The Impact of a Career Course on Retention and Academic Performance (Technical Report 34)[1]

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Abstract

A credit career development course has been offered at Florida State University for approximately 25 years. A study, completed in 2000, assessed course effects on the following student outcomes: 1) retention to graduation, 2) time taken to graduate, 3) the number of credit hours taken to graduate, 4) the number of course withdrawals executed by students, and 5) academic success as indicated by cumulative GPA at graduation.

An ex post facto design examined outcomes among students who completed the course between 1989-1990 and 1993-1994 (n = 544). A comparison sample of non-course participants was evaluated based on the same outcome variables (n = 544). The two groups were matched based on gender, race, and high school grade point average (GPA). The variance attributed to academic aptitude (SAT score), year in school, and initial year of matriculation were partitioned and thus controlled through covariance. We compared outcome variables for the two groups based on registrar data as of fall 1999. (Note: the Registrar's database uses the period of continuous enrollment prior to graduation to calculate summary credit hours, which is why some subjects showed graduation hours average less than 120.)

We found the following:

- Course participants graduated at a rate of 81% compared to a rate of 69% for the general population of students.

- Course participants graduated with an average of 110 credit hours compared to 132 for the general population.

- Course participants executed slightly less course withdrawals than nonparticipants (.84 compared to .97) a statistically but not practically significant difference)

- Female course participants graduated on average in 50 months, while female nonparticipants took an average of 61 months (a statistically and practically significant difference).

- Male participants in the course executed less course withdrawals on average (.88) than did male nonparticipants (1.22). This difference was statistically, but not practically significant.

These findings indicate that this career development course may positively affect students in ways that support University objectives of student efficiency in pursuit of degrees. The course appears to affect gender groups differently. These indications should be further investigated through replication of the study. Further, this evaluation model may be useful with other applications such as evaluation of student outcomes relative to the FYE course or the FSU online Career Portfolio program.

The Impact of a Career Course on Retention and Academic Performance

Student academic performance, time taken to graduate, and retention rates continue to concern college administrators, faculty, state legislatures, and even governors. For example, Florida Governor Jeb Bush recently noted that it costs millions of dollars annually to educate the large number of full-time students who fail to graduate in four years, and reducing this number should be a primary goal for each university's trustees (Spencer, 2001). This study sought to examine the premise that a semester-long career-planning course taken for academic credit may be an effective intervention program to address these concerns.

Career courses have a long and interesting history in higher education. One of the earliest comprehensive career courses titled "Vocational Planning" was offered in the General College at the University of Minnesota in 1932 (Borow, 1960). Career courses in higher education became more prevalent in the decades following the 1930s. As of the early1960s, 33 higher education institutions were offering full academic credit career courses (Carter & Hoppock, 1961). In a related report, Calvert et al. (1964) estimated that over 100 two- and four-year colleges were providing career-related courses.

A survey of 458 colleges and universities conducted in the late 1970s sought information about the role and function of career services and found that career planning courses were offered at approximately 29% (87 of 299) of responding institutions (Reardon et al., 1979). Another 33% reported that a career-planning course was being considered for implementation. An even larger survey, around the same time period, of 2,400 two- and four-year institutions found that 353 (38% of respondents) were offering for-credit career courses (Haney & Howland, 1978).

A survey of career course practices conducted in 1994 randomly targeted two colleges from each of the 50 states. Responses from 61 schools in 32 states, showed that 62% offered some kind of career course geared either toward career decision making, job search preparation, or examination of specific career-related disciplines. Students who were enrolled in these courses were almost equally distributed across the four college years. These researchers also reported that 95% of respondents granted from one to three hours of credit for completion of their career course and 5% of the courses were graded pass/fail (Mead & Korrschgen, 1994).

In the most recent national survey we found, Collins (1998) surveyed 1,688 college members of the National Association of Colleges and Employers in 1997. Responses were obtained from 26.8%. Credit-bearing courses were offered by 30% of respondents, a figure that has held steady since 1981, while 24% offered noncredit-bearing courses.

A recent e-mail survey using various listservers found that 70% (28 of 40) of responding institutions reported offering a career course. According to respondents, these courses were most frequently offered for one credit. The findings further revealed that the presence or absence of administrative and faculty support was a critical issue to consider in offering a career course and that the longstanding battle between student affairs and academic affairs over awarding academic credit for career courses was still being waged (Halasz & Kempton, 2000).

Individual schools and colleges have begun to offer career courses in the past two decades. For example, 64% of business schools, responding to a survey, offered some type of career planning and development service, and nearly 50% provided a formal course (Montana, 1989). A two-credit course offered at the University of Nebraska-Lincoln (UNL) was designed such that each academic department or college could offer the course within their department and use departmental faculty to teach the course (Heppner & Krause, 1979). The North Carolina State University College of Business offers two different career courses. A recent study found that students enrolled in these courses tended to begin their career

planning earlier, developed greater self-awareness, grasped realities of the job market, wrote their resumes before graduation, and were positively evaluated by their employers (Brooks, 1995).

Folsom and Reardon (2001) reviewed over 80 articles reporting the design, development, management and evaluation of career courses, most of which were written since 1970. Of these studies, 40 addressed outputs as contrasted with outcomes of career courses. While *outputs* reflect student learning in relation to course objectives, e.g., learn more about interests, values and skills related to careers, *outcomes* refer to the resultant effects, at some later point in time, of attainment of course objectives (Peterson & Burck, 1982). Examples of career course outcomes include job satisfaction, selecting an academic major, career satisfaction, time taken to graduate from college, and cumulative GPA. Retention as an outcome variable in these studies was usually defined with a short-term view as returning for the next school term (Folsom & Reardon, 2001). Folsom and Reardon found 32 studies (88%) reporting positive gains in measured output variables, and 4 studies (12%) reporting no changes in output variables. At the same time, they found 13 studies (87%) reporting positive gains in measured outcome variables, and two studies (13%) reporting no changes in outcome variables.

