COPING EFFICACY AND PERCEPTION OF BARRIERS AMONG STUDENTS: A SOCIAL COGNITIVE CAREER THEORY APPROACH TO UNDERSTANDING DIFFERENCES BETWEEN STUDENTS

by

KEVIN MCCRAE SHEPARD

(Under the Direction of BRIAN A. GLASER)

ABSTRACT

In this study, 296 students from a large southeastern public university were compared on measures of career decision self-efficacy, perceptions of barriers, and perceptions of coping efficacy. Of particular interest was the career and academic development of students who were on normal academic status versus students on probation/dismissal status in a college of agricultural and environmental sciences. Results indicated that as perception of career and academic barriers increased for students, career decision self-efficacy was reported as lower. As students perceived fewer barriers and the ability to cope with barriers to career and academic goals, career decision self-efficacy was higher. There was no difference between males and females in the study on career decision self-efficacy, perception of barriers, or perception of coping skills. Regarding ethnicity, non-Caucasian students perceived more barriers to career and academic goals than did Caucasian students, but no differences were found between Caucasian and non-Caucasian students on measures of career decision self-efficacy and perceptions of coping skills. Perception of barriers, perception of coping efficacy, ethnicity, and number of hours completed toward one's degree each contributed to the prediction of career decision self-

efficacy. Academic counseling efforts toward primary prevention and early intervention with students who struggle with academic difficulties may be facilitated through attention to students' career decision self-efficacy, perception of barriers, and perception of coping efficacy.

INDEX WORDS: Self-efficacy, barriers, coping efficacy, academic counseling

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DEDICATION

To Sherri: my high school sweetheart and partner for life, without whom I would be lost to myself, and with whom I have complete love…

To Courtney and Collin: two amazing children who continue to teach me through our love how to just be. Thank you for loving me and for trusting me as your father. Your vibrant minds, tender hearts, and enthusiastic spirits inspire me daily to be the best person I can be…

To Adrian and Joyce Shepard, and Hugh and Beverly Wentz: who have modeled love, success, caring for others, faith, loyalty, wisdom, and a continual seeking after knowledge…

And to the memories of Addie Elizabeth Posey, and Dorothy Hathaway: whose love sustained their families, and whose playfulness and zest for life still dances on the lips of family storytellers and indwells our spirits as we seek to make something of this life. I miss you.

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Without the specific assistance of Dr. Joe Broder, and Ellen Martin, this project may have never taken shape. My years as Academic Counselor in the College of Agricultural and Environmental Sciences changed my professional life.

TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

The issue of academic success among college students presents at once as simplistic and complex. It would seem on the surface that college students have merely to choose an institution, a major course of study, a career direction, and eventually a job located in her or his chosen career field. However, these "choices" are rather complexly linked to personal and environmental factors, and rarely occur in sterile or ideal conditions. Subjectively, it would seem that ideal choices under ideal conditions would be the exception rather than the norm of career and academic decisions made by undergraduate college students. Some may even challenge the entire concept of choice under certain conditions in which a person perceives his or her career and academic options to be attenuated by demands of family or social life, the presence of discrimination or oppression, lack of adequate experience, skill, or opportunity to succeed, or a variety of motivational and other factors.

Counseling Psychology has its roots in the career and academic development of people in this American society. The development of theories of career development has coincided with political and social pushes to advance educational and counseling opportunities for students. During a time of societal change involving a shifting workforce, and economic constraints, it is not only appropriate, but necessary to continue to turn the light of research and scientific inquiry toward the factors that influence the academic and career development of today's undergraduate student.

Roots and Future of Counseling Psychology

The core identities of Counseling Psychology emerged from a commitment to development, a commitment to issues of diversity, and a commitment to career and vocational issues (Neimeyer & Diamond, 2001). Neimeyer and Diamond (2001) conducted a Delphi poll of training directors of counseling psychology programs in order to discover what this distinguished group of professionals imagined where counseling psychology is headed in the future. They found that commitment to diversity and commitment to development remained at the top of the list of future directions, but that issues related to career and vocational issues occupied the bottom stations of list. Emerging in the place of a vocational emphasis was an emphasis on preventative psychology and health psychology.

Although the results of the Neimeyer & Diamond (2001) study seem to indicate a move away from a key component (e.g. vocational psychology) of the historic identity of counseling psychology, they urge the reader to consider this as only one perspective. For example, Howard (1992) states that the core identities reflect a commitment to the personal and subjective experiences of people who encounter the world as we move through it. Regarding an emphasis on career development, the argument has been made that career counseling and personal counseling are "inextricably intertwined" Krumboltz, 1993), and unable to be considered apart from each other (Betz & Corning, 1993). Some of the importance of considering personal and career counseling as intimately connected arises from formative emphases within counseling psychology as a profession to consider a person holistically, and to understanding that gender and culture have tremendous influence on personal as well as career development (Betz & Corning, 1993).

One criticism of vocational psychology is that it seems uninteresting (Neimeyer & Diamond, 2001). However, each of us has a location for some type of work in our lives (Richardson, 1993) and engages in work for the majority of our waking lives as adults whether formally paid, or as part of the roles we experience in various facets of our lives. Invigorating, rather than uninteresting, is the thought that work is one way making meaning in our lives (Chen, 2001).

Without an early focus on vocational development, we as a profession would simply not exist—it was our niche as we sought credibility in our early formational years.

Dawis (1996) recited a history of counseling psychology replete with contributions of vocational psychologists. He went on to assert a continued need for career theory and research in counseling psychology as workers in the contemporary world of work could benefit from understanding what personal factors are likely to increase the possibilities of job satisfaction, and help them pursue training for available work in which their employers are likely to view them as satisfactory.

Dawis (1996) answered criticism that career theory is not applicable in the current working world of those workers at the entry level in jobs whose opportunities continue to change with the ebbs and flows of economic trends, and the criticism that current theoretical formulations are not applicable to persons in groups other than the white middle class. Dawis' answers were that the technological advances of the career field (in terms of the multitude of career assessments) could be helpful in identifying and limiting false positive career choices (those in which a fit is assumed without investigation) and false negative career choices (those in which a career is not considered due to context, lack of information, or other reasons. Further,

Dawis (1996) reasoned that thoughtful use of assessment and consideration of cultural differences could help members of diverse groups gather some information about career fields.

Blustein (2001) asserts that as psychologists apply a conceptual understanding of the psychology of working (Richardson, 1993), our field will be better able to address the needs of a wider variety of people. From a social constructionist perspective, Richardson (1993) recommended the use of the word "work" rather than "career" due the nature of career as being associated with the white male majority and the growing irrelevance of career theory to persons of diverse cultures. Richardson made a case for work as being a socially constructed location in one's life, embracing the many facets of work that can possibly exist as a way of expanding our awareness. For example, Richardson's discussion of "caring work" is a way of understanding how many people in families care for children, provide elder care, or volunteer themselves in organizations or social causes as a way of investing their lives in important activities that are ways of working. This perspective seemed to have the effect of calling us to understand work not as a compartmentalized "thing" that we go and do, but as a part of we choose to be in the midst of the systems that are important and formative to us in life.

As we move toward the future, Fouad (2001) calls for a strengthening of emphasis on the science of vocational psychology, relying on strengths based upon years of research driven by theory, and looking toward more specific focus on contextual variables influencing career development. Lent (2001) casts a vision for the future of vocational psychology that includes a deep connection to encouraging continued research to understand career development issues across the range of preparation, selection, adjustment, and change throughout work experience. Further, a focus on developing "preventive" (Lent, 2001) career services may be useful in

helping people to identify potential barriers to career development along with the necessary coping skills and supports that could assist in overcoming these barriers.

Purpose of the Study

The work of a student can be said to include academic achievement and development toward career goals. Undergraduate students face continual opportunities to make career related decisions in their academic lives within the context of perceived supports and barriers. The current study is concerned with the questions of whether students enrolled in a college of agriculture differ on measures of career decision self efficacy (Betz & Taylor, 2001) depending on-probation versus no-probation academic status. The study is also interested in exploring whether students enrolled in a college of agriculture differ on measures of perceived barriers and supports to academic success, as well as in perceptions of coping skills (Luzzo & McWhirter, 2001). Through a look at how contextual factors operate in a student's life to contribute to perceptions of career self-efficacy, perceptions of barriers and supports, and perceptions of coping skills, student retention may be better facilitated through preventive and remedial efforts to assist students in career and academic planning.

