.2
18	4	Fall 2001	18	M	W	29142	-1	3.7
18	4	Fall 2003	18	M	W	25706	1	3.8

[a]0 = did not graduate; [b]H/L = Hispanic/Latino, W = White, non-Hispanic, A = Asian; [c]–1 = No, 1 = Yes; [d]Overall GPA after year 1.

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Table 18

Matched Pair Summary

	GPA difference[a]		Persistence[b]		Semesters to graduation		
Pair	Internship	No internship	Internship	No internship	Internship	No internship	Final GPA difference[c]
1	0.83	n/a	1	0	8.5		n/a
2	0.02	0.89	1	1	8	7	0.24
3	0.35	-0.49	1	1	8	8	0.17
4	0.09	0.11	1	1	8	8	-0.19
5	-0.09	n/a	1	0	9		n/a
6	0.9	-0.03	1	1	7.5	8	0.24
7	0.35	-0.39	1	1	8	8	0.62
8	0.17	0.16	1	1	6	6	-0.12
9	0.15	-0.03	1	1	8	8	0.13
10	-0.05	0.23	1	1	8	8	-0.19
11	-0.28	n/a	1	0	8		n/a
12	-0.06	-0.16	1	1	8	8	-0.01
13	0.03	-0.04	1	1	8	8	0.13
14	-0.58	-0.42	1	1	10	9	0.54
15	0.04	n/a	1	0	8		n/a
16	0.1	n/a	1	0	8		n/a
17	-0.03	0.07	1	1	8	8	0.06
18	0.01	-0.23	1	1	8	8	0.16
M	0.108	-0.025	1.00	0.72	8.0	7.9	0.137
SD	0.346	0.357	0.00	0.46	0.7	0.7	0.246
Min	-0.58	-0.49	1	0	6	6	-0.19
Max	0.9	0.89	1	1	10	9	0.62

[a]GPA difference–Internship: the average of all semester GPAs following an internship subtracted from the average of all the semester GPAs prior to an internship [AVE(Post-internship semester GPAs) – AVE(Pre-internship semester GPAs)]; GPA difference–No internship: the average of all semester GPAs that match to its pair—the average following an internship, subtracted from the average of all semester GPAs that match the pair prior to an internship [AVE(Matched post-internship semester GPAs) – AVE(Matched Pre-internship semester GPAs)]. [b]Persistence: coded as 1 = graduated, 0 = not graduated. [c]Final GPA difference: the difference in final GPA between matched pairs; if a partnered pair did not graduate, the difference was not determined.

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Question 1: Does Participation in a Student Internship Improve Overall, Final GPA?

Figure 9 provides a graphical comparison of the matched pairs, pre/post semester average of GPAs as well as the comparative difference in final GPA. The graph shows that 50% of the study group (those who had an internship) showed a comparative gain in GPA over their matched control. Five of the control group did not graduate. In an evaluation of final GPA at graduation, this set of five is filtered, reducing the sample size to 13 matched pairs. Nine of the 13 (69%) of the interns improved their overall GPA over their matched pair. The average of the increased final GPA was 0.137 grade point which is a 3.43 percent increase on a 4-point grading scale.

Table 19 lists the graduating pairs' final GPAs, as well as the differences in GPA. Those who participated in an internship were more likely to improve their GPA than were

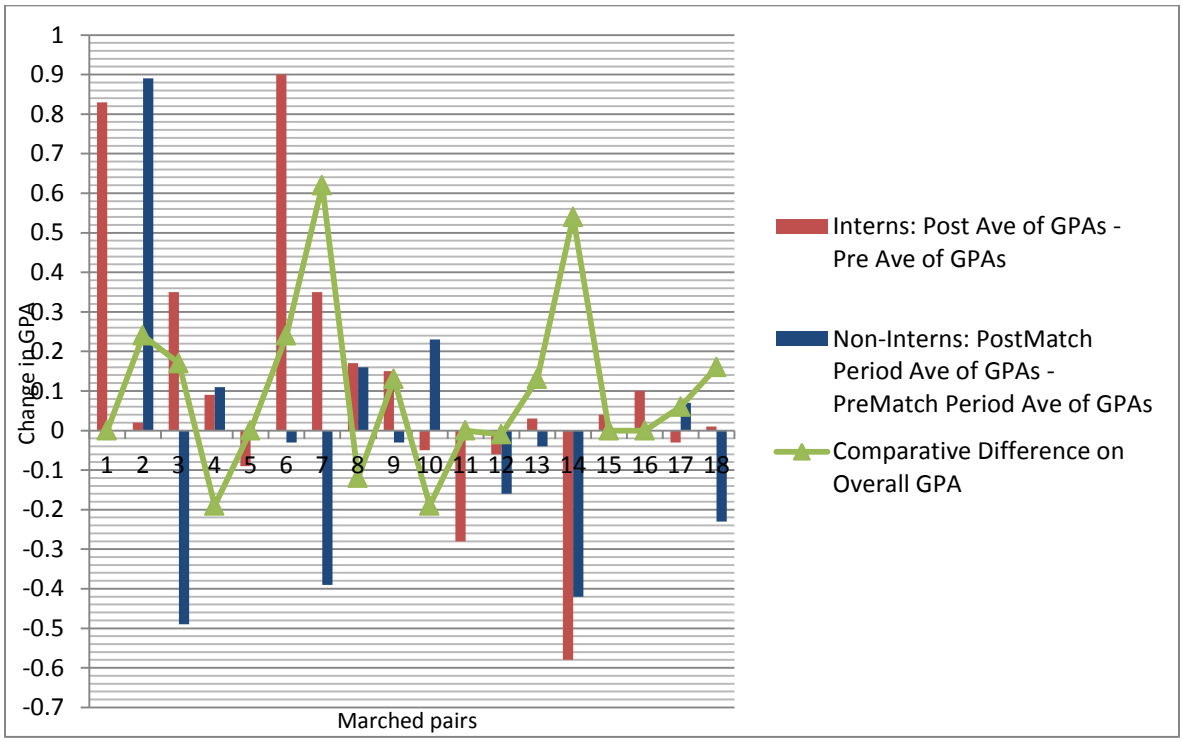

Figure 9. Matched pairs: comparison of impact of the internship to overall GPA.

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Table 19

Matched Pairs' GPA at Graduation

Graduating GPA		Difference
No internship	Internship	in GPA
2.575	2.815	0.240
2.646	2.817	0.171
2.973	2.784	-0.188
2.763	3.000	0.237
2.924	3.544	0.621
3.621	3.504	-0.117
3.598	3.731	0.133
3.685	3.496	-0.190
3.792	3.777	-0.015
3.836	3.966	0.130
2.364	2.900	0.536
3.304	3.360	0.056
3.635	3.803	0.168
	M	0.137
	SD	0.245365
	M/SD/SR(N)	2.0128293
	T-test	0.0336

those who did not participate. The average comparative difference in overall grade point was 0.137 (*SD* = 0.246). For a 4-point grading scale, the result is a 3.325% (±6%) increase in GPA on matched pairs—most likely, a 3% better overall GPA results. Students are more likely to persist to graduation based on the matched pairs. Table 20 provides the descriptive statistics of the matched pairs' GPA differences; final GPA for the subset of the matched pairs that did graduate is noted.

Table 21 reflects the outcome of the *t*-test (paired two sample for means) for the matched pairs' graduating GPA. The *t*-test produced a *p*-value of .03 (highlighted in the table), demonstrating a probability that the improvement of the final GPAs is by chance, less

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Table 20.

