

**COLLEGE CAREER COURSES AND
LEARNER OUTPUTS AND OUTCOMES, 1976-2014:
TECHNICAL REPORT NO. 55¹**

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Executive Summary

Career course literature in 157 documents traces the history, development, design, and effectiveness of career courses in colleges and universities. It includes reviews of 88 studies in 80 reports or articles in 133 documents regarding the effectiveness of the career courses, primarily in the U.S. More than 25,333 participants were involved in these studies from 1976 to 2014. A review of 88 results or findings has been framed in terms of the outputs and outcomes of career course interventions. We reviewed 64 results of career course *output* studies using measures of career thoughts, career decision-making skills, career decidedness, vocational identity, and the like. In this analysis, we found 58 (91%) reporting positive gains in measured output variables, and 6 (9%) reporting no changes in output variables. We also reviewed 25 results or findings of career course *outcomes* such as persistence (retention) in college, graduation rate, cumulative GPA, and job satisfaction or satisfaction with field of study. In this analysis we found 23 (92%) reporting positive gains in measured outcome variables, and two (8%) reporting no changes in outcome variables. The majority of the studies (59 of 88, 67%) used control or comparison groups to strengthen methodological rigor. This report concludes with an analysis of this body of research and implications for further research and practice in this area.

**STUDIES OF COLLEGE CAREER COURSES ON
LEARNER OUTPUTS AND OUTCOMES, 1976-2014:
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The practice of using career development courses in colleges and universities to assist students with educational and career planning has a surprisingly long and robust history. In colonial times, instruction about work might have been the subject of a college wide convocation, along with discussions of health, morals, deportment, and other life adjustment topics. Maverick (1926) reported that freshman orientation courses, which appeared as early as 1911, included several hours of instruction on vocational guidance. One of the early career courses was offered for women at Barnard College, Columbia University in 1921 with the title “Professional Occupations: Their Scope, Functions, and Newer Developments” (Maverick, 1926). In general, courses emerged at the turn of the century as one way of delivering comprehensive career services in colleges and universities.

But what do we really know about career courses as career interventions, and to what extent are courses used as learning events that offer more than help in finding a job after graduation or choosing a major field of study? What do we know about the impact of career courses in helping students to develop new ideas about work, education, life planning, and other outcomes? Do career courses affect student retention in college? Do career courses help students develop new ways of thinking about themselves and the world in which they will live and work? What kind of research is being done on career courses, and who is doing it? The purpose of this article is to provide some answers from the research literature that will help us answer these questions and others regarding the design and evaluation of career courses in colleges and universities.

The first review of career course literature was published in the *Journal of Career Assessment* (Folsom & Reardon, 2003) and included 46 studies of career courses. A second review appeared as Technical Report No. 44 (Folsom, Reardon, & Lee, 2005) two years later and examined 50 studies. We begin this third review with an overview of career courses, and then move to an analysis of the outputs and outcomes of career courses in terms of accountability. Next we examine the literature on career courses, and conclude with some observations about the effects of career course interventions. Our overall purpose is to provide a comprehensive review of material that might be helpful to practitioners in developing a career course and in securing academic credit for such a course at their postsecondary institution.

An Overview of Career Development Courses

Maverick (1926) found that career-related courses have been used in higher education since the early 1900s. In our review of the literature, we found and have referenced more than 133 articles or chapters reporting career course development activities and course results across U.S. colleges and universities. In this section, we first review general surveys of the prevalence of career courses in higher education institutions. We then examine courses focused on a particular discipline or academic unit, followed by a review of meta-analyses of career courses. We conclude this section with an examination of some features of career courses that may be of special interest to practitioners.

Surveys of Career Course Prevalence

Hoppock (1932), assisted by the National Vocational Guidance Association, located catalog descriptions of 18 college-career courses in the early 1930s. These courses were offered in all kinds of colleges, e.g., two-year, liberal arts, professional, and in a wide variety of disciplines. In 1937, Hoppock

and Tuxil (1938) analyzed 695 college catalogues and found that 85 career related courses were offered in 71 institutions, which revealed that considerably more career related courses were provided in 1937 than 1932. Later, Stevens and Hoppock (1956) surveyed 303 (about 33%) of schools in the 1952 American Council on Education directory of colleges and found career courses at 11 institutions. They provided brief descriptions of these courses and noted that five were taught by placement officers, five by professors, and one by a dean of women. They also noted that full academic credit was given for most of the courses.

Carter and Hoppock (1961) suggested that Edgar J. Wiley, who included a unit on occupations as part of a contemporary civilization course in 1923, had developed the first career course. However, Borow (1960) was one of the first to describe a comprehensive course, "Vocational Planning," which was offered in the General College at the University of Minnesota in 1932. Indeed, Borow and Lindsey (1959) eventually co-authored a text for that course, *Vocational Planning for College Students*, which was published by Prentice-Hall.

Career courses in higher education became more prevalent over the next few decades. Journal articles provided reports on such courses from 1930 to 1960, and there was evidence that 33 institutions of higher education were offering full academic credit career courses in the early 1960s (Carter & Hoppock, 1961). In a related report, Calvert, Carter, and Murphy (1964) estimated that over 100 two- and four-year colleges were providing courses in this area.

Later, Devlin (1974) conducted an extensive survey of college placement offices to determine the extent to which career development courses were being offered. Results indicated that approximately 75 responding institutions were offering career development courses with another 123 institutions indicating that they were planning to propose such a course. Devlin pointed out that many of the career development courses of this era covered three major areas: (1) career choice factors, (2) career information, and (3) job-seeking techniques (Devlin, 1974). This triad of topics probably continues to define the contents of a comprehensive course.

As an explanation for the emergence of career planning classes during the early 1970s, Ripley (1975) suggested that it was primarily due to a combination of a restricted job market and a growing desire within higher education to contribute to the holistic development of students. Ripley discussed the advantages of large career development classes comprised of over 100 students, including the maximum utilization of career development staff, greater institutional impact, and the ability to reach more students. Additional information on this topic was provided in a study by Reardon, Zunker, and Dyal (1979). These authors recounted an assertion by Goldstein (1977) that institutions of higher learning reject the concept of career education as inappropriate within an academic setting. (This was labeled "creeping vocationalism" by some faculty.)

Reardon, Zunker, and Dyal (1979) surveyed 458 colleges and universities across the nation to learn more about the role and function of career services, including courses. Part of the interest in conducting this national survey was to determine the extent to which the career education concept was being discussed on campuses at that time. Of 299 respondents, approximately 29 percent (87) indicated that a career-planning course for credit was available at their campus. Further, 33 percent noted that the issue of career education was being studied at their school. The authors concluded that in spite of Goldstein's (1977) pessimism about the acceptance of career education on college campuses, the survey results indicated some positive response to the idea.

In a larger study, Haney and Howland (1978) found evidence of a growing proliferation of career development courses in the 1970s in an extensive survey of 2,400 two- and four-year institutions. Of the

respondents, 38 percent (353) reported offering career courses for credit. Additionally, these researchers described the importance of career courses providing academic credit because of the value and respect attributed to courses within higher education that offer academic credit.

Mead and Korschgen (1994) randomly surveyed two colleges from each of the 50 states in order to learn about current practices with career courses. They obtained responses from 61 schools in 32 states, and 62% offered some kind of career course. Three broad types of courses were offered, including those geared either toward career decision making, job search preparation, or specific disciplines. Students enrolled were almost equally distributed across the four college years. They reported that 95% of the respondents granted from one to three hours of credit, and 5% of the courses were graded pass/fail.

Collins (1998) surveyed 1,688 college members of the National Association of Colleges and Employers (NACE) in 1997 and obtained responses from 26.8%. She found that credit-bearing courses were offered by 30% of those responding, a figure that has held steady since 1981, while 24% offered noncredit-bearing courses. Halasz and Kempton (2000) conducted an e-mail survey using various listservers and found that 70% (28 of 40) of responding institutions reported having a career course. They noted that the course was most usually offered for one credit, and that the presence or absence of administrative and faculty support was a key issue in offering a career course. Halasz and Kempton (2000) found evidence that the long battle between student and academic affairs was still being waged in regards to offering credit for career courses.

The NACE survey, *2009-10 Career Services Benchmarking Survey for Four-Year Colleges and Universities* (NACE, 2010), was sent to 1,389 member schools and 557 (40%) useable responses were obtained. Results showed that 55% of schools with 20,000+ students offered such courses, but schools with fewer than 10,000 rarely did. Smaller schools were more likely to provide academic counseling through career services than larger schools, but larger schools were more likely to provide a for-credit career course. Overall, 32% of respondents offered a credit career course.

Finally, the NACE survey, *2013-14 Career Services Benchmark Survey* (NACE, 2014) was sent to 1,969 member schools in September 2013 and 881 members responded (44.7%). NACE found that 33% ($n = 240$) of respondents offered a career class for credit, almost the same percent as in the 2009-10 survey. The mean and median numbers of classes offered were 9 and 3, respectively, and the mean and median numbers of students attending were 2,011 and 80, respectively. These courses were most frequently offered at doctorate-granting universities, 43.3% (Carnegie Classification).

Specialty Career Courses

This section begins with a focus on career courses in the business curriculum and then moves to other discipline-based career courses. It concludes with reports on procedures for developing and managing career courses.

Montana (1989) surveyed business schools across the nation and found that 64 percent ($N = 120$) of the respondents offered some type of career planning and development instruction, and nearly 50 percent offered formal instruction. In 43 percent ($N = 81$) of the schools, the career planning and placement staff provided the instruction. Brooks (1995) described two career courses offered at North Carolina State University in the business area. Using a case study approach, Brooks offered suggestions to other professionals interested in teaching career courses. Brooks reported that career course participants tended to begin their career planning earlier, develop greater self-awareness, grasp realities of the job market, and write their resumes before graduation. She also reported positive evaluations by employers. A post-course evaluation form developed by the author and completed by students formed the

basis for comments as to the value and usefulness of these courses. Finally, Gordon (2005) described a 3-credit, 14-week elective course, “Marketing Yourself: Job-Hunting Skills for the Rest of Your Life,” offered by the marketing communication department at Columbia College Chicago and team-taught by instructors with career services, marketing, and executive search experience. The article included details about course activities and procedures.

Using a case study method, Heppner and Krause (1979) described a course offered at the University of Nebraska-Lincoln (UNL) that consisted of two hours of academic credit. The course was designed such that each academic department or college could offer the course within the department and use departmental faculty to teach the course. The authors suggested this course system could be an efficient use of career counselors’ time through employing the use of academic department faculty to increase student career development competencies. In a report on career course development in the speech department at the University of Rhode Island, Erhart and Gilmore (1977) discussed some of the issues encountered by career professionals in obtaining approval from academic committees to award credit for career development courses. In spite of these obstacles, a credit course on interviewing, including job hunting, was successfully launched at the upper division level.

In the field of psychology, Landrum, Shoemaker, and Davis (2003) found that 34% of these departments offered career-related courses, either as introductory courses on exploring careers in psychology or as capstone courses for seniors focused on the job search or graduate school. They also reported national survey results of the important topics to be included in such a course. For example, an undergraduate course at Auburn University (Buskist, 1999) was designed to prepare students for graduate study in psychology. Lattal (1980) described the development of a one-credit, pass-fail course at the University of West Virginia and students preference for this program rather than a noncredit colloquium or dissemination of written materials. Dillinger and Landrum (2002) described the development of a one-credit, pass-fail course at Boise State University. They noted “Introduction to the Psychology Major,” taken by both majors and nonmajors ($N = 190$), was helpful in informing students about the major and careers related to psychology. Dodson, Chastain, and Landrum (1996) described the development and operation of a junior/senior team-taught credit course for psychology majors. They noted that the course was graded pass/fail, student journaling was required, graduate school options were emphasized, no written papers or text were used, and quantitative assessments were used to evaluate the course. Zechmeister and Helkowski (2001) developed a career course that emphasized each student’s research on a career of interest in relation to a major in psychology. Students shared the results of their research with classmates as well as other students who did not enroll in the course. The authors reported that knowledge about psychology related occupations as well as other occupational areas were improved for both enrolled students and others. Macera and Cohen (2006) described the one-credit Psychology as a Profession course offered at West Virginia University for over 20 years. Required for pre-psychology majors, the course covers a range of goals related to educational and career planning.