The study relates to the field of Counseling Psychology historically and currently, with an eye toward future development of the field. Counseling Psychology has its beginnings in career and vocational psychology, and owes its initial and continuing identity, in part, to the voluminous strength of research and theory development related to understanding how people make sense of themselves through career development (Heppner et al., 2000). Without the intensity and longevity of efforts at carving a niche in the field of psychology through emphasis on vocational development, Counseling Psychology may not have come into existence in the

early decades of the 20th Century in which social and economic conditions fed into the changing workplace in American society. Current trends in technological advances, internationalization of work, and other areas are emerging from an environmental context in which attention to gender issues and broad concepts of cultural identity create a dynamic interaction of possibilities as well as challenges for today's student.

Conceptual Framework

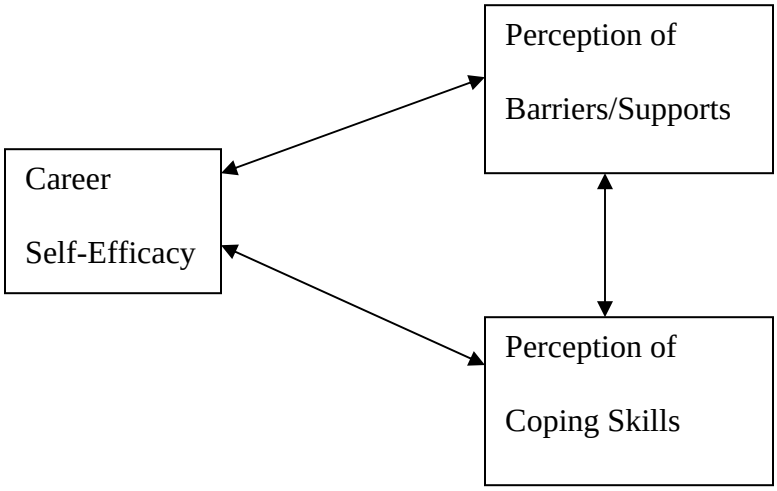

Figure 1. Conceptual framework showing the relationship between Career Self-Efficacy, Perception of Barriers/Supports, and Perception of Coping Skills.

This framework suggests the relationship between career self-efficacy, perceptions of barriers and supports, and perceptions of coping skills that are being investigated in this study. Career self-efficacy is defined as one's perception of herself as being capable of making career and academic related decisions in an effective manner. Perception of barriers and supports is an important area of investigation within Social Cognitive Career Theory (Lent, Brown, & Hackett,

1994), and for this study suggests that contextual factors in a student's environment contribute to her or his experience of inhibiting or reaching career and academic goals. Perception of coping self-efficacy refers to a student's belief in whether or not she will be able to manage to overcome contextual barriers and identify contextual supports in order to successfully achieve career and academic goals.

Contextual Variables

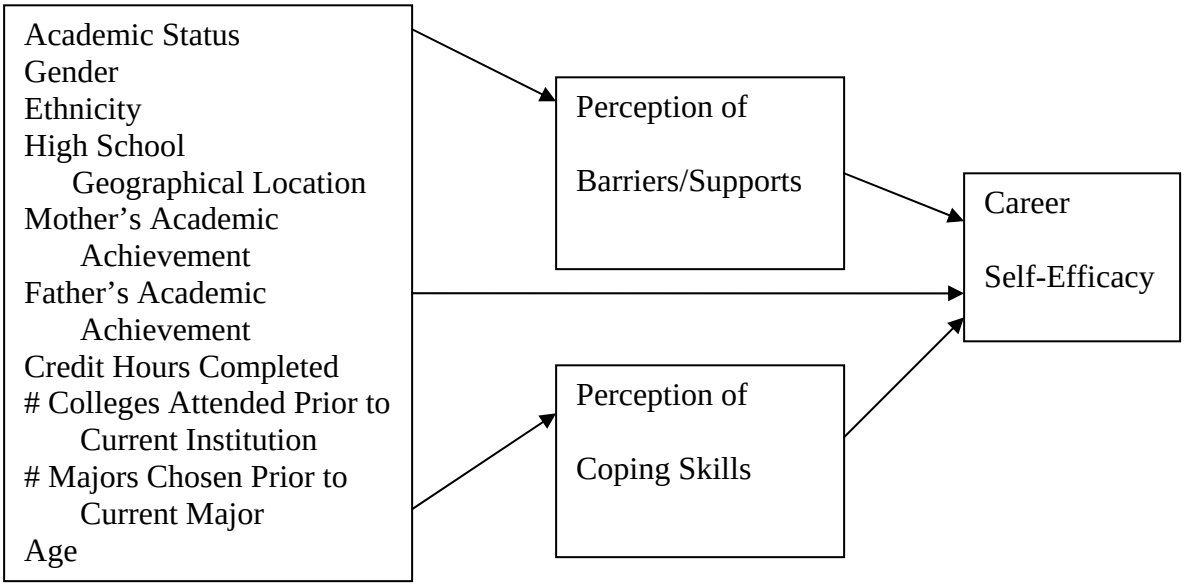

Figure 2. Conceptual framework specifying personal and contextual factors and their relationship to career self-efficacy, perception of barriers/supports, and perception of coping skills.

This framework suggests that contextual factors as defined by the variables listed have a relationship to the development of career self-efficacy directly, and through a student's perception of barriers, supports, and personal ability to cope within a given environmental context. This study is interested in the relationship of these factors as a group on career self-efficacy. More specifically, however, this study is interested in the relationship between

academic status, ethnicity, gender, and high school geographical location taken individually with career self-efficacy, perception of barriers and supports, and perception of coping skills.

Academic status, for the purpose of this study is defined as students who have experienced academic probation/dismissal versus students who have not experienced academic problems. Ethnicity is defined in this study as Caucasian versus non-Caucasian students. Gender refers to male versus female students. High school geographical locations were of interest to the researcher in order to begin to identify any particular social contexts of relevance to the study, and are identified as urban, suburban, small town, or rural locations.

Hypotheses

The following hypotheses were developed by the researcher:

1. There will be a statistically significant relationship between participants' scores on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping skills.

2. There will be a statistically significant difference between participants with a regular academic status and participants on probation/dismissal status on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping skills.

3. There will be a statistically significant difference between males and females on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping skills.

4. There will be a statistically significant difference between Caucasian and Non-Caucasian participants on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping skills.

5. There will be a statistically significant difference between the different levels of participants' high school geographic location on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping skills.

6. Age, gender, ethnicity, academic status, high school geographic location, mother's and father's education level, credit hours competed, number of colleges entered prior to attending current institution, number of majors chosen prior to current major, perceived barriers and perceived coping skills will be significant predictors of career decision self-efficacy.

CHAPTER 2

LITERATURE REVIEW

Although spending an afternoon at a local theater may acquaint us with the triumphs of the most current action hero against nearly impossible odds, we return to our universities with the realization that students with obstacles such as academic probation face real-life barriers that threaten to change the way they pursue their goals and ultimately live their lives. Many students entering institutions of higher learning find themselves "thrust into the milieu of an academically challenging environment" (Little, 2003) without having the personal or social resources to adjust to these new demands (2003). Is it acceptable to leave the success or failure of our students to chance, or might we find a way to identify and support students toward increased academic success?

Student retention appears to be influenced by the personal characteristics of students, and the relationships students have or develop with university personnel (Tinto, 1993, 1998). Student capacity to cope effectively with college stress has been found to assist in personal adjustment to the demands of college (Skowron, Wester, & Azen, 2004), which implies that services designed to help students develop such coping skills are necessary resources on college campuses. Counseling services have been found to be effective in helping colleges and universities retain students through collaborative efforts with academic programs and faculty (Coll & Stewart, 2002), and by addressing personal concerns of students that impact their academic progress (Kadar, 2001; Rojas, Knauft, Broder, & Campbell-Burden, 2002; Wilson, Mason, & Ewing, 1997). Wilson, Mason, and Ewing (1997) asserted that the "effect of

counseling interventions on student well-being" is related to whether or not a student eventually succeeds academically.