Descriptive Statistics for Matched Pairs' Difference in Graduating GPA

Statistic	Value	Statistic	Value
Mean	0.136977	Range	0.8102
Standard error	0.068052	Minimum	-0.1896
Median	0.1325	Maximum	0.6206
Mode	N/A	Count	13
Standard deviation	0.245365	Largest(1)	0.6206
Sample variance	0.060204	Smallest(1)	-0.1896
Kurtosis	0.162331	Confidence level (95%)	0.148272
Skewness	0.593246		

Table 21

t-Test for Matched Pairs' Difference in Graduating GPA

	Difference in graduating GPA	
Statistic	Internship	No internship
Mean	3.345876923	3.2089
Variance	0.184131429	0.270062425
Observations	13	13
Pearson Correlation	0.883403599	
Hypothesized mean difference	0	
Degrees of freedom	12	
t statistic	2.012829316	
$P(T \leq t)$ 1-tail	0.033562878	
t critical 1-tail	1.782287548	
$P(T \leq t)$ 2-tail	0.067125756	
t critical 2-tail	2.178812827	

Note. *t*-test: paired two sample for means.

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than 3%. With a *p*-value of less than .05, there is enough evidence to reject the null hypothesis; results are statistically significant and the research hypothesis is supported by the data. The conclusion is that a statistically significant difference exists in final GPA between matched pairs. Those with an internship graduate, on average, with an improved final GPA versus matched pairs that did not have an internship experience.

Question 2: Does Participation in a Student Internship Significantly Improve GPA for the Semesters Following an Internship Compared to Prior Semesters?

Five members of the control group did not graduate. In an evaluation of differences in pre- and post-internship semester GPA averages of students, the five who did not graduate were filtered out, reducing the sample size to 13 matched pairs. In Table 22, the second column lists the matched pairs' differences for the average of all semester GPAs following an internship. This value is then compared to the average of all semester GPAs prior to an internship. The third column lists computed averages for very same semester periods of the matched student. Nine of the 13 (69 percent) of those who had had internships had a more distinguishable improved semester GPA average over their match pair within the same periods. The mean of the improved GPA (average post- over pre-internship) was 0.129 (σ = 0.49). This value translates to a 3.29 percent increase on a 4-point grading scale.

Table 23 reflects the outcome of the *t*-test (two samples for means) comparing the differences between matched pairs for improved average GPA between post- and pre-internship semesters. The *t*-test produced a *p*-value of .18 (highlighted in the table), indicating that the improvement of the semester GPAs by chance is 18%. With a *p*-value greater than .05, there is not enough evidence to reject the null hypothesis; when matched

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one-for-one on a sample of 13, individual improvement (post-internship minus pre-internship) was not statistically significant. On average, students who had participated in an internship improved their GPA by 0.108 over those who had not, with a mean difference of -.025. This marked, comparative improvement was not statistically significant.

Table 22

Graduating GPA Differences Between Students with Internships and Students without Internships

	GPA difference		Differences of
Pair	Internship	No internship	the Differences
2	0.02	0.89	-0.87
3	0.35	-0.49	0.84
4	0.09	0.11	-0.02
6	0.9	-0.03	0.93
7	0.35	-0.39	0.74
8	0.17	0.16	0.01
9	0.15	-0.03	0.18
10	-0.05	0.23	-0.28
12	-0.06	-0.16	0.1
13	0.03	-0.04	0.07
14	-0.58	-0.42	-0.16
17	-0.03	0.07	-0.1
18	0.01	-0.23	0.24
M	0.108	-0.025	0.129
SD	0.346	0.357	0.490
SE			0.135809357
Median			0.07
Sample variance			0.239774359
Kurtosis			0.48825431
Skewness			-0.00489455
Range			1.8
Minimum			-0.87
Maximum			0.93
Count			13
Largest (1)			0.93
Smallest (1)			-0.87
Confidence level (95.%)			0.295903169

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Table 23

t-Test for Matched Pairs' Difference in GPA Between Post- and Pre-Internship Semesters

	Difference in graduating GPA[a]	
Statistic	Internship	No internship
Mean	0.103846154	-0.025384615
Variance	0.109925641	0.127476923
Observations	13	13
Pearson Correlation	-0.010018019	
Hypothesized mean difference	0	
Degrees of freedom	12	
t statistic	0.951560128	
$P(T \leq t)$ 1-tail	0.180046763	
t critical 1-tail	1.782287548	
$P(T \leq t)$ 2-tail	0.360093526	
t critical 2-tail	2.178812827	

Note. *t*-test: paired two samples for means.

Question 4: Does Participation in a Student Internship Improve Persistence or the Probability of Completion to Graduation?

Figure 10 graphically displays a comparison of the number of semesters taken for graduation by the matched pairs. A zero designates those who did not graduate. The graph shows that 5 out of 18 (28%) students did not persist. For the whole study, the overall persistence of those who did not take an internship was 46%. This reflects a bias in the matched pairs to select the students who did graduate versus those who did not if multiple options where available. Of the total students in the study, 31% did not graduate (as compared to the 28% seen here), demonstrating that logic tried to take individual goals of persistence into consideration in the matching process. Ultimately, 5 out of 18 students in the control group of the matched pairs did not graduate (or 28%) as compared to 100% of those with an internship did graduate.

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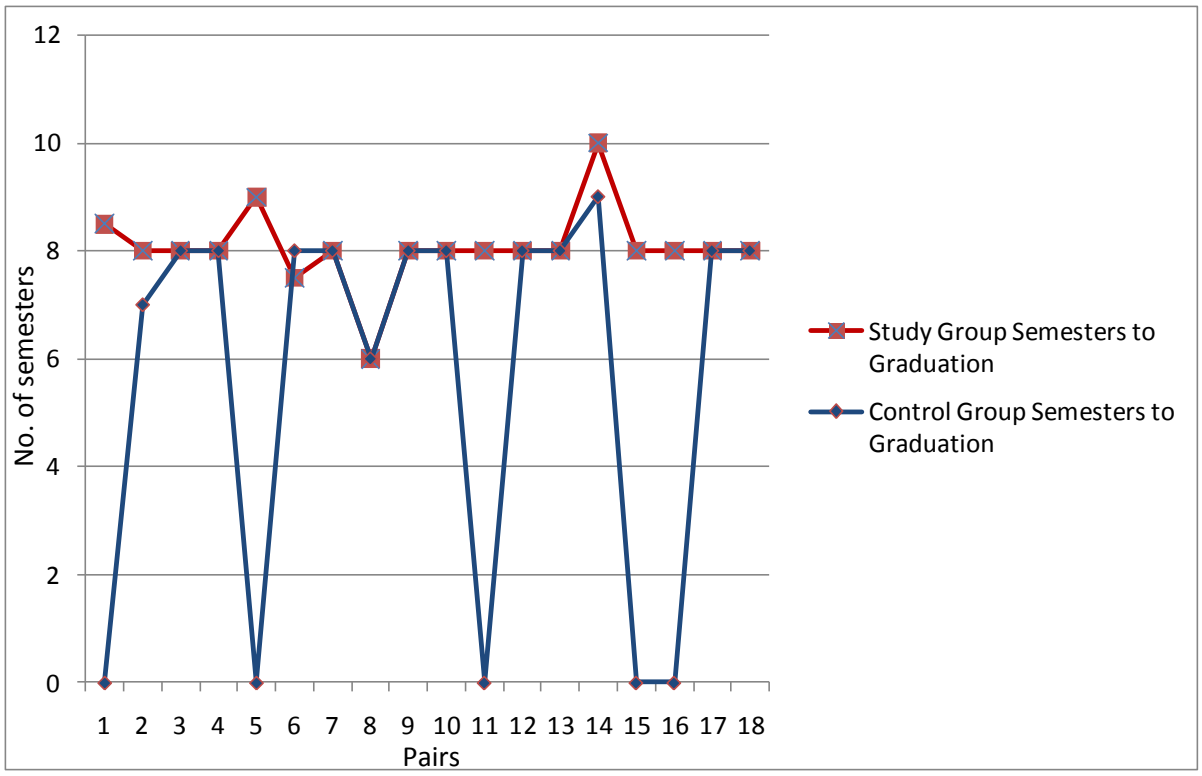

Figure 10. Matched pairs: semesters to degree completion.