Over the years, various authors have described alternative strategies for developing and managing career courses. To assess alternative methods of instruction in a career course, Salinger (1966) reported a four year course development project at Ferris State College. Beginning with a highly structured approach, the course evolved to one that featured small group discussion on career topics and the extensive use of outside resource persons. A similar course development activity intended to increase an awareness of gender roles in career planning was reported by Gerkin, Reardon, and Bash (1988). Bradley and Mims (1992) reported how family systems and birth order were used as the basis for a college career decision-making course. Filer (1986) discussed varied issues in grading student performance in career courses. Four other articles by Barkhaus and Bolyard (1977), Lee and Anthony (1974), Swails and Hess (1977), and Ramsey (1973) were published in the *Journal of College Placement* in the 1970s that described the development of comprehensive university-level career courses. The latter

course was designed especially for women. Smith, Myers and Hensley (2002) suggested that the Wheel of Wellness, a holistic, multidisciplinary model of wellness and prevention over the life span, could provide an integrated conceptual base for a career course.

Swain (1984) described the development of a comprehensive, three-credit course developed at the University of Illinois. This course, Ed Psych 250 Career Development Theory and Practice, was jointly offered by the Educational Psychology Department in the College of Education, the Career Development and Placement Center, and Division of Counseling Psychology (counseling center). Ed Psych 250 was theory based, open to students at all undergraduate levels, taught by graduate students supervised by a faculty member, and offered in 5-10 sections per semester.

Meta-Analyses of Career Course Results

In an effort to learn more about the impact results of career courses, several meta-analyses provide insight into the effects of career-related courses. Spokane and Oliver (1983) reported that group or class interventions were more effective than individual counseling or other interventions. Later, Oliver and Spokane (1988) reported an analysis of 240 treatment-control comparisons in 58 studies comparing 11 different types of career interventions. They found that career guidance classes produced the largest effect size with regard to client gains resulting from the assortment of career interventions considered. Classes also involved the largest number of hours and sessions, but were the most expensive intervention according to Oliver and Spokane (1988). Hardesty (1991) also conducted a meta-analysis consisting of 12 studies that evaluated career development courses offered for credit. Results of this meta-analysis confirmed previous research findings as to overall positive effects of undergraduate career courses on increasing both career decidedness (48% more certain) and career maturity (40% more capable of making a realistic decision) of college students. However, Hardesty noted that the long-term effects of career courses, e.g., within a year or two or longer after completion of the courses, had not been established.

A later meta-analysis by Whiston, Sexton and Lasoff (1998) examined 47 studies conducted between 1983 and 1995, including nine studies of career classes. Whiston et al. (1998) found that career classes were the third most effective career intervention out of eight different categories of interventions examined. Career classes followed individual and group counseling in effectiveness, but were ahead of group test interpretation, workshops, computer interventions, counselor-free interventions, and other nonclassified interventions. The researchers found classes followed counselor-free interventions and computer interventions as least costly. These findings are similar to those reported by Oliver and Spokane (1988) ten years earlier, except for the matter of cost.

Brown and Krane (2000), in reviewing a series of meta-analyses, concluded that demonstrably effective career interventions, including career courses, have 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 study of models and mentors who demonstrate effective career behavior; and (5) assistance in developing support networks for pursuing career aspirations. Brown and Krane suggest that persons designing and evaluating the impact of career courses should assess the extent to which at least three of the five components are included in the course.

Whiston and Rose (2013) observed that “research indicates that individual career counseling and career classes are the most effective modalities. . .there is still room for additional research related to which modalities are most effective with which clients under what circumstances. In particular, for emerging adults in either high school or college, there are questions regarding the efficacy of career courses and specifics about what constitutes the most effective curriculum” (p. 366).

Special Features of Career Courses

In reflecting on the research available at the time, Gimmestad (1984) provided an insightful discussion about the use of instruction in career planning. He pointed out the benefits of a systematic approach to delivery of career services provided by career course interventions. The course provides for efficient use of staff and delivery of services. Even more important, when academic credit is involved, the sponsoring institution almost always stands to benefit due to commonly used funding formulae that are based on the generation of student credit hours. Indeed, credit career courses are somewhat unique among other career interventions, e.g., individual counseling, in that students actually pay for the intervention prior to service delivery. Sounding a recurring theme in this literature, Lent, Larkin, and Hasegawa (1986) noted that the efficient delivery of career services to large numbers of students is a major advantage of career planning courses.

The growing interest over the past few years in career development courses has become international in scope. The Open University in the United Kingdom has introduced a university wide optional for-credit module on personal career development (Watts & Hawthorn, 1992). Additionally, Peng (2001) and Peng and Herr (1999) reported on the positive effects of a career education courses on career related decision-making among different groups of college students in Taiwan. Chien, Fisher and Biller (2006) also reported on research with a career course in Taiwan. Browley (1986) and Hung (2002) reported on the effectiveness of career courses in Canada, and Crozier (1998) described a credit career course in Australia.

In concluding this overview of career courses, we checked Amazon.com/ and found scores of books including a wide variety of topics being used as texts for college level career courses. It is apparent that there is a strong interest in writing and publishing career course textbooks, which may be indicative of a strong market demand for such materials.

Outputs and Outcomes

A review of the impact of college career courses can be framed in terms of accountability, or the outputs and outcomes of this career intervention. These two concepts are part of the five basic elements of accountability in human service interventions, i.e., diagnosis, prescription, process, output, and outcome, which were discussed by Peterson and Burck (1982) in proposing an accountability model for human services programs. *Outputs* refer to the skills, knowledge, and attitudes acquired by participants as the result of an intervention (Peterson & Burck, 1982). Specific examples include more positive career planning thoughts, and increased career decidedness, vocational identity, internal locus-of-control, and career maturity. In contrast to output variables, *outcomes* of career service interventions refer to the resultant effects occurring at some later point in time. Examples of outcomes of a career planning course are job performance ratings, course satisfaction, level of personal adjustment, deciding on a major, timely graduation from college, and cumulative GPA.

In reviewing the research literature on the effects of career courses, an understanding of the distinction between *outputs* and *outcomes* is helpful in evaluating the studies. For example, most of the research we found was focused on outputs, e.g., changes in level of vocational identity or career maturity, or improved decision-making skills. In contrast, only a few of the studies were concerned with an outcome variable, and it was retention in college. This matter led Fretz (1981) to worry that in evaluation studies “So many career interventions are focused on students in the educational system that outcomes more appropriate to persons already in or about to enter the world of work have been neglected” (p. 85). Moreover, Fretz urged that evaluations of career service interventions should employ outcome rather than

output criteria to the extent possible. In like manner, Peterson and Burck (1982) stated, “By using the attainment of competencies to connote output and their resultant efforts as outcomes, a sharper perspective on human service work is gained that may well lead to more effective decision making that will in turn result in more effective, efficient, and worthwhile programs” (p. 495).

Research on both the outputs and outcomes of career courses is needed, but the ultimate value of career courses in higher education will probably be most affected by outcome research that documents the impact of courses on student retention in and graduation from college and the quality of work and life roles after college. However, outputs remain important in our understanding of outcomes, as they are inextricably linked or related. In this regard, Tinto (1993) noted that indecision with regard to career goals, an output variable, is one of the factors that may influence student retention, an outcome variable. Tinto suggested that prolonged career uncertainty by students leads them to call into question the reasons for their continued presence on campus (Tinto, 1993). Sounding a similar theme, Noel, Levitz, and Saluri (1985, p. 12) summarized the matter this way: “My experience indicates that the second major theme of attrition, uncertainty about what to study, is the most frequent reason talented students give for dropping out of college.”

To summarize this discussion of the outputs and outcomes of career courses, Tinto and Noel suggested that output variables, such as career indecision, may have a direct effect on outcomes, such as retention in college. This understanding is helpful in evaluating career courses with respect to accountability.

Studies of Career Development Course Outputs

It was not until the 1970s that formal research on career courses began to appear in academic journals. For the most part, career services professionals could only guess as to the effectiveness of these courses prior to this time (Gimmestad, 1984). Many of the studies before 1980 were plagued by methodological shortcomings, such as the failure to employ adequate controls for extraneous effects upon outcome measures (Lent, Larkin, & Hasegawa, 1986). In spite of these problems, the early studies of career courses conducted in the 1970s provided an indication of the effectiveness of these courses which was later confirmed by more methodologically sound research.

The study of career development courses has continued to the present time. In this review of literature we found 88 studies in 80 articles that reported outputs and outcomes (see Table 1). Twenty-one (24%) of the studies cited are dissertation reports (Baldwin, Bash, Bollman, Broley, Crommett, Folsom, Frederiksen, Kilk, Lisansky, McClair, Montolio, Oreshnick, Poole, Robinson, Salter, Shearer, Smith-Keller, Wachs, Weist, Wiseman, and Williamson) and one is unpublished (Schmidt). In the following paragraphs, we will briefly describe the dependent variables used as outputs and major findings in the studies we reviewed. We begin with the earliest studies.

 Insert Table 1 about here
 Summary of Studies of Career Course Outputs and Outcomes

Table 1 includes more than six outputs that are measured by standardized instruments. In this paragraph, we introduce the most frequently used outputs, generally in the order of their presentation in the table. The career maturity output reported in several studies was measured by the Career Maturity Inventory (CMI; Crites, 1973) and reflects subjective reactions toward making a career decision along with other cognitive variables involved in a career choice. A related instrument, The Career Development

Inventory (CDI; Super, Thompson, Lindeman, Jordaan, & Myers, 1981), assesses statements of occupational preference, knowledge of self and career, and career planning orientation. Internal locus of control refers to increased autonomy and self-reliance with career planning and decision making as measured by Rotter's Internal-External Locus-of-Control Scale (Rotter, 1966). The career decidedness or decreased career indecision output is intended to capture those studies that either reported increased career decidedness or reduced career indecision. This output is often measured by the Career Decision Scale (CDS; Osipow, Carney, Winer, Yanico, & Koschier, 1976). Career decision-making ability refers to skills at making career decisions with a more rational career decision-making approach. The vocational identity outcome is concerned with clarity of vocational goals, interests, and personality and is measured by the My Vocational Situation (MVS; Holland, Daiger, & Power, 1980). The career thoughts output is measured by the Career Thoughts Inventory (CTI; Sampson, Peterson, Lenz, Reardon, & Saunders, 1996).

At this point, we want to add an additional word about the Career Thoughts Inventory (CTI; Sampson, Peterson, Lenz, Reardon, & Sanders, 1996). Since its publication in 1996, investigators such as Grier-Reed, Skaar and Conkel-Ziebell (2009); Kilk (1997); Osborn, Howard and Leierer (2007); Reed, Lenz, Reardon and Leierer (2001); and Bertoch, Lenz, Reardon, and Peterson (2013) have begun to examine the role of thinking in career problem solving and decision making. The CTI is based on cognitive information processing (CIP) theory (Peterson, Sampson, & Reardon, 1991; Peterson, Sampson, Reardon, & Lenz, 1996). Three construct scores are included in the CTI assessment: Decision Making Confusion, which is characterized by inability to begin or continue the career decision-making process; Commitment Anxiety, which is characterized by reluctance to commit to a single career choice; and External Conflict, which denotes negative thinking concerning the balancing of one's own career perceptions against those of significant others (Sampson et al., 1996). In a criterion-related validity study, Sampson et al. (1996) reported that the CTI accurately discriminated between clients (those seeking career services) and nonclients, with clients always indicating more negative or dysfunctional career thoughts.

Career Course Output Studies, 1970-1979

In one of the earliest studies in the 1970s, Babcock and Kaufman (1976) used two experimental groups and one control group to study outputs of a career course. The student body of the academic departmental site used in this study consisted of mostly females, and thus men were omitted from the study. One treatment group was composed of members of a career development class, "Career Environment and Individual Development," and a second treatment group was composed of students not in the class that had requested individual career counseling. The control group consisted of a group of students who received neither of the treatments. The primary measuring instrument used in the study was a revised version of the CDI (Super et al., 1981). Results indicated that the career development course was more effective than counseling or no treatment at facilitating vocational development of the women in the study.

