

The Relationship between Self-Efficacy Expectations and Career-Choice

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Thesis submitted to the College of Human Resources and Education at West Virginia University  
as part of the fulfillment of the requirements for the degree of

Master of Arts  
In  
Educational Psychology

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2003

Keywords: self-efficacy, career choice, career-decision making

## ABSTRACT

### The Relationship of Self-efficacy expectations and career-choice behavior

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Analysis of responses from (N = 64) undergraduate students enrolled in Learning Strategies and Orientation courses on the Career Decision Making Self-Efficacy scale and the Occupational Self-Efficacy Scale, revealed that participants who selected male-dominated careers scored higher on the goal selection subscale compared to participants in the female-dominated group. Similar results were observed for career decision-making, self-efficacy and major status. As predicted, the scores for males on the OSES indicated that males reported equally higher scores for male and female-dominated occupations, whereas females reported higher self-efficacy for female-dominated occupations compared to male-dominated occupations.

## Acknowledgements

I thank the Almighty for the courage and fortitude throughout the thesis writing process, all praise is due to his mercy and kindness. A special thanks to my advisor, Dr. Larry Stead and committee members, Dr. Richard Walls, Dr. Anne Nardi, and Dr. Patricia Haught for your kind help, suggestions and guidance throughout the thesis process. I thank my mom and family for your support and encouragement even if we are oceans apart. I am forever grateful to all the graduate students who have encouraged and supported me unflinchingly. My friend, A. Moen, I would have not made it to graduate school without you. Thank you so much for your support and encouragement. You are part of my success.

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## Chapter I

### INTRODUCTION

#### *Statement of Problem*

Career indecision has been a long-standing challenge for many young people for centuries. For some, deciding on a career is a relatively automatic experience requiring minimal introspection and contemplation. On the other hand, career decision making could mean a life-time experience of searching and exploring career alternatives. At the onset of exploring career decision or indecision in vocational psychology, earlier researchers, in an attempt to alleviate career indecision, developed scales such as the Vocational Decision-Making Difficulty Scale (Holland & Holland, 1977) and the Career Decision Scale (Osipow, Carney, Winer, Yanico, & Koschier, 1980). These earlier measures proved to be significant contributors in the field of career guidance, helping students identify personal and environmental antecedents that influence decision-making skills. Furthermore, these scales have been credited for contributing understanding toward antecedents such as lack of confidence in decision making skills, lack of a clear sense of personal identity, external barriers to preferred choices, and simply a lack of understanding of immediacy of need to make a decision (Taylor & Betz, 1983).

Still, within the social learning theory framework (Bandura, 1977), subsequent studies considered the relationship between personal, behavioral, and environmental oriented factors as they related to career development in both men and women (Fitzpatrick & Silverman, 1989; Hackett, Betz, Casas, & Rocha-Singh, 1992; Hackett, Esposito, & O'Halloran, 1989; Nauta, Epperson, & Kahn, 1998; Schaefer, Epperson, & Nauta, 1997). As a result, a body of research emanating from the tenets of social learning theory approaches the process of career development by investigating the reciprocal interaction between the psychological, behavioral,

and environmental factors. On the basis of personality or internal conditions, *self-efficacy expectations* developed by Bandura (1977) has been a major influence in much of the vocational psychology research.

Bandura's foundations of self-efficacy theory were extended by Betz and Hackett (1981), introducing an additional concept, namely career self-efficacy. The term "career self-efficacy" has been used in the literature to refer to self-efficacy beliefs as they relate to the career development process (Betz, 2000). Career self-efficacy expectations are beliefs that influence career decisions and achievements, partly determining people's range of perceived career options. Career self-efficacy expectations in career related pursuits have been found to be related to achievement and persistence in college students majoring in engineering and scientific majors (Lent, Brown, & Larkin, 1984, 1986).

Related studies have documented self-efficacy as the most important useful predictor from two other variables (explaining aspects of career-relevant behavior) in predicting grades and persistence in technical/scientific majors (Lent, Brown, & Larkin, 1987). This suggests that self-efficacy as a motivational construct contributes significantly to career-choice behavior, specifically engineering. However, the studies documenting a relationship between self-efficacy and career choices and performance in a specific subject matter or domain, namely physical sciences, physics, chemistry, mathematics, and engineering, recruited participants with high ability and high interests in those fields. For example, much of the data collected from college students with relatively high ability and high interests are from students enrolled in a career planning course in science and engineering fields (Lent et al. 1984; 1986; 1987). Thus, there is limited generalizability of the self-efficacy concept due to the sample bias and specificity of the instruments used in most of the studies. Moreover, large variances and high correlations reported

for science and engineering majors compared to non-science/engineering majors on self-efficacy scales, seem predictable given the selection of sample participants and the domain-specific nature of the measures used.

Another avenue explored in the self-efficacy research addressed the specific question posed by Betz and Hackett (1981), as to what extent sex differences in the level, strength, and generality of career-related self-efficacy expectations contribute to the understanding of sex differences in vocational behavior. A number of studies have shown that individual occupational choices revealed significant sex differences (Betz & Hackett, 1981; Post-Kammer & Smith, 1985). However, fewer gender differences in self-efficacy expectations are evident in research using samples where choices have already been made, for example Lent et al.'s (1984; 1986) engineering students and also Hackett, Betz, Casas, and Rocha-Singh's (1992) students in engineering majors (Betz, 2000).

In addition to career self-efficacy measures designed to differentiate between career-decided versus career-undecided and to predict whether career options considered are traditional versus untraditional, self-efficacy has also been applied to vocational interests. A case in point is Holland and Holland's (1977) RIASC model, which based career interests on six categories known as the Realistic/Investigative/Artistic/Social/Enterprising/Conventional hexagonal constructs. This scale would later form the groundwork for related scales such as the General Occupational Themes (GOT) of the Strong Interest Inventory (Chartland, Borgen, Betz, & Donnay, 2002). Other scales based on Holland's hexagonal constructs such as the Skill Confidence Inventory (SCI) and the Task Specific Occupational Self-Efficacy Scale (TSOSS) have been used to predict how personality interests as defined by Holland's model relate to the selection of career options in engineering and scientific fields between men and women.

Thus far, the reviewed literature has focused on what the individual considers or chooses as an occupation (Lent & Hackett, 1987). However, research by Taylor and Betz (1983), explores the process dimension of career choice i.e. how decisions are made. The career decision-making literature has largely been correlational in nature, revealing relationships among vocational indecision and educational indecision (Bergeron & Romano, 1994). Other correlates of career decision making self-efficacy examined include women's attitudes toward non traditional occupations (Mathieu, Sowa & Niles, 1993), social and academic integration of underprepared college students (Peterson, 1993), locus of control and aspiration-occupation congruence (Luzzo & Ward, 1995), patterns of career choice development (Gianakos, 1999), and gender and ethnic differences (Chung, 2002).