To determine whether the internship experience relationship to persistence to graduation was significant among the matched pairs, the observed graduation frequency was compared to the expected frequency values (see Table 24) using the following calculations:

Expected = RjCj/n (row_itotal * cd_jtotal/grand total)

$X^2 = \sum_{i,j}(O_{i,j} - E_{i,j})^2/E_{i,j} = 21.73$, *p*-value = .0000031, *df* = 1

Expected to not graduate and have no internship = (5*18)/36 = 2.5

Expected to not graduate but have had an internship = (5*18)/36 = 2.5

Expected to graduate and have no internship = (31*18)/36 = 15.5

Expected to graduate but have had an internship = (31*18)/36 = 15.5

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Table 24

Observed Versus Expected Graduation Frequencies With and Without Internship: Matched Pairs

	Observed		Expected		
	No internship	Internship	No internship	Internship	Total
Not graduated	5	0	2.5	2.5	5
Graduated	13	18	15.5	15.5	31
Total	18	18	18.0	18.0	36

Note. Solving for chi square: $X^2 = 5.806$, p-value = .016, $df = 1$.

To determine whether the difference between observed and expected frequencies was significant, the chi square value of 5.806 was compared to the critical value of 3.841 (df = 1, σ = .05 (Gay et al., 2006). The value of 5.806 is greater than 3.841; therefore, the null hypothesis is rejected as there is a significant difference between the observed and expected values. Internship experiences did relate significantly to the increased likelihood that a student would graduate.

Question 5: Does Participation in a Student Internship Impact the Timeliness of Graduation?

To assess if taking an internship would have any impact on the timeliness of graduation, students who had participated in an internship were compared only to graduating students with no internship. Table 25 shows the outcome of the *t*-test. The *p*-value of .33 is greater than .05, indicating that the difference between a timely graduation rate for those had participated in an internship versus those who had not is not significantly different. The implication here is that participating in an internship does not impact timeliness to graduation.

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Table 25

t-Test of Matched Pairs: Years Taken to Complete Degree

	Years to complete degree[a]	
	No internship	Internship
Mean	3.923076923	3.961538462
Variance	0.118589744	0.185897436
Observations	13	13
Pearson correlation	0.679979305	
Hypothesized mean difference	0	
Degrees of freedom	12	
t statistic	-0.433012702	
$P(T \leq t)$ 1-tail	0.336343137	
t critical 1-tail	1.782287548	
$P(T \leq t)$ 2-tail	0.672686273	
t critical 2-tail	2.178812827	

Note. *t*-test: paired two sample for means.

[a]0 = did not complete degree.

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CHAPTER 5. CONCLUSIONS

Overview

To better understand the benefits that internships have for students and for a private, not-for-profit, liberal arts college, one needs to know what impact student internships have on retention, persistence, and GPA. The hypothesis tested in this study is that there exists a relationship between internships and GPA, retention, and degree completion. The expected findings for the research question were that internships contribute to students' overall success and learning, as demonstrated through timely degree completion and a higher GPA

The null hypothesis (H_0) was that there is no relationship between internships, retention, degree completion, and GPA; any differences are due strictly to chance. The alternative hypothesis (H_1) stated that there is a relationship between internships and retention, degree completion, and GPA; that differences are real and not due to chance. The expected results for the research question were vetted through the following inquiries:

Does participation in a student internship impact overall, final GPA?

Does participation in a student internship significantly improve GPA for the semesters following an internship compared to prior semesters?

Does participation in a student internship have an impact on GPA for the area of study as opposed to the GPA for other courses?

Does participation in a student internship impact persistence or the probability of completion to graduation?

Does participation in a student internship impact the timeliness of graduation?

If the null hypothesis is not rejected, then:

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If an internship is beneficial, when in a student's academic career is the optimal time to complete an internship?

Discussion

Six questions were studied to gain an understanding of the relationship a student internship has to retention, persistence to degree, and overall learning as measured by GPA.

Question 1: Does Participation in a Student Internship Improve Overall, Final GPA?

The findings from the cross-sectional analysis showed that, on average, students who participated in an internship had a 0.471 higher final GPA than those who did not participate in an internship. The *t*-test produced a *p*-value of .00005, meaning there is less than a 0.005% probability that the improved final GPA of those who participate in an internship is by chance.

The findings of the matched pairs analysis showed that, on average, students who participated in an internship had a 0.137 higher final GPA than those who did not participated in an internship. The *t*-test produced a *p*-value of 0.03, indicating there is less than a .03% probability that the improved final GPA of those who participate in an internship is by chance.

The difference between the two scenarios may be that, in the cross-sectional analysis, the final GPA may not necessarily have been the graduating GPA if the student had not persisted to degree. In matched pairs, all non-graduating students were removed from consideration. This action resulted in slightly lower improved GPA but still a statistically significant finding. It is reasonable to say that those who participate in an internship are more likely to finish with an overall higher final GPA than those who do not.

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Question 2: Does Participation in a Student Internship Significantly Improve GPA for the Semesters Following an Internship Compared to Prior Semesters?

In the cross-sectional analysis, the *t*-test produced a *p*-value of 0.0236, meaning the probability that the improvement of the semester GPAs is by chance is less than 2%. With a *p*-value less than .05, there is enough evidence to reject the null hypothesis; results are statistically significant, and the research hypothesis is supported by the data. Students who have had the experience of an internship reflect on average a 0.24 better semester GPA (6% better on a 4-point scale).

Within the findings of the matched pairs analysis, 9 of 13 (69%) interns had a more improved semester average GPA than did their match pair for the same periods. The mean of the improved average GPA, post-internship over pre-internship, was 0.129 ($\sigma = 0.49$). This was a 3.29% increase on a 4-point grading scale. This value had a *p*-value of .18, (which is greater than .05) and was not found to be statistically significant at a 95% confidence interval.

The difference between the cross-sectional and matched pairs analysis is that, in the matched pairs, all nongraduating students were removed from consideration, leading less variance in improved GPA.

Question 3: Does Participation in a Student Internship Have an Impact on GPA for the Area of Study As Opposed to the GPA for Other Courses?

In the cross-sectional analysis, the difference in business-core course GPA for those who had participated in an internship was, on average, 0.24 points higher than for those without internship experience. The *t*-test produced a *p*-value of .137, which is greater than .05; thus, the probability that the improvement of the core-business class semester GPAs is

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not statistically significant. The experiences of an internship do not necessarily improve students GPA in business-core classes.

Question 4: Does Participation in a Student Internship Improve Persistence or the Probability of Completion to Graduation?

In examining graduation rates, 100% of students who took an internship persisted to graduation. In the cross-sectional analysis, of 81 students who did not participate in an internship, 46% did not persist to graduation. In the matched pair analysis of 18 students who did not participate in an internship, 28% did not persist to graduation. This demonstrates that match logic tried to take individual goals of persistence into consideration when matching. This fact was shown to be statistically significant in both the cross sectional and match pair's analysis. It is reasonable to say that those students taking an internship are more likely to persist to graduation versus those who did not participate.