Touchton, Wertheimer, Cornfeld, and Harrison (1977) created a career course at the University of Maryland based on cognitive development theory (Knefelkamp & Slepitzka, 1976). This model sought to move students from a dualistic level of thinking to a more complex level identified as multiplicity. The two sections of the experimental course were based on a developmental theory of instruction and cognitive development, the two traditional sections were taught by instructors with no knowledge of developmental instruction, and one section was taught in a mixed format. Touchton et al. (1977) reported that the experimental course produced the largest gains in cognitive complexity with respect to careers.

Evans and Rector (1978) conducted a study similar to many others of this time period that established the value of a career guidance course in increasing the career decidedness of participating students. The independent variable in this study was a college credit course, “Decision Making for Career Development.” The dependent variable was students’ vocational development as determined by pre- and postcourse scores on the Vocational Decision Checklist (VDC; Harren, 1978), as well as another questionnaire developed for the study by the researchers. Results provided evidence of the effectiveness of the course in facilitating the vocational decidedness output of students who completed the course.

Indicative of increased rigor in the research methodology of these studies was an evaluation of a career development course conducted by Ganster and Lovell (1978) that used a quasi-experimental design. The sample consisted of both students taking a business management class and students enrolled in a career development seminar. A 2 x 2 factorial design was employed in order to control for both initial comparability of the control and treatment groups and for any possible re-testing effects. The measuring instrument was the CMI (Crites, 1973). This instrument assesses subjective reactions toward making a career decision along with other cognitive variables involved in a career choice. Results demonstrated the effectiveness of this career development seminar in increasing the level of career maturity of college students.

Locus of control was the output variable of interest in a study conducted by Bartsch and Hackett (1978). A pretest, treatment, posttest design was employed in administering Rotter’s Internal-External Locus-of-Control Scale (Rotter, 1966) to participants in a course entitled “Effective Personal and Career Decision Making.” The study involved use of two experimental and two no-treatment control groups. A primary finding of the study was that students who had participated in this two-credit course altered their locus-of-control beliefs toward greater internality, which is believed to lead to increased autonomy and responsibility with career planning and decision-making.

Williamson (1979) sought to evaluate the effectiveness of a career planning and decision-making course intended to assist freshmen and sophomore college students with career decision making. A comparison group was used in this study. The career planning decision-making output was measured using Harren’s (1978) Assessment of Career Decision Making. This instrument was used in numerous studies during this time period to test effectiveness of career counseling or instructional interventions (Williamson, 1979). The study also examined the internal-external decision orientation of students who had completed the course using Rotter’s (1966) Locus-of-Control Scale. Results of this study indicated that those students who completed the course, compared with those who did not, demonstrated higher levels of career decision making concerning choice of a future occupation. The two groups were found to be similar in terms of internal-external decision styles (Williamson, 1979).

Career Course Output Studies, 1980-1989

Several studies of career courses found limited or no positive outputs from career courses (see Table 1). For example, Weist (1980) examined the effects of a life career-planning course on self-esteem, career maturity, and sex-role stereotypes and found little evidence to indicate that participation in a career-planning course would lead to changes in the outcome variables of interest. Also, Baldwin (1981) reported on a study of the effects of a career development course on career maturity levels using the Career Development Inventory (CDI; Super et al., 1981). For the most part, results showed a lack of increase in career maturity as measured by the CDI. Only the “Resources for Exploration” scale of this instrument showed a significant pretest to posttest increase.

As was the case with Ganster and Lovell (1978) earlier, Smith (1981) used the CMI (Crites, 1973) to evaluate the outputs of a career guidance class. This study included two career guidance classes

and a control group comprised of randomly selected students living in a residence hall who did not participate in the course. Smith was also interested in comparing the two career guidance classes relative to some philosophical and methodological differences used in teaching the course. In examining the results, Smith (1981) found that the more highly structured class significantly exceeded the less structured class and the control group in measures of career maturity. These findings suggest that the effect of a career course may be dependent on a high level of class organization or structure.

Ware (1981) conducted a second study of a career course using the CMI (Crites, 1973) as a primary measuring instrument. The objective of this study was to evaluate the outputs of a career development course for upper level psychology majors. The experimental group consisted of upper division psychology majors enrolled in a career development course and the control group consisted of psychology majors who did not enroll in the course. Results provided evidence that the course appeared to be effective in increasing students' career maturity and level of self-knowledge.

Another study of this period that used effective control measures in evaluating career development courses was conducted by Barker (1981). This researcher evaluated the effectiveness of a pilot career planning and decision-making college course, which was developed by the Division of Career Guidance at Appalachia Educational Laboratory. The study involved field testing the course at 14 participating colleges. A nonequivalent control group design was employed utilizing 15 experimental and 15 control classes. The control classes were similar to the experimental classes in terms of class structure, organization, student composition, and student desire to participate in a career guidance class. However, control group classes consisted of academic classes that did not deal with career development issues. Students were pre- and posttested using both the Assessment of Career Decision Making (ACDM; Harren, 1978) and a researcher-developed post-course evaluation survey. The ACDM is based on the career development theory of Tiedeman and O'Hara (1963) and assesses style of decision making and level of progress in completing several college-related career development tasks, including adjustment to college, major selection, and occupation selection (Barker, 1981). A student survey developed by the researcher had been previously validated through pilot and field testing. It was designed to test the following outcomes: self-knowledge, knowledge of career milieu, and decision-making ability (Barker, 1981). Analysis of the data indicated differences in many of the criteria that were examined between experimental and control groups, including a positive effect on career decision-making ability and selection of a major. Barker (1981) reported the summative evaluation indicated the effectiveness of this pilot course as a career development intervention.

Johnson, Smither, and Holland (1981) evaluated two career development courses at Johns Hopkins University to see what kinds of interventions were helping which students. The courses were listed as seminars and included a variety of interventions, e.g., inventories, workbooks, written assignments, individual counseling, and students were asked to evaluate each activity. The seminar was offered five times, with the first three providing less structure and the last two were more structured and organized around a specific career decision-making model. Johnson et al. (1981) found a strong impact of the course on increasing vocational identity as measured by the MVS (Holland et al., 1980).

Crommett (1982) investigated internal locus of control and cognitive development of 44 students who completed a career development course based on Perry's Theory of Cognitive Development (1970). Cognitive development was measured by the Knefelkamp-Widick Scale, and internal locus of control was assessed by the Adult Nowicki-Strickland Internal-External Locus of Control Scale Form G. Three groups were compared: two different sections of a career development course and one psychology class. The results revealed that students in the career course based on Perry's theory significantly increased in internal locus of control and cognitive development in contrast to the comparison class students.

However, the students in the developmentally designed career class did not improved in internality and cognitive development in comparison with students in the traditionally taught class.

Stonewater and Daniels (1983) reported the development of Guidance 100, a first year two-credit course at Southern Illinois University—Carbondale designed to help students acquire knowledge and skill in career planning. In a comparative study of this course and an introductory psychology course using an instrument developed by Knefelkamp and Slepitz (1976) and the Student Development Task Inventory (Winston, Miller, & Prince, 1979), Stonewater and Daniels found that students in Guidance 100 made significant gains in cognitive development from the beginning to the end of the course.

Rayman, Bernard, Holland, and Barnett (1983) used the My Vocational Situation (MVS; Holland, Daiger, & Power, 1980) to evaluate effects of a career course on undecided college students. The vocational identity output as measured by the MVS is concerned with the clarity of vocational goals, interests, and personality. A pretest, midterm, posttest procedure was conducted using a relatively large sample of 255 students in 11 sections of a one credit course. Results indicated that the treatments included in the course had a positive effect on vocational identity as measured by the MVS. Moreover, these gains did not appear related to the sex of the instructor, sex of the student, tentative major, age of the instructor, educational level of the instructor, or commitment to teaching the course on the part of the instructor. However, gains in vocational identity were not consistent across the 11 week term, because men showed gains in the period leading up to midterms and women had gains in identity scores following midterms.

Poole (1983) explored how the interaction between students' cognitive complexity and course design influenced career maturity. The structure of the career course was manipulated from 'low structure' to 'high structure' in terms of four points: (1) instructor behaviors, (2) course content, (3) room size, and (4) instructional methods. The degree of cognitive complexity was quantified by assessing "cognitive integration" and "cognitive discrimination." The Career Maturity Inventory (CMI; Crites, 1973) was used to assess career maturity. The hypotheses of this study were that matching the students high in cognitive complexity with low structure course design and the students low in cognitive complexity with high structure course design would increase career maturity. Forty-seven students who matriculated in a free, four-week career course were randomly assigned to either a "high structure" or "low structure" class. Results showed that cognitive integration interacted significantly with course design increasing participants' career maturity, which supported the hypothesis although main effects were not significant.

Remer, O'Neill, and Gohs (1984) used a rather complex research design intended to gauge multiple outcomes of a life-career development course. This study consisted of eight career-related inventories administered pre- and postcourse including 12 sub-scales to assess the impact of the course. Given that a randomly assigned control group was not feasible, a modification of the institutional cycle design was used (Cook & Campbell, 1979). This is a type of cohort design that uses "cohort similarity" to control for several threats to validity not otherwise possible with a simpler pre-post design absent a control group (Remer, O'Neill, & Gohs, 1984). Among the positive results reported, course participants became more certain about career choices, more rational in their career decision-making process, and clearer in their vocational identity.

Carver and Smart (1985) reported that students in a career and self-exploration course reduced their career indecision as measured by the Career Decision Scale (CDS; Osipow, Carney, Winer, Yanico, & Koschier, 1976). This instrument was initially designed to measure the level of academic and career indecision of college students. In addition, the CDS has been shown to be quite sensitive to changes in college student career decisiveness fostered by career development programs, and test-retest reliability

and criterion validity have shown the CDS to be good (Osipow et al., 1976). Carver's methodology included use of a quasi-experimental design which sought to strengthen content validity by controlling for such extraneous variables as class level, age, sex, level of financial aid, college residence, and undecided status. In addition, Carver and Smart (1985) used a pre- and immediate postcourse assessment procedure with the CDS. They suggested that future research address longer-term affects of career development courses, such as retention.

A second study conducted by Ware (1985) used the MVS (Holland et al., 1980) in addition to the CMI (Crites, 1973) as the measuring instruments to assess the outputs of a career development course on upper-level psychology students. A pretest-posttest design was used. No significant differences were found concerning the CMI measures, but significant pretest to posttest differences were found with each of the three MVS sub-scales (vocational identity, need for occupational information, and barriers to career planning). Ware (1985) concluded that these results indicated the course was achieving desired objectives with upper division students, particularly with the increased levels of vocational identity that were indicated.

Lent, Schmidt, and Larkin (1985) reported the development and impact of a career course in science and technology for returning adult students at the University of Minnesota. This work involved the adaptation of an existing 2-credit course, Introduction to Careers in Science and Technology, for students with an interest in technical careers. Occupational information related to science and technology occupations consumed about 60% of the course. Lent et al. (1985) found that the students improved in career decision making as measured by the Career Decision Scale (Osipow et al., 1976). They also noted that they students reported increased self-knowledge in relation to careers, knowledge of career information, and career-information seeking behavior outside of the class. They suggested that such targeted career courses might also be effective in other fields, e.g., social services, business, the arts.

Wachs (1986) conducted a study aimed at assessing the effects of a career planning course on Holland's construct of vocational identity (Holland et al., 1980). A comparison group was composed of students enrolled in non-career related courses. Both groups were pre- and posttested using the MVS (Holland et al., 1980). Results demonstrated that women who had completed the career planning course had higher scores in vocational identity as measured by the MVS than their counterparts in the comparison group, but this finding was not true for men. Wachs (1986) postulated that this difference in treatment output according to gender may have been due to the fact that pretest vocational identity scores for the women in the treatment group were significantly higher than pretest vocational identity scores for men in the treatment group. In general, studies of career course outputs have not reported gender differences in the results.