Several meta-analyses that we reviewed provided further insight into the effects of career-related courses. One such analysis reported that group or class interventions were more effective than individual counseling or other interventions (Spokane & Oliver, 1983). Later, in the same decade, an analysis of 240 treatment-control comparisons in 58 studies compared 11 different types of career interventions and found that career guidance classes produced the largest effect size, resulting from the assortment of career interventions considered, with regard to client gains (Oliver & Spokane, 1988). An analysis of 12 studies of for-credit career development courses confirmed previous research findings as to the overall positive effects of career courses on career decidedness and career maturity (Hardesty, 1991). Finally, a recent meta-analysis found that career classes were the third most effective career intervention among eight different categories including individual and group counseling, group test interpretation, workshops, computer interventions, and counselor-free interventions (Whiston et al., 1998).

A recently conducted review of several meta-analyses indicated that demonstrably effective career interventions, including career courses, contain five components: (1) allow clients to clarify career and life goals in writing; (2) provide clients with individualized interpretations and feedback, e.g., test results; (3) provide current information on the risks and rewards of selected occupations and career fields; (4) include the study of models and mentors who demonstrate effective career behavior; and (5) provide assistance in developing support networks for pursuing career aspirations. Design and evaluation of career courses should assess the extent to which at least three of these five components are included (Brown & Krane, 2000).

The positive impact of career courses was further underscored by a previous evaluation of the career course examined in this current study. This earlier evaluation revealed that course participants decreased their negative career thoughts as measured by the Career Thoughts Inventory (CTI; Sampson et al., 1996a) when the CTI was administered as a pre-test and post-test measure. The greatest decrease in negative thinking was found in students exhibiting the highest levels of negative thinking at the beginning of the course (Reed et al., 2001).

Another recognized advantage of career courses is the efficient delivery of career services to large numbers of students (Gimmestad, 1984; Lent et al., 1986). Hence, large numbers of students can be served with limited career service resources. When these courses offer academic credit, institutions garner additional economic benefit due to commonly used funding formulae, which are based on the generation of academic credit.

We reviewed several studies that have addressed the impact of career courses on retention, usually defined as students returning for the subsequent school term. For example, a course entitled "Orientation to Higher Education" included three objectives aimed specifically at retaining students between the freshman and sophomore years: (1) academic planning, (2) selection of an academic advisor, and (3) selection of a major and a tentative career plan. Findings of a follow-up study of the course effects indicated that among freshmen students who were undecided with regard to an academic major, course participants returned for the following school term at a rate significantly greater than non-participants (Bechtol, 1978).

A longitudinal 10-year follow-up study of undecided students who took a noncredit career orientation class in the fall of 1966 found that a significantly higher percentage of course participants, compared to nonparticipants, finished their college degree within 10 years (Goodson, 1982). Goodson recommended that similar studies be conducted to assess longer-term effects of for-credit career courses.

Another longitudinal follow-up study of three cohort groups of students enrolled in a career course (fall 1989, spring 1990, and fall 1990) compared retention rates between course completers and noncompleters. Course completers returned for the next semester at a rate 8% higher than nonparticipants. African-American course participants returned for the next semester at a 22% higher rate than their counterparts in the group of nonparticipants (Schmidt, 1999).

Researchers concluded that a career-planning course offered at the University of Northern Colorado exerted at least some positive effect on the retention rate of enrolled students. However, these researchers noted that this assertion needed to be verified by further research, specifically recommending follow-up studies aimed at longer-term effects of career courses on retention (Carver & Smart, 1985). Several other researchers have mentioned this need for the study of longer-term effects of career courses as well (Goodson, 1982; Hardesty, 1991; Kern, 1995).

Past research has clearly demonstrated the positive impact of career courses on short-term student outputs (e.g., career decidedness and reduced negative career thinking). The present study was based upon the postulation that students who gain improved career focus through participation in career courses should then be expected to exhibit more positive longer-term outcomes as well (e.g., increased graduation rates, more timely and efficient degree attainment, and higher GPAs). As of yet, these long-term effects of career courses on student outcomes have not been documented.

The current study sought to address this absence of research substantiating the longer-term effects of career development courses on college student outcomes such as retention to graduation and academic performance. Two research questions guided the study. First, what was the effect of the course on: (a) retention to graduation; (b) time taken to graduate; (c) credit hours taken to graduate; (d) course withdrawals executed prior to graduation; and (e) cumulative GPA at graduation? Secondly, is there an interaction between taking the career course, retention, and academic performance with respect to gender?

The research hypothesis stated that students who successfully completed the career development course would demonstrate an increased rate of retention to graduation, reduced time taken to graduate, fewer credit hours taken to graduate, fewer course withdrawals executed prior to graduation, and higher cumulative GPAs at graduation compared to students who had not completed the course. Secondly, it was hypothesized that the course would have no differential impact with respect to gender.

Method

Participants

The participants were 544 students who completed all three units of the career course offered at a large southeastern university between 1989-1990 and 1993-1994 and earned a grade of B– or higher. A comparison group of 544 students was derived through random sampling of non-course participants who matriculated at the university during the same general time period. Both groups included both students admitted as freshmen and transfer students. The two groups were matched according to gender, race, and average high school GPA. Both samples contained 311 females and 233 males, and similar race proportions from the following categories: African American, Hispanic, Asian Pacific, and other. A chi square test of independence confirmed that there were no statistically significant ($p > .05$) differences between the groups in terms of race proportions or high school GPA.