Question 5: Does Participation in a Student Internship Impact the Timeliness of Graduation?

In examining timeliness of graduation, 91% of study participants graduated in 4 years or less; only 9% of the group took more than 4 years. To assess if taking an internship may have any impact on timeliness of graduation, students who had participated in an internship were compared only to those graduating without having participated in an internship. In the cross-sectional analysis, the *p*-value was .11, which is greater than .05. In the matched pairs analysis, the *p*-value was .33, which is also greater than .05. Both tests revealed that the difference between timely graduations for those participating in an internship to those who do not is not significantly different. Thus, having an internship does not impact timeliness to graduation.

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Question 6: If an Internship is Beneficial, When in the Student's Academic Career is the Optimal Time to Complete an Internship?

The greatest, positive difference in GPA occurs after students have completed their second year of study and before starting their fourth year of study (semesters 4.5–6).

Recommendation for Further Study

With the findings that an internship does have a positive impact on retention, persistence, and GPA, a qualitative study should be conducted to learn students' perspectives on the added value from having an internship. In this study, students should be asked to construct meaning from their internships in relation to their academic experience and their academic career. Students completing internships should be interviewed to see what effect, if any, the internship had on motivation to complete a degree, performance in the classroom, and career decisions. Qualitative research should be conducted through semistructured interviews with students who have completed internships. The study would determine the student's perspective on the effect the internship had on retention, completion, and dedication to classes.

Constructionist epistemology allows participants to construct meaning from their experiences. The theoretical perspective of phenomenology allows the researcher to examine the dynamics of internship experiences of the participants. Participants should be asked to construct meaning or truth from their internship in relation to their academic careers before, during, and after the experience. The student's responses should be triangulated through internship assignments and evaluations.

Further study recommended is to use the National Student Clearinghouse to research the students that did not graduate from this institution to see if they graduated from any other

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institution and to research their time of completion. Conducting qualitative interviews with the students who did not complete their college education at this institution could also provide insight as to their reason for departure.

Implications for Practice

This study supports the argument for required internships in business programs, with the most effective time to participate in an internship is after completion of the student's sophomore year and before the start of the student's senior year of study. In this study, students who took internships were more likely to persist to graduation and have a higher GPA then those students who did take an internship. Structured internships increase student contact with supervising faculty members and/or internship coordinators which increases student academic involvement and integration. Kuh et al. (2005) recommend that "If an activity or experience is important to student success, consider requiring it" (p. 315). This study supports that internships contribute to student success as measured by persistence to degree completion, higher GPA and internships do not adversely impact time to graduate.

Summary

This study provided an understanding of the relationship existing between student internships for business students and retention, persistence to degree completion, and GPA. Students in a private, not-for-profit, 4-year, liberal arts, baccalaureate institution served as participants. Analysis of the data offers the following findings:

Those students who participate in an internship are more likely to finish with an overall, higher, final GPA than those who do not take advantage of a student internship.

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Those students who participate in an internship are more likely to have a slightly improved semester GPA (post-internship) than they would have without the experience of an internship.

The experiences of an internship do not necessarily improve students' GPA in business-core classes.

Those students who participate in an internship are more likely to persist to graduation than those who do not participate in a student internship.

Having an internship does not impact timeliness to graduation.

It is most optimal to take an internship during the junior year, after a student has completed the second year of study and before starting the fourth year of study.

This study contributes to the body of knowledge on internships and the effect such activity has on student persistence, retention, and GPA as well as the optimal time to take an internship. This study focused only on the institution's business students who were first-time, full-time students in the cohort beginning their studies from 2000 to 2003. Transferability of results to other colleges or universities is limited given the specific population. Further, studies at other colleges and universities are needed to determine if this study is consistent with student experiences in general and could be transferable. The benefits of internships to students, colleges, universities, and businesses have been established in research studies. This study provides further agreement that requiring internships in business programs helps a student persist to graduation without increasing the time to graduation.

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APPENDIX

Matched Pair Detail Comparing Pre- and Post- Internship Average GPAs

Interns: Post Ave of GPAs - Pre Ave of GPAs: average of all semester GPAs (following an internship) subtracted from the average of all the semester GPAs prior to an internship AVE(Post internship semester GPAs) - AVE(Pre internship semester GPAs)

Non-Interns: PostMatch Period Ave of GPAs - PreMatch Period Ave of GPAs: average of all semester GPAs that followed an internship subtracted from average of all semester GPAs pair prior to an internship AVE(Matched Post internship semester GPAs) - AVE(Matched Pre internship semester GPAs)

Persistence: coded as 1=Graduated, 0=Not Graduate

Semesters to Graduation: number of semesters taken to complete graduation

Comparative Difference on Overall GPA: difference in final GPA between matched pairs. If a partnered pair did not graduate, the difference was not taken

imp lete)	Cohort	Degree	Gender	Race				Student ID		1st year	Pair				
id	semester	internship	sem GPA	overall GPA	ave of each GPA	dif of pre/post GPA Averages		id	semester	internship	sem GPA	overall GPA	ave of each GPA	dif of pre/post GPA Averages	
0	Fall 01	18	F	H/L				40890	-1	2.13	1				
4	Fall 01	18	F	W				34585	1	2.15	1				
40890	1	-1	1.92	1.92				34585	1	-1	1.97	2.17			Graduated, Improved overall GPA .3
40890	1.5	-1	3.00	2.13				34585	1.5	-1	3.67	2.40			
40890	2	-1	2.25	2.13				34585	2	-1	1.75	2.15			
40890	3	-1	2.50	2.28				34585	3	-1	2.11	2.14			
40890	4	-1	1.42	2.08			2	34585	4	-1	2.08	2.13			
								34585	5	-1	2.84	2.26			
					2.22			34585	5.5	-1	3.00	2.29	2.49		
								34585	6	0	2.67	2.36			
								34585	6.5	1	2.84	2.42			
								34585	7	1	3.00	2.47			
								34585	7.5	1	4.00	2.52			
								34585	8	1	2.78	2.54			
					0.00	-2.22		34585	8.5	1	4.00	2.57	3.32	0.83	
3.5	Fall 01	18	F	W				41259	-1	2.44	2				
4	Fall 03	18	F	W				28166	1	2.49	2				
41259	1	-1	3.08	2.50				28166	1	-1	2.67	2.67			Without Internship, graduated 1 semester early, No real impact on self GPA
41259	1.5	-1	3.67	2.59				28166	1.5	-1	2.67	2.67			
41259	2	-1	1.92	2.44				28166	2	-1	2.25	2.49			
41259	3	-1	2.89	2.50				28166	3	-1	3.00	2.67			
41259	3.5	-1	0.00	2.50				28166	3.5	-1	3.33	2.71			
41259	4	-1	2.42	2.49				28166	4	-1	3.13	2.81	2.84		
41259	4.5	-1	1.67	2.41	2.23			28166	5	0	2.42	2.75			
41259	5	-1	2.56	2.42				28166	5.5	1	2.67	2.75			
41259	6	-1	2.84	2.47				28166	6	1	3.00	2.78			
41259	6.5	-1	3.67	2.57				28166	6.5	1	2.67	2.78			
41259	7	-1	2.60	2.58	3.03	0.80		28166	7	1	2.92	2.79			
								28166	7.5	1	3.00	2.80			