Similar to the study by Bartsch and Hackett (1978) earlier, Broley (1986) evaluated the effect of a career development course on the locus-of-control of female undergraduate students. The experimental group consisted of 22 female students enrolled in a career development course and the control group consisted of 22 female students enrolled in a psychology course with no career-related content. Results indicated that the students who completed the course had significant increases in internality of locus-of-control relative to career decision-making in comparison with those students who did not complete the course.

Using the previously discussed CDS, (Osipow, Carney, Winer, Yanico, & Koschier, 1976) and CMI (Crites, 1973) as measuring instruments, Davis and Horne (1986) compared the effects of a small-group counseling and a career course on career decidedness and maturity. A pretest, treatment, posttest design was used. The study did not use a control group due to practical constraints. Results indicated no significant difference between the group counseling and career course treatments, although both the CMI

and CDS measures indicated significant pretest-posttest increases in scores following the interventions. The researchers concluded that career development courses may be just as effective as small group career counseling at effecting positive changes in career decidedness and maturity of college students. However, they noted that career development courses were the more cost-effective intervention.

Lent, Larkin, and Hasegawa (1986) completed a study that sought to depart from the shortcomings of past studies failing to use adequate controls for extraneous variables. Their study employed a quasi-control condition in order to account for general occupation objectives, age, GPA, and class level. The sample included science and engineering students. The CDS (Osipow et al., 1976) was used as the measuring instrument, and the commonly used pretest, treatment, posttest design was employed. Results indicated that students who completed the career course reported significantly less postcourse career indecision than did the quasi-control group.

Bash (1987), in a pretest-treatment-posttest design study of a career course, sought to examine changes in irrational beliefs, vocational identity, consistency in interests related to Holland's (1997) theory, and career decision making certainty/satisfaction. Posttest results indicated that vocational identity measured by the MVS (Holland et al. 1980) increased from pretest levels, and certainty/satisfaction with vocational choice increased the most for students with the lowest vocational identity at the pretest. Bash (1987) suggested that students with the lowest vocational identity had the most to gain in completing the career course.

Another study addressing effects of a career and life planning course on vocational identity and college adjustment was reported by Montolio (1988). The "Vocational Identity Scale" from the MVS (Holland et al., 1980) was administered pre- and postcourse to both a treatment group (class participants) and a control group consisting of randomly selected students from residence halls, the Greek system, and 13 students who registered for the career and life planning course, but subsequently dropped. Results showed that students who completed the career and life planning course had significantly higher scores on the vocational identity scale of the MVS and better adjustment to college.

During this period, two studies failed to show positive change in output variables used in a study of a career course. In one of them, Wiseman (1988) used the CDS (Osipow et al., 1976) and the Career Decision-Making Self-Efficacy Scale (Taylor & Betz, 1983) to study the influence of a career course and a career course cognitive restructuring combination on self-efficacy, career decidedness, and career indecision. A pretest-posttest design with a control group was used. The results indicated no significant changes in the outcome measures.

Taking a slightly different approach, Quinn and Lewis (1989) reported an effort to incorporate career instruction into an existing upper-division business personnel and organization behavior course. The career instructional materials included use of SIGI PLUS, development of a job campaign strategy, writing a resume, and attending employability presentations. Using a matched control group and the Career Decision Scale (Osipow et al., 1976), Quinn and Lewis found career certainty increased for the course treatment group. They suggested that career counselors could work as consultants with academic faculty in incorporating career instruction into traditional courses.

Career Course Output Studies, 1990-2000

Garis and Niles (1990) conducted a study that involved students in career planning classes at both Penn State University (PSU) and the University of Virginia (UVA). The study involved 112 students who completed the Survey of Career Development (SCD; Rayman & Super, 1978), the Self-Assessment of Confidence and Progress in Educational/Career Planning (SACP; Garis, 1982), and the

Career Decision Scale (CDS; Osipow et al., 1976). The study also involved a control group and other treatment conditions involving SIGI and Discover. Garis and Niles found significant positive results for the career courses. On the SCD, the career course compared to the control group produced higher scores at both universities; on the SACP, the course produced significant differences at UVA; and on the CDS, the course scores were significantly lower than in the control condition at PSU. They concluded that the career courses were highly effective in positively affecting career output measures.

Kern (1990) examined the effect of a career planning and decision-making course on career indecision and self-concept. The experimental group included students that had enrolled in a “World of Work” course and a control group of students that had enrolled in a sociology course. The CDS (Osipow, et al., 1976) was used as the instrument to measure career decidedness. In addition, the Tennessee Self-Concept Scale (Fitts, 1965) was used to measure changes in the nature of students’ self-concept. A pre-posttest procedure yielded results indicating that students who participated in the career planning and decision-making course did not experience a decrease in their career indecision and actually had higher levels of career indecision than the comparison group. This finding was partially explained by the fact that students with higher initial levels of career indecision chose to enroll in the career planning and decision-making course. In addition, results indicated no significant within group change or difference between the two groups with regard to the self-concept output variable.

Lisansky (1990) sought to evaluate the effects of a life and career planning course on the cognitive style of decision-making and level of career decidedness of undecided freshmen college students. An experimental group and a control group were used. The previously discussed CDS (Osipow et al., 1976) was the measuring instrument used in this study. CDS score results did indicate that the experimental group had more rational, less dependent career decision-making styles, and showed an increase in the level of career decidedness. Higbee and Dwinell (1992) found significant positive increases in the tasks of establishing and clarifying purpose, career planning, educational involvement, lifestyle planning, and life management of freshmen enrolled in a self-awareness course.

Oreshnick (1991) reported results of a study indicating enhanced career decision making resulting from a university career course intervention. A control group was used in this study. The measuring instrument was the Career Decision-Making Self-Efficacy Scale (CDMSE; Taylor & Betz, 1983), which is an instrument designed to assess students’ career decision-making expectations. Results indicated significant pretest-posttest increases in career decision-making self-efficacy for the treatment group compared to the control group. Higbee and Dwinell (1992) used the Student Development Task Inventory (Winston, Miller & Prince, 1979) to study the changes in personal development of underprepared freshmen in a self-awareness course. Although not a “career” course per se, they found that students made progress in establishing educational and lifestyle goals in college, life management, and career planning.

Johnson and Smouse (1993) conducted an output study which also employed the use of a control group. Researchers sought to control for common factors including age, gender, ethnicity, college class, and GPA. The measuring instrument was the Career Decision Profile (CDP; Jones, 1989), which includes six sub-scales related to career decision: decidedness, comfort, self-clarity, knowledge of occupations, decisiveness, and choice importance. This multi-dimensional assessment revealed greater specificity as to which career-decision problems may be best treated by a career planning course. The instrument was administered during the second week of the course and again during the final week of class. In comparison with a control group, students in the career class indicated a significant increase in career decidedness, comfort, and self-clarity as measured by the CDP.

Henry (1993) examined the impact of three different kinds of credit courses on the vocational identity of 64 undergraduate and graduate students in a medical/dental preparatory program. The overall program was intended to increase the number of qualified applicants underrepresented in the medical profession. The courses were an orientation seminar, a medical seminar, and a clinical experience. Significant increases were made on the three scales of the MVS (Holland et al., 1980), indicating higher vocational identity, less need for occupational information, and fewer barriers to vocational plans by students in the course. No control group was used in this study.

Robinson (1995) reported on a pretest-posttest study of the effects of a career course on the career maturity of undergraduates. The measuring instrument was the Career Development Inventory (CDI; Super et al., 1981). The CDI was developed in response to the unidimensional feature characteristic of previous measures of career maturity such as the CMI (Crites, 1973). It is rooted in developmental theory and characterized by principals such as “mature individuals select and pursue goals” (Thompson et al., 1984, p. 2). According to the results of Robinson’s study, participation in the career course by students appeared to positively affect the output of thinking about career planning as indicated by more positive career attitudes.

A similar study by Peng and Herr (1999) used a treatment and control group design with the CDS (Osipow et al., 1976) as the pretest-posttest measure. The design of the study included two experimental groups and one control group. Results confirmed prior research by indicating that students who had completed the course demonstrated greater certainty and decreased indecision on CDS posttest results than did the control group students. Peng and Herr did not find differences on the Career Beliefs Inventory (Krumboltz, 1991).

In an outcome study related to career thoughts, Kilk (1997) found that scores on all three CTI scales (Sampson et al., 1986) distinguished between students who had selected a field of study and students who had not selected a field of study. Her research also showed that the Decision Making Confusion scale differentiated between those students who had completed or who were enrolled in a college career course and those who had not completed a college career course. This finding could be considered an output of enrollment in a career course. There was also a significant difference in the DMC and EC scores between those students who had completed or who were enrolled in a college career course and the students who comprised the normative sample for the CTI instrument, further output results. In summary, Kilk (1997) showed that the CTI scales could differentiate among students with regards to the status of major indecision and enrollment in a career course.

In an unpublished study, Schmidt (1999) analyzed the pretest-posttest measures of a sample of 378 students who completed the career course at California State University—Long Beach. Students were tested on Rotter’s (1966) ten-point Locus-of-Control Scale and the CDS (Osipow et al., 1976). On the Locus-of-Control Scale, results indicated a statistically significant increase in pre-post course gains in internality of locus-of-control. Likewise, results indicated a statistically significant increase in career decidedness by students who completed the course as measured by the CDS.

Halasz and Kempton (2000) compared a credit career course, Exploring Careers, with two non-career related courses. Using both developmental and experiential instructional techniques to increase learning about careers in psychology, the researchers administered the CDS (Osipow et al., 1976) as a pretest-posttest measure of course impact on career certainty and indecision. They found that students in the career course, in comparison to students in another psychology course and a communications course, indicated more comfort with their career decision-making situation and more certainty about their career choices.

Career Course Output Studies, 2001-2014

Hung (2002) examined the impact of a career course at Dalhousie University. The sample was composed of 48 students and the design was a pre- and post-course study using the Career Decision Scale, the Career Maturity Inventory, and the Career Factors Inventory. Results showed increased career certainty and decreases in career indecision, career choice anxiety, and generalized indecisiveness. Hung reported some differences between men and women on various measures, e.g., women had significant mean score changes on measures of anxiety, indecisiveness, certainty, indecision, and career competencies, while men showed change only on increased need for self-knowledge.

Thomas and McDaniel (2004) described a one-credit graded career planning course required for psychology majors at Northern Kentucky University. The course is designed to increase (1) student knowledge about career options for psychology majors, (2) confidence in self-knowledge and career decision making, and (3) movement toward a vocational identity. The article summarizes two studies assessing course effectiveness. In the first study, a quasi-experimental design was used comparing students in a co-requisite research methods course and the career course. Results indicated that students in the career course obtained higher scores on the three sets of measures than students in the comparison group. In the second study which used a pretest-posttest design, students in the career course increased actual career-related knowledge and in career exploration and decidedness.

Reed et al. (2001) evaluated the impact of a career development course on negative or dysfunctional career thoughts with a pretest, midterm, and posttest administration of the CTI. The midterm administration of the CTI took place in conjunction with an explanation of the CTI as a measure of dysfunctional career thinking, which can be a barrier to productive career planning. Course instructors provided interpretive discussions of CTI scores with individual students. The course text (Reardon, Lenz, Sampson, & Peterson, 2000) includes a discussion of cognitive information processing theory and the procedures for reframing negative career thoughts. Results of the study indicated that posttest CTI scores were lower than pretest scores indicating that students completing this course reduced their negative thinking relative to career planning. This finding applied to all three CTI Scales, Decision Making Confusion, Commitment Anxiety, and External Conflict. Indeed, the largest decreases in negative career thoughts occurred with students scoring highest on the pretest (most negative career thoughts). Although test-retest bias combined with test familiarity may have been a factor in the improved CTI scores, researchers concluded from the results of this study that this career development course appears to have a positive effect on reducing negative career thinking, which should lead to more effective educational/career problem solving and decision making.

Osborn, Howard, and Leierer (2007) conducted a study similar to the one reported by Reed et al. (2001). They used a one-credit six week career course composed of 158 racially and ethnically diverse college freshmen who were “alternative admits” to the university and found that students with the most dysfunctional thoughts as measured by the CTI showed the most dramatic decrease in negative career thinking, irrespective of gender, race or ethnicity. They concluded that even a one-hour course meeting for six weeks can have a positive effect on cognitive career behavior.