The purpose of the present study was to make a new contribution to the extant body of research examining self-efficacy beliefs as they relate to the career decision-making process. This study first explored whether a difference existed between self-efficacy expectations and occupational titles selected among college males and females enrolled in Learning Strategies/Orientation courses. Second, the study attempted to investigate whether there was a difference between males and females and self-efficacy expectations. Third, was there a difference between self-efficacy beliefs and major status (i.e. career-decided versus undecided)?

#### *Research Questions and Hypotheses*

To address the relationships between career self-efficacy expectations and career choice behavior, the following research questions and hypotheses were formulated based on a review of the research in this field.

Research Question 1: Is there a difference between career decision-making self-efficacy expectations and the type of occupational titles (traditional versus non traditional career

options) selected by students during enrollment in Learning Strategies/Orientation courses?

Hypothesis 1: There is no difference between career decision-making self-efficacy expectations and the type of occupational titles (traditional versus non traditional career options) selected by students enrolled in Learning Strategies/Orientation courses?

Research Question 2: Is there a difference between occupational self-efficacy expectations of males versus females of students enrolled in Learning Strategies/Orientation courses?

Hypothesis 2: There is a difference between occupational self-efficacy expectations of males versus females, such that females will report higher self-efficacy for female-dominated occupations, and males will report equivalent self-efficacy expectations for female and male-dominated occupations on the OSES.

Research Question 3: Is there a difference between career self-efficacy expectations as measured by the CDMSES and college major decision (declared versus undeclared) of students enrolled in the Learning Strategies/Orientation courses?

Hypothesis 3: Participants with declared majors will report higher career self-efficacy expectations on the accurate self-appraisal and gathering occupational information factors of the CDMSE compared to undeclared majors.

## Chapter II

### LITERATURE REVIEW

#### *Self-Efficacy in Perspective*

The construct of self-efficacy has a relatively brief history that began with Bandura's (1977) publication of *Self-efficacy: Toward a Unifying Theory of Behavioral Change*. The tenets of self-efficacy have since been tested in diverse fields, primarily in the area of academic motivation. Theories of motivation in academia have included self-concept, attributions of success and failure, expectancy value, goals, self-schemas and possible selves, and perceived competence or expectancy beliefs. Self-efficacy and other expectancy beliefs have in common the fact that they are beliefs about one's perceived capability; they differ in that self-efficacy is defined in terms of an individual's perceived capabilities to attain designated types of performances and achieve specific results. Therefore, self-efficacy judgments differ from expectancy beliefs such that they are specific to a given domain or task as opposed to global traits or self-perceptions. Domain-specific assessments such as asking students to report their confidence to learn mathematics or writing, are more explanatory and predictive than instruments measuring general self-efficacy. Domain-specific assessments are preferable to general academic judgments, because self-efficacy beliefs are context-specific and not generalized personality traits. (Pajares, 1996).

Bandura conceptualized self-efficacy as varying along three dimensions: level, strength and generality (Lent & Hackett, 1987). The *level* of self-efficacy expectations refers to the degree of difficulty of the task an individual feels capable of attempting, which in turn influences the kinds of behaviors attempted or avoided. *Strength* of self-efficacy expectations is the person's confidence in his/her capability that influences persistence in behavior in the face of

obstacles or aversive experiences. And, *generality* of self-efficacy concerns the range of situations in which a person considers him or herself efficacious (Lent & Hackett, 1987). Self-efficacy expectations derived from Bandura's (1977) self-efficacy theory are a person's beliefs concerning his/her ability to successfully perform a given task or behavior. Self-efficacy beliefs are also viewed as a major mediator of behavior and behavior change (Bandura, 1977). Self-efficacy expectations are viewed as both learned and modified via four primary sources of information. The first and most influential source is *performance accomplishments*. These are first-hand learning experiences accompanied by negative or positive consequences. Second, *vicarious learning* refers to observed modeled behavior accompanied by success or failure at a given task. Third, *emotion arousal* is a response to a certain behavior, for example, heightened feelings of anxiety before taking a test. Fourth, *verbal persuasion* is offering encouragement or discouragement to persuade someone about their capabilities to succeed or fail at a given task (Bandura, 1986).

In considering the role of these sources of efficacy information, it is important to note that they are subjectively appraised and integrated by the perceiver (Betz, 2000). As noted by Bandura:

Information that is relevant for judging personal capabilities... is not inherently enlightening. It becomes instructive only through cognitive processing of efficacy information and through reflective thought. Therefore, a distinction must be drawn between information conveyed by experienced events and information as selected, weighted, and integrated into self-efficacy judgment (Bandura, 1977, p. 80).

Bandura explains that self-efficacy expectations are mandated by at least three major behavioral indicators, which are (a) approach versus avoidance behavior, (b) quality of performance of behavior in the target domain, and (c) persistence in the face of obstacles or disconfirming experiences. The consequences of low self-efficacy expectations regarding a

behavior or behavioral domain lead to avoidance of those behaviors, poorer performance, and a tendency to give up at the first sign of difficulty. Approach behavior is important because it indicates behavior crucial to selecting educational majors, occupations that the individual is willing to try or to pursue. Furthermore, low self-efficacy will cause an individual to eliminate options and limit initial interest development by avoidance of the kinds of experiences and learning opportunities that could facilitate the development of new interests (Betz & Borgen, 2000).

In addition, self-efficacy theory has been applied to treat diverse areas of psychosocial functioning, such as anxiety and phobias (Bandura, 1986), depressive affect (Davies & Yates, 1982), health behaviors (O’Leary, 1985), athletic attainments (Feltz, 1982), assertiveness (Lee, 1983; 1984), and school achievement (Schunk, 1984; 1985). In other words, personal efficacy was crucial to the initiation and persistence of behavioral performance in each of these cases.

#### *Critical Review of Past Research*

Betz and Hackett (1981) first proposed that self-efficacy might be an important variable to include in models of career development (Lent & Hackett, 1987). Even though the authors looked at the influence of self-efficacy on achievement behavior, academic career decisions, and career adjustment of both men and women, the main focus was on understanding self-efficacy expectations of women in choosing male-dominated versus female-dominated occupations (Taylor & Betz, 1983). Betz and Hackett (1981) focused specifically on gender differences in access to the primary sources of efficacy information, e.g., enactive performance opportunities or performance accomplishments relevant to career pursuits; availability of vocational role models; and encouragement by significant others to pursue non-sex stereotypical endeavors (Lent &

Hackett, 1987). Betz and Hackett (1981, p. 334) posed three questions that subsequent research reviewed has addressed:

- (1) To what extent are expectations of self-efficacy related to the individual's perceived range of career options, to effective career decision-making, and to effective and persistent pursuit of desired alternatives?
- (2) To what extent do sex differences in the level, strength, and generality of career-related efficacy expectations contribute to the understanding of sex differences in occupational behavior?
- (3) Do counseling interventions focused on increasing career-related self-efficacy expectations change vocational behavior, including satisfaction with and success in occupational pursuits?