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								28166	8	1	2.92	2.82	2.86	0.02				
Years to Complete (0=not complete)	Cohort	Age at Start of College	Gender	Race				Student ID		GPA after 1st year	Pair							
id	semester	internship	sem GPA	overall GPA	ave each GPA	dif pre/post GPA		id	semester	internship	sem GPA	overall GPA	ave of each GPA	dif of pre/post GPA				
4	Fall 03	18	F	W				39102	-1	2.85	3							
4	Fall 01	18	F	W				31987	1	2.75	3							
39102	0.5	-1	3.67	2.53														
39102	1	-1	2.77	2.70				31987	1	-1	2.67	2.77						
39102	1.5	-1	3.00	2.73				31987	1.5	-1	2.00	2.67						
39102	2	-1	3.07	2.85				31987	2	-1	2.86	2.75						
39102	3	-1	2.72	2.82				31987	3	-1	2.50	2.69						
39102	3.5	-1	3.67	2.87				31987	3.5	-1	2.67	2.69						
39102	4	-1	2.51	2.80				31987	4	-1	2.75	2.70						
39102	5	-1	2.67	2.78	3.01			31987	4.5	-1	2.00	2.67						
39102	5.5	-1	2.00	2.75				31987	5	-1	3.25	2.76	2.59					
39102	6	-1	2.92	2.77				31987	5.5	0	P	2.76						
39102	6.5	-1	2.00	2.73				31987	6	1	2.87	2.78						
39102	7	-1	2.13	2.65				31987	6.5	1	3.00	2.79						
39102	7.5	-1	3.00	2.66				31987	7	1	2.92	2.80						
39102	8	-1	2.53	2.65	2.52	-0.49		31987	7.5	1	3.00	2.81						
								31987	8	1	2.92	2.82	2.94	0.35				
4	Fall 03	18	F	W				34720	-1	3.00	4							
4	Fall 01	18	F	W				40800	1	3.00	4							
34720	1	-1	3.00	3.00				40800	1	-1	3.08	3.03						
34720	1.5	-1	3.00	3.00				40800	1.5	-1	3.00	3.03						
34720	2	-1	3.00	3.00				40800	2	-1	2.93	3.00						
34720	3	-1	2.75	2.93				40800	3	-1	2.40	2.86						
34720	3.5	-1	3.67	2.98				40800	3.5	-1	3.67	2.90						
34720	4	-1	2.87	2.95				40800	4	-1	2.83	2.89						
34720	5	-1	2.75	2.92				40800	4.5	-1	2.33	2.87						
34720	5.5	-1	3.67	2.95				40800	5	-1	2.60	2.83						
34720	6	-1	2.67	3.01	3.04			40800	5.5	-1	3.00	2.83	2.87					
34720	6.5	-1	2.00	2.98				40800	6	0	2.67	2.80						
34720	7	-1	3.01	2.94				40800	6.5	1	2.67	2.79						
34720	7.5	-1	3.33	2.95				40800	7	1	2.67	2.78						
34720	8	-1	3.10	2.97				40800	7.5	1	4.00	2.81						
					3.15	0.11		40800	8	1	2.50	2.78	2.96	0.09				

Internship did not delay graduation, slight improvement in GPA. Non-intern saw decrease in GPA

Internship did not delay graduation, No impact on GPA. Non-intern had a slight ly better ending GPA

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Years to Complete (0=not complete)	Cohort	Age at Start of College	Gender	Race				Student ID		GPA after 1st year	Pair				
id	semester	internship	sem GPA	overall GPA	ave of each GPA	dif of pre/post GPA Averages		id	semester	internship	sem GPA	overall GPA	ave of each GPA	dif of pre/post GPA Averages	
0	Fall 01	18	F	W				32976	-1	3.18	5				
4.5	Fall 03	18	F	A				25950	1	3.20	5				
32976	1	-1	2.87	3.07				25950	1	-1	3.24	3.32			Non impact on GPA. Internship may have delayed graduation by 1 semester (but did graduate)
32976	1.5	-1	3.67	3.12				25950	1.5	-1	3.33	3.32			
32976	2	-1	3.33	3.18				25950	2	-1	2.89	3.20			
32976	3	-1	3.27	3.20				25950	3	-1	3.36	3.25			
32976	3.5	-1	4.00	3.24				25950	3.5	-1	4.00	3.29			
32976	4	-1	3.09	3.21				25950	4	-1	3.22	3.28			
32976	4.5	-1	2.33	3.18				25950	5	-1	2.84	3.21			
					3.22			25950	6	-1	3.30	3.22	3.27		
								25950	7	0	3.59	3.27			
								25950	7.5	1	3.67	3.28			
								25950	8	1	2.87	3.22			
					0.00	-3.22		25950	9	1	3.00	3.20	3.18	-0.09	
4	Fall 02	18	F	W				37510	-1	3.22	6				
3.5	Fall 03	18	F	W				27515	1	3.29	6				
37510	1	-1	3.44	3.44				27515	1	-1	3.54	3.54			Graduated a semester early, even with internship
37510	1.5	-1	3.67	3.48				27515	1.5	-1	3.67	3.56			
37510	2	-1	2.93	3.22				27515	2	-1	2.92	3.29			
37510	3	-1	2.95	3.14				27515	2.5	-1	3.34	3.29			
37510	3.5	-1	4.00	3.19				27515	3	-1	3.07	3.22			
37510	4	-1	2.27	2.97				27515	4	-1	2.92	3.16			
37510	5	-1	2.17	2.84				27515	5	-1	2.92	3.12			
37510	5.5	-1	3.00	2.84				27515	6	-1	2.17	2.99			
37510	6	-1	2.00	2.73	2.94			27515	6.5	-1	3.33	3.00	3.10		
37510	7	-1	2.87	2.75				27515	7	0	3.00	2.97			
37510	7.5	-1	3.00	2.76				27515	7.5	1	4.00	3.00	4.00	0.90	
37510	8	-1	2.80	2.76	2.90	-0.03									

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Years to Complete (0=not complete)	Cohort	Age at Start of College	Gender	Race				Student ID		GPA after 1st year	Pair				
id	semest er	inter n ship	sem GPA	oveal l GPA	ave of eac h GPA	dif of pre/post GPA Average s		id	semeste r	inter n ship	sem GPA	oveal l GPA	ave of eac h GPA	dif of pre/post GPA Average s	
4	Fall 2002	18	F	W				42956	-1	3.34	7				
4	Fall 2002	18	F	W				36778	1	3.34	7				
42956	1	-1	3.13	3.13				36778	1	-1	3.21	3.21			
42956	1.5	-1	3.33	3.17				36778	1.5	-1	3.00	3.17			
42956	2	-1	3.53	3.34				36778	2	-1	3.53	3.34			
42956	3	-1	3.28	3.33				36778	3	-1	3.27	3.32			
42956	3.5	-1	4.00	3.37				36778	3.5	-1	4.00	3.36			
42956	4	-1	2.60	3.19	3.31			36778	4	-1	3.67	3.43	3.45		
42956	5	-1	2.92	3.15				36778	5	0	3.58	3.45			
42956	5.5	-1	3.33	3.15				36778	5.5	1	4.00	3.47			
42956	6	-1	2.67	3.07				36778	6	1	3.75	3.51			
42956	7	-1	2.25	2.98				36778	7	1	3.67	3.53			
42956	7.5	-1	4.00	3.01				36778	7.5	1	4.00	3.54			
42956	8	-1	2.37	2.92	2.92	-0.39		36778	8	1	3.59	3.54	3.80	0.35	
3	Fall 2000	18	F	W				38095	-1	3.52	8				
3	Fall 2001	18	F	W				33140	1	3.49	8				
38095	1	-1	3.42	3.50				33140	1	-1	3.64	3.55			
38095	1.5	-1	3.33	3.49				33140	1.5	-1	3.00	3.50			
38095	2	-1	3.67	3.52				33140	2	-1	3.47	3.49			
38095	3	-1	3.47	3.51				33140	3	-1	3.37	3.46			
38095	3.5	-1	3.67	3.52				33140	3.5	-1	3.50	3.46			
38095	4	-1	4.00	3.60	3.59			33140	4	-1	3.63	3.49	3.43		
38095	5	-1	3.93	3.64				33140	4.5	0	3.17	3.47			
38095	5.5	-1	4.00	3.65				33140	5	1	3.71	3.50			
38095	6	-1	3.33	3.62	3.76	0.16		33140	5.5	1	3.67	3.51			
								33140	6	1	3.44	3.50	3.61	0.17	