Intrapersonal characteristics of individual students seem to influence academic performance. Furnham, Chamorro-Premuzic, and McDougall (2003) found that college students who showed preferences for spending time studying and for conscientious work habits were more likely to succeed academically than students whose personality styles indicated preferences for social interaction and less academic effort. Among students in a college of Agriculture setting, students were found to learn more effectively when were more intrinsically motivated and were more likely to be able to utilize individual effort in tasks requiring individual effort and effective problem solving capabilities (Garton, Dyer, & King, 2001). Extrinsic motivation, for example the goal of higher grades, is effective when paired with intrinsic motivation such as interest in or enjoyment of subject matter (Lin, McKeachie, & Kim, 2003).

Student ability to adopt relevant achievement goals has also been found to predict academic outcomes (Harackiewicz, Tauer, Barron, & Elliot, 2002), leading to the assumption that academic counseling services can be effective when designed to intervene with students on probation by assisting them in establishing new goals for academic behavior (Rojas, Knauft, Broder, and Campbell-Burden, 2002). Further, students who are able to understand their academic goals, and who are able to develop ways to reach those are better able to achieve academic success in college settings (Snyder, Shorey, Cheavens, Pulvers, Adams, and Wiklund, 2002).

Characteristics related to interpersonal and cultural factors appear to influence academic performance as well. Heilman, Wallen, Fuchs, and Tamkins (2004) found that women who were successful in domains traditionally considered appropriate for males were subject to "negative

social reactions" (2004) from others, which could inhibit future successes. Borrowing from stereotype threat theory which suggests that performance suffers for persons who enter an environment in which they are concerned about being judged, Cullen, Hardison, and Sackett (2004) found no difference related to gender for women performing in the domain of mathematics, which was considered to be traditionally male gender-typed.

Social cognitive factors have been found to predict college students' persistence toward academic goals (Kahn & Nauta, 2001), particularly after students had completed their first semester of college. In this current study, academic probation is considered to be a barrier toward reaching academic goals, and therefore disruptive of student persistence. The following is a more thorough discussion of social cognitive factors, particularly those most relevant to this study.

Theoretical Approach

Social Cognitive Career Theory (SCCT; Lent, Brown, & Hackett, 1994) was developed as an approach to career and vocational psychology that would integrate the useful parts of theories previously developed (Lent, 2005), while providing a system of understanding new and emerging career development needs of persons entering contemporary workplace environments (Lent & Brown, 1996). In this way, SCCT seeks both to use what is effective and beneficial about established career development theories, and to remain open to the need to develop approaches to career development that take current personal and environmental factors into account.

Through a "cognitive constructivist" lens (Lent et al., 1994), SCCT attempts to describe the relationship between past learning and future choices and actions through focus on the

cognitive mediation of learning on career related development. More complex than simply stating that what one learns one applies, SCCT is interested in looking deeply into how a given person in a given social context, with a certain way of appraising her of his efficacy, may make choices by both reacting to environmental events as well as taking active initiative in changing one's present context and future career options (Lent et al., 1994). One therefore is an active participant in forming one's own future, even as one seeks to incorporate past learning, and present awareness of personal abilities and environmental supports and barriers that may provide either freedom or constraint.

In this chapter, the development and application of SCCT to the current research project will be examined. It has been strongly argued by Betz and Hackett (2006) that one cannot fully understand SCCT without a deep understanding of Bandura's social cognitive theory (1986, 1997). Therefore, beginning with a look at Bandura's (1986) formulation of social cognitive theory, we will investigate the roots of key concepts within SCCT. From there, we will provide an in depth overview of SCCT and its concepts and principles. The chapter will conclude with more intensive looks at two constructs within SCCT that are important for the current research: self-efficacy, and perception of career-related barriers.

Bandura: Social Cognitive Theory

In his formulation of social cognitive theory, Bandura (1986) stated that from this perspective, "people are neither driven by inner forces nor automatically shaped and controlled by external stimuli" (p.18). People are seen as "agents" who influence both themselves and their environments, and are in turn influenced by oneself and one's environment (Bandura, 1989). Through this lens, people are seen in unified fashion as both the agent who acts, and the object upon which action is taken (1989). Freedom, then is generated through self-influence on one's

self and environment, even as events and their effects shape and even determine a given environmental context (1989). Mechanisms for agentic influence include knowledge, cognitive skills, behaviors, self-reflection, and experience (1989).

Bandura proposed that a model of "triadic reciprocality" (1986, p. 18) helped to explain how people's behavior, cognitions, personal factors, and environmental context interacted in dynamic fashion to influence each other. This model of triadic reciprocality (Bandura, 1977a, 1978a) represented the view that the interaction of factors produced mutual causal relationships and worked to shape and develop each other through this interaction.

These interrelationships of mutual causality suggest a sense of dynamic determinism, in that as personal factors (e.g. cognitions, social location, life roles, ethnicity, etc.), behavior, and environment interact, they influence the direction of mutual development. This determinism, according to Bandura, is not in conflict with personal freedom (1986, p.39), since freedom is seen as the "exercise of self-influence" under given environmental and personal conditions. Social cognitive theory then sees people as participating in the formation of their life situations in active and dynamic relation to the constraints they experience (Bandura, 1989). People, then, are not seen as acting apart from their environment, but within a balance of self-influence and constraint. That is, people influence their own development through cognitive action and choices, and are influenced concurrently by environmental and personal factors (Bandura, 1986, 1989).

Bandura: Self-Efficacy

A person's perceived self-efficacy was defined by Bandura as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (1986, p. 391), and is centrally related to one's sense of personal agency, or

ability to behave in such a manner as to exert influence on one's life (Bandura, 1989; Bandura, 1982). That is, perceived self-efficacy refers to one's judgment about how he or she can use personal knowledge or skills toward goal attainment. Whether or not a person has the necessary skills to accomplish a given goal is a question that remains outside this definition, which is concerned with the person's cognitive beliefs about their abilities to use these skills (Bandura, 1986), although perceptions of self-efficacy are thought to contribute highly to one's actual accomplishments (Bandura, 1984; Bandura, 1982).

Self-efficacy beliefs form and are formed by four sources of information, which include personal performance attainments, vicarious learning, social persuasion, and physiological states (Bandura, 1986; Bandura, 1982; Lent et al., 1994). As a person successfully engages and repeats specific activities, self-efficacy is strengthened. Likewise, observing others perform activities can build self-efficacy through vicarious learning. Social persuasion helps form self-efficacy beliefs as people encourage or discourage participation in specific activities, and a person's own physiological state may either increase and strengthen self-efficacy beliefs, or lead to diminished perceptions of self-efficacy. Support for this four-factor structure of informational sources has been found, including support for Bandura's (1986) hypothesis that one's past personal performance accomplishments contribute most strongly of the four factors to development of self-efficacy in a given domain (Lent, Lopez & Bieschke, 1991).

Bandura has also outlined four major processes through which perceived self-efficacy influences personal and cognitive development (1993). The first of the four processes is "cognitive", and Bandura (1993) theorizes that people initially tend to visualize and shape actions through thought. Self-efficacy beliefs are said to contribute to a person's ability to self-regulate behavior and decision-making en route to setting and accomplishing personal goals

(Grusec, 1992). During the theorized process of self-regulation, a person is said to judge one's own actions to determine how effective these actions are in meeting personal goals (Grusec, 1992). Effective self-regulators are able to judge actions that contribute to goal attainment more positively, and actions that hinder goal attainment more negatively (Grusec, 1992). Self-efficacy beliefs influence self-regulation by providing information through cognitions to persons in goal attainment situations about whether or not the person believes that he or she can utilize their personal skills as they seek to accomplish their chosen goals, and may contribute to helping or discouraging certain goal-oriented behaviors (Bandura, 1989; Bandura & Wood, 1989).

The second major cognitive process involving self-efficacy is considered by Bandura (1993) to be the "motivational" process. As people's perceptions of self-efficacy increase, they are better able to act upon goals and desired outcomes. When goals are reached through actions, people set new goals and are motivated to reach these newer, higher goals (1993).

The third major process is the "affective" (Bandura, 1993), in which perceived self-efficacy is said to play a role in one's ability to exert control over known contextual stressors. For example, people with higher perceived self-efficacy are thought to experience less anxiety connected to the pursuit of specific goals. Also, higher perceived self-efficacy is connected to one's ability to cope with difficult activities (1993). People with lower self-efficacy tend to experience decreased academic achievement as they are prone to increased anxiety and depression (1993).

The fourth and last major process is the selection process (Bandura, 1993) which refers to the shaping of one's environmental context through choosing, or selecting activities based on personal appraisal of one's abilities in a given situation. With higher self-efficacy, more diverse activities may be considered, and increasingly more challenging activities and situations are

selected as self-efficacy rises. As consideration of options is broadened, a person is able to develop more potential life courses with each new choice. Vice versa, lower self-efficacy leads to a person's limiting selection of activities they believe are beyond personal abilities.