Reese and Miller (2006) examined the effects of a career development course on career decision-making self-efficacy. A pretest-posttest nonequivalent group design compared students who completed the course ($n = 30$) with a quasi-control group of students who were enrolled in an introductory psychology course ($n = 66$). The results indicated that students who completed the career course showed increased career decision-making self-efficacy overall, specifically in the areas of obtaining occupational information, setting career goals, and career planning. The career course also appeared to lower perceived career-decision difficulties. In another study, Scott and Ciani (2008) hypothesized that

undergraduates enrolled in a career exploration course would report significant gains in career decision-making self-efficacy and vocational identity during a semester. They used a repeated-measures MANOVA to assess 88 students' pre-course and post-course career decision making self-efficacy. Results revealed that students reported significantly more adaptive self-efficacy beliefs following the career course, and a time by gender interaction indicated the course was especially effective for increasing women's judgments of efficacy for career planning and problem solving. Subsequent analyses indicated that students also reported a stronger sense of vocational identity following the course.

A novel theory-based study by Tracey (2008) examined the efficacy of Holland's RIASEC structure and several cognitive career decision variables with 283 students in a career class. Tracey examined the notion of student adherence to (or intuitive use of) the RIASEC hexagon structure and the degree to which it varied across individuals and was associated with career certainty, career decision-making self-efficacy, and interest-occupation congruence. Results indicated that adherence to the RIASEC circumplex as a cognitive structure was related to better career decision outcomes. Changes in adherence as a function of instruction in a career class were found to be associated with changes in career certainty, career decision-making self-efficacy, and interest-occupation congruence. The results suggest that thinking about careers in a manner similar to the RIASEC structure is related to positive career decision-making and that there is potential value in directly teaching students about the RIASEC model.

Salter (2009) used a pre-posttest design to compare two different instructional approaches in a college career development course with 52 lower division students. A standard career course plan was used for one group and a special curriculum that included purposeful infusion of the five critical components (Brown & Krane, 2000) into course activities was developed for the other group. The outcome variables of interest were career decision making self-efficacy, career decidedness, career indecision, and the presence of negative career thoughts. Both courses were successful in improving outcomes on each of the four measures, and demographic and personality characteristics did not have a significant impact on students' receptiveness to the course interventions.

Fouad, Cotter and Kantamneni (2009) studied the impact of a course designed to increase career decision-making self-confidence and facilitate career exploration. Results from the Perceptions of Barriers Scale, Career Decision-Making Difficulties Questionnaire, and Career Decision Self-Efficacy Scale-Short Form (CDSE-SF) indicated that career decision-making difficulty decreased, career self-efficacy increased, and barriers showed no change. No control group was used in this study of 73 students in the course. Shearer (2009) examined the multiple intelligences profiles of typical university students and compared them with those of 82 students enrolled in three sequential semesters of a career exploration course. Low intrapersonal intelligence scores were found to be a significant characteristic of undergraduates with moderate and high levels of career confusion.

Grier-Reed and her colleagues have reported on a series of studies involving an undergraduate constructivist career course. Grier-Reed, Skaar, and Conkel-Ziebell (2009) drew upon constructivist career theory and a pretest-posttest design to study 75 underprepared students in six sections of a college career course. Using the CDSE-SF and the Career Thoughts Inventory they found increased career self-efficacy and decreased negative career thoughts, especially decision-making confusion and commitment anxiety. Grier-Reed and Skaar (2010) used a pre-posttest design to examine empowerment (operationally defined as career decision self-efficacy) and career indecision in seven sections of a constructivist career course enrolling 149 students. While 100 students initially agreed to complete the study the final sample consisted of 82 students. The sample included students identified as European American (47%) and students of color (53%). Results revealed significant increases in empowerment but no decreases in career indecision. Grier-Reed and Ganuza (2011) examined the impact of a constructivist career course in improving the career decision self-efficacy for 81 Asian American and African American students over a

5 year period. They found the course increased five elements: self-appraisal, occupational information, goal selection, planning, and problem solving. Finally, Grier-Reed, Skaar, and Parson (2009) found that 115 culturally diverse students in a constructivist career course showed significant increases in empowerment and career certainty and decreases in career indecision in contrast to students in a comparison group.

Johnson, Nichols, Buboltz and Riedesel (2002) assessed the impact of a holistic career and life planning course that met twice weekly for 10 weeks in 13 sections. The treatment group included 132 students while the control group was composed of 77 students enrolled in varied “exploring self” courses meeting 2 hours weekly. Instruments used in the study included the My Vocational Situation (Holland et al., 1980), the Career Decision Scale (3rd revision; Osipow et al., 1976), and the Career Decision-Making Self-Efficacy Scale-Short Form (Taylor & Betz, 1983). Results indicated that the course decreased students’ career indecision and increased their vocational identity and career decision-making self-efficacy. Moreover, the authors noted that the career and life planning course affected career outcomes more than various personal growth courses.

Peng (2001) examined the effectiveness of two different career education courses on college freshmen career decidedness. In order to determine whether differences exist between two different career courses (a cognitive restructuring intervention and career decision skills training intervention) and a control group, the author administered the Career Decision Scale (CDS; Osipow et al., 1976) to 152 college freshmen in Taiwan. The pretest was administered in August 1998 and the posttest was administered in December 1998. Results revealed that there was significant treatment main effect on the indecision scale of the CDS, regardless of gender. Specifically, post hoc analysis of the treatment main effect on career indecision indicated that both career courses were significantly different from the control group. The mean scores for students in two career courses ($M = 38.61$; $M = 39.17$, respectively) were significantly lower than the mean score for the control group ($M = 42.70$). However, the significant differences between two different career courses were not found. The study suggests that career education courses have a positive impact on career decision making.

In another study of Taiwanese college students, Chien, Fisher and Biller (2006) used a pretest-posttest, non-equivalent control group, quasi-experimental design to examine the effectiveness of a 12-week, metacognitive and planned happenstance career training course. They used two career course treatment groups with 71 students and two comparison/control groups with 86 students. Instruments included the Tennessee Self-Concept Scale (TSCS:2; 2nd Edition for Adults), the Learning and Study Strategies Inventory (LASSI), and the Metacognitive Competency Measure (MCM), along with a Course Evaluation Measure (CEM) and attendance at a mock interview activity. The treatment groups significantly increased their career competencies in metacognitive, cognitive, affective, and behavioral dimensions (mock interview activity) over the comparison and non-equivalent control groups.

Thompson and Feldman (2010) used a grant from the Lilly Endowment, Inc. to develop a Let Your Life Speak career course at Santa Clara University. The course was designed to help students articulate their framework of life meaning and increase their sense of vocational calling. Data were collected from 60 students enrolled in four sections of the course, with 56 completing postcourse evaluations and 44 completing both pre-and postcourse evaluations. Measures included the Vocational Identity Questionnaire, Life Regard Index, and the State Hope Scale. Results indicated an increase in students’ sense of vocational calling, greater confidence in the ability to achieve goals, and a deepened framework of life meaning.

Frederiksen (2009) examined the relationship between perfectionism and career indecision among first-semester college students who were undecided with regard to academic major and enrolled in

a career exploration course ($N = 476$). Students completed the Frost Multidimensional Perfectionism Scale and Career Factors Inventory and cluster analysis revealed three distinct perfectionism groups: adaptive, maladaptive, and non-perfectionism. Results indicated that the perfectionism groups scored similarly on the cognitive factors and no group differences were present. However, on the affective factors, the maladaptive perfectionism group reported higher career choice anxiety and generalized indecisiveness than the adaptive perfectionism group. The non-perfectionism group also reported higher generalized indecisiveness than the adaptive perfectionism group. In this study, adaptive and maladaptive perfectionism were associated with different career indecision factors.

Bollman (2009) investigated the effect of a 15-week career exploration course on the career decision self-efficacy of 141 traditional-age undecided college students, utilizing a single group pre-posttest design. The independent variables in this study were research participants' sex, cultural identification, and reported cumulative grade point average. The dependent variable in this study was career decision self-efficacy, which was measured by the Career Decision Self-Efficacy Scale-Short Form (Betz, Hammond, & Multon, 2005). A paired samples *t*-test revealed that traditional-age college students' mean career decision self-efficacy total score increased significantly from the pretest, administered at the beginning of a career exploration course, to the posttest, administered at the end of the career exploration course. One-way analyses of variance found no statistically significant differences between the mean pretest career decision self-efficacy total score of study participants for the variables of sex, cultural identification, and reported cumulative grade point average. One-way analyses of variance of the mean total gain score on the posttest of the CDSE-SF found no significant differences in the total mean gain score of research participants for the variables of sex, cultural identification, and reported cumulative grade point average. A Pearson chi-square analysis revealed that a greater number of research participants who dropped out of the study had reported cumulative grade point averages below 2.0 than those participants who completed the study. An independent samples *t*-test found the participants who dropped out of the study to have a lower mean pretest career decision self-efficacy total score as measured by the CDSE-SF than those who completed the study. A major contribution of this study to the literature was the examination of grade point average on career decision self-efficacy. One implication of this study is that career exploration courses may be an effective intervention in increasing career decision self-efficacy of traditional-age undecided college students, and point to the need for interventions that promote career decision self-efficacy for college students with grade point averages below 2.0.

A study by Reese and Miller (2010) muddied this distinction by referring to output measures, e.g., CDMSES-SF, CDDQ, as "outcome" measures. Notwithstanding this confusion, their study involved modifications of the career course (Reese & Miller, 2006) reported earlier, then modified and monitored over a two-year period. Students in an introductory psychology class were used as a comparison group. Conceptual models for the career class were drawn from CIP theory (Peterson et al., 1996) and Brown and Krane (2000). The sample composed primarily of lower division students in the last two years included 133 and 110 students, respectively. Multiple sections were offered each year of the one credit course and enrollment ranged from 8–13 students per class. Instruments included the CDMSES-SF and CDDQ. Results suggested that modifications in the initial course resulted in large improvements in career decision-making self-efficacy in the second and third years; however, uneven improvement was found over time regarding perceived career difficulties, e.g., lack of motivation, indecisiveness, and dysfunctional myths.

McClair (2010) obtained a sample of 269 college students in two career intervention groups. One group participated in individual career counseling and the other group was in a career planning class. She found that both treatments provided effective career outputs in terms of career self-efficacy, career thoughts, and five critical ingredients of successful career interventions.

Thrift, Ulloa-Heath, Reardon, and Peterson (2012) examined the impact of a career planning unit on 128 students enrolled in 10 sections of a two-credit hour college success skills course at the University of Guam. Participants were assigned to (a) a cognitive intervention using the Career Thoughts Inventory (CTI) workbook, (b) an occupational research project involving an oral report, and (c) a control condition. The course was offered to assist students in preparing for and adjusting to college life, and students in the two treatment groups examined important factors to consider when choosing a major field of study and/or career path. The workbook condition (a) had a significant positive effect on the CTI total score, whereas the research condition (b) and the control condition (c) did not. Both workbook and research conditions had a significant positive effect reducing decision-making confusion and commitment anxiety. Thus, both class interventions appeared to be as equally effective in reducing confusion related to the formulation of a viable set of career options. A third noteworthy observation pertains to the CTI as an outcome measure of a career class intervention. The CTI was not only sensitive to direct effects of mastering cognitive reframing skills, but it also appears to be sensitive to detecting changes in attitudes regarding confusion about making a career choice as well as committing to a plan of action to implement the choice. The CTI may well serve as an effective outcome measure for a variety of career interventions.

Bertoch et al. (2013) studied 246 students in a career course to determine if goal instability was related to participation in career course activities. They used the Goal Instability Scale (GIS; Robbins & Patton, 1985) and completed student course performance contracts in collecting data. The proposition undergirding this study was that one's state of goal instability is associated with one's readiness to fully engage in the career exploration process. Specifically, a student's state of goal instability, as measured by the GIS, would have a bearing on motivation to undertake and complete classroom assignments related to obtaining self-knowledge and occupational knowledge, with an eye toward identifying viable career options in a comprehensive credit-bearing college career course. Results indicated a statistically significant relationship between goal stability or motivation and extra credit points earned in the course. In other words, as motivation increased (i.e., goal instability decreased), the amount of extra credit points earned in the course increased as well.