Concerning other matching criteria, a chi square test of independence indicated statistically significant ($p < .05$) between-group differences in proportions of class levels represented. Participants included freshman 2%, sophomores 42%, juniors 28%, and seniors 28%, while corresponding non-participant percentages were 7%, 33%, 56%, and 4% respectively. Hence, there were many more seniors in the class group. A matched sample *t* test indicated a statistically significant ($p < .05$) between-group difference in average SAT score ($M = 1056$ for participants; $M = 1093$ for non-participants). Finally, a matched sample *t* test showed a statistically significant between-group difference in initial year of matriculation to the university. Therefore, the variance attributed to academic aptitude (SAT score), year in school, and year of matriculation was partitioned through covariance.

Subjects in both groups were assigned into five academic major categories, professional/business, social science, natural science, humanities, and other. A chi square test of independence indicated a statistically significant difference between the two groups in the proportions of students in academic major fields. For example, 30.5% of course participants were professional/business majors compared to 38.8% of non-participants. Academic major category could not be entered as a covariate since this criterion consisted of nominal rather than interval data; therefore, the analysis proceeded with the understanding that this uncontrolled factor could have an effect on results and should be considered in the interpretation of findings.

The Career Course

The career course examined in this study has existed since 1973 (Peterson et al., 1991). The original course was a series of career seminars which was eventually developed into a formal three credit hour course through the leadership of staff in the counseling center and the career placement center. Instructional systems specialists further developed and improved the course design and integrated multimedia career development resources available through the university's career resource center. In 1984, the conceptual base of the course changed to include a systems approach, and in 1993, a foundation in cognitive information processing (CIP) theory was formally added. The present course is based on CIP theory (Peterson et al., 1991; Peterson et al., 1996; Sampson et al., 1999), which is incorporated into the text, *Career Planning and Development: A Comprehensive Approach* (Reardon, 2000a) and related workbook, (*Student Manual*; Reardon et al., 2000b).

The course content is comprised of three units. Unit I, "Career Concepts and Applications," focuses on self-knowledge, knowledge about options, and decision making. Assignments include writing an autobiography and completing the Self-Directed Search (Holland, 1994) and a skills assessment activity. Students develop knowledge about occupational and educational options through the use of two computer-assisted career guidance systems (e.g., SIGI PLUS or Discover, and Choices) and by writing a

research paper on one or three occupations. The concepts of decision making and meta-cognitions are introduced in this unit and students have the opportunity to apply this knowledge through creating an Individual Action Plan (IAP). The IAP includes a career goal and a breakdown of steps to meet that goal which includes activities, resources needed, and completion dates. Since 1996, students also complete the CTI (Sampson et al., 1996a) which helps them identify their level of negative thinking that can be impeding their career problem solving and decision making. Students also have access to *Improving Your Career Thoughts: A Workbook for the Career Thoughts Inventory* (Sampson et al., 1996b), which may be recommended by the instructor as a vehicle to help students understand and alter their negative career thoughts, using a cognitive restructuring exercise.

Unit II, "Social Conditions Affecting Career Development," focuses on current social, economic, family, and organizational changes affecting the career planning process and the need for students to develop more complex cognitive schema to solve career problems. Unit III of the course focuses on employability skills and strategies for implementing academic/career plans. Assignments include two information interview reports, the completion of a resume and cover letter, and a strategic/academic career plan paper. This final paper utilizes the CASVE cycle from the CIP model as an over-arching cognitive strategy to help students integrate their learning and the career problem-solving and decision-making model.

Course learning objectives are designed to enable students:

1. To perceive the individual as purposefully responsible and active in the life/career planning process and to develop skills for increasing such behavior in others and oneself.
2. To understand how personal characteristics, e.g., interests, values, and skills, influence career development;
3. To become oriented to the socioeconomic world of work as it impacts individual and family career systems;
4. To identify appropriate academic major and/or occupational alternatives in relation to personal characteristics;
5. To learn about and use a variety of information resources to explore academic major or career options;
6. To understand career development theories and use decision-making skills for life/career planning and management;
7. To formulate action plans and strategies for moving other persons or oneself toward implementation of life/career goals; and
8. To learn about and use employability skills necessary for successful job placement.

Student achievement of course objectives is assessed by instructors through the use of a performance contract that provides a point scheme for evaluating outputs in 16 different areas of behavior related to the course objectives. Letter grades are assigned based on point accumulation, e.g., A = 90-100% of possible points.

The course was typically offered in 10-12 sections per year, each with 25-35 students and taught by a lead instructor and a group of co-instructors, providing an instructor/student ratio of 1:8-9. The class was a mixture of lecture, panel presentations, and small and large group activities. Each instructor was assigned a small group of students who met throughout the semester during class time. The instructors also met individually with the students at least once during the semester to assist them in developing their IAP and to discuss their assessments and progress in the class. More information about this career course is available at http://www.career.fsu.edu/techcenter/instructor/undergraduate/index.html.

Data Analysis

Participant and non-participant groups were compared using Multivariate Analysis of Covariance (MANCOVA) which is based on a set of assumptions intended to reduce likelihood of Type I errors (Bray & Maxwell, 1985; Wachs, 1986). A two-tailed test of the hypotheses was employed to capture the potential effect on outcomes in either direction. An alpha level of .01 was used to test the hypotheses at the univariate level to control for family-wise error (Tabachnick & Fidell, 1996).

The study was designed so that units were randomly sampled from the population of interest and sampling units were independent of one another. The assumption of similar correlation between any two dependent variables was addressed through calculation of Pearson Product moment correlations r (Light et al., 1990) to determine the direction and extent of correlation r between the dependent variables. The amount of shared variance between dependent variables was well below the level that would violate this assumption. Other assumptions of MANCOVA including multivariate and univariate normal distribution and homogeneity of variance posed mostly moderate, or less, departure from normal. Therefore, the conclusion was reached that the large and equivalent sample sizes combined with the observed power ($P = 1.000$) provided robustness against the extent of observed violation of assumptions.