Bandura (1986) stated that "reasonably accurate appraisal of one's own capabilities is, therefore, of considerable value in successful functioning." Overestimators of personal ability are likely to run into barriers in achieving goals, while underestimators are likely to limit personal goal selection (1986). Underconfidence presents particular challenges to researchers due to the difficulty of studying possibilities of what might have been achieved had a person persisted toward a goal (Bandura & Locke, 2003). Lower perceived self-efficacy related to career development is said to lead to limitation of one's choices for career options, which reciprocally validates the low sense of efficacy (Bandura, 1989).

Self-efficacy theory was originally extended to career theory (Betz & Hackett, 1981; Hackett & Betz, 1981) as a way of understanding varying influences on the career development of women and men. While developing a measure to assess, career self-efficacy, Taylor and Betz (1983) found that in general, college students tend to perceive themselves as having the abilities to engage in career decision-making behavior, and that results of the study indicated no difference by gender on this high level of confidence. However, students reporting lower levels of career self-efficacy related to performance of tasks leading to decision-making were also more likely to report being undecided about career direction (1983). Also, results indicated that self-efficacy perceptions both preceded and followed career decidedness (1983). Continuing the extension of self-efficacy to academic and vocational development, Betz and Hackett (1987) found that college students tended to report positive self-efficacy related to career and

educational situations, but also tended to lack experiential competence with achieving career and educational goals.

Bandura (1986) also stated that self-efficacy relates to one's ability to be persistent toward one's goals. Persons with more positive self-efficacy beliefs were seen as being more likely to pursue personal goals through persistent effort even in the face of barriers to achievement. Those with more negative self-efficacy beliefs were seen as being more likely to doubt one's own abilities toward goal achievement, and therefore more likely to decrease efforts toward accomplishing goals.

Perceived academic self-efficacy and personal goal setting have been found to contribute significantly to academic achievement (Zimmerman & Bandura, 1994; Zimmerman et al, 1992; Hackett et al., 1992). Moreover, people with higher perceived efficacy tend to visualize themselves as successful in anticipation of specific actions, whereas those who see themselves as lacking in self-efficacy tend to imagine themselves failing in anticipated actions (Bandura, 1989). Further, persons who approach tasks with the perspective that skills necessary to the task can be acquired have been found to maintain a higher and more resilient sense of personal self-efficacy than those who perceive skill level as a static, stable set (Wood & Bandura, 1989).

According to Bandura (1986), the origins of self-efficacy beliefs are found in children's interactions with their environments. As children develop, they continually appraise their physical, social, and cognitive skills such that through continuing contact of self and environment, one's self-concept and perceived self-efficacy emerge (1986, p.415). Families, peers, schools, and other social settings in the environment contribute to a person's experience of developing self-efficacy. A study by Bandura et al., (1996), showed that parent's self-efficacy related to their abilities to promote their children's intellectual development influenced

children's academic achievement, and that children's self-efficacy beliefs influenced academic achievement through impact on interpersonal relationships with peers, affective mood, and understanding of personal morals. Self-efficacy development in children was also found to be related to children's ability to set goals for learning, and increased as children accomplished goals even for activities that were not previously appealing (Bandura & Schunk, 1981).

Bandura also believed that self-efficacy appraisals continued through the demands of developmental transitions such as adolescence, adulthood and intimacy choices, and as a person reaches mature older adulthood (1986). Therefore, a person's perceived self-efficacy is seen as dynamic and developmental, changing through one's progression through developmental stages, and through contact with one's social environment.

Self-efficacy theory has been found to relate to academic achievement, health behaviors, athletic performance, children's self-concept, and parenting styles (Grusec, 1992), and to have important bearing on the consideration of career choice options for women (Betz & Hackett, 1986). Self-efficacy perceptions are related to social and cognitive development (Bandura,1986), and higher social self-efficacy has been found to influence career choice (Anderson & Betz, 2001; Bandura et. al., 2001). Specifically, perceived self-efficacy in children was found to strongly influence their occupational self-efficacy beliefs as well as having a bearing on the types and ranges (Church, Teresa, Rosebrook, & Szendre, 1992) of careers considered, how decisions are made about careers, and whether decisions are pursued (Bandura et. al., 2001). Self-efficacy beliefs are said to be learned through past experience, and then to interact with current experience to influence a person's behavior and beliefs (Grusec, 1992).

It is important here to draw a distinction between self-efficacy and self-concept. Self-concept is a more general perception of one's global skills versus a more specific appraisal of

one's skills in a particular context, and have been found to be "empirically distinguishable" (Lent, Brown, & Gore, 1997). An example of this difference in an academic context could be an individual who has a well defined positive self-concept regarding his or her ability to grasp and apply mathematical concepts, but who has difficulty developing a specific sense of being able to utilize these general skills effectively in a given course in agricultural economics.

Bandura (1989) stated that self-efficacy contributes to outcome expectations through influencing participation in desirable activities, or limiting participation in undesirable activities. This is said to particularly so when quality of performance affects the eventual outcome of the activity. For example, a student who perceives high self-efficacy in mathematics might consider a course of study that includes a series of agricultural economics courses, eventually leading to more positive outcome expectancies of successful course completion if, through taking said courses, the student is able to perform well in support of self-efficacy beliefs. On the other hand, a similar student may briefly consider a series of agricultural economics courses based on academic record and advisor recommendation, but rule them out due to low perceived self-efficacy in mathematics, leading to uncertain or negative outcome expectations relative to choosing a major and career interest area related to mathematics.

SCCT: Overview

In the midst of a movement within counseling psychology to offer relevant theoretical approaches to vocational development in the current social and economic context, and with its roots connected back to Betz and Hackett's (1981) and Hackett and Betz's (1981) application of Bandura's self-efficacy theory to career development, SCCT was formulated originally as an attempt at integrating applicable constructs from a rich history of vocational research with

constructs more connected to recent and emerging conditions (Lent, Brown, & Hackett, 1994). Further, in the conceptualization of the SCCT framework, the original authors intended for SCCT to be useful toward understanding academic and career behavior, and stated their perspective that the word "career" as used in SCCT includes "academic development phenomena as well" (Lent, Brown, & Hackett, 1994, p. 81). A third reported goal in conceptualizing SCCT was to base it firmly within the model of social cognitive theory (Bandura, 1986) from the perspective that motivation for human development arises through "self-referent thinking" (1994). That is, as a person considers the impact of her beliefs about her abilities, and becomes aware of contextual barriers and supports in her life, she is better able to generate expected beliefs about the outcome of her behavior and to set and strive for personally relevant goals. To the degree that she is able to understand herself in the context in which she is submerged, she is then able, through motivating goals, to emerge in an active role toward shaping her future.

Again following from Bandura's (1986) social cognitive theory, people are seen through the lens of SCCT as being capable of choosing and influencing their vocational development, as well as being influenced by personal, social, and environmental barriers and supports (Lent et al., 1994; Lent, 2005). SCCT holds that personal variables such as self-efficacy, outcome expectations, and personal goals interact along the construct of triadic reciprocity to influence one's career development (Lent et al., 1994; Lent & Brown, 1996a). Triadic reciprocity mirrors Bandura's (1986) formulation of reciprocal determinism in that each segment influences and is influenced by the others. It is this focus on the dynamic interaction of the person and environmental factors that set SCCT apart from other vocational models that emphasize more static variables such as personal traits, or more general characteristics of a vocational field (Lent, Brown, & Hackett, 1994).

Further SCCT proposes that a person develops academic and vocational interests, choices, and performance behaviors as described by a series of processually connected models (Lent, 2005). Academic and vocational development, in these models, are explained by the inclusion of the reciprocally influencing variables of self-efficacy, outcome expectations, and personal goals. Personal variables (e.g. age, race, ethnicity, gender, physical ability, sexual identity, spirituality, etc.) account for a crucial part of the interaction with one's environment in these models (Lent, 2005). Gender and race, specifically are personal variables that are considered in SCCT to be "socially constructed statuses" (Lent et al., 1994) that are not only biologically founded, but which interact with one's social environment as career choices are developed. Likewise, a person's environment, including social groupings and learning environments, are considered to wield much influence in the development of interests, choices, and performance behavior.