The first two questions have been investigated more than the last question involving counseling interventions on increasing self-efficacy expectations. The third question has been addressed indirectly through experimental investigations of the effects of performance on self-efficacy (Lent & Hackett, 1987).

In the Betz and Hackett (1981) study, students were assessed on self-efficacy with regard to 20 occupational titles designated either as traditional or non-traditional based on the percentage of women employed in the occupation as stipulated by the U.S. Women's Bureau in 1975. Participants were asked to indicate their *level* and *strength* of self-efficacy expectations as measured by the Occupational Self-Efficacy Scale (Betz & Hackett, 1981). Form A of a two-part survey measured the level and strength of self-efficacy. To measure the level of self-efficacy respondents were asked whether or not they felt they could successfully complete educational requirements indicating either a yes/no. Second, to measure the strength of self-efficacy respondents had to indicate their degree of confidence for completing the educational requirements to enter the 20 occupations on a 10-point Likert scale from Completely Unsure (1) to Completely Sure (10). Form B of the survey, assessing confidence ratings only, asked respondents to indicate how much confidence they felt they had to successfully complete the

education and/or training requirements to enter each occupation on a scale from No Confidence At All (0) to Complete Confidence (10). The scale also asked respondents to indicate confidence to perform the job duties of the occupation if they had the necessary education and/or training. Results indicated that in terms of the level of self-efficacy for completing the educational/training requirements for each occupational title, the occupations of physician, engineer, and mathematician were perceived as most difficult, with 45%, 47%, and 49% of the total participant group (N = 235) perceiving themselves as capable of completing the educational requirements (Betz & Hackett, 1981).

Furthermore, results indicated that males reported higher self-efficacy on five non-traditional occupations (accountant, drafter, engineer, highway patrol officer, and mathematician) and females reported greater self-efficacy on five traditionally female occupations (dental hygienist, elementary teacher, home economist, physical therapist, and secretary). There were fewer sex differences in confidence ratings for completing the educational/training requirements, however the mean confidence scores of males were significantly greater than those of females on engineer and highway patrol officer, whereas females reported higher levels of confidence on the occupations of elementary school teacher, home economist, secretary, and social worker.

Similar results were obtained for males and females on Form B of the scale that assessed the strength of self-efficacy to complete the education and/or training requirements to enter each occupation. Males reported greater self-efficacy for the job duties of accountant, drafter, engineer, highway patrol officer, and mathematician, and females reported higher self-efficacy on four traditionally female occupations: dental hygienist, home economist, secretary, and social worker.

However, a critical examination of the study reveals that there were sex differences in only 10 of the 20 occupations. Moreover, a difference in females' and males' perceived capability to successfully perform the job duties was evident in only 9 of the 20 occupations. Lent & Hackett (1987) concluded that no sex differences in overall self-efficacy were found and that the differences emerged as a result of the traditional and non-traditional groupings of the occupations.

Following a similar technique as employed by Betz and Hackett (1981) in measuring self-efficacy estimates in college students, the Lent, Brown, and Larkin studies (1984; 1986) developed a program for students majoring in scientific/technical careers. Their research focused on examining the relation of self-efficacy estimates on 15 technical/scientific educational requirements and job duties. Students were also measured on several variables such as self-esteem, career indecision, vocational interests, and range of perceived career options. Findings from a one-year follow-up study indicated that students who had reported high efficacy, achieved higher grades and showed greater persistence in science/engineering majors. Findings from a partial replication of the first study indicated similar results with regards to a significant relation of technical/scientific self-efficacy to grades and persistence in technical majors. Non-significant relations were found between self-efficacy, self-esteem, and career indecision. Although Lent et al. (1984; 1986) have been credited for documenting the psychometric properties of the self-efficacy instruments raising issues about operationalization and construct validity (Lent & Hackett, 1987), the studies have also been criticized for using small samples and sampling students with high ability suggesting that they may have had more efficacy-building experiences than men and women in the general public (Lent & Hackett, 1987).

### *Self-Efficacy, Interests, and Career Choice*

Self-efficacy research has examined the relationship between perceived self-efficacy and interests predicting the type of career options college students considered (Betz, Borgen, & Harmon, 1996; Betz, Harmon, & Borgen, 1996; Lapan, Boggs, & Morrill, 1989; Lapan, Shaughnessy, & Boggs, 1996). In a large study sampling 1,105 employed adults in 21 various occupational groups, self-efficacy predicted the greatest differences in occupational interests among the 21 occupational groups, accounting for 82% of the variance (Betz & Borgen, 2000). Similarly, Lapan et al. (1996) found that math self-efficacy and math interests predicted college major choice in math and science majors. Also, Betz & Hackett, (1983) focusing on the self-perceptions of math ability, found that math self-efficacy was related to the extent to which students selected math/science related college courses. However, because math self-efficacy was determined based on 18 short math problems, critics suggested limitations in generalizability of these findings (Lent & Hackett, 1987).

Taylor and Popma (1990) looked at the relationship between career decision-making self-efficacy and vocational indecision along with its relationship to other concepts such as career salience and locus of control. Female and male undergraduates (N= 407) enrolled in a general psychology course were placed into three groups based on their major choice status (i.e. I have declared a major; I am tentatively decided on a major; I am undecided on a major.) To address one of the research questions concerning the relationship among career-decision-making self-efficacy, traditional and non-traditional range of career options, and occupational self-efficacy for traditional and non-traditional occupations, a stepwise discriminant analysis revealed that declared majors reported the highest career-decision-making self-efficacy compared to the tentative and undeclared groups. These findings suggest that higher self-efficacy for career-

decision making behaviors distinguishes between students who have declared their academic major or selected a career path compared to their counterparts who are undecided or who have made only tentative selections of an academic major or career choice. A moderate positive relationship was found between the two measures of occupational self-efficacy and career self-efficacy indicating that confidence in one's ability to complete the educational and training requirements for the traditional and nontraditional occupational entry coincides to some degree with confidence to complete career decision-making tasks (Taylor & Popma, 1990).