Results

A MANCOVA analysis revealed a significant multivariate effect, Hotelling's Trace = 9.076, $F = 1.467$, $p < .001$, and Wilk's Lamda = .009, $F = 1.434$, $p < .001$.

Univariate testing compared differences between groups with respect to the five dimensions of student performance. As mentioned previously, analysis of covariance controlled for the following extraneous variables: SAT score, class level, and year of matriculation. A summary of observed and adjusted means is presented in Table 1.

Insert Table 1 Means and Adjusted Means of College Outcome Measures
between Course Participants and Non-Participants about here

Retention

Graduation rates were 80.9% for the study sample of students that completed the career course and 83.6% for non-participants. A chi-square test of independence was used to compare frequencies between the two groups in the number of students graduating by the end of the fall semester 1999. Results led to the conclusion that there was no statistically significant difference, $X^2 (1, n = 1088) = 1.418$, CV = 6.635, in graduation rates between course participants and non-participants.

Time to Graduation

An F test was used to determine whether the observed difference in the time taken to graduate between course participants and nonparticipants was statistically significant ($p < .01$). Results showed no statistically significant difference in unadjusted means (participants $M = 52.26$, nonparticipants $M = 55.17$) of months taken to graduate, $F (1083) = 1.095$, $a = .01$, $p = .154$. Comparison of adjusted means (participants adjusted $M = 52.08$, non-participants adjusted $M = 50.18$) also indicated the absence of a statistically significant difference and led to the conclusion that the two groups were essentially similar in time taken to graduate.

Credit Hours Taken to Graduate

An *F* test showed a statistically significant difference in between-group unadjusted means (participants *M* = 110.27, nonparticipants *M* = 108.93) of credit hours taken to graduate, *F* (1083) = .1418, *a* = .01, *p* = .000. Comparison of adjusted means (*M* = 110.85 for participants and *M* = 109.9 for nonparticipants) was also statistically significant. The effect size was .03. Therefore, the conclusion was reached that there was a statistically significant difference between groups (though slight) in the number of credit hours taken to graduate.

Course Withdrawals

As with the previous outcome variable, an *F* test showed a statistically significant difference (*F* (1083) = 1.535, *p* < .000) in unadjusted between-group means of the number of course withdrawals executed prior to graduation (participants *M* = .81, nonparticipants *M* = .85). Comparison of adjusted means (*M* = .84 for participants and *M* = .97 for nonparticipants) also indicated a statistically significant difference. The effect size was .08. Therefore, we concluded that there was a statistically significant difference in the between-group mean number of course withdrawals executed prior to graduation.

Cumulative GPA

Finally, an *F* test showed no statistically significant between-group difference (*F* (1083) = 1.149, *a* = .01, *p* = .058) in adjusted means of cumulative GPA at graduation (participants *M* = 2.72, nonparticipants *M* = 2.79). Comparison of adjusted means (participants adjusted *M* = 2.68, non-participants adjusted *M* = 2.67) also indicated an absence of a statistically significant difference and led to the conclusion that the two groups had essentially similar cumulative GPAs at graduation.

Interaction of Outcomes According to Gender Type

In order to further explore possible differences in academic performance between course participants and non-participants, study data were analyzed for potential interaction effects in terms of gender status. Findings showed that female non-participants graduated at a rate of 87% compared to 82% for female participants. Non-participant and participant males graduated at an identical rate of 79%.

Significant interaction effects were observed regarding several other outcome variables with gender as a fixed factor. Statistically and practically significant effects in the expected direction occurred with months taken to graduate and the number of course withdrawals executed according to gender. Results indicated that female course participants graduated with fewer months taken to graduate than female non-participants, but executed more course withdrawals (Table 2). Non-participant females took 60.8 months to graduate and female course participants took 50.1 months to graduate (*F* (1, 1083) = 52.079, *a* = .01, *p* = .000), a statistically and practically significant difference (ES = .62). Female course participants executed .81 course withdrawals compared to .53 for their non-participant counterparts (ES = .20). Male course participants executed fewer course withdrawals (Table 2, *M* = .83) than did male non-participants (*M* = 1.2). This difference was statistically significant (*F* (1, 1083) = 7.420, *a* = .01, *p* = .007), but not very practically significant (ES = .18).

Insert Table 2 Means and Adjusted Means of Outcome Measures
Between Participant and Non-Participant Males and Females about here
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Unlike female participants, male course participants took longer to graduate compared to nonparticipants, 54.51 months compared to 47.68 (Figure 1). This difference was statistically (F (1, 1083) = 52.079, p = .000) and practically significant (ES = .36). Also, male participants had slightly higher cumulative GPAs than their nonparticipant counterparts (participant males M = 2.55, nonparticipant males M = 2.42) whereas female participants had slightly lower cumulative GPAs than their nonparticipant counterparts (participant females M = 2.87, nonparticipant females M = 3.03).

Insert Figure 1 Interaction of Adjusted Means of Months to Graduation for
Non-Participant and Participant Females and Males about here

Insert Figure 2 Interaction of Adjusted Means of Cumulative GPA for
Non-Participant and Participant Females and Males about here

Discussion

This study sought to assess the impact of a career course on the retention and academic performance of college students. We did not find a significant course impact in the case of three of the outcome variables of interest to the study. There was no statistically significant difference in retention to graduation rates between course participants and nonparticipants. Also, there were no statistically significant between-group differences in time taken to graduate and cumulative GPA at graduation. However, the course did have a positive impact, though slight, on both credit hours taken to graduate and the number of course withdrawals executed prior to graduation. These findings led to the conclusion that course participants took significantly fewer credit hours to graduate and executed significantly fewer course withdrawals than nonparticipants.