Continuing this discussion of socially constructed statuses interacting with one's environment to develop self-efficacy related to career choice, gender and race influence one's experience of one's academic and social environment (Lent et al., 1994). Depending on societal context, personal variables such as gender and race may influence further development of career self-efficacy and greater range of options, or may under adverse social conditions may represent socially marginalized statuses leading to a more limited range of learning opportunities and decreased self-efficacy (Lent et al., 1994). Some evidence has been found in a sample of primarily Hispanic students that in occupations dominated by one's own gender, self-efficacy was found to be higher, with an interesting trend for people to rule out occupations dominated by their opposite gender (Church, Teresa, Rosebrook, & Szendre, 1992).

Vocational interests emerge as children become exposed in their environments to a variety of activities (Lent et al. 1994; Lent & Brown, 1996a). Beyond exposure to such activities, children become reinforced by important persons in their social environments such as parents, teachers, peers, and even self such that they begin to practice and develop skills and attitudes in different activity areas (1994; 1996a; Lent, 2005). Personal and environmental factors act as sources of information for the formation of self-efficacy in a specific domain (Betz, 2004). Examples of such sources are: access to educational opportunities, socioeconomic status (SES), gender, ethnicity, physical ability, family of origin, and myriad others (Betz, 2004). With continued exposure and feedback in activities, children develop a sense of how confident they are at accomplishing given tasks (self-efficacy), and develop beliefs about what they expect performance outcomes to be in given activity areas (1996a; 2005).

Interests begin to develop in conjunction with activities in which a person views him or herself as being capable of producing good outcomes, and in which personal and environmental variables encourage investment of practice and emotional connection (Lent et al., 1994; Lent & Brown, 1996a). This process is seen as dynamic and continuously repetitive throughout the life-span (1994; 1996a; 2005). One's expectations of outcome and specific goals for career-related behavior contribute through self-efficacy beliefs to one's developing career interests (1994). Smith (2002) explored the connection between social cognitive variables and the development of vocational interests, and found evidence to support the theoretical foundation of SCCT.

Vocational choice is viewed as an ongoing process throughout development rather than as a single event in time (Lent, 2005). SCCT allows that choice in careers follows the influence of vocational interests when personal and environmental variables exist in ideally supportive conditions, but that people face personal and environmental constraints that must taken into

account along with interests when considering occupational choice (Lent & Brown, 1996a). Occupational behavior may be influenced by a person's beliefs regarding performance outcomes of academic and vocational activities, and by their sense of self-efficacy in tasks related to areas of career interest (1996a).

The SCCT model of career choice (Lent et al., 1994) includes a person choosing a primary career goal from interests with which she has become aware, followed by a series of action behaviors to implement this initial choice. As the person acts on this initial choice and cognitively processes her performance outcomes, she develops a feedback loop to inform future career-decision making, and develops a new perspective on present and future career options. In a study of developing career interests and self-efficacy among college students, support was found for a pattern of reciprocal pattern of influence between career interests and self-efficacy (Nauta et al., 2002). Essentially, self-efficacy does lead to the development of initial career interests, and these initial interests influence further development of self-efficacy (Nauta et al., 2002).

Take, for example, a student who is highly interested in becoming a veterinarian based on past learning that she loves animals and perceives herself to be interested in a career that allows her to focus her attention on providing medical care for animals. Over the course of her initial enrollment in pre-veterinary courses, she finds her coursework to be more challenging than expected, to the point where she is placed on academic probation due to low GPA (grade point average). In this case, the student may utilize the performance feedback of low GPA and academic probation to assess her sense of self-efficacy about continuing in pre-veterinary courses. Although there are a number of directions this student may consider at this point, she may alter her career trajectory should she perceive lower interest in becoming a veterinarian due

to lower perceived self-efficacy toward this end. Personal development, environmental factors, the interaction of self-efficacy with interests and goals, among numerous other factors contribute to this complicated and dynamic cognitive constructive assessment of career choice (Lent et al., 1994).

Contextual variables in a person's environment may represent either supports or barriers that constrain a person's career and academic choices (Lent & Brown, 1996a). Examples of such variables are: personal or family financial situation, socioeconomic status, family expectations, racism, sexism, educational achievement, physical ability, and others (1996a; Lent, 2005). SCCT emphasizes the psychological impact of such environmental variables as race and gender, which may serve to attenuate or broaden exposure to careers (Gibbons & Shoffner, 2004), thereby influencing personal development of efficacy beliefs.

Regarding performance behaviors related to career development, SCCT views that people adjust subsequent behaviors though feedback of how well past behaviors and cognitions contributed to attainment of personal goals (Lent & Brown, 1996a). Here self-efficacy and expectations of outcomes help determine personal goals, and the degree to which the goals are achieved help to regulate self-efficacy beliefs and new outcome expectations. It is in this performance behavior model that congruence between self-efficacy beliefs and a person's abilities is seen as necessary for more effective accomplishment of personal goals (1996a; Lent, 2005). Practically speaking, persons with high abilities in a particular activity domain but low self-efficacy may not develop the motivation to develop personal goals and subsequent complementary performance behavior. Likewise, a person with high self-efficacy but low capability in a given domain may not reach their performance goals due to outcome expectations

and personal goals being established on the incongruence between ability and self-efficacy beliefs.

In summary, self-efficacy beliefs, outcome expectations, and personal goals operate in a reciprocally determined relationship within each of the three process models discussed above. Interests, choices, and performance behaviors emerge through a person's contact with self and environment. Development occurs in dynamic fashion throughout the life-span as feedback loops on goal attainment and behavior influence and are influenced by a person's developing beliefs about self-efficacy, outcome expectations, and personal goal selection in a series of given domains. Supports and barriers to the development of career and academic interest, choices, and behaviors are constrained by personal and environmental factors. Developing a broader and deeper understanding of a person's sense of developing self-efficacy and of their sense of contextual supports and barriers seems not only appropriate, but crucial to their continued academic and vocational development.

SCCT: Self-Efficacy

Self-efficacy, in SCCT, is seen as a "dynamic set of self-beliefs that are linked to particular performance domains and activities" (Lent, 2005, p. 104). It should be noted that self-efficacy differs dramatically from self-esteem and self-concept (Lent, Brown, & Gore, 1997). Self-esteem generally refers to an overall belief in one's social or intrinsic value. Self-concept refers to the general attitudes and perceptions one has about oneself that help determine a person's image or representation of oneself.

The definition of self-efficacy in SCCT emerges from Bandura's (1986) conceptualization of self-efficacy involving people's cognitive beliefs about their abilities to

carry out particular behaviors required to successfully complete personal goals associated with expected and desired outcomes (Lent & Brown, 1996a). For example, in support of this domain specific definition of self-efficacy, past mathematical accomplishments contributed to an increased sense of math self-efficacy while global academic self-concept failed to contribute to the prediction of math self-efficacy in a study conducted by Lopez and Lent (1992). Lent and Hackett (1987) anticipated continued expansion of self-efficacy into the career domain, and called for research related to college major choices, academic performance, career choice, and exploration of relationships between career self-efficacy and vocational behavior.

Mathematics self-efficacy in particular was found to fit a four-factor model as proposed by Bandura (1986), and appears among college student populations to consist of personal performance, vicarious learning, social persuasion, and emotional arousal (Lent & Brown, 2006; Lent, Lopez, Brown, & Gore, 1996c; Lent, Lopez, & Bieschke, 1991). Personal performance has been found to more strongly produce higher ratings of math and science self-efficacy than other social cognitive variables (Luzzo et al., 1999). In a study to explore the sources of information that students utilize to inform their mathematics self-efficacy, past successes in math as personal performance experience was most commonly endorsed (Lent et al., 1996b).

Self-efficacy beliefs tend toward being specifically connected to academic and occupational tasks, and are capable of being shaped by engagement in such tasks as well as shaping performance (1996a). Gibbons and Shoffner (2004) describe self-efficacy beliefs as being ever-changing in response to relational interactions with others, one's environmental context, and personal behaviors. McWhirter, Rasheed, and Crothers conducted research on the impact of a 9-week career education course and found that members reported in follow-up testing that they experienced higher self-efficacy related to career decision-making and

vocational skills (2000). Mastery experiences, those experiences that engage behaviors and encourage the development of self-efficacy beliefs (Bandura, 1986) have been found to contribute to the efficacy beliefs of students in an information technology program (Smith, 2002), and lead to higher reported self-efficacy on related tasks (Hackett et al., 1990). Engagement in career exploratory behavior was found to lead to the self-efficacy development among high school students with learning disabilities (Ochs & Roessler, 2004).