To summarize this section, we reviewed 64 results or findings of career course outputs in reports and articles. Output variables, such as career thoughts, career decision-making skills, career decidedness, and vocational identity, are theoretically related to outcomes of career interventions, such as persistence (retention) in college, and job satisfaction or satisfaction with field of study. In this analysis, we found 58 findings or results (91%) reporting positive gains in measured output variables, and 6 (9%) reporting no changes in output variables. In the following section, we will review the studies that have examined the outcomes of career courses.

Studies of Career Development Course Outcomes

As we noted earlier, outcomes of career service interventions refer to the resultant effects occurring at some later point in time. Examples of outcomes of a career planning course are job satisfaction, selecting a major, course satisfaction, time taken to graduation from college, and cumulative GPA. More specifically, selecting a major refers to students' choosing academic majors at increased rates following completion of a career development course. Retention as an outcome variable is intended to reflect both retention-to-graduation as well as retention to the next school term. In this section, we review 25 studies related to career course outcomes in historical order. Additional information about these studies is presented in Table 1.

Career Course Outcome Studies, 1970-1979

Touchton et al. (1977) compared three different types of career courses at the University of Maryland. The two sections of the experimental course were based on a developmental theory of instruction, the two traditional sections were taught by instructors with no knowledge of developmental instruction, and one section was taught in a mixed format. While overall student ratings of all the career courses were very positive, the developmental classes showed higher satisfaction ratings by students with respect to instructor performance, course organization, feelings of competence, and recommending the course to others.

The first study we found that considered retention as an outcome was reported by Bechtol (1978). The report began by noting the difficulty experienced by the institution in retaining undecided freshmen students. More specifically, Bechtol (1978) found that approximately half of the undecided freshmen did not return following the fall 1975 term. A course entitled "Orientation to Higher Education" was developed to address this concern. Three objectives of the course were (1) academic planning, (2) selection of an academic advisor, and (3) selection of a major and a tentative career plan. Results of the study indicated that undecided freshmen who completed the course returned for the following school term at a rate significantly greater than undecided freshmen that did not complete the course.

As noted earlier, Heppner and Krause (1979) developed a comprehensive, two-credit course for undecided students at the University of Nebraska. In an outcome evaluation using student self-evaluations, individual interviews, formal and informal written feedback, they found that 100% of the students reported gains in self-awareness, self-knowledge, and knowledge of interests and skills. The same percentage (100%) reported increased knowledge about the world-of-work and job hunting.

In a similar course evaluation report, Gillingham and Lounsbury (1979) evaluated Humanities 397, a career exploration course at Central Michigan University. They used a post-course evaluation form completed by 104 students. Impetus for the development of the course emanated from a campus survey indicating that 33 percent of responding students reported a need for assistance with life planning. Of the responding students, 81 percent reported that the course "helped" or "helped some" in making career decisions and 70 percent claimed to be closer to a career decision (Gillingham & Lounsbury, 1979).

Career Course Outcome Studies, 1980-1989

As noted earlier, Johnson et al. (1981) evaluated two variations on a career development course at Johns Hopkins University to see what kinds of interventions were helping which students. While finding a strong main effect for increased vocational identity, they were unable to identify any systematic relationships between more than 15 course interventions and student preferences. The author's noted several problems in trying to specify the best interventions: (1) each course was made up of different students and had its own mood and climate; (2) each intervention had multiple possible effects, e.g., SDS results could provide cognitive structure and emotional reassurance; and (3) there was little success in finding positive interactions in other areas of instruction. Johnson et al. (1981) suggested that practitioners focus on creating main effects by using a wide variety of interventions with less emphasis on student-treatment interactions. They further suggested that all course treatments should be rated immediately after use, seminars led by two or more leaders should be compared to learn more about the role of the instructor, and logs should be maintained of the impact of each intervention for students.

In an attempt to learn more about the academic credibility of career development courses in a university, Reardon and Regan (1981) conducted a study of student reactions to a career development

course offered at Florida State University. These researchers compared scores from a standardized instrument for the career development course and other university courses taught in a standard classroom format. The comparison was based on five factors reported in the instrument: (1) level of instructor involvement, (2) level of student interest, (3) amount of student-instructor interaction, (4) extent of course demands, and (5) level of course organization. No significant differences in mean scores were found between the university wide courses and the career planning course with regard to levels of instructor involvement, student interest, and course demands; however, the career course received higher ratings in amount of student-instructor interaction and level of course organization. Hence, the researchers concluded that the career development course compared very favorably in terms of academic acumen with other courses in the academic marketplace, and better in terms of student-instructor interaction and course structure or organization.

At a national conference, Goodson (1982) reported on a longitudinal 10-year follow-up study of undecided students who took a non-credit career orientation class in the fall of 1966. A comparison group was composed of a random selection of undecided (academic major) students who did not take the career orientation class. Results indicated that a significantly higher percentage of undecided students that completed the course finished their college degree within 10 years than those undecided major students who did not complete the course. Goodson recommended that similar studies be conducted with regard to career academic credit courses to assess the longer-term effects of these courses.

Poole (1983) examined how the interaction of students' cognitive complexity with career course design impacts on students' satisfaction with a career course. Cognitive complexity was measured by two indices, "cognitive integration" and "cognitive discrimination." Career course design was varied from low structure to high structure in terms of environmental factors, such as instructor behaviors, course content, room size, and instructional methods. Satisfaction was assessed with a career course evaluation form. Forty-seven college students who enrolled in a free, four-week "Career Cycles" program at an urban community college participated in the study. The students were randomly assigned to either a "high structure" or "low structure" career course design. The results showed that matching the students high in cognitive complexity with a minimally structured career class and the students low in cognitive complexity with a highly structured career class produced the most student satisfaction with the course.

Carver and Smart (1985) evaluated a career planning course offered at the University of Northern Colorado and concluded that the course exerted at least some positive effect on the retention rate of enrolled students. However, they pointed out that this assumption needed to be verified by further research. They specifically recommended follow-up studies to view longer-term effects of the course on retention as had Goodson (1982) earlier.

Career Course Outcome Studies, 1990-2000

Besides examining the career decidedness output as noted in the previous section, Lisansky (1990) also sought to evaluate the effects of a life and career planning course on the retention of undecided freshmen college students. Both an experimental group (course) and control group were used. No significant difference between the two groups was found with regard to rates of retention.

Dodson, Chastain, and Landrum (1996) reported that psychology students changed the level of their postgraduate educational goals following the course intervention, e.g., from doctoral to master's level degrees, and became more planful regarding graduate school. Using a 10-point rating scale, with 10 indicating the highest possible satisfaction, students rated the course 9.50 and the instructors 9.65. "In summary, Psychology Seminar: Careers and Graduate Study in psychology is an effective way to inform students about the options for careers and graduate study in psychology (Dodson et al., 1996, p. 239).

As previously noted, an unpublished study by Schmidt (1999) also found several positive outcomes of a career development course. The four major topics of this comprehensive course included educational process, understanding human nature, the career search process, and the job search process. Working with the institutional research office at the university, Schmidt (1999) conducted a longitudinal follow-up study of three cohort groups of students enrolled in the course (fall 1989, spring 1990, fall 1990) to compare retention rates in 1993 between students who had completed the career class and students who had not. The analysis showed that students in the career course were retained at a rate 7.7% greater than students who did not complete the career course. For African-American students, the rate was 22.1% greater for those completing the course and for undeclared majors the rate was 14.1%.

Folsom (2000) used an *ex post facto* design to examine five year outcomes for 544 students enrolled a career course between 1989-90 and 1993-94 at Florida State University. A comparison, matched sample of noncourse students was drawn in terms of gender, race, high school GPA, class year, SAT score, and initial year of matriculation. Folsom found no differences in academic data between the two groups with respect to graduate rate, time taken to graduate, cumulative GPA, or number of credit hours accumulated at graduation, but course students did have significantly fewer course withdrawals. However, in examining raw data, Folsom reported that career course participants graduated at a rate of 81% compared to 69% for students in general at FSU, and course participants graduated with markedly fewer credit hours than the general population of students (an average of 110 for course participants and 132 for the general population). This indication of higher rates of graduation and less credit hours taken to graduate by career course participants may have potential implications relative to University objectives for student retention and credit hour efficiency.

Career Course Outcome Studies, 2001-2014

Folsom, Peterson, Reardon, and Mann (2005) isolated the effect of the FSU career development course on outcome variables according to gender and minority or non-minority status. Female course participants graduated in fewer months than nonparticipants. Female participants took an average of 50 months to graduate while nonparticipants took an average of 61 months (a statistically and practically significant difference). Male participants in the course executed fewer course withdrawals on average (.9) than did male nonparticipants (1.2). This difference was statistically, but not practically significant. Finally, minority course participants on average took fewer credit hours to graduate (104) than did minority nonparticipants (115). This difference was statistically and practically significant. This study indicates that the career development course may positively affect gender and minority groups in ways that support University objectives of student efficiency in the pursuit of undergraduate degrees.

Smith-Keller (2005) examined the relationships between a one-credit career course and student persistence rates, the number of credit hours completed to graduate, the amount of time taken to graduate, and the number of course drops by investigating the academic records of 1,108 students during the 1994 to 1998 period. Students who took a career course persisted to graduation at a higher rate and graduated with significantly fewer credit hours than the students who did not participate in a career course. However, there were no significant differences in course drop rates between course participants and non-participants. Meanwhile, non-participants took a shorter period of time to graduate.

As noted earlier, Macera and Cohen (2006) described a one credit course covering academic advising and career planning for pre-psychology majors. Students rated the course moderately high in value and recommended it be required for psychology majors. Almost 93% of enrolled students either changed their career plans or felt more confident about their plans after taking the course. In another study of this course, Heffner and Cohen (2005) found that students' frequency in accessing online career

course material (Web CT) was positively correlated with course grades. Similar to other studies, women made more use of Web CT than men. Finally, Roscoe and Strapp (2009) studied senior psychology majors who had ($n = 19$) and had not ($n = 52$) taken a 4-credit capstone course. Those in the capstone course felt more satisfied about their preparation for further academic study and their preparation for entering the job market relative to students who had not completed the course.

Winston and Rose (2013) noted that more evidence is needed about the relative effectiveness of the curriculum and instructional methodologies in career courses. A number of studies included in this review have focused upon this matter (Johnson et al., 1981; Peng, 2001; Poole, 1983; Rayman et al., 1983; Salter, 2009; Smith 1981; Touchton et al., 1977). More recently, McHugh, Lenz, Reardon, and Peterson (2012) examined the effects of viewing a ten-minute model-reinforced video on career information-seeking behavior in 10 sections of a career planning class. The 280 enrolled students were randomly assigned to treatment or control conditions. The video portrayed an undergraduate student seeking career counseling services and a counselor using modeling, as well as verbal and nonverbal reinforcement, to encourage the student to use information resources (such as books, websites, informational interviews). Students who viewed the video (the treatment group) reported using a significantly wider variety of information-seeking strategies (reinforced in the video) and using more varied career resources in completing a research assignment than students in a regular classroom presentation who did not view the video (the control group). They also spent less time seeking information than students in the control group, probably because the video provided sources of information and demonstrated use of them.

Reardon, Leierer, and Lee (2012) analyzed student grades in a standardized career course offered at a large southeastern university over a 26-year period in order to measure the class impact on student learning. The results revealed that 74% of the 6,176 students completing the course met the learning objectives of the course with a grade of B+ or higher. However, grades were lower toward the end of the 26-year period following the introduction of a career theory to the course and coinciding with the increasing use of the Internet in occupational research. Grades varied by semester, and they were lower in the most recent time period than in any other. This study provides evidence that grades might be used to measure the impact of career course interventions, especially if the treatment variables are carefully described and the grading procedures are fully explained and replicable by other researchers. Indeed, using grades as a measure of career course learner outcomes is a logical and practical method for studying a career course.