Isolating the effects of the course based on gender led to two major conclusions. First, female course participants graduated in significantly less time than female nonparticipants, but executed more course withdrawals. Second, male participants took longer to graduate, but executed fewer course withdrawals and had higher GPAs than nonparticipants.

Although course participants in this study did not graduate at a greater rate than nonpartipants, it is noteworthy that both groups graduated at a rate (80.9% and 83.6% respectively) considerably higher than the general population of students at this institution (69%). Non-equivalence of the control and comparison groups might have obscured a positive effect of the course on retention. Because graduation rate is a dichotomous outcome measure, this outcome was not part of the MANCOVA analysis and it was not possible to control for SAT score, class level, and year of matriculation (covariates in the MANCOVA analysis). Therefore, one of these uncontrolled factors or some other group similarity could partially explain why both groups graduated at a similarly high rate. For example, nonparticipants matriculated on average about a year and a half earlier than participants and hence had a longer time span in which to graduate.

Another observation, based on conjecture, could be related to uncontrolled differences in the proportion of academic major categories in each of the student groups. One could postulate that professional/business majors, who comprised 38.8 percent of the nonparticipant group and 30.5 percent of the participant group, may possess a clearer career focus and motivation toward expeditious graduation. If this were true, then the within-group proportions of professional/business majors noted above could have contributed to relatively high rates of graduation for both groups, and an even slightly higher graduation rate for nonparticipants.

At first glance, the fact that course participants graduated with approximately one less credit hour than nonparticipants may seem trivial though statistically significant and detectable due to the high power ($P = 1.000$) of this MANCOVA design. However, a one credit hour decrease in the total number of credit hours needed to graduate is a significant contribution to cost efficiency when considering the hundreds of students who take this course on an annual basis at the site of the study. If similar results were to occur at numerous other institutions offering similar courses, the likely savings to the public higher education system becomes considerable. Though not a scientific comparison, it is also noteworthy that course participants graduated with more than 20 less credit hours on average than the general population of students at this institution. Hence, the positive impact of the course on efficient degree attainment may be greater than detected by this study.

It should be noted that the adjusted mean number of credits for course participants (110.85) and nonparticipants (109.9) were below the 120 credits required for graduation from this institution. The reason for this discrepancy is that some student records in both samples contained very low credit hours taken to graduate due to stop-out activity (sporadic activity that involved intermittently dropping out of school for a period of time and then resuming degree pursuits). The manner in which this institution reports the number of credit hours accumulated at graduation only reflects the number of hours accumulated since the most recent enrollment. This phenomenon randomly effected both groups and thus resulted in lower than expected mean results for this outcome. We believe this phenomenon did not diminish the usefulness of these data in comparing the two groups used in this study.

Course withdrawals that follow the drop/add period cause added administrative expense to the higher education process. In addition, course slots may be unnecessarily denied to students who need a particular course in order to efficiently proceed toward graduation. Therefore, although the positive effect of the course on this outcome seems slight, though statistically significant, the magnitude of this effect on efficiency becomes more considerable if applied to the thousands of students and courses potentially affected across the country.

Limitations

There were numerous factors and events capable of affecting the outcome variables of interest in this study and it was impossible to account for all of these. For example, it was beyond the scope of this study to control for student involvement in the education process or student connections with staff or faculty. In a reasonable attempt to reduce this threat to internal validity, the study observed five years of course participants. The inclusion of five years of students mitigated the potential of substantially inaccurate conclusions being drawn from observance of a few atypical years.

A second threat to internal validity was that observed differences between the two groups could have been due to differences in the students comprising the participant and nonparticipant groups (Cook & Campbell, 1979). Controlled factors were intended to produce reasonable similarity between the groups and thereby strengthen internal validity. These included high school GPA, SAT score, gender, race, class level, and year of matriculation. Although this design left other potential rival explanations uncontrolled, these selected control criteria were similar to those used by prior researchers (e.g., Johnson & Smouse, 1993) and represented a reasonably accessible attempt to strengthen internal validity.

The design of this study did not appear to result in substantial threats to external validity. Study samples were not so pure or unique so as to result in a sample of students substantially different from college students in general. In addition, the course content and methods were similar to career courses that were noted in the literature and offered at other institutions.

Several other cautions and limitations of the study should be noted. First, it was not feasible within the scope of this study to control for two major influences on retention, such as involvement in educational related activities (Astin, 1984) and "connectedness" with the institution through quality relationships with staff and faculty (Pascarella & Terenzini, 1991, 1977). Rather, the study proceeded with the expectation that general overall similarities with regard to these two variables existed between course participants and non-participants.

Also, the vast majority of students enrolled in this career course are referred by academic advisors or other faculty or staff. This raised the concern of possible selection bias as a result of a personality variable, such as reduced inner locus-of-control (Rotter, 1966) that may be prevalent among students who completed this career course and could potentially offer some explanation for differences in outcomes. Additionally, with an *ex post facto* research design, it is not possible to use a control group, and a matched comparison group of non-course participants was used instead to mitigate the confounding influence of extraneous variables and thereby maintain a degree of methodological rigor.

Other limitations include the fact that it was not possible to measure the number of course withdrawals executed by students following completion of the career course as the ideal way to assess the effect of the course on this outcome variable. Rather, the total number of course withdrawals executed over the entire college career was the available measure that was used. Additionally, the use of a single career course and institution is less generalizable than a study design that includes several career courses offered at several institutions.