In addition to predicting positive adjustment in romantic relationships (Lopez & Lent, 1991) as well as client motivation in counseling (Longo et al, 1992), self-efficacy was proposed in SCCT (Lent, Brown, & Hackett, 1994; Lent and Brown, 1996a) as contributing to academic and career development, and has been found to contribute strongly to career decision making attitudes in college students (Luzzo, 1995b). Lent, Brown, & Larkin (1986) found that self-efficacy significantly helped to explain variance in the prediction of grades, persistence, and perceived career options among undergraduate students in technical and scientific fields, but not significantly related to measures of self-esteem or career indecision. Self-efficacy has also been found in college student populations to have a positive relationship to satisfaction with college (DeWitz & Walsh, 2002). Among graduate student populations, perceptions of research training environments were found to influence students' self-efficacy beliefs and research productivity (Brown et al., 1996).

In their meta-analysis of the literature, Multon, Brown, & Lent (1991) found that self-efficacy was significantly related to both academic performance and persistence such that increased self-efficacy was shown to be associated with increased performance as well as persistence to academic goals. Self-efficacy related to mathematics was linked to prediction of college majors and eventual career choice as the higher the perceived self-efficacy in

mathematics, the higher the likelihood that students would choose to continue toward math related careers (Hackett & Betz, 1989).

Self-efficacy has also been found to contribute to predicting grades and academic persistence among science-related majors (Lent, Brown, & Larkin, 1987; Lent, Brown, & Larkin, 1984). Among students with lower rated levels of academic ability, those with higher levels of perceived self-efficacy were found to have Grade Point Averages (GPAs) that were one standard deviation higher than students who reported low perceived self-efficacy (Brown, Lent, & Larkin, 1989). In an early study linking self-efficacy to beliefs to vocational and career domains, mathematics self-efficacy was found to influence choice of science-based majors among college students (Betz & Hackett, 1983).

In a study to test the SCCT hypothesis that academic persistence was influenced by self-efficacy along with outcome expectations and performance goals, Kahn and Nauta found that although self-efficacy did not significantly contribute to the prediction of student persistence, outcome expectations and performance goals did contribute (2001). In their discussion, the authors argued that student beliefs about whether to return to college after their first year appear to have been influenced by their experiences and that, taken together, social-cognitive factors had a demonstrated effect on academic persistence (Kahn & Nauta, 2001). However, Gore (2006) found that although self-efficacy was a relatively weak predictor of academic performance during the first year of college, it became a very strong predictor of academic performance after the first academic year.

Further investigating the relationship between career interests and self-efficacy, Nauta, Kahn, Angell, and Cantarelli (2002) found that their data in a time-lagged study of undergraduates indicated a reciprocal relationship between career interests and self-efficacy.

That is, early career interests influence the development of self-efficacy beliefs, which then influence the further development of career interests. The findings of this study suggested, however, that though there was reciprocity indicated between self-efficacy and career interests, the strongest influence occurred as self-efficacy influenced interests (2002).

Lent and Brown (1989) found that higher self-efficacy for engineering fields was associated with scores on career interest inventories in categories reflective of interests shared with engineers. In a study of undergraduates' estimates of ability, Brown, Lent, and Gore (2000) found that career self-efficacy and self-rated ability helped to influence the development of career interests and career choices. Further findings support that career interests develop as self-efficacy influences outcome expectations (Lopez, Lent, Brown, & Gore, Jr., 1997). Higher levels of self-efficacy and outcome expectations lead to greater career exploration, and are associated with lower levels of reported career indecision (Betz & Voyten, 1997).

Self-efficacy has been found to moderate academic outcomes and persistence toward goals (Brown, Lent, & Larkin, 1989) in undergraduate students in technical and science majors. Further, self-efficacy predicts choice and performance in the mathematics domain (Lent, Brown, & Gore, 1997; Lent, Lopez, & Bieschke, 1993), and math-related self-efficacy has been found to be related to student interest in math and science activities (Luzzo et al., 1999). Although support for career self-efficacy as related to college outcome expectations was not supported in one study, the same study found that higher career self-efficacy was related to a broader range of careers considered by students (Smith, 2001).

Non-traditional students have been found to differ from traditional students on measures of career self-efficacy (Luzzo, 1993a) from the perspective of decision-making attitudes regarding career choice. The non-traditional students in the study were seen to be more like

adults who had successfully entered careers than did traditional students (Luzzo, 1993a). Implications follow from SCCT that career self-efficacy is informed in this case by developmental stages and life roles, and that self-efficacy then influences decision-making from this same developmental context.

Brown and Lent suggested that inaccurate perceptions of self-efficacy may contribute to a person's removal of certain vocations from consideration, in some ways, then, highlighting that person's perceptions of barriers to pursuing such occupations (1996). There is evidence to support the hypothesis that women tend to experience decreased confidence in these abilities as they age and move through high school (Bandura, et al, 2001), and that self-efficacy may vary by gender depending on the academic context (Lent, Lopez, & Bieshcke, 1993; Rotberg et al., 1987; Betz & Hackett, 1983; Betz & Hackett, 1981), affecting the range of career options that one perceives available for pursuit.

With a specific look at self-efficacy as it relates to the career development of women, Betz and Hackett (1997;1981) and Hackett and Betz (1981) discussed gender role socialization as being influential in the differences between men and women's career choices and vocational development. Gender role socialization may be thought to affect self-efficacy development by acting as a type of filter through which young girls and boys receive messages about types of careers to consider, types of activities that are considered appropriate for engagement, and either encouragement or discouragement to pursue specific career-related activities.

Self-efficacy theory within the SCCT framework has been thought of as applicable to diverse populations, though as Lindley (2006) points out, there remains an interesting question about whether self-efficacy as a construct is a more universal experience of humans in general, or whether it is culturally embedded within more individualistic cultures. However, within the

context of SCCT (Lent et al., 1994), self-efficacy is placed in a theoretical location that attempts to emphasize social, cultural, personal, and other environmental factors (Lindley, 2006).

In a study attempting to extend SCCT to African-American students, math-related self-efficacy and outcome expectations taken together influenced the development of math-related interests (Gainor & Lent, 1998). Also consistent with SCCT theory, self-efficacy influenced the development of academic interests directly and indirectly, such that African-American students perceiving themselves as having high efficacy in performing math tasks were more likely to expect positive outcomes and to develop further math-related interests (Gainor & Lent, 1998). Though social cognitive variables were found to have only a weak relationship with racial identity attitudes in African-American students, enough support was found in this study to suggest that SCCT may be applied to various racial and ethnic groups, and among African-American students at varying stages of racial identity development (Gainor & Lent, 1998). African-American students at Historically Black Colleges and Universities (HBCUs) reported more supports relative to barriers than did African-American students at predominantly White universities (Lent et al., 2005), lending support to SCCT variables as applied to African-American college students.

Flores and O'Brien (2002) found that career self-efficacy related to nontraditional careers in Mexican-American women led to the development of interests in careers that were considered nontraditional, and more prestigious. Mexican-American women who tended to be more identified with European-American cultural attitudes and behaviors were more likely to choose traditional careers, as well as careers considered less prestigious (Flores & O'Brien, 2002). Implications are that contextual variables influence the development of self-efficacy in Mexican-

American women, which in turn influences the types of career interests that develop. Let us turn attention now to the role of the perception of barriers and supports in SCCT.

SCCT: Perception of Barriers versus Supports

Prior to the formalization of SCCT, the discussion of perceived social support and its connection to college students' perceptions of satisfaction in their environmental contexts was well under way (Brown, et al., 1988). SCCT (Lent, et al, 1994; 1996) has provided a theoretical model in which contextual supports, as well as barriers, are considered to wield strong influence on a person's career development and choices, through either direct or moderating relationships (Lent, et al, 2000). Contextual supports and barriers are capable of being either objective or perceived (2000). That is, objective factors in one's environment, such as educational experience, financial status, living arrangements, and others can either enhance or detract from a person's ability to formulate career conceptualizations (2000). Examples of commonly rated barriers are: financial concerns, personal difficulties, problems with ability, and social and family influences (Lent et al., 2002). Examples of supports include social support, encouragement, personal strengths, role models or mentors, and financial resources (Lent et al., 2002).