Improved at internship and not delay graduation

Even with internship, No impact on GPA

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Years to Complete (0=not complete)	Cohort	Age at Start of College	Gender	Race				Student ID		GPA after 1st year	Pair				
id	semest er	inter n ship	sem GPA	oveal l GPA	ave of eac h GPA	dif of pre/post GPA Average s		id	semeste r	inter n ship	sem GPA	oveal l GPA	ave of eac h GPA	dif of pre/post GPA Average s	
4	Fall 2002	18	F	W				25401	-1	3.51	9				
4	Fall 2001	18	F	W				26439	1	3.51	9				
25401	1	-1	3.85	3.69				26439	1	-1	3.67	3.67			
25401	1.5	-1	4.00	3.74				26439	1.5	-1	3.33	3.60			
25401	2	-1	3.23	3.51				26439	2	-1	3.39	3.51			
25401	3	-1	3.00	3.58				26439	2.5	-1	3.67	3.52			
25401	3.5	-1	4.00	3.60	3.62			26439	3	-1	3.92	3.64			
25401	4	-1	3.77	3.63				26439	3.5	-1	4.00	3.66	3.66		
25401	5	-1	3.40	3.59				26439	4	0	3.67	3.66			
25401	5.5	-1	3.67	3.59				26439	4.5	1	4.00	3.68			
25401	6	-1	3.56	3.59				26439	5	1	3.75	3.69			
25401	7	-1	3.53	3.58				26439	5.5	1	4.00	3.70			
25401	8	-1	3.75	3.60	3.58	-0.03		26439	6	1	3.93	3.74			
								26439	6.5	1	3.67	3.74			
								26439	7	1	3.67	3.73			
								26439	7.5	1	3.67	3.73			
								26439	8	1	3.78	3.73	3.81	0.15	
4	Fall 2000	19	F	W				28664	-1	3.54	10				
4	Fall 2000	18	F	W				36292	1	3.55	10				
28664	1	-1	3.59	3.59				36292	1	-1	3.46	3.46			
28664	1.5	-1	4.00	3.67				36292	1.5	-1	4.00	3.56			
28664	2	-1	3.40	3.54				36292	2	-1	3.53	3.55			
28664	3	-1	3.47	3.51				36292	3	-1	3.27	3.46			
28664	3.5	-1	4.00	3.54				36292	3.5	-1	4.00	3.49			
28664	4	-1	3.53	3.54				36292	4	-1	3.50	3.49			
28664	5	-1	3.60	3.55				36292	5	-1	3.46	3.49			
28664	5.5	-1	4.00	3.57	3.70			36292	6	-1	3.67	3.52	3.61		
28664	6	-1	3.92	3.61				36292	7	0	3.50	3.51			
28664	7	-1	3.93	3.66				36292	7.5	1	4.00	3.53			
28664	7.5	-1	4.00	3.67				36292	8	1	3.11	3.50	3.56	-0.05	
28664	8	-1	3.85	3.69	3.93	0.23									

GPA improved in period following Internship

Internship hours to have true impact. (late in college)

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Complete (0=not complete)	Cohort	Age at Start of College	Gender	Race				Student ID		GPA after 1st year	Pair				
id	semester	internship	sem GPA	overall GPA	ave of each GPA	dif of pre/post GPA Averages		id	semester	internship	sem GPA	overall GPA	ave of each GPA	dif of pre/post GPA Averages	
0	Fall 2000	18	F	W				32756	-1	3.67	11				
4	Fall 2003	18	F	W				36062	1	3.70	11				
32756	1	-1	2.92	2.92				36062	1	-1	3.54	3.59			Persisted, Internship did not delay graduation, slight decrease in GPA
32756	1.5	-1	4.00	3.13				36062	1.5	-1	3.67	3.60			
32756	2	-1	3.67					36062	2	-1	3.87	3.70			
32756	3	-1	3.20	3.32				36062	3	-1	3.73	3.71			
32756	3.5	-1	4.00	3.32	3.56			36062	3.5	-1	4.00	3.72	3.76		
32756	4	-1	3.53	3.40				36062	4	0	3.87	3.75			
32756	5	-1	3.40	3.40				36062	4.5	1	4.00	3.76			
								36062	5	1	3.53	3.73			
								36062	5.5	1	P	3.73			
								36062	6	1	3.53	3.70			
								36062	6.5	1	3.00	3.68			
								36062	7	1	3.17	3.63			
					0.00	-3.56		36062	8	1	3.67	3.63	3.48	-0.28	
4	Fall 2000	18	F	W				31092	-1	3.71	12				
4	Fall 2002	18	F	W				26321	1	3.73	12				
31092	1	-1	3.64	3.79				26321	1	-1	3.51	3.51			No noticeable difference or change
31092	1.5	-1	4.00	3.81				26321	1.5	-1	4.00	3.60			
31092	2	-1	3.53	3.71				26321	2	-1	3.87	3.73			
31092	3	-1	3.73	3.72				26321	3	-1	3.60	3.69			
31092	3.5	-1	4.00	3.73				26321	3.5	-1	4.00	3.71			
31092	4	-1	3.83	3.75				26321	4	-1	3.93	3.76			
31092	5	-1	3.69	3.74				26321	5	-1	3.87	3.78			
31092	5.5	-1	4.00	3.75	3.80			26321	5.5	-1	4.00	3.79	3.85		
31092	6	-1	4.00	3.77				26321	6	0	3.84	3.79			
31092	7	-1	3.92	3.76				26321	7	1	3.58	3.77			
31092	7.5	-1	3.00	3.76				26321	7.5	1	4.00	3.78			
31092	8	-1	4.00	3.79	3.64	-0.16		26321	8	1	3.77	3.78	3.78	-0.06	