In spite of these limitations, the design of this study should support generalization with a reasonable degree of confidence to other career development class sections offered at the institutional site of this study. Also, this study design enables one to speculate about generalization of these outcomes to similar courses offered at other institutions.

Implications for Practice and Future Research

In view of increasing administrative costs in higher education, combined with increasing enrollment demands in many parts of the country, efficiency in the pursuit and award of degrees is of central concern to administrators of colleges, universities, and state systems of higher education. An intervention improving the efficiency with which students complete their degrees is of particular value to those who develop and implement higher education policy. These results lend some support to the argument that this career course may be an effective intervention that results in more efficient and cost-effective degree completion processes. Also, college students who complete these courses may benefit by beginning their post-collegiate careers sooner, which usually includes higher financial income along with earlier work experience leading to faster career advancement. Hence, career courses may be worthy of wider exposure, increased funding support, and expanded offerings. This research adds to the literature on the broad effects of career courses (Folsom & Reardon, 2001).

This study should be replicated in order to confirm and extend the results. Although career course participants in the current study graduated at rates significantly exceeding those of the general population of students at the institution, the current study did not sufficiently establish a positive course impact on retention. Future studies should examine the effects of career courses on the number of major changes executed by course participants compared with non-course participants. This can be another good indicator of the efficiency and focus with which students are pursuing their academic goals.

A qualitative study of career course participants involving personal interviews and/or focus groups would be a useful addition to the literature. This could involve in-depth analysis of a much smaller sample of course participants. A methodology of this nature would provide the opportunity to obtain

specific information from students as to how the career course may have benefited them and what has happened in their lives since completing the course. It might provide insights regarding specific course components related to outcomes, and examine the transfer effects of learning. Insightful and valuable feedback could potentially be gained that could lead to refinement of course design resulting in even greater benefits to course participants.

Follow-up research of students following graduation is a largely unexplored outcome that should be addressed in future studies of career courses. Specific points of inquiry relative to career knowledge and focus could include time taken to obtain job placement following graduation, relatedness of job placement to college major, job satisfaction following graduation, extent of job mobility following graduation, and rate of career advancement following graduation.

Finally, unraveling the apparent gender-specific effect of the course is another topic that is ripe for further research. The course outcome of improved career focus appears to affect males and females differently concerning time taken to graduate, execution of course withdrawals, and cumulative GPA. Future research should seek to validate these differences and determine why they occur.

It is unlikely that studies of longer-term effects of career courses will occur under present arrangements due to the time and expense involved in such research. Much of the prior research on this topic has been associated with doctoral student dissertations. One funding option for supporting future research in this area would involve career course textbook publishers. They have a financial interest in learning more about the impact of their products because they are copyright holders of the texts. Some test publishers already do this in support of their product development. Another option for funding research related to longer-term effects of career courses could be involvement of universities, government agencies, and foundations.

References

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel, 25*, 297-308.

Bechtol, W. (1978). Helping undecided students select a major or career. *Journal of College Student Personnel, 19*, 570-571.

Borow, H. (1960). College courses in vocational planning. *Vocational Guidance Quarterly, 9*, 75-80.

Borow, H., & Lindsey, R. V. (1959). *Vocational planning for college students*. Englewood Cliffs, NJ: Prentice-Hall.

Brawer, F. B. (1996). Retention-attrition in the nineties. *ERIC Digest*, April, 3-4.

Bray, J. H., & Maxwell, S. E. (1985). *Multivariate analysis of variance.* Beverly Hills, CA: SAGE Publications, Inc.

Brooks, J. E. (1995). Guide to developing a successful career course. *Journal of Career Planning & Employment, 55(3)*, 29-31, 33, 58.

Brown, S. D., & Krane, N. E. R. (2000). Four (or five) sessions and a cloud of dust: Old assumptions and new observations about career counseling. In S. B. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology* (3rd ed., pp. 740-766). New York: John Wiley & Sons.

Calvert, R., Carter, E. M., & Murphy, I. (1964). College courses in occupational adjustment. *Personnel & Guidance Journal, 42*, 680-682.

Carter, E. M., & Hoppock, R. (1961). College courses in careers. *Personnel & Guidance Journal, 39*, 373-375.

Carver, D. S., & Smart, D. W. (1985). The effects of a career and self-exploration course for undecided freshmen. *Journal of College Student Personnel, 26*, 37-43.

Collins, M. (1998). Snapshot of the profession. *Journal of Career Planning & Employment, 41(2)*, 32-36, 51-55.

Cook, T. D. & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings.* Boston, MA: Houghton Mifflin.

Devlin, T. (1974). Career development courses: An important part of the counselor's repertoire. *Journal of College Placement*, *34*(4), 62-68.

Erhart, J. R., & Gilmore, R. G. (1977). Working together for academic credit. *Journal of College Placement, 37*(3), 71-75.

Florida State University. (1999-2000). *Facts, statistics, useful information.* Tallahassee, FL: Office of Institutional Research, Budget, and Analysis, Florida State University.

Folsom, B., & Reardon, R. (2001). *The effects of college career courses on learner outputs and outcomes* (technical report No. 26). Tallahassee, FL: Florida State University. Also available at http://www.career.fsu.edu/techcenter/tr26.html

Gerken, D., Reardon, R., & Bash, R. (1988). Revitalizing a career course: The gender roles infusion. *Journal of Career Development, 14*, 269-278.

Gimmestad, M. J. (1984). Career planning through instruction. In H. D. Burck & R. C. Reardon (Eds.), *Career development interventions* (pp. 212-232). Springfield, Illinois: Charles C Thomas.

Goldstein, M. (1977). *The current state of career education at the post-secondary level.* (A paper for the National Advisory Council for Career Education) Washington, D C: U.S. Government Printing Office.