Subjective factors are represented by a person's experience of her or his environment in such a way as to be able to develop beliefs about individualized factors that represent barriers or supports to academic or career achievement (2000). Whether a factor is objective or subjective remains an interesting question—who is responsible for deciding about which factors are objective or subjective? Though the provision for considering supports and barriers as either objective or subjective is helpful in terms of a model, practically these may be contextually subjective. For example, race, ethnicity, physical ability, gender, age, and other such personal

variables seem to differentially represent objective and subjective supports and barriers depending on the context.

Supports and barriers are further seen by SCCT as being both “distal” and “proximal” (Lent et al, 2000; Lent et al., 1994). Distal factors represent learning experiences that have helped form a person’s career self-efficacy and cognitive expectations of outcome, and may include childhood models and life experiences leading to either support for the development of certain career interests or dissuasion from pursuing other career-related interests (2000; 1994). Proximal factors are currently relevant to a person as they consider career options. Lent, Brown, and Hackett provide examples for proximal factors as “the adequacy of one’s informal career contacts or exposure to discriminatory hiring practices” (2000; 1994). Other examples related to undergraduate students could be one’s connectedness to a social or academic peer group, or quality of interaction with faculty.

Barriers to career development have also been defined as “external conditions or internal states that make career progress difficult” (Swanson, Daniels, & Tokar, 1996) . Perception of barriers is inevitably a subjective process, along with one’s perception of the level of challenge represented by the perceived barrier. Though it is thought that people can overcome perceived barriers (1996), that, too, seems to rely on one’s subjective experience of supports and resources available to a person in her or his environmental context. College students with more perceived occupational barriers reported lower self-efficacy related to career decision-making, although experience with overcoming barriers was related to a greater sense of being able to make career-related decisions (Luzzo, 1996).

This concept of barriers and supports contributes not only to general career development models, but adds points for discussion of the relationship of factors such as race, ethnicity,

gender, physical ability, educational level of achievement, socioeconomic status, religious and spiritual factors, and other factors considered from a perspective of multiculturalism and diversity. Cultural barriers (McWhirter et al., 1998) may also present obstacles for marginalized populations based on race or ethnicity. These may consist of overt or covert racist beliefs that discriminate against persons of color, and may be externally held in the social environment or internalized beliefs. Discrimination may also take the form of sexual harassment or other sexual discrimination, usually as women are marginalized due to gender-based stereotypes (1998). Homophobia, limitations in the physical work environment, and lack of support are more examples of possible barriers (1998). Sadly, barriers to academic and career development may exist in any environment in which one group of people marginalizes another group of people for any reason, and these barriers may reflect dominant cultural stereotypes or idiosyncratic beliefs relative to the given social context. It bears stating that the perception of barriers is the key to one's experience of her or his environment as supportive or negative toward one's vocational development.

Perceived barriers have been found to be associated with ethnic and gender differences (McWhirter, 1997) in that females and Mexican-Americans were found to expect and perceive more barriers to educational and career goals than men or European Americans. In a study of Mexican-American high school women in their senior years, findings indicated that the presence of perceived parental support along with fewer perceived barriers led to increased career goals, and to these women choosing careers that were considered higher in prestige (Flores & O'Brien, 2002). Although contextual barriers may exist, the suggestion is that strong support facilitates career development.

Though there seems to be insignificant differences between Euro-American men and women regarding types of barriers perceived, women were found to rate barriers as having greater impact on them (Swanson & Tokar, 1991a, 1991b). Luzzo, (1995a) reported that women tend to report expectations for gender role conflicts to become barriers to future career development, significantly more than men. Specific gendered concerns reported by women were finding day care, and finding a college that offered flexibility to accomplish academic and family goals (1995a). Interestingly, Luzzo (1995a) also found that women tended to approach career development in a more planned fashion than did men, perhaps as a result of more perceived barriers and the perceived need to take them into account so as to successfully negotiate layers of career choice.

Luzzo and McWhirter (2001) also examined differences by gender and ethnicity regarding perception of barriers and levels of coping efficacy pertaining to academic and career development. They found that among undergraduate students, women and members of ethnic minority groups expected more barriers to career development than men and Euro-American students, and that members of ethnic minority groups further reported lower coping efficacy than Euro-American students. In this study, African American, Native American, Asian American, and Hispanic students were combined to form a category for ethnic minority students (2001). A study by Smith (2001) also found gender to be an important variable when considering social cognitive factors, with women reporting higher perceptions of academic and career related barriers, and more limited career choice goals than men.

Chronister and McWhirter (2003) described the usefulness of SCCT in understanding and overcoming barriers for women who are abused by domestic partners. In a study of women who have experienced domestic violence, Chronister and McWhirter (2004) found that perception of

barriers to career were higher for European-American women who experienced a larger number of abuse methods versus European-American women who experienced fewer. There was no significant difference in the same study between women of color experiencing greater or fewer abuse methods, leading the researchers to conclude that the impact of domestic violence among women of color, though just as serious as the impact to European-American women, was one of a number of serious barriers for African-American women, including racism and decreased access to services that are culturally sensitive (2004).

Chronister and McWhirter (2004) also found that women of color who reported higher socioeconomic status were more likely than women of color from lower socioeconomic backgrounds to experience larger numbers of abuse methods from domestic partners. Though the specific reason for this difference is not known, the researchers suggested that as women of color enter careers and advance in their employment, they begin to challenge more traditional gender role expectations, perhaps placing them at risk of experiencing escalating abuse from partners who feel threatened by these new career roles and increased potential for independence (2004).

Also studying ethnic differences in perceptions of barriers, Luzzo (1993b) found that Filipino and Asian American college students reported that they perceived future study skills to be barriers to career development. In the same study (1993b), students of all ethnic groups (Filipino, Asian American, African American, Hispanic, and Caucasian) perceived that financial barriers would present obstacles to career development. African-American students reported perceptions of past and future ethnic identity barriers more than any other ethnic group, including perceptions of racial discrimination (1993b).

Perceptions of barriers to career development have been found to be relevant to persons with mental illness (Corbiere et al, 2004). On measures of Barriers to Employment and Coping Efficacy, as well as on Career Search Efficacy, the authors found that people with mental illness concerns in vocational assistance programs reported the perception of barriers to work such as: medication side-effects, workplace absences, decreased self-confidence, and anxiety (2004).

Albert and Luzzo (1999) commented on the role of perceived barriers in career development by stating that perceived barriers by high school and college students are a part of a "perceived opportunity structure" such that even for people with high self-efficacy, career and academic development may be limited based on the presence of barriers. There is evidence to support that barriers, along with contextual supports, are mediated through self-efficacy to indirectly influence career choice (Lent et al., 2003b; Lent et al., 2001). That is, as contextual supports and barriers lead to either increased or decreased perception of self-efficacy, which in turn shapes a person's perceptions of available career choices (Lent et al., 2003b; Lent et al., 2001).

Further, one's outcome expectations and career interests mediate the influence of career-related self-efficacy on career and academic choice (Lent et al., 2003b; Lent et al., 2001). For example as a student perceives supports and barriers in her environment, her perceptions of self-efficacy influence and are influenced by these contextual variables. In turn, her dynamic perception of self-efficacy influences what academic majors and potential careers she may locate her interests, as well as informing her expectations connected to pursuit of a given major or career. Career choice then is one outcome of this reciprocally dynamic system of influences that include barriers and supports. In a sample of nontraditional college women, strong social

support along with high self-efficacy was found to facilitate a sense of overcoming perceived barriers to educational goals (Quimby & O'Brien, 2004).

This same model was found to fit for women and students at historically Black Universities with majors in Engineering (Lent, et al, 2005), as well as for a population of Italian school students (Lent, Brown, Nota, and Soresi, 2003a). Earlier research demonstrated that higher perceived career self-efficacy is related to a decreased likelihood to perceive barriers in one's academic environment (Smith, 2001). Further research was indicated by the authors of these studies to investigate the roles of supports and barriers in influencing career choice behavior (2003a).

Along with the discussion of barriers and supports in a person's environment, it is important to discuss the concept of "coping efficacy". Albert and Luzzo (1999) define coping efficacy as "the degree to which individuals possess confidence in their ability to cope with or manage complex or difficult situations". High personal coping efficacy has been associated with successful academic performance despite the perception of barriers (Hackett & Byars, 1996). The degree of coping efficacy may help explain why some students overcome obstacles and become successful, while others do not, given similar environmental contexts. It has been suggested that the perception of higher barriers may even decrease a person's perception of contextual supports, and that, vice versa, a high perception of supports may serve to decrease the effects of the perception of barriers for people (Lent et al., 2003a). Higher coping efficacy has been found to be related to the perception of fewer barriers and a greater sense of contextual supports (Lent et al, 2001).