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mor co mpl/ ete)	Coh ort	r or Coll ege	Gen der	Rac e				Stu den t ID		st yea r	Pair				
id	sem est er	inter n ship	se m GP A	ovea ll GPA	ave of eac h GP A	dif of pre/po st GPA Averag es		id	seme ster	inter n ship	se m GP A	ovea ll GPA	ave of eac h GP A	dif of pre/po st GPA Averag es	
4	Fall 200 0	18	F	W				34485	0	3.78	13				
4	Fall 200 1	18	F	W				33763	1	3.94	13				
34485	1	-1	3.8 5	3.62				33763	1	-1	3.9 4	3.94			No noticeable difference or change
								33763	1.5	-1	4.0 0	3.95			
34485	2	-1	4.0 0	3.78				33763	2	-1	3.9 3	3.94			
34485	3	-1	3.7 5	3.77				33763	3	-1	3.9 3	3.94			
34485	3.5	-1	3.6 7	3.76				33763	3.5	-1	4.0 0	3.94			
34485	4	-1	4.0 0	3.81				33763	4	-1	3.9 4	3.94			
34485	5	-1	3.8 8	3.82				33763	5	-1	4.0 0	3.95			
34485	5.5	-1	4.0 0	3.83	3.88			33763	5.5	-1	4.0 0	3.95	3.97		
34485	6	-1	3.8 0	3.83				33763	6	0	4.0 0	3.96			
34485	7	-1	3.8 4	3.83				33763	7	1	4.0 0	3.96			
34485	7.5	-1	3.6 7	3.82				33763	7.5	1	4.0 0	3.96			
34485	8	0	4.0 0	3.84	3.84	-0.04		33763	8	1	4.0 0	3.97	4.00	0.03	
4.5	Fall 200 2	18	M	W				35837	-1	2.71	14				
5	Fall 200 3	18	M	W				24257	1	2.73	14				
35837	1	-1	1.7 0	2.24				24257	1	-1	2.5	2.5			No noticeable difference or change
35837	1.5	-1	4.0 0	2.52				24257	1.5	-1	4.0	2.8			
35837	2	-1	3.0 4	2.71				24257	2	-1	2.7	2.7			
35837	3	-1	2.1 0	2.54				24257	3	-1	2.9	2.8			
35837	3.5	-1	3.3 3	2.60				24257	3.5	-1	2.0	2.7			
35837	4	-1	3.0 0	2.65				24257	4	-1	3.1	2.8			
35837	4.5	-1	2.6 7	2.65				24257	4.5	-1	3.3	2.8			
35837	5	-1	2.5 0	2.62				24257	5	-1	2.9	2.9			
35837	5.5	-1	3.3 3	2.65				24257	5.5	-1	4.0	2.9			
35837	6	-1	1.4 0	2.42				24257	6	-1	3.1	2.9			
35837	6.5	-1	3.0 0	2.46	2.7			24257	7	-1	2.5	2.9	3.0		
35837	7	-1	2.3 6	2.44				24257	8	0	3.1	2.89			
35837	7.5	-1	3.0 0	2.47				24257	9	1	2.5	2.9			
35837	8	-1	1.9 3	2.43				24257	10	1	2.3	2.9	2.4	-0.58	
35837	9	-1	2.0 0	2.36	2.3	-0.42									

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Complete (0=not complete)	Cohort	Age at Start of College	Gender	Race				Student ID		GPA after 1st year	Pair				
id	semester	internship	semGPA	overall GPA	ave of each GPA	dif of pre/post GPA Averages		id	semester	internship	semGPA	overall GPA	ave of each GPA	dif of pre/post GPA Averages	
0	Fall 2003	18	M	W				25442	-1	2.80	15				
4	Fall 2001	19	M	W				35025	1	2.75	15				
25442	1	-1	2.03	2.40				35025	1	-1	2.95	3.15			
25442	1.5	-1	4.00	2.65				35025	1.5	-1	3.00	3.12			
25442	2	-1	3.11	2.80				35025	2	-1	2.17	2.75			
								35025	3	-1	2.60	2.70			
					3.05			35025	3.5	-1	3.00	2.72	2.74		
								35025	4	0	3.00	2.76			
								35025	5	1	3.00	2.80			
								35025	5.5	1	3.00	2.81			
								35025	6	1	2.83	2.82			
								35025	7	1	2.73	2.80			Internship persisted
					0.00	-3.05		35025	8	1	2.34	2.78	2.78	0.04	
0	Fall 2002	18	M	W				34992	-1	2.86	16				
	Fall 2001	18	M	W				34044	1	2.85	16				
34992	1	-1	2.71	2.71				34044	1	-1	2.80	2.80			
34992	1.5	-1	3.00	2.75				34044	1.5	-1	3.67	2.95			
34992	2	-1	3.00	2.86				34044	2	-1	2.75	2.85			
34992	3	-1	3.80	3.15				34044	3	-1	3.08	2.91			
34992	3.5	-1	4.00	3.20				34044	3.54	-1	3.67	2.96			
								34044	4	-1	3.00	2.97			
								34044	5	-1	3.42	3.04			
								34044	5.5	-1	4.00	3.08			
					3.30			34044	6	-1	2.69	3.02	3.23		
								34044	6.5	0		3.02			
								34044	7	1	2.84	3.00			
								34044	7.5	1	4.00	3.03			Internship persisted
					0.00	-3.30		34044	8	1	3.17	3.04	3.33	0.10	

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Complete (0=not complete)	Cohort	Age at Start of College	Gender	Race				Student ID		GPA after 1st year	Pair				
id	semester	internship	sem GPA	oveall GPA	ave of each GPA	dif of pre/post GPA Averages		id	semester	internship	sem GPA	oveall GPA	ave of each GPA	dif of pre/post GPA Averages	
4	Fall 2002	18	M	W				24201	-1	3.20	17				
4	Fall 2001	18	M	Other				32066	1	3.20	17				
24201	1	-1	3.12	3.12				32066	1	-1	3.18	3.18			
24201	1.5	-1	3.33	3.16				32066	1.5	-1	3.67	3.27			
24201	2	-1	3.27	3.20				32066	2	-1	3.13	3.20			
24201	3	-1	2.87	3.10				32066	3	-1	3.47	3.29			
24201	3.5	-1	4.00	3.15				32066	3.5	-1	3.67	3.31			
24201	4	-1	3.50	3.22	3.35			32066	4	-1	3.40	3.33	3.42		
24201	5	-1	3.40	3.25				32066	5	0	3.67	3.39			
24201	5.5	-1	3.00	3.24				32066	5.5	1	3.67	3.40			
24201	6	-1	3.00	3.21				32066	6	1	3.21	3.37			
24201	7	-1	3.33	3.23				32066	7	1	3.00	3.33			
24201	7.5	-1	4.00	3.25				32066	8	1	3.67	3.36	3.39	-0.03	
24201	8	-1	3.77	3.30	3.42	0.07									
4	Fall 2001	18	M	W				29142	-1	3.73	18				
4	Fall 2003	18	M	W				25706	1	3.83	18				
29142	1	-1	3.67	3.60				25706	1	-1	3.75	3.83			
29142	1.5	-1	4.00	3.64				25706	1.5	-1	4.00	3.85			
29142	2	-1	3.92	3.73	3.86			25706	2	-1	3.81	3.83	3.85		
29142	3	-1	3.33	3.62				25706	3	0	3.67	3.79			
29142	3.5	-1	3.33	3.60				25706	3.5	1	4.00	3.80			
29142	4	-1	3.53	3.59				25706	4	1	3.73	3.79			
29142	5	-1	3.75	3.61				25706	5	1	3.80	3.79			
29142	5.5	-1	4.00	3.62				25706	5.5	1	4.00	3.80			
29142	6	-1	3.89	3.65				25706	6	1	3.75	3.79			
29142	7	-1	3.55	3.64				25706	7	1	3.75	3.79			
29142	7.5	-1	3.33	3.63				25706	7.5	1	4.00	3.79			
29142	8	-1	3.67	3.64	3.63	-0.23		25706	8	1	3.90	3.80	3.87	0.01	

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REFERENCES

ACT. (2010). National collegiate retention and persistence to degree rates. Retrieved from http://www.act.org/research/policymakers/pdf/retain_2010.pdf

Astin, A. W. (1975). *Preventing students from dropping out*. San Francisco, CA: Jossey-Bass.