Goodson, W. D. (1982). *A career class does have an impact – a ten year follow-up.* (ERIC Document Reproduction Service No. ED 232 070)

Halasz, T. J., & Kempton, C. B. (2000). Career planning courses and workshops. In D. A. Luzzo (Ed.), *Career counseling of college students: An empirical guide to strategies that work* (pp. 157-170). Washington, D.C.: American Psychological Association

Haney, T., & Howland, P. (1978). Career courses for credit: Necessity or luxury? *Journal of College Placement, 38*(3), 75-78.

Hardesty, P. H. (1991). Undergraduate career courses for credit: A review and meta-analysis. *Journal of College Student Development, 32*, 184-185.

Heppner, P., & Krause, J. (1979). A career seminar course. *Journal of College Student Personnel, 20*, 300-305.

Holland, J. L. (1994). *Self-Directed Search*. Odessa, FL: Psychological Assessment Resources, Inc.

Lent, R. W., Larkin, K. C., & Hasegawa, C. S. (1986). Effects of a "Focused Interest" career course approach for college students. *Vocational Guidance Quarterly, 34*, 151-159.

Light, R. J., Singer, J. D., & Willett, J. B. (1990). *By design: Planning research on higher education*. Cambridge, MA: Harvard University Press.

Lisansky, R. S. (1990). The effect of cognitive style of decision-making, level of career decidedness and completion of the life and career planning course on retention rate of undecided entering traditional-age college freshmen. (Doctoral dissertation, The John Hopkins University, 1990). *Dissertation Abstracts International, 51* (05A), 1521.

Mead, S., & Korschgen, A. J. (1994). A quick look at career development courses across the country. *Journal of Career Planning & Employment, 54*(2), 24-25.

Montana, P. J. (1989). Career development in our nation's business schools. *Journal of Career Planning & Employment, 49*(4), 61-64.

Oliver L. W., & Spokane, A. R. (1988). Career-intervention outcome: What contributes to client gain. *Journal of Counseling Psychology, 35*, 447-462.

Pascarella, E. T., & Terenzini, P. T. (1991). *How college effects students*. San Francisco: Jossey-Bass.

Peterson, G. W., Sampson, J. P., Reardon, R. C. (1991). *Career development and services: A cognitive approach.* Pacific Grove, CA: Brooks/Cole.

Peterson, G., Sampson, J., Reardon, R., & Lenz, J. (1996). A cognitive information processing approach in career problem solving and decision making. In D. Brown & L. Brooks (Eds.), *Career choice and development* (3rd ed., pp. 423-475). San Francisco: Jossey-Bass.

Phillips, J. L. (1992). *How to think about statistics.* New York: W. H. Freeman.

Reardon, R., Lenz, J., Sampson, J., & Peterson, G. (2000a). *Career development and planning: A comprehensive approach.* Pacific Grove, CA: Wadsworth-Brooks/Cole.

Reardon, R., Lenz, J., Sampson, J., & Peterson, G. (2000b). *Student manual for career development and planning: A comprehensive approach.* Pacific Grove, CA: Wadsworth-Brooks/Cole.

Reardon, R., & Wright, L. (1999). The case of Mandy: Applying Holland's theory and cognitive information processing theory. *Career Development Quarterly, 47*, 195-203.

Reardon, R., Zunker, V., & Dyal, M. (1979). The status of career planning programs and career centers in colleges and universities. *Vocational Guidance Quarterly, 28*, 154-159.

Reed, C., Reardon, R., Lenz, J., & Leierer, S. (2001). Reducing negative career thoughts with a career course. *Career Development Quarterly, 50*, 158-167.

Rotter, J. (1966). Generalized expectancies for internal versus external control reinforcement. *Psychological Monographs, 80*, (Whole No. 609).

Sampson, J. P., Jr., Lenz, J. G., Reardon, R. C., & Peterson, G. W. (1999). A cognitive information processing approach to employment problem solving and decision making. *Career Development Quarterly, 48*, 3-18.

Sampson, J., Peterson, G., Lenz. J., Reardon, R., & Saunders, D. (1996a). *Career Thoughts Inventory.* Odessa, FL: Psychological Assessment Resources, Inc.

Sampson, J., Peterson, G., Lenz, J., Reardon, R., & Saunders, D. (1996b). *Improving your career thoughts: A workbook for the Career Thoughts Inventory.* Odessa, FL: Psychological Assessment Resources, Inc.

Schmidt, D. (1999). *Effects of a personal and career exploration course on student retention/persistence.* [Unpublished study] Long Beach, CA: College of Education, California State University, Long Beach.

Spencer, T. (July 26, 2001). University trustees learn their roles. *Tallahassee Democrat*, p. A1.

Spokane, A. R., & Oliver, L. W. (1983). The outcomes of vocational intervention. In S. H. Osipow & W. B. Walsh (Eds.), *Handbook of vocational psychology* (pp. 99-136). Hillsdale, NJ: Erlbaum.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics.* New York: Harper-Collins.

Wachs, P. M. (1986). Career planning course effect on vocational identity and related outcome measures (Doctoral dissertation, Northern Illinois University, 1986). *Dissertation Abstracts International, 47* (06A), 2031.

Whiston, S. C., Sexton, T. L., & Lasoff, D. L. (1998). Career-intervention outcome: A replication and extension of Oliver and Spokane (1988). *Journal of Counseling Psychology, 45*, 150-165.