### *Gender and Occupational Choice*

A body of research has used self-efficacy to investigate the relationships between variables or factors relevant to career development such as career choice options, achievement, ability, persistence, and interests. Researchers examining gender and self-efficacy have examined a broad range of constructs in efforts to understand the differences in motivation, specifically self-efficacy as it relates to career choices between men and women (Betz & Hackett, 1981; Betz & Schifano, 2000; Chung, 2002; Hackett, Betz, Casas, & Rocha-Singh 1992; Nauta, Epperson, & Kahn 1998; Schaefer, Epperson, & Nauta 1997). Betz and Hackett (1981) were among the first to extend self-efficacy theory to vocational behavior, hypothesizing that expectations of personal efficacy may exert strong influences on the career decisions and achievement of both men and women. Findings from this first study supported the postulate that both self-efficacy and interests predicted the kind of career options college students considered (Betz & Borgen, 2000). To understand how self-efficacy and interests influence career options in women, Betz and Schifano (2000) evaluated an intervention to increase realistic self-efficacy or confidence in women to pursue engineering and scientific occupations by including the sources of primary information as postulated by Bandura (1977). To address the issue on how to

encourage women to pursue male-dominated careers, research has examined personality styles and interests. Holland's (1966, 1977) typology of personalities and work environments (also known as the RIASEC theory) has been most useful in this regard. Holland categorized people and work environments into six groups: realistic (R), investigative (I), artistic (A), social (S), enterprising (E), and conventional (C). According to Holland, realistic types seek environments that allow them to work with tools, objects, animals, or machines, and they avoid environments that require social interaction. Investigative types prefer observing and systematically examining physical, biological, or cultural phenomena, and avoid environments that require persuasive activities. Artistic types prefer unstructured and ambiguous activities that allow them to create art from physical, verbal, or human materials and avoid clerical and computational environments. Social types prefer teaching, developing, or curing and avoid working with things such as machines. Enterprising types prefer working in leadership roles and tend to avoid science. And lastly, Conventional types prefer examination of data and tend to avoid ambiguous unstructured environments (Fritzsche, McIntire, & Yost, 2002). Based on these personal styles some researchers suggest that when realistic interests and confidence accompany Holland's Investigative (scientific) theme, a large array of engineering and technical specialities becomes viable for career exploration (Betz & Schifano, 2000). In a follow-up study Post-Kammer and Smith (1986) examined the relationship of gender differences in consideration of math-oriented and nonmath-oriented occupations in disadvantaged students who participated in a precollege program. Regression analysis revealed both self-efficacy and interests contributed significantly to the prediction of both math-related and nonmath-related occupational consideration for women, but only interests were predictive of occupational consideration for men (Lent & Hackett, 1987).

Other studies have looked at gender differences with regards to career decision-making self-efficacy and career commitment, (e.g., Chung, 2002). Although not examining self-efficacy, Perrone, Sedlacek, and Alexander (2001) examined gender differences with regards to variables influencing career goal setting and barriers to and facilitators of meeting career goals. College freshmen (N = 2,743) were surveyed on (1) factors influencing career choice goals, (2) barriers to achieving career goals, and (3) facilitators of career goals. Respondents were asked to choose from a list of 10 factors which were most important to them in determining their long-term career goals. An example of items listed as factors in determining long-term goals were “make an important contribution to society, high anticipated earnings, well-respected or prestigious occupation”. To assess barriers to meeting career goals, some items included “personal finances, time management, and family conflicts”. Facilitators of career goals were assessed on a 5-point Likert scale from 5 (*strongly agree*) to 1 (*strongly disagree*), items included were “I prefer to handle my academic problems on my own”, “I would consider seeking study skills training”, and “I would consider seeking time management training.” The first hypothesis was supported; gender differences did exist among factors influencing career-choice goals. Both males and females cited intrinsic interest in the field as their long-term career goal, men cited high anticipated earnings, and women cited a well-respected or prestigious occupation as most important career goals. A third hypothesis was also supported by the results; gender differences were found for perceived barriers to attaining career goals. Similarly, Lent, Brown, Talleyrand, McPartland, Davis, Chopra, Alexander, Suthakaran, and Chai (2002) looked at career-choice barriers, supports, and coping strategies in college students’ experiences. By interviewing 19 and 12 students enrolled at a state university and a technical college respectively, students at both sites perceived their interests, values (i.e. expected outcomes and working conditions), and

abilities as important factors with respect to both choice of options they expect to pursue and those they had ruled out (Lent et al., 2002). Some of the barriers included financial concerns, role conflicts, and social family influences. Support variables cited by some students included family members, friends, and teachers for the career choices they had considered or failed to consider.

Other studies measuring self-efficacy with respect to domains of vocational activity still provide evidence for gender differences with regard to perceived capabilities between males and females. For instance, Betz, Schifano, and Kaplan (1999) assessed students enrolled in an introductory psychology course on three measures of self-efficacy expectations. First, the Task Specific Occupational Self-Efficacy Scale (TSOSS; Osipow, Temple, & Rooney, 1993) measured participants' confidence in their ability to perform 60-task specific activities. Tasks for the scale were grouped under headings such as Verbal, Quantitative, Physical, and Aesthetic. Sample items included were "Indicate your confidence in your ability to gain the trust and confidence of people" and "Use hand tools". Second, the Skills Confidence Inventory (SCI; Betz, Borgen, & Harmon, 1996) which is also a 60-item measure of self-efficacy expectations with regard to activities and tasks associated with each of the six Holland themes was also completed by participants. Item types are grouped under Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. An example of an activity item and task item included are, "Build a doll house" industrial arts (Realistic); organize systems for filing information, accounting (Conventional). Third, participants completed the Career Decision Scale (CDS; Osipow, 1987) which measures career indecision.

Results indicated that college men reported higher TSOSS means on the Quantitative and Physical self-efficacy subscales compared to college women. Men also reported higher confidence on Realistic, Investigative, Enterprising, and Conventional themes, while women

reported higher confidence with respect to the Social theme. These findings indicate that males are more confident with regards to Realistic themes, which is a central component for pursuit of careers in engineering and technology (Betz & Schifano, 2000).

Overall, the results have pointed in similar directions such that gender differences were observed with respect to specific tasks, men scoring higher on self-efficacy as defined by each study in terms of traditionality of occupational choice (male versus female-dominated) or females scoring lower on mathematics and science related items while higher on stereotypically feminine occupations. However, in terms of gender differences on self-efficacy expectations and occupational choices the literature remains inconclusive.

#### *Summary of literature review*

Over the past century, career development has intrigued and curiously inspired researchers interested in studying social cognitive antecedents to career development. Effective career decision-making is important because career decisions affect lifestyles (Kraus & Hughey, 1999). Researchers have acknowledged this importance to exploring the vastly complicated factors involved in career planning and have attempted to investigate the realities of information involved to uncover the maze of career exploration. Initially the tenets of the social learning theory opened the door to career development. However that research has evolved to include the complexities of intrinsic motivators of career-choice behavior, and thus brought the social cognitive learning approach to the forefront.

In the seventies Bandura's foundations of self-efficacy led the way in career development research, growing and expanding into various avenues of research and helping to understand general behavior and behavior change. However, for researchers interested in vocational psychology the focus centered on discovering personal attributes as they relate to career

exploration. Consequently, a body of research has developed that tackles broad domains of personal motivation, specifically self-efficacy expectations. The research has largely been correlational in nature and therefore causality of self-efficacy expectations to any career development variable has only been speculated upon. However, a number of experimental research studies focused on intervention strategies to facilitate incongruous career development such as career indecision. Much of the focus of the experimental research is to increase self-efficacy and interests in members of society where they have largely been under-represented, particularly women. Similarly, pioneers in the field of addressing career self-efficacy and gender differences (e.g., Betz & Hackett, 1981) have demonstrated the scope of self-efficacy expectations as they influence male and female career-choice development. Even though the research currently remains inconclusive regarding gender differences in terms of career self-efficacy and career-choice behavior, self-efficacy research has helped explore how confident women compared to men are concerning occupational choices or career goals. In an attempt to encourage women to enter male-dominated professions where they are largely underrepresented, the tenets of self-efficacy theory have delineated the effects of sex-role socialization such that women have been more likely to express lower self-efficacy expectations with regards to engineering and the physical sciences compared to men. The creation of self-efficacy research on gender differences in career development are improved methods for counselors and career guidance teachers. By paying particular attention to women who are good in mathematics, career counselors can help provide the necessary resources to encourage these women to pursue careers in predominantly male professions.