Astin, A. W. (1977). *Four critical years: Effects of college beliefs, attitudes, and knowledge*. San Francisco, CA: Jossey-Bass.

Clark. S. (2003). Enhancing the educational value of business internships. *Journal of Management Education, 27*(4), 472-484. doi:10.1177/1052562903251350

Creswell, J. W. (1994). *Research design: Qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.

Coco, M. (2000). Internships: A try before you buy arrangement. *S.A.M. Advanced Management Journal, 65*(2), 41-43.

Cook, S., Parker, R., & Pettijohn, C. (2004). The perceptions of interns: A longitudinal case study. *Journal of Education for Business*, *79*(3), 179-185.

D'Abate, C., Youndt, M., & Wenzel, K. (2009). Making the most of an internship: An empirical study of internship satisfaction. *Academy of Management Learning & Education, 8*(4), 527 - 539

Divine, R., Linrud, J., Miller, R., & Wilson, J. H. (2007). Required internship programs in marketing: Benefits, challenges and determinants of fit. *Marketing Education Review*, *17*(2), 45-52.

www.manaraa.com

Fisher, C. G., & Grant, G. E. (1983). Intellectual levels in college classrooms. In C. L. Ellner & C. P. Barnes (Eds.), *Studies in college teaching* (pp. 47-60). Lexington, MA: D.C. Heath.

Fitt, D., & Heverly, M. (1992). Involving the private sector with higher education. *Journal of Cooperative Education*, *27*, 64-72.

Gage, N. L. (1994). The scientific status of research on teaching. *Educational Researcher, 44*(4), 371-383.

Gall, M., Borg, W., & Gall, J. (1996). *Educational research: An introduction* (6th ed.). White Plains, NY: Longman.

Gault, J., Leach, E., & Duey, M. (2010). Effects of business internships on job marketability: The employers' perspective. *Education & Training, 52*(1), 76-88. doi:10.1108/00400911011017690

Gault, J., Redington, J., & Schlager, T. (2000). Undergraduate business internships and career success: Are they related. *Journal of Marketing Education, 22*(1), 45-53. doi:10.1177/0273475300221006

Gay, L. R., Mills, G. E., & Airasian, P. (2006). *Educational research: Competencies for analysis and applications.* Upper Saddle River, NJ: Pearson.

Horn, L., & Berger, R. (2004). *College persistence on the rise? Changes in 5-year degree completion and postsecondary persistence rates between 1994 and 2000* (NCES 2005-156). Washington, DC: National Center for Education Statistics.

Hymon-Parker, S. & Smith, C. (1998). Benefits and limitations of internships as viewed by educators and retailers. *Journal of Family and Consumer Sciences: From Research to Practice*, *90*(4), 76-81.

www.manaraa.com

Knapp, L. G., Kelly-Reid, J. E., & Ginder, S. A. (2010). *Enrollment in postsecondary institutions, fall 2008; graduation rates, 2002 & 2005 cohorts; and financial statistics, fiscal year 2008.* Washington, DC: Institute of Education Sciences National Center for Education Statistics.

Knapp, L. G., Kelly-Reid, J. E., & Ginder, S. A. (2011). *Enrollment in postsecondary institutions, fall 2009; graduation rates, 2003 & 2006 cohorts; and financial statistics, fiscal year 2009.* Washington, DC: Institute of Education Sciences National Center for Education Statistics.

Knechel, W. R., & Snowball, D. (1987). Accounting internships and subsequent academic performance: An empirical study. *Accounting Review, 64*(2) 799-807.

Koehler, R. W. (1974). The effect of internship programs on subsequent college performance. *Accounting Review, 49*(2) 382-384.

Kuh, G., Kinzie, J., Schuh, J., Whitt, E., & Associates. (2005) *Student success in college: Creating conditions that matter*. San Francisco, CA: Jossey-Bass.

Kwong, K. S., & Lui, G. (1991). Effects of accountancy internship on subsequent academic performance. *CUHK Educational Journal, 19*(1). 111-116.

Lind, D. A., Marchal, W. G., & Wathen, S. A. (1994). *Basic statistics for business and economics*. New York, NY: McGraw-Hill.

Maskooki, K., Rama, D., & Raghunandan, K. (1998). Internships in undergraduate finance programs. *Finance Practice & Education, 8*(2), 74-82.

Narayanan, V., Olk, P., & Fukami, C. (2010). Determinants of internship effectiveness: An exploratory model. *Academy of Management Learning and Education, 9*(1), 61-80.

www.manaraa.com

National Association of Colleges and Employers. (2008). *Job outlook report 2008.* Bethlehem, PA: Author.

National Association of Colleges and Employers. (2010). *2010 internship & co-op survey.* Retrieved from http://www.naceweb.org/Publications/Spotlight_Online/2010/0512/Internship_Could_Be_Step_to_First_Job.aspx

Neumann, Y. & Finaly-Neumann, E. (1989). Predicting junior's and senior's persistence and attrition: A quality of learning experience approach. *Journal of Experimental Education,* 57(2), 129-140.

Noel-Levitz. (2009). *Cost of recruiting report: Comparative benchmarks for two-year and four-year institutions.* Retrieved from https://www.noellevitz.com/NR/rdonlyres/A1CCD94E-CD38-4FB8-BD85-46FD11370147/0/CostofRecruitingReport09.pdf

Radford, A. W., Berkner, L., Wheeless, S. C., & Shepherd, B. (2010). *Persistence and attainment of 2003-04 beginning postsecondary students: After 6 years.* Washington, DC: Institute of Educations Sciences National Center for Educational Statistics.

Roth, M. A. (1980). *Courage and change: Mount Mercy College: The first fifty years*. Cedar Rapids, IA: Stamates Communications.

Rothman, R. (2007). Lessons learned: Advice to employers from interns. *Journal of Education for Business, 82*(3), 140-144.

Schambach, T., & Dirks, J. (2002). Student perceptions of internship experiences. *Proceedings of the 17th annual conference of the international academy for information management* (pp. 1-8). Statesboro, GA: Georgia Southern University. ED481733

www.manaraa.com

Sides, C. H., & Mrvica, A. (2007). *Internships: Theory and practice*. Amityville, NY: Baywood.

Swift, C., & Kent, R. (1999). Business school internships: Legal concerns. *Journal of Education for Business, 75*(1), 23.

Thiel, G., & Hartley, N. (1997). Cooperative education: A natural synergy between business and academia. *S.A.M. Advanced Management Journal, 62*(3), 19-24.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 25,* 89.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago, IL: University of Chicago Press.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: University of Chicago Press.

Tinto, V. (1997) Classrooms as communities: Exploring the educational character of student persistence. *Journal of Higher Education, 68*, 599-623.

Tinto, V., Goodsell-Love, A., & Russo, P. (1993). Building community. *Liberal Education*, *79*(4), 16-21.

University of Cincinnati (2011) Co-op history, retrieved September 27, 2010 from http://www.uc.edu/propractice/uccoop.html

Weible, R. (2010). Are universities reaping the available benefits internship programs offer? *Journal of Education for Business*, *85*(2), 59-63.

Wesley, S., & Bickle, M. (2005). Examination of a paradigm for preparing undergraduates for a career in the retailing industries: Mentors, curriculum and internship. *College Student Journal*, *39*(4), 680-691.

www.manaraa.com

Wild, L., & Ebbers, L. (2002). Rethinking student retention in community colleges. *Community College Journal of Research & Practice*, *26*(6), 503-519. doi:10.1080/2776770290041864

www.manaraa.com