Table 1.*Means and Adjusted Means of College Outcome Measures between Course Participants (n = 544) and Nonparticipants (n = 544)*

Outcome Variables	Participants		Nonparticipants		F
	M	SD	M	SD	
Months	52.26 (52.08) [a,b]	14.77	55.17 (50.18) [a,b]	22.16	1.095
Credit Hours	110.27 (110.85) [a,b]	35.82	108.93 (109.90) [a,b]	39.25	1.418
Withdrawals	.81 (.84) [a,b]	1.62	.85 (.97) [a,b]	1.67	1.535
GPA	2.72 (2.68) [a,b]	.56	2.79 (2.67) [a,b]	.59	1.149

[a] Adjusted Means
[b] Covariates:
SAT
Class Level
Year of Matriculation

Table 2. *Means and Adjusted Means of Outcome Measures Between Participant and Nonparticipant Males (n = 233) and Females (n = 311)*

Outcome Variables	Males				Females			
	Participants		Nonparticipants		Participants		Nonparticipants	
	M	SD	M	SD	M	SD	M	SD
Months	54.56 (54.51) [a,b]	14.89	52.63 (47.68) [a,b]	22.54	50.54 (50.07) [a,b]	14.46	56.62 (60.82) [a,b]	20.35
Hours	111.17 (109.68) [a,b]	33.04	110.56 (111.16) [a,b]	37.02	109.59 (109.62) [a,b]	37.81	107.63 (108.27) [a,b]	40.89
Withdrawals	.87 (.88) [a,b]	1.76	1.12 (1.22) [a,b]	2.01	.77 (.81) [a,b]	1.51	.65 (.53) [a,b]	1.33
GPA	2.52(2.55) [a,b]	.48	2.70 (2.43) [a,b]	.60	2.86 (2.83) [a,b]	.56	2.86 (3.03) [a,b]	.57

[a] Adjusted Means
[b] Covariates:
SAT
Class Level
Year of Matriculation

Figure 1. *Interaction of Adjusted Means of Months to Graduation for Non-Participant and Participant Females and Males*
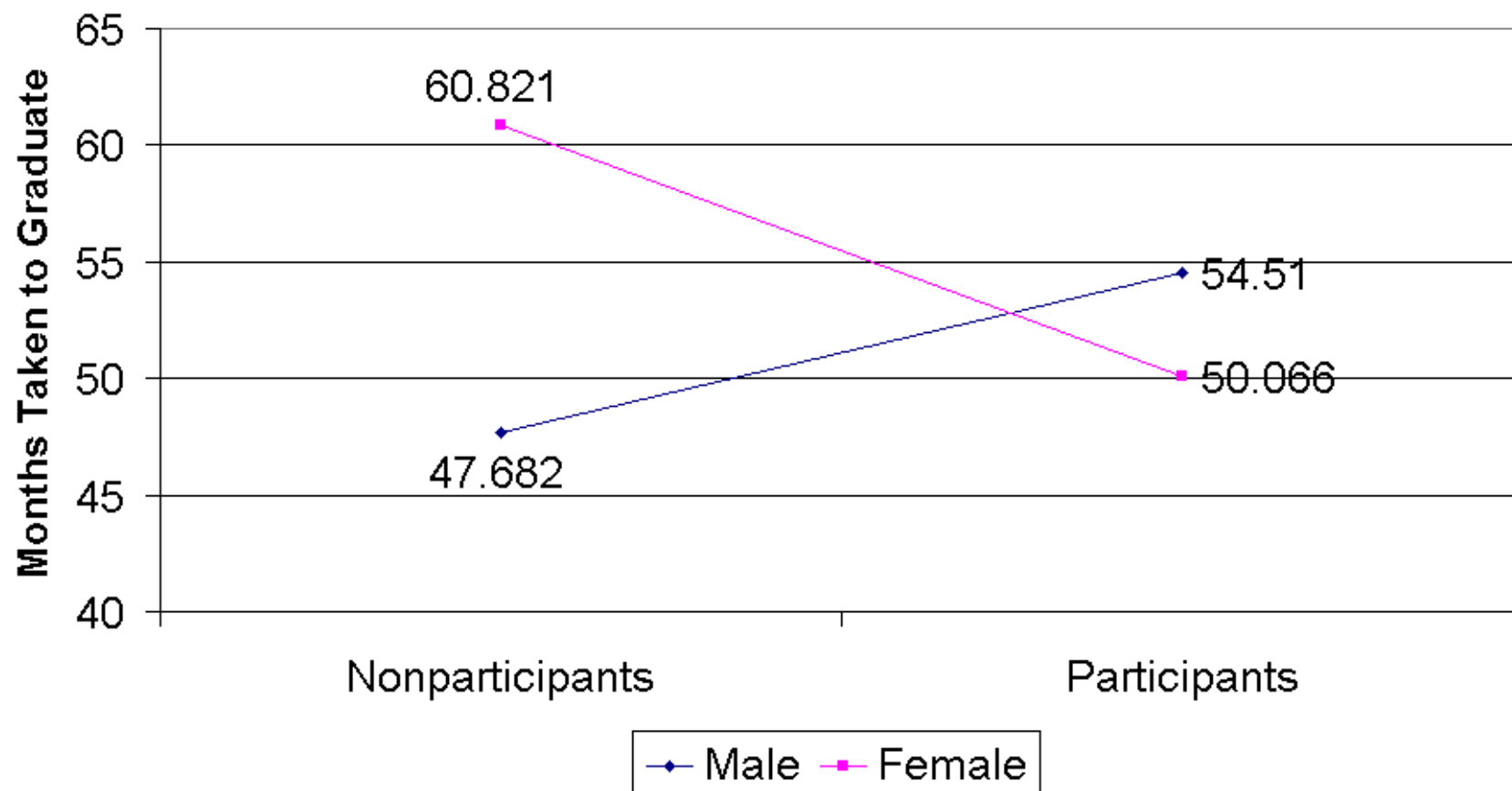
Figure 2. Interaction of Adjusted Means of Cumulative GPA for Non-Participant and Participant Females and Males