Research in the later half of the twentieth century has adopted a social learning theory approach by exploring the interaction between self-referent mechanisms such as self-efficacy

and the influence of the environment. The interplay of self-efficacy expectations and social factors has delineated the complex aspects involved in the career development process. Because self-efficacy largely plays a facilitative and mediational role in relation to contextual factors, the focus of current research explores the impact of contextual factors such as parental occupation and socioeconomic status on choice of college major (e.g., Leppel, Williams, & Waldauer, 2001). Similarly, research on self-efficacy expectations has looked at the relationship of coping strategies, career-choice support for, and barriers from committing to or rejecting occupational options, (e.g., Lent et al., 2002). This current trend toward the reciprocal interaction between cognitive, behavioral and environmental factors in building, selecting, committing, and pursuing of career-choice options seems to be the likely direction for self-efficacy research in the twenty-first century.

## Chapter III

### METHOD

#### *Participants*

Participants for this study were 33 males and 31 females (N = 64) undergraduate students enrolled in the Learning Strategies and the Orientation courses (Educational Psychology 101/Orientation 101) at a Mid-Atlantic university. Participants were 87.5% Caucasian, 6.3% African-American, 1.6% Hispanic, and 4.7% specified as Other (students were not asked to specify race under the other category). Participants represented the following age groups: 67% were between 17-19, 26% were between 20-22, 3% were between 23-25, and 2% were 26 or older. Major status of participants was as follows: 67% indicated that they had declared a major compared to 33% who indicated that they were undeclared. 51% of the participants had been at the university for 1-2 semesters, 12% reported 3-4 semesters, and 1% had reported 7 or more semesters of enrollment. (see Appendix A for copy of demographics page)

In general, students enrolled in the Learning Strategies course include *Stay Students* (i.e. students who have been given a second chance to improve their academic standing and to remain enrolled at the university as a result of academic probation or suspension). Furthermore, some students are part of the *Step Program* (participation in this program is based on academic performance over the summer session and as recommended by their advisor). Both courses are designed to assist students with strategies on how to cope with a college curriculum. The courses teach students strategies/skills to improve studying habits. The courses also focus on developing skills in the area of problem solving, time management, and self-management.

### *Procedure*

The Career Decision Self-Efficacy Scale (Short Form), and the Occupational Self-Efficacy Scale (Form B) were administered to the participants. It took 15 minutes to complete both surveys. Prior to administering the surveys, instructions were read aloud according to the IRB script (Appendix B). Students in the Learning Strategies course were awarded extra credit points for participating in the study. Students in the Orientation course were not awarded any incentive to participate.

### *Measures*

Participants completed the Career Decision Self-Efficacy Scale (Short Form) [CDMSE, Short Form] (Taylor & Betz, 1983). The scale consists of 25 items assessing an individual's degree of belief that he/she can successfully complete tasks necessary to making career decisions (Betz & Taylor, 2001). The items were developed based on Crites' (1978) model of Career Maturity and from the CDMSE (Taylor & Betz, 1983) which originally consisted of 50 items. Crites' model of career maturity hypothesized that "good" career decisions are facilitated by competence (as opposed to incompetence) with respect to five career-choice processes and by mature attitudes (as opposed to immature attitudes) regarding the career-choice process (Betz & Taylor, 2001). The five competencies that form the subscales of the CDMSE are (1) accurate self-appraisal, (2) gathering occupational information, (3) goal selection, (4) making plans for the future, and (5) problem solving. Respondents indicate their degree of confidence to accomplish 25 tasks on a 5-point Likert scale ranging from No Confidence At All (1) to Complete Confidence (5). A copy of the CDMSE-Short form appears in Appendix C.

Reliability (internal consistency computed by Cronbach's alpha) for the CDMSE (Short Form) is .95 (Betz, Klein, & Taylor, 1996). Values of coefficient alpha for the five subscales is

reported to be (.81) Self-Appraisal, (.82) Occupational Information, (.87) Goal Selection, (.84) Planning, and (.81) Problem Solving. The CDMSE-SF had moderate correlations (ranging from .31 to .68) with career indecision and vocational identity measures. Scores on the original CDMSE-50 are highly correlated with scores on other measures of self-confidence, such as self-esteem and occupational self-efficacy. However, they also tap unique aspects of self-confidence associated with career planning.

The Occupational Self-Efficacy Scale (Betz & Hackett, 1981) is a 20-item scale listing 10 traditionally female and 10 traditionally male occupations as defined by the percentage of women employed in the occupation, as stipulated by the U.S. Women's Bureau, 1975. The traditional-nontraditional dichotomy was formulated if 70% or more of the members were women or 30% or less were women in a given occupation. Internal consistency reliability for the OSES is .95 for (total score), .91 for (sum of traditionally female occupations across educational requirements and job duties), and .92 for (sum of male-dominated occupations across educational requirements and job duties) as reported by Layton (1984). Concurrent validity was reported by Zilber (1988) to be a value of  $r = .73$  (a measure of self-efficacy consisting of five job-relevant tasks was correlated across each of the 20 occupations in the OSES). With regards to construct validity, the authors suggest evidence comes from empirical research supporting the nomological network of the construct of career-related self-efficacy as measured by the OSES. Only Form B of the scale was used for purposes of this study. (See Appendix D for copy of survey ).

## Chapter IV

### RESULTS

The research questions and hypotheses formulated for this study were based on past research exploring self-efficacy expectations and the process in career decision-making. Research Question 1 asked whether there is a difference between career decision-making self-efficacy and the type of occupational titles (traditional versus non traditional) selected. It was hypothesized that there would be no difference between career decision-making self-efficacy and the type of occupation selected. Research Question 2 posed whether there would be a difference between males and females and the type of occupation selected (traditional versus non traditional). It was hypothesized that there would be a difference between males and females and the type of occupations selected such that females would report higher self-efficacy for traditional occupations, and males would report equivalent self-efficacy for traditional and non traditional occupations. Lastly, Research Question 3 asked whether a relationship existed between career self-efficacy and major status (declared versus undeclared). It was hypothesized that declared majors will report higher career self-efficacy on the accurate self-appraisal and gathering occupational information subscales compared to undeclared majors.