Reardon, Melvin, McCain, Peterson, and Bowman (2015, in press) replicated and enhanced the study by Folsom et al. (2004-2005) using archival data obtained from the university registrar to examine how engagement in a credit-bearing undergraduate career course related to college graduation from a selective southern university. Results suggested the course was one of four factors predicting graduation rates, including GPA, changes in major, and withdrawals. The study also found that traditional measures, SAT scores and high school grades, did not effectively predict graduation rates. Graduation rate in the career course cohort was higher than for the matched university cohort, despite the course participants being lower on traditional indicators (e.g., GPA, SAT score) and representing a more diverse group. Reardon et al. (2015) concluded that offering career courses at the university level may be one factor to enhance graduation and to facilitate overall exploration behavior. Similarly, administrators and student affairs personnel should consider providing a credit career course such as the one described in this study.

To summarize this section, we reviewed 25 results or findings of career course outcomes in reports or articles. Outcome variables associated with a career planning course include job satisfaction, selecting a major, course satisfaction, time to graduation from college, or cumulative GPA. In this analysis, we found 23 (92%) reporting positive gains in measured outcome variables, and two (8%)

reporting no changes in outcome variables. These findings are similar to the studies summarized earlier regarding output variables and the effects of career courses.

Summary and Conclusion

This review of career course literature has traced 80 reports in 88 studies of the effectiveness of the various career planning courses offered in institutions of higher education throughout the country. More than 25,333 students were involved in these studies. Research in this subject area was scarce until the 1970s and early 1980s when activity increased. This review has been framed in terms of the outputs and outcomes of career course interventions, with six reports examining both outputs and outcomes. We found 64 findings addressing output effects and 25 addressing outcome effects. The clear majority of these focused on pretest-posttest output measurement rather than longer term outcome effects of these courses.

Career courses are quite varied in design, scope, and function. Some are offered for credit, others are not; credit courses range from 1 to 3 hours, and some are variable credit. Some are designed for entering first year students and others are designed for upper division students already in their majors. Some courses are elective and others are required in a major. Some courses are highly structured and others are more open-ended in format. Some courses focus on self-assessment and career planning, and others include knowledge about labor markets, employing organizations, and employment. Some courses are offered in a more stand-alone format, and others are fully integrated into ongoing career services programs available on the campus. Some courses are taught by career counseling staff and others are taught by regular faculty.

In spite of this variability in career course design and operation, there is overwhelming evidence that career courses have a positive impact on the cognitive functioning of students, and these courses also appear to have a positive impact on student outcomes, including satisfaction with career courses, increased retention in college, and improved graduation rate. Only 6 of the 64 findings involving career course outputs failed to show a positive impact of a career course, while 91% showed positive gains in vocational identity, career decision making, or other output variables. Similarly, 23, or 92%, of the 25 findings involving outcomes showed positive results.

However, questions remain about exactly why these courses are effective. Some studies have examined the efficacy of different methods of teaching career development skills (e.g., Brown & Ryan Krane, 2000; Brown, Ryan Krane, Brecheisen, Castelino, Budisin, Miller, & Edens, 2003; Whiston, Brecheisen & Stephens, 2003). Current best practices identify characteristics that career classes should follow: (a) structured approaches to the course appear to be more effective than unstructured approaches (Smith, 1981); (b) individual career exploration should be a cornerstone of the course (Blustein, 1989); and (c) five components (written exercises, individualized interpretations and feedback, in-session occupational exploration, modeling, and building support for choices within one's social network) are critical to the success of any career counseling intervention including a career course (Brown & Ryan Krane, 2000; Brown et al., 2003).

The majority of the results or findings reviewed in Table 1 (59 of 88 or 67%) used control or comparison groups to strengthen methodological rigor. Most studies used suitable and well-established measuring instruments in terms of reliability and validity. The findings of the majority of these studies are impressive in establishing evidence that career development courses tend to positively effect desired career development objectives or output variables, e.g., career planning thoughts, career decidedness, career decision-making ability, vocational identity, internal locus-of-control, vocational/career development maturity.

Whiston (2011) suggested that career interventions should be examined from a cost-effectiveness perspective. The report by Folsom et al. (2004-2005) provided some discussion of this matter in terms of increased college retention following a career course. Reardon et al. (2015, in press) provides additional information in this regard. Increased graduation rate is a cost-benefit of a college career course. It is apparent that comprehensive career courses offered for academic credit represent an intervention that could be described as a “mega-dose” of career services. Such courses may include as many as 50 different, discrete career interventions. Moreover, career courses can be a unique intervention in that participants actually pay for the service before receiving it. Assuming a fee of \$100 per credit hour, a 3-hour course enrolling 30 students would generate \$9,000 in tuition fees. The amount of money generated by a course could be even higher if there were matching funds provided from other sources such as the institution itself. Few other career interventions are likely to have the potential for generating such monies.

However, this area of research is not without weaknesses. Spokane and Oliver (1983) examined research literature on career interventions and noted some of the problems that are also relevant to the evaluation of career courses: (1) the course content and duration are sometimes not clearly specified in the reports and vary widely across studies; (2) courses include multiple treatments, ranging from as few as 12 to more than 50; (3) course treatments are not all equally potent or effective, e.g., some are unstructured and some are highly controlled, some are based on a single integrating theory and others are atheoretical; (4) output and outcome measures are not clearly linked to the treatment interventions; (5) student motivation to enroll in the course is not assessed; (6) possible differences among instructors are not investigated; and (7) investigators may have bias regarding preferred treatment outcomes.

Some researchers and policy makers have urged that studies of the long term effects of these courses be undertaken, but it is difficult to imagine this being done under the present arrangements. For example, Kern (1990, p. 80) suggested that “A longitudinal study of the participants in a career planning and decision-making course may indicate whether participants not only made career choices but went on to graduate.” In addition, much of the research in this area is the result of dissertations completed by graduate students as part of their training and the research has not been published in journals. One option might be for textbook publishers to support research on their instructional materials in the same way that test publishers support studies of psychological tests. Another option might involve the support of universities, government agencies, and foundations for long-term research on the impact of career courses related to student retention.

Of special interest to many postsecondary institutions, career courses may have an important impact on increasing student retention to graduation (Lepre, 2007). Researchers estimate that between 20% and 50% of students enter their freshman year undecided about their major and future career and that between 50% and 70% of all undergraduates will change their major and future career plans at least once during college (Gordon & Steele, 2003). These “drop out” prone students may benefit from a career development course intervention that can reduce this dropout risk. The current federal initiatives to increase education and training of the U.S. workforce should be mindful of the importance of career interventions in achieving educational attainment.

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Summary Table of Career Course Studies, 1976-2014

Researcher(s)	Year	Variable(s) of Interest	Comparison Group	Measuring Instrument(s)	Design	Sample Size	Findings
Babcock & Kaufman	1976	Career planning, self & occupational knowledge, & career decidedness	Yes	Career Development Inventory	Pre/posttest	77	Greater gains in career planning & self-knowledge for career class
Touchton et al.	1977	Cognitive development	Yes	Knefelkamp & Slepitzka scale	Pretest/posttest	76	Increased cognitive complexity; positive course satisfaction
Evans & Rector	1978	Vocational development/career decision making	No	Vocational Decision Checklist	Pretest/posttest	79	Positive Effect on Vocational development
Bechtol	1978	Retention	Yes	Academic Records	Postcourse follow-up	192	Significant increases in students returning for next term
Ganster & Lovell	1978	Career planning & decision-making	Yes	Career Maturity Inventory	Pretest/posttest	46	Significant increases in career maturity
Bartsch & Hackett	1978	Locus-of-control	Yes	Rotter's I-E Scale; two author designed instruments	Pretest/posttest	64	Greater internality in locus-of-control
Gillingham & Lounsbury	1979	Career decidedness	No	Author designed instrument	Postcourse evaluation	115	Improved career decision-making
Williamson	1979	Career decision-making, locus-of-control	Yes	Rotter's I-E Scale; Assessment of Career Decision-Making	Pretest/posttest	42	Increased career decision levels for those students completing the course
Heppner & Krause	1979	Course evaluation	No	Self-evaluations & feedback	Postcourse evaluation	NS*	Course satisfaction & increased knowledge
Weist	1980	Career maturity, self-esteem, & sex role stereotypes	No	Career Maturity Inventory; Self-Esteem Scale	Pretest/posttest	36	Little evidence of increase in outcome variables
Baldwin	1981	Career maturity	Yes	Career Development Inventory	Pretest/posttest	120	Only limited increase in career maturity
Smith	1981	Career maturity	Yes	Career Maturity Inventory	Pretest/posttest	115	Significant increase in career maturity
Reardon & Regan	1981	Course evaluation	Yes	Student Instructional Rating System	Posttest	76	Course highly rated on organization and student-instructor interaction

NS* = Not Specified

Summary Table of Career Course Studies, 1976-2014

Researcher(s)	Year	Variable(s) of Interest	Comparison Group	Measuring Instrument(s)	Design	Sample Size	Findings
Ware	1981	Career decidedness & maturity; self & occupational knowledge	Yes	Assessment of Career Decision-Making; Career Maturity Inventory	Pretest/posttest	148	Positive effect on career maturity, occupational, & self-knowledge
Johnson et al. (2 studies)	1981	Vocational identity, course evaluation	Yes	My Vocational Situation; author designed scale	Pretest/posttest	46	Increased vocational identity; no differences among course treatments for satisfaction
Barker	1981	Career planning & decision-making	Yes	Assessment of Career Decision-Making; author designed instrument	Pretest/posttest	589	Positive effect on career decision-making ability & selection of a major
Goodson	1982	Retention to graduation	Yes	Ten-year follow-up	Longitudinal	451	Positive effect on retention
Crommett	1982	Internal locus of control, cognitive development	Yes	Adult Nowicki-Strickland Internal-External Locus of Control Scale, Knefelkamp-Widick Scale	Pretest/posttest	44	Increased in internality and cognitive development
Stonewater & Daniels	1983	Student development & cognitive development	Yes	Knefelkamp & Slepitz Scale	Pretest/posttest	143	Increased cognitive development
Rayman et al.	1983	Vocational identity, occupational information, & barriers	No	My Vocational Situation	Pretest/posttest	255	Positive effect on results not dependent on vocational identity; these results not dependent on other variables
Poole (2 studies)	1983	Career maturity, satisfaction with career course	No	Career Maturity Inventory course evaluation form	Pretest/posttest	47	Interaction between students' cognitive complexity and course design, but no main effect
Remer et al.	1984	Multiple, including decidedness & vocational identity	No	My Vocational Situation	Pretest/posttest	74	Positive effect on vocational identity, rational decision-making, & decidedness
Carver & Smart	1985	Career decidedness, maturity, & other related variables	Yes	Career Maturity Inventory; Career Decision Scale	Pretest/posttest	110	Positive effect on career maturity/decidedness & academic/major selection

NS* = Not Specified

Summary Table of Career Course Studies, 1976-2014

Researcher(s)	Year	Variable(s) of Interest	Comparison Group	Measuring Instrument(s)	Design	Sample Size	Findings
Ware	1985	Self & occupational knowledge	Yes	My Vocational Situation; author designed scale	Pretest/posttest	70	Increased vocational identity; no differences among course treatments for satisfaction
Lent et al.	1985	Career decidedness	No	Career Decision Scale; author designed instrument	Pretest/posttest	20	Reduced indecision; Increased self-knowledge & career information
Wachs	1986	Vocational identity, differentiation, self-esteem	Yes	My Vocational Situation; Vocational Preference Inventory; knowledge of Preferred Occup. Scale	Pretest/posttest	138	Positive effect on vocational identity, differentiation, & self-esteem
Broley	1986	Locus-of-control & cognitive complexity	Yes	Knefelkamp/Sleptiza scale	Pretest/posttest	44	Significant increases in internal locus-of-control
Davis & Horne	1986	Career decidedness & maturity	No	Career Decision Scale; Career Maturity Inventory	Pretest/posttest	102	Significant increases in career decidedness & maturity
Lent et al.	1986	Career indecision	Quasi	Career Decision Scale	Pretest/posttest	54	Positive effect on reduced career indecision
Bash	1987	Career satisfaction/certainty	Quasi	Winer et al. certainty item; Slaney satisfaction item	Pretest/posttest	120	Positive effect on career choice certainty/satisfaction
Montolio	1988	Vocational identity; adjustment to college; career planning	Yes	My Vocational Situation; Career Planning Scale; Adj. To College Scale	Pretest/posttest	239	Increased vocational identity & total adjustment
Wiseman	1988	Decidedness & self-efficacy	Yes	Career Decision Scale; Career Decision Making Self-Efficacy Scale	Pretest/posttest	62	No significant differences
Quinn & Lewis	1989	Career decidedness	Yes	Career Decision Scale	Pretest/posttest	NS*	Increased career certainty
Garis & Niles	1990	Decidedness	Yes	Survey of Career Development; Self-Assm't. of Confidence in Educ./Career Planning; Career Decision Scale	Pretest/posttest	112	Positive effect on career decidedness