The analysis to answer Research Question 1 consisted of five one-way analyses of variance (ANOVAs). ANOVAs were between-subjects, meaning that there were different participants in the two levels of the independent variable. The independent variable was labeled as Occupational type and the 2 levels were ( $n = 37$  for female-dominated and  $n = 18$  for male-dominated occupation). The dependent variables were career decision-making self-efficacy subscales; self-appraisal, occupational information, goal selection, planning, and problem-solving. The means and standard deviations for these dependent variables partitioned by the two

levels of the independent variable are reported in Table 1. Additionally, the results of these ANOVAs are summarized in Table 1. As may be noted, the goal selection subscale yielded a significant finding in which the male-dominated participants had higher goal selection scores than the participants who scored higher on the female-dominated occupational titles,  $F(1, 53) = 7.92, p > .01$ . The remaining four ANOVAs did not yield significant findings.

These results suggest that participants who show a higher level of confidence for male-dominated occupations also feel equally competent to fulfill the educational or training requirements for those occupations as measured by the Occupational Self-Efficacy Scale. Additionally, participants in the male-dominated group are more competent at selecting and making career-choices as assessed by the goal selection items. Alternatively, it may be stated that participants who have decided to pursue a male-dominated occupation show more confidence in selecting goals to meet the educational or training requirements for male-dominated occupations.

Table 1

*Analysis of variance for occupation-type group and career decision-making self-efficacy subscales*

Dependent variable	Traditional (n=37)		Non traditional (n=18)		<i>F</i>
	M	SD	M	SD	
Self-appraisal	19.72	2.79	19.77	2.84	0.953
Occupational information	19.27	2.73	18.94	3.15	0.695
Goal selection	17.86	3.49	20.50	2.68	0.007**
Planning	18.29	2.99	19.16	2.85	0.309
Problem-solving	18.16	2.97	18.22	2.98	0.944

Note: \*\* significant at  $p < .01$

To answer Research Question 2, descriptive statistics consisted of means, standard deviations and 2 t-tests for the independent variable gender ( $n = 33$  males and  $n = 31$  females) and the dependent variable occupational type selected (male versus female-dominated occupations). The means and standard deviations for these dependent variables partitioned by the two levels of the independent variable are reported in Table 2. As may be noted, hypothesis 2 which suggested that males would report equivalent confidence for male and female-dominated occupations and females would report higher confidence for female-dominated occupations compared to male-dominated occupations was supported. Males were more likely than females to report equivalently higher self-efficacy for both female and male-dominated occupational choices. Although a t-test revealed no significant differences between the levels of the independent variable and the dependent variables, the mean self-efficacy scores for males on both female ( $M=113.79$ ,  $SD=29.36$ ) and male-dominated occupations ( $M=108.45$ ,  $SD=34.71$ ) were almost equally high compared to female self-efficacy scores, which were higher for female-dominated occupations ( $M=119.77$ ,  $SD=33.86$ ) compared male-dominated occupations ( $M=94.10$ ,  $SD=38.53$ ). These results are consistent with evidence from past research (e.g., Betz & Hackett, 1981; Layton, 1984).

Table 2

*Means, standard deviations and t-tests for males and females by occupational-type*

Dependent variable	Gender				
	Males (n =33)		Female (n=31)		<i>t</i>
	M	SD	M	SD	
Male-dominated	113.79	29.36	94.10	38.53	1.754
Female-dominated	108.45	34.71	119.77	33.86	.112

Note: \*significant at  $p < .01$

Hypothesis 3 which suggested that declared majors will report higher career self-efficacy expectations on the accurate self-appraisal and gathering occupational information factors of the CDMSE compared to undeclared majors was not supported. Five t-tests were conducted with major status as the independent variable, partitioned by two levels, declared ( $n = 43$ ) and undeclared majors ( $n = 21$ ). The dependent variables were the scores on the career decision-making self-efficacy subscales; self-appraisal, occupational information, goal selection, planning, and problem solving. The means and standard deviations for these dependent variables partitioned by the two levels of the independent variable are reported in Table 3. Additionally, the results of these t-tests are summarized in Table 3. As may be noted, the goal selection subscale yielded a significant finding in which the declared participants had higher goal selection scores than the undeclared participants,  $t(1, 62) = 3.510 p > .01$ . The remaining four t-tests did not yield significant findings.

By examining the data, it may be noted that undecided majors scored lower than decided majors on the career decision-making self-efficacy scale. These results support and are consistent with past research that suggests the CDMSES is valid measure of career indecisiveness (Taylor & Betz, 1983).

Table 3

*Means, standard deviations, and t-test analysis for major status and career decision-making self-efficacy subscales*

Dependent variable	Major status				<i>t</i>
	Declared (n=43)		Undeclared (n=21)		
	M	SD	M	SD	
Self-appraisal	19.93	2.79	19.23	2.84	0.900
Occupational Information	19.51	2.73	18.62	3.15	1.174
Goal selection	19.77	3.49	16.95	2.68	3.510**
Planning	19.25	2.99	17.62	2.85	0.001
Problem-solving	18.53	2.97	17.00	2.98	0.049

Note: \*\* significant at  $p < .01$

## Chapter V

### DISCUSSION

Based on a review of the research, beliefs of personal efficacy play a highly influential role in occupational development and pursuits. The higher a person's perceived self-efficacy to fulfill educational requirements and occupational roles, (a) the wider the career options they seriously consider pursuing, (b) the greater the interest they have in them, (c) the better they prepare themselves educationally for different occupational careers, and (d) the greater their staying power in challenging career pursuits (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001).

The purpose of this study was to investigate relationships between career decision-making self-efficacy and occupational self-efficacy of undergraduate students. Specifically, the study explored whether differences existed between career decision-making self-efficacy expectations and occupational titles selected by students enrolled in Learning Strategies and Orientation courses. Additionally the study looked for differences between males and females in their confidence for female-dominated versus male-dominated occupations. Based on existing literature, Research Question 1 posited that there are no differences between career self-efficacy and occupational titles selected. However, results from this study suggested that students who indicated higher self-efficacy for male-dominated occupational titles also felt competent on the goal selection areas of career decision-making. It seems reasonable to suggest that students who prefer male versus female-dominated careers have assessed their career goals, and subsequently feel competent to facilitate a career in a male-dominated occupational field. Furthermore, studies that have looked at the social support structure of students who choose nontraditional occupational choices, found that these students generally had more positive perceptions of

support from others regarding their occupational choice than either students in gender balanced or traditional training programs (Read, 1994). Perhaps these results reflect the research of Swanson and Tokar (1991) and Luzzo (1995) which indicated that career motivation is affected by gender related differences in the perception of barriers to career attainment. Similarly, Harmon (1977), proposed that women's career development is affected by both internal/psychological and external/sociological constraints.