NS* = Not Specified

Summary Table of Career Course Studies, 1976-2014

Researcher(s)	Year	Variables of Interest	Comparison Group	Measuring Instrument(s)	Design	Sample Size	Findings
Kern	1990	Decidedness & self-concept	Yes	Career Decision Scale	Pretest/posttest	169	No significant change in outcome variables
Lisansky (2 studies)	1990	Retention; decidedness & cognitive style	Yes	Academic records; Career Decision Scale	Pretest/posttest; Follow-up	79	No difference in retention; increased decidedness & rational decision making
Oreshnick	1991	Decidedness	Yes	Career Decision-Making Self-Efficacy Scale	Pretest/posttest	159	Positive effect on career decidedness
Higbee & Dwinell	1992	Purpose, career & lifestyle planning, educ. involvement, life mgmt.	No	Student Development Task Inventory	Pretest/posttest	83	Positive effects on variables of interest
Henry	1993	Vocational identity; need for occupational information; barriers	No	My Vocational Situation	Pretest/posttest	64	Increased identity
Johnson & Smouse	1993	Decidedness	Yes	Career Decision Profile	Pretest/posttest	240	Positive effect on career Decidedness
Robinson	1995	Career maturity	Yes	Career Decision Index	Pretest/posttest	107	Positive effect on career planning thoughts
Dodson et al.	1996	Course evaluation	No	Author designed instrument	Posttest	42	Positive effect on career choice & educational planning
Kilk (2 studies)	1997	Career thoughts; decided major	Yes	Career Thoughts Inventory	Course Evaluation	346	Career thoughts related to deciding a major & career course enrollment
Schmidt (2 studies)	1999	Retention & career decidedness	Yes	Academic records; Career Decision Scale; Rotter's ten point scale	Pretest/posttest	378; 9,242	Increased rate of retention; positive effect on career decision making & internal locus-of-control
Peng & Herr	1999	Career beliefs & career decision making	Yes	Career Decision Scale; Career Beliefs Inventory	Pretest/posttest	495	Decreased career Indecision
Halasz & Kempton	2000	Decidedness	Yes	Career Decision Scale	Pretest/posttest	150	Increased career choice certainty

NS* = Not Specified

Summary Table of Career Course Studies, 1976-2014

Researcher(s)	Year	Variables of Interest	Comparison Group	Measuring Instrument(s)	Design	Sample Size	Findings
Folsom et al. (2 studies)	2001, 2005	Academic performance & retention	Yes	Academic records	Follow-up	1,088	Female students graduated faster; minority students took fewer hours to graduate
Reed et al.	2001	Negative career thoughts	No	Career Thoughts Inventory	Pretest/posttest	181	Decreased negative career thoughts
Peng	2001	Career decidedness	Yes	Career Decision Scale	Pretest/posttest	152	Decreased career indecision
Hung	2002	Career maturity, indecision, certainty, choice anxiety; indecisiveness; need for self & career information	No	Career Decision Scale, Career Maturity Inventory, Career Factors Inventory	Pretest/posttest	48	Increased career certainty and decreases in career indecision, choice anxiety, generalized indecisiveness; gender differences noted
Johnson et al.	2002	Career outputs including career decidedness, vocational identity, and career decision-making self-efficacy	Yes	My Vocational Situation, Career Decision Scale, & Career Decision Making Self-Efficacy Scale-Short Form	Quasi-experimental	209	Decreased career indecision, increased vocational identity & career decision-making self-efficacy
Thomas et al. (2 Studies)	2004	Movement toward Achievement of Vocational Identity & Career Decidedness	Yes	2 Likert Scales Career Decision Making Self Efficacy Scale/ Career Exploration & Decidedness Inventory	Quasi-experimental design/ pretest-posttest	165/72	Increased perceived & actual career knowledge, confidence, and movement toward career
Smith-Keller	2005	Graduation & retention rate	Yes	Academic records	Follow-up	1,108	Career course participants' graduation rate higher; however, retention rate was lower
Heffner et al.	2005	Student characteristics, course performance, & access to online course material (Web CT)	No	Course assignments & exams, 5-point Likert scale items related to Web CT on course evaluation, Web CT access data	Correlational	154	Frequency of online access to course materials correlated positively with course grade, females accessed more than males

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Summary Table of Career Course Studies, 1976-2014

Researcher(s)	Year	Variables of Interest	Comparison Group	Measuring Instrument(s)	Design	Sample Size	Findings
Chien et al.	2006	Metacognitive competencies, course evaluation, behavioral variable of attendance at a mock interview activity, and self-concept	Yes	Tenn. Self –Concept Scale, Learning & Study Strategies Inventory, Metacognitive Competency Measure, course evaluation measure, & attendance at a mock interview activity	Pretest/posttest/non-equivalent control group design/Quasi-experimental	157	Increased career competencies across several areas including cognitive, metacognitive, affective, and behavioral
Reese & Miller	2006	Career development course & decision-making self-efficacy	Yes	CDMSE scale-short form & Career Decision Difficulties Questionnaire	Pretest/posttest nonequivalent group design	30/66	Students completing course showed increased decision-making self-efficacy and appeared to lower perceived career decision difficulties
Macera et al.	2006	Perceived decision-making self-efficacy, vocational identity, and course evaluation	No	Web CT pre- & post-course survey regarding interests and career plans, as well as evaluative feedback on the course	Pretest/posttest	154	93% of enrolled students changed career plans or felt more confident about plans after taking the course
Osborn et al.	2007	Dysfunctional career thoughts & a career development course	No	Career Thoughts Inventory	Pretest/posttest	158	Freshman with the most dysfunctional thoughts showed the most dramatic decrease, irrespective of gender, race/ethnicity.
Scott et al.	2008	Career course & career-related beliefs (CDMSE & vocational identity)	Yes	CDMSE scale-short form Vocational Identity scale	Pretest/posttest	88	Increased women's self efficacy for career planning and problem solving, stronger vocational identity

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Summary Table of Career Course Studies, 1976-2014

Researcher(s)	Year	Variables of Interest	Comparison Group	Measuring Instrument(s)	Design	Sample Size	Findings
Tracey	2008	Career development class; adherence to the RIASEC circumplex, & career decision-making self-efficacy, interest-occupation congruence	Yes	Inventory of Children's Activities-Activities-Paired, Inventory of Children's Activities-Revised CDSE-short form, Career Decision Scale, & 4-point Likert scale class evaluation items	Pretest/posttest	283	Changes in adherence to RIASEC through career course instruction were related to changes in career certainty, career decision-making self-efficacy, and interest-occupation congruence
Fouad et al.	2009	College career course & career decision-making confidence, career exploration	No	Perceptions of Barriers Scale, Career Decision-Making Difficulties Questionnaire, Career Decision Self-Efficacy Scale-Short Form	Pretest/posttest	73	Career decision-making difficulties decreased, career self-efficacy increased, perception of barriers showed no change
Grier-Reed, Skaar, & Conkel-Ziebell	2009	Constructivist curriculum & career self-efficacy, negative career thoughts	No	CDSE-SF & CTI	Pretest/posttest	75	Increased CDSE-SF scores and lower CTI scores
Shearer	2009	Interpersonal intelligence & career confusion	Yes	Multiple Intelligences Developmental Assessment Scales, MVS, author developed questionnaire	Nonequivalent comparison group	82	Low interpersonal intelligence related to moderate and high levels of career confusion
Salter	2009	Two instructional approaches compared	Yes	CDSE-SF, CTI, CDS	Pre-posttest	52	Both courses achieved positive outcomes on career certainty & decidedness, career self-efficacy, and negative thinking
Roscoe & Strapp	2009	Preparation for graduate school or jobs	Yes	Author designed instruments	Quasi-experiment	71	Students taking the capstone course were more prepared for both

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Summary Table of Career Course Studies, 1976-2014

Researcher(s)	Year	Variables of Interest	Comparison Group	Measuring Instrument(s)	Design	Sample Size	Findings
Bollman (2 studies)	2009	Self-efficacy among undecided college students	No	CDSE-SF	Pre-posttest	141	Self-efficacy increased pre-post course; study dropouts had lower SCSE-SF scores
Grier-Reed, Skaar & Parson	2009	Impact of constructionist career course	Yes	CDSE-SF, CDS	Pre-posttest	115	Increased empowerment and certainty & decreased indecision
Frederiksen	2009	Perfectionism and career indecision among freshmen	No	Frost Multidimensional Perfectionism Scale, Career Factors Inventory	Correlational	476	Three perfectionist groups similar on cognitive factors, but maladaptive group had more choice anxiety and indecisiveness than adaptive group
Reese & Miller	2010	Career course outcomes	Yes	CDMSES-SF & CDDQ	Pretest/posttest	278	Increased CDMSES scores both years; found uneven CDDQ changes
Grier-Reed & Skaar	2010	Empowerment & career indecision among culturally diverse students	No	CDSE-SF, CDS	Pre-posttest	82	Increased empowerment (career self-efficacy) but no decrease in career indecision
McClair	2010	Career course compared to career counseling	Yes	Career self-efficacy, career thoughts, critical ingredients	Comparison groups	269	No differences in outcomes for the two career intervention groups
Thompson & Feldman	2010	Assessing effects on meaning, purpose & calling	No	Vocational Identity Questionnaire, Life Regard Index, State Hope Scale	Pre-posttest	60	Increased sense of calling, ability to achieve goals, and life/work meaning
Grier-Reed & Ganuza	2011	Constructivist course impact on career self-efficacy among students of color	No	CDSE-SF	Sample of convenience	81	Increased career self-efficacy in 5 areas

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Summary Table of Career Course Studies, 1976-2014

Researcher(s)	Year	Variables of Interest	Comparison Group	Measuring Instrument(s)	Design	Sample Size	Findings
McHugh, Lenz, Reardon, & Peterson	2012	Information-seeking behavior (ISB) in a career course	Yes	Questionnaires on type & frequency of ISB	Two comparison groups (treatment & control)	280	Students viewing a video engaged in ISB more frequently using more varied types of resources
Thrift, Ulloa-Heath, Reardon & Peterson	2012	Impact of career unit in a college course on career thoughts using CTI workbook and SDS	Yes	Career Thoughts Inventory	Pretest-Posttest	128	Decreased negative thoughts with both CTI workbook and SDS research groups
Reardon, Leierer & Lee	2012	Educational experience of students in 4 alternative class meeting formats	Yes	Class grades; teaching evaluations using Student Instructional Rating System (SIRS) and State University System Student Assessment of Instruction (SUSSAI)	Comparison groups	1,479	MTuWTh format had significantly higher earned grades, but W and MTuWTh format had higher expected grades than earned grades. There were no significant differences between student evaluation of teaching and meeting formats
Bertoch, Lenz, Reardon & Peterson	2013	Student motivation and course participation	No	Goal Instability Scale (GIS)	Correlational	257	High motivation (low goal instability) was positively related to course participation
Reardon, Melvin, McCain, Peterson & Bowman	2015	Career course and college graduation rate	Yes	6-year graduation rate	Archival data from registrar, comparison groups	1,091	Course was one of four factors predicted graduation rate, along with GPA, changes in major, and withdrawals; traditional measures, SAT scores and high school grades, did not effectively predict graduation rates.

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