Secondly, it was hypothesized that there is a relationship between males and females and occupational self-efficacy expectations, such that females will report higher self-efficacy for female-dominated occupations, and males will report equivalently high self-efficacy expectations for female and male-dominated occupations on the Occupational Self-Efficacy Scale. The results from this study reiterate evidence from past research findings which revealed males as reporting higher self-efficacy for male and female-dominated occupations, compared to females who reported lower self-efficacy for male-dominated and higher self-efficacy for female-dominated occupations. These results make for interesting speculations since some of the occupations such as Accountant which were categorized as non traditional by Betz and Hackett, 1981, according to the percentage of males dominating the field in 1975 by the U.S census bureau has since experienced an influx of females into the field so that women account for slightly more than half of those employed as accountants and auditors as reported by the U.S Bureau of labor statistics in 2003. Furthermore, it may be noted that these results were perhaps as a result of the traditional and non traditional groupings of the occupations as suggested by Lent & Hackett (1987). Based on the scores, the results revealed that only 9 out of the 33 males scored equivalently high on both the male and female-dominated careers. However, based on the mean differences for males and females on their preference for male versus female-dominated occupations, it seems accurate

to conclude that sex differences as it relates to career-choice are apparent for this sample of students. A possible explanation for the consistent sex-stereotypical gender differences in career-choice are perhaps explained by Stickel and Bonett (1991) who have suggested, women choose traditional careers because of the perceived difficulty in combining nontraditional careers with the socially imposed expectations and responsibilities of home and family.

Lastly, it was hypothesized that a relationship existed between self-efficacy expectations for those participants with declared compared to undeclared majors, such that students who have declared a major compared to those who remain undeclared would report higher levels of self-efficacy beliefs as they related to the career decision-making process. Would declared majors be more self-efficacious at career planning as measured by the four factors on the CDMSES? It was hypothesized that declared majors would be more self-efficacious on the accurate self-appraisal and gathering occupational information factors compared to undeclared majors. However, hypothesis 3 was not supported and the results indicated goal selection as the only significant factor of difference between the two groups. The findings for research question 3 support previous research (e.g. Taylor & Betz, 1983; Taylor & Popma, 1990) in which career self-efficacy was found to be significantly related to vocational indecision. In other words, these studies validated the CDMSES as a measure in distinguishing decided versus undecided majors. Furthermore, by close examination of the five items that make up the goal selection subscale, e.g. “select one major from a list of potential majors you are considering”, or “make a career decision and then not worry about whether it was right or wrong” it seems reasonable to suggest that undecided majors would be less likely to indicate a high level of confidence to fulfill such a task compared to decided majors.

The results obtained in research question 1 which addressed whether there is a difference between type of occupation selected and career decision-making self-efficacy, indicated that goal selection was the only subscale to yield a significant finding. However, whether these results were influenced by the fact that there were almost twice as many students in the female-dominated (n = 37) compared to male-dominated group (n = 18) is not plausible. Given that the results obtained for research question 3, which addressed whether a difference existed between career decision-making and declared (n = 43) versus undeclared majors (n = 21), also revealed goal selection as the only subscale to yield a significant finding. The results of this study highlight the importance of goal selection with regard to career-choice preferability and attainability for research questions 1 and 3. It seems reasonable to suggest that an internalization of coherent goals may produce a reciprocating relationship between career decision making and goal selection. However, research on the career decision making self-efficacy scale has documented the measure as assessing generalized self-efficacy rather than a distinct measure of self-efficacy expectations for specific career decision making tasks (Luzzo, 1993). Furthermore, differences between the type of occupation selected i.e. male versus female-dominated and the goal selection subscale on the career decision-making self-efficacy scale has not been found in past research, suggesting the need for further exploration.

Based on the research, self-efficacy expectations are particularly useful to understanding women's career development because sex-role socialization of females is believed to be less likely than that of males to facilitate the development of strong career-related self-efficacy expectations (Betz & Hackett, 1981). Even though this was a small sample of students, sex-stereotypical differences between traditional and non traditional occupations were still evident in the present group of undergraduates. The question arises, do sex differences found between

traditional and non traditional occupations in the past still exist today? More importantly, if so, how can counselors encourage female students to pursue non traditional disciplines in the twenty-first century?. Given a projected shortfall of half a million science and engineering professionals by the year 2010, and the increasing decline of women and minorities entering science-related professions, how can teachers and counselors successfully implement intervention strategies to increase low self-efficacy expectations in women?. According to self-efficacy theory, self-efficacy expectations can be modified via four primary means: performance accomplishments, vicarious experiences, verbal persuasion, and emotional arousal (Bandura, 1977).

The unexpected finding between the goal selection subscale on the career decision-making self-efficacy scale and declared majors, supports the inconsistent differences found between these subscales and other variables in past research (Gianakos, 2001). However, as it may be noted in the present study, goal selection was a consistent factor in differences between occupational-type and major status. Perhaps, participants who choose predominately male-dominated careers and participants who have declared a major are more prepared to exert personal control over exploring their career-choices and therefore more goal-oriented toward exploring those career possibilities. Another possible explanation may be that the skills and strategies taught in these courses enable students to have more confidence in their abilities to complete tasks such as selecting a major from a list of potential majors, selecting one occupation from a list of occupations they are considering, choosing a career that will fit their preferred lifestyle, making a career decision and then not worry whether it was right or wrong, and finally choosing a major or career that will fit their interests. Subsequent research exploring these

variables in other samples would further investigate the unique relationship between goal selection and occupational type and major status.

Some of the limitations of this study include a small sample size of students ( $N = 64$ ), some of whom were enrolled in a course designed to help improve their academic standing. Additionally, more than half of the students sampled were between ages 17-19 and thus in their first or second semester at the university. However, research by Gianakos, 1999, found that age of students, and the years of college study, did not influence whether a student reported a stable, unstable, conventional or multiple-trail pattern of career choice. In other words, regardless of age the students' pattern of career-choice varied irrespectively. Lastly, the sample lacked racial diversity, reflective of the student population served by this university. However, the results make a valid contribution to self-efficacy research by delineating potential relationships between goal-setting behavior and career-choice self-efficacy. Additionally, the present study expands the small but growing body of published research that has largely been dominated by two groups of researchers (e.g. Betz & Hackett and Lent, Larkin & Brown).

The results of this study suggest the CDMSES is a valid measure of distinguishing between career decided and undecided majors. Furthermore, the measure can help career counselors assess a clients' self efficacy as it relates to their vocational behavior. Even though career decision making is a complex phenomenon, the scale provides insight into a clients decision-making tasks.

With regards to career-choice and the Occupational Self-efficacy scale, counselors have an overview of a clients' confidence or preference for various male and female-dominated occupational titles. Based on a student's academic skill, an intervention strategy such as performance accomplishments, can be customized to help individual students trial careers

wherein they express low self-efficacy or facilitate career-options where high self-efficacy is expressed.

Lastly, there is a need for more longitudinal research exploring self-efficacy beliefs along with attitude changes of students and their perceptions of their abilities as they relate to occupations. Longitudinal research provides a better analysis of career planning patterns, course of career interests pursued and provides a greater and more in-depth understanding or analysis of temporal attitudes on career and major indecision.

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## Appendix A

### Demographics Page

Please fill out the following questions by placing a check mark (✓) next to the correct answer.

1. Gender:  Male  Female

2. Age:  17-19  20-22  23-25  26 and older

3. Semester(s) at WVU:  1 – 2  3 - 4  5 – 6  7 and above

4. Major status:  Declared major  Undeclared major

5. Ethnicity:  Caucasian  African American  Hispanic  
 Asian American  Native American  Other

## Appendix B

Good morning (afternoon). Thank you for agreeing to participate in my study. The goal of my research is to investigate the relationship of career self-efficacy and career choice behavior of students enrolled in an Orientation course. The information gathered will be used for my master's thesis.

I want to point out several things to you before we start:

1. Your participation is entirely voluntary and you do not have to respond to every item or question;
2. Your responses will remain anonymous and confidentiality will be maintained;
3. Neither your class standing, athletic status, nor grades will be affected by refusing to participate or by withdrawing from the study.

Thank you for agreeing to participate in this study.

## Appendix C

### CDMSE – Short Form

INSTRUCTIONS: For each statement below, please read carefully and indicate how much confidence you have that you could accomplish each of these tasks by CIRCLING your answer according to the key.

HOW MUCH CONFIDENCE DO YOU HAVE THAT YOU COULD:

1. Find information in the library about occupations you are interested in.

No Confidence At all	Very little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
1	2	3	4	5

2. Select one major from a list of potential majors you are considering

No Confidence At all	Very little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
1	2	3	4	5

3. Make a plan of your goals for the next five years

No Confidence At all	Very little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
1	2	3	4	5

4. Determine the steps to take if you are having academic trouble with an aspect of your chosen major.

No Confidence At all	Very little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
1	2	3	4	5

5. Accurately assess your abilities.

No Confidence At all	Very little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
1	2	3	4	5

6. Select one occupation from a list of potential occupations you are considering.

No Confidence	Very little	Moderate	Much	Complete
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At all 1	Confidence 2	Confidence 3	Confidence 4	Confidence 5
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7. Determine the steps you need to take to successfully complete your chosen major.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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8. Persistently work at your major or career goals even when you get frustrated.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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9. Determine what your ideal job would be.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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10. Find out the employment trends for an occupation over the next ten years.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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11. Choose a career that will fit your preferred lifestyle.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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12. Prepare a good resume

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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13. Change majors if you did not like your first choice.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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14. Decide what you value most in an occupation.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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15. Find out about the average yearly earnings of people in an occupation.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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16. Make a career decision and then not worry whether it was right or wrong.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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17. Change occupations if you are not satisfied with the one you enter.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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18. Figure out what you are and are not ready to sacrifice to achieve your career goals.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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19. Talk with a person already employed in the field you are interested in.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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20. Choose a major or career that will fit your interests.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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21. Identify employers, firms, and institutions relevant to your career possibilities.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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22. Define the type of lifestyle you would like to live.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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23. Find information about graduate or professional schools.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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24. Successfully manage the job interview process.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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25. Identify some reasonable major or career alternatives if you are unable to get your first choice.

No Confidence At all 1	Very little Confidence 2	Moderate Confidence 3	Much Confidence 4	Complete Confidence 5
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Appendix D

Occupational Self-Efficacy  
Confidence Ratings only

Instructions: For each occupation listed below, please indicate **how much confidence you have that you could successfully complete the educational and/or training required to enter the occupation.**

Occupation	Your confidence									
	No confidence At all confidence		Very little Confidence			Some Confidence		Much Confidence		Complete Confidence
	0	1	2	3	4	5	6	7	8	9
1. Mathematician	0	1	2	3	4	5	6	7	8	9
2. Probation Officer	0	1	2	3	4	5	6	7	8	9
3. Dental Hygienist	0	1	2	3	4	5	6	7	8	9
4. Lawyer	0	1	2	3	4	5	6	7	8	9
5. Physician	0	1	2	3	4	5	6	7	8	9
6. Social Worker	0	1	2	3	4	5	6	7	8	9
7. Drafter	0	1	2	3	4	5	6	7	8	9
8. X-Ray Technician	0	1	2	3	4	5	6	7	8	9
9. Physical therapist	0	1	2	3	4	5	6	7	8	9
10. Home Economist	0	1	2	3	4	5	6	7	8	9
11. Engineer	0	1	2	3	4	5	6	7	8	9
12. Secretary	0	1	2	3	4	5	6	7	8	9
13. Art Teacher	0	1	2	3	4	5	6	7	8	9
14. Medical technician	0	1	2	3	4	5	6	7	8	9
15. Elementary School teacher	0	1	2	3	4	5	6	7	8	9
16. Travel Agent	0	1	2	3	4	5	6	7	8	9
17. School Administrator	0	1	2	3	4	5	6	7	8	9

18. Sales Manager	0	1	2	3	4	5	6	7	8	9
19. Highway Patrol Officer	0	1	2	3	4	5	6	7	8	9
20. Accountant	0	1	2	3	4	5	6	7	8	9

Instructions: For each occupation listed below, please indicate **how much confidence you have that you could successfully perform the job duties of the occupation** if you had the necessary education and/or training.

Occupation	Your confidence									
	No confidence At all	Very little confidence			Some Confidence		Much Confidence		Complete Confidence	
	0	1	2	3	4	5	6	7	8	9
1. X-Ray Technician	0	1	2	3	4	5	6	7	8	9
2. Secretary	0	1	2	3	4	5	6	7	8	9
3. Physical Therapist	0	1	2	3	4	5	6	7	8	9
4. Art teacher	0	1	2	3	4	5	6	7	8	9
5. Travel Agent	0	1	2	3	4	5	6	7	8	9
6. Accountant	0	1	2	3	4	5	6	7	8	9
7. Home Economist	0	1	2	3	4	5	6	7	8	9
8. Drafter	0	1	2	3	4	5	6	7	8	9
9. Highway Patrol Officer	0	1	2	3	4	5	6	7	8	9
10. Mathematician	0	1	2	3	4	5	6	7	8	9
11. Social Worker	0	1	2	3	4	5	6	7	8	9
12. School Administrator	0	1	2	3	4	5	6	7	8	9
13. Physician	0	1	2	3	4	5	6	7	8	9
14. Dental Hygienist	0	1	2	3	4	5	6	7	8	9
15. Lawyer	0	1	2	3	4	5	6	7	8	9
16. Engineer	0	1	2	3	4	5	6	7	8	9
17. Medical Technician	0	1	2	3	4	5	6	7	8	9
18. Probation/Parole officer	0	1	2	3	4	5	6	7	8	9
19. Elementary School teacher	0	1	2	3	4	5	6	7	8	9
20. Sales Manager	0	1	2	3	4	5	6	7	8	9