Revisiting the Hypotheses

This study was designed to determine whether there is a difference between students on academic probation versus students on normal academic status on measures of self-efficacy, perception of supports and barriers, and coping efficacy. Also of interest was how measures of self-efficacy and perception of supports and barriers relate to demographic and academic status variables. For future program planning, it would be helpful to know whether cognitive attributional styles related to self-efficacy beliefs and perceptions of barriers help develop models leading to prevention and early intervention with students facing academic probation status.

CHAPTER 3

PROCEDURES

This chapter discusses the methods and investigative procedures utilized in data collection and analyses for the purpose of addressing the hypotheses. The research design, sampling process, instruments and procedures will be described.

Research Design

The current study will utilize a descriptive research design. Gall, Gall, and Borg (1999) defined descriptive research as "collecting information about research participants' beliefs, attitudes, interests, or behavior through questionnaires, interviews, or paper-and-pencil tests" (p. 173). They reported that this type of research involves different kinds of data, and the data can be transformed into numerical data. In this specific study, the descriptive responses of student participants were assessed to determine relationships, differences and predictors of career decision self-efficacy, perceptions of barriers and perceptions of coping efficacy.

Participants

In order to identify how many participants would be needed for this study, a power analysis was conducted using the GPOWER software and also using the appropriate statistical analysis that will be used in this study. The power analysis indicated that a total of 176 participants would be needed. This number of participants was calculated based on an effect size of .50 (.20 = small, .50 = medium, .80 = large), an alpha of .05 and an actual power of .9514. The

analysis also indicated that a total of 176 participants would require a Δ of 3.32 and a t-critical (174) of 1.65 to reach significance. The final number of participants was 296, which implied excellent power.

Instrumentation

Career Decision Self-Efficacy

Career decision self-efficacy was measured by the Career Decision-Making Self-Efficacy-Short Form (CDMSE-SF, Betz and Taylor, 2001). This self-report instrument is a 25-item questionnaire that requires the participant to give responses according to a Likert-type scale from "1" (No Confidence) to "5" (Complete Confidence) in one's perceived ability to complete career decision related tasks that represent the 25 items. The questionnaire was posted on the website with instructions for participants to select their responses. Reliability data for the five-point continuum of the CDMSE-SF included an alpha coefficient of .95 on the total scale and test-retest reliability coefficient of.83 over a 6-month period (Betz and Taylor, 2001).

The CDMSE-SF is a shorter version of the Career Decision-Making Self-Efficacy Scale (CDMSE; Taylor & Betz, 1983). Both the CDMSE and CDMSE-F were found to have high reliability (Betz & Luzzo, 1996) and to be widely used regarding assessment of beliefs among individuals regarding one's perception of being able to complete tasks relevant to career decision making (Betz, 2000). The CDMSE-SF is a copyrighted scale and was used by permission form N.E. Betz (personal communication, January 27, 2005).

Perception of Barriers and Perception of Coping Efficacy

Perception of barriers and coping efficacy related to barriers was assessed through the use of the Perceived Barriers Scale (PBS, Luzzo and McWhirter, 2001) . This measure consists of 64 items, the first 32 of which are the perception of barriers measure related to academic and career development. Items 33-60 comprise the coping with barriers measure, which are expected to give an indication of how well the participant believes he or she is able to overcome any perceived barriers. Items 61-64 are used to estimate validity of the scales. Reliability data for the coping with barriers measure is given as Cronbach's alpha of .95 (N= 292), with a test-retest reliability over 2 months reported as .58 (N=55). The PBS was used by permission of E.H. McWhirter (personal communication, January 27, 2005).

Procedure for Data Collection

This study was confidentially conducted via a website that included a demographic questionnaire, a measure of career decision self efficacy, and a measure of perception of barriers and coping efficacy. Undergraduate students from the College of Agricultural and Environmental Sciences (N = approximately 1200) were invited by e-mail to participate in this study. One week prior to launch of the study, an e-mail was sent to the entire population through CAES Office of Academic Affairs announcing the study and asking students to look for a second e-mail that will contain a website hyperlink. On the day of launch of the study, all CAES undergraduate students received the second e-mail request for voluntary participation in the study, and were directed to a hyperlink for the website on which the three questionnaires were posted.

After reading and indicating agreement with a statement of informed consent, students proceeded to a demographic questionnaire seeking information regarding pertinent variables to be utilized in the study. Such variables included: age, number of credit hours completed at UGA, academic status, gender, ethnicity, current major, number of prior collegiate institutions attended, geographic location of high school attendance (rural, suburban, urban), and expected graduation date. This information was used to gather important background information for descriptive statistics, as well as to help form variables to be used in regression models against measures of self-efficacy and perceptions of barriers.

Following completion of the study, participants had the opportunity to voluntarily leave contact information should they desire to participate in a drawing for prizes for completing the study. Gifts included in the drawing were UGA logo items such as shirts and memorabilia, in addition to a grand prize of an I-Pod. The total number of prizes included in the drawing is expected to be 5.

Variables of Interest

The variables of interest of this study included: age, gender, ethnicity, academic status, high school geographic location, mother's and father's education level, credit hours competed, number of colleges entered prior to attending current institution, number of majors chosen prior to current major, perceived barriers, perceived coping skills and career decision self-efficacy.

Hypotheses

The following null and research hypotheses were developed by the researcher:

Null Hypothesis 1. There will be no statistically significant relationships among participants' scores on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping efficacy.

Research Hypothesis 1. There will be statistically significant relationships among participants' scores on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping efficacy.

Null Hypothesis 2. There will be no statistically significant difference between participants with a regular academic status and participants on probation/dismissal status on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping efficacy.

Research Hypothesis 2. There will be a statistically significant relationship between participants with a regular academic status and participants on probation/dismissal status such that those on regular academic status are expected to report greater career development self-efficacy, lower perception of barriers related to academic and career development, and greater perception of coping efficacy than participants on probation/dismissal status.

Null Hypothesis 3. There will be no statistically significant difference between males and females on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping efficacy.

Research Hypothesis 3. There will be statistically significant relationships between males and females such that males are expected to score higher than females on measures of career development self-efficacy, lower on measures of perception of barriers related to academic and career development, and higher on perceptions of coping efficacy.

Null Hypothesis 4. There will be no statistically significant difference between Caucasian and Non-Caucasian participants on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping efficacy.

Research Hypothesis 4. There will be statistically significant relationships between Caucasian and Non-Caucasian participants such that Caucasians are expected to score higher than Non-Caucasians on measures of career development self-efficacy, lower on measures of perception of barriers related to academic and career development, and higher on perceptions of coping efficacy.

Null Hypothesis 5. There will be no statistically significant difference between the different levels of participants' high school geographic location on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping skills.

Null Hypothesis 6. Age, gender, ethnicity, academic status, high school geographic location, mother's and father's education level, credit hours competed, number of colleges entered prior to attending current institution, number of majors chosen prior to current major,

perceived barriers and perceived coping skills will not significantly predict career decision self-efficacy.

CHAPTER 4

RESULTS

Demographic Data

All the raw data from the 296 student participants were transferred and coded into the Statistical Program for the Social Sciences, Version 12.0 (SPSS 12.0). The coded data of this study guaranteed the anonymity of the student participants. Before utilizing any statistical analyses, the data was assessed for normal distributions and prepared for final analyses. This exploratory analysis revealed that most variables in the study were normally distributed (kurtosis and skewness values between –1.0 and +1.0). This implied excellent distributions of these variables. There were a few variables however that did not fall in the normal distribution range. Specifically, ethnicity, number of colleges/technical schools one attended prior to entering University of Georgia, and age were not normally distributed (values of 2.99, 2.61, and 3.97 for skewness and values of 21.64, 10.72, and 18.28 for kurtosis respectively). These variables were taken into consideration when performing the final analyses. This chapter reports the descriptive information of the sample and addresses the analyses and results for each of the hypotheses of this study.

Frequency distributions were constructed in order to obtain a greater understanding of the sample and its characteristics. Table 1 describes the gender distribution of the student participants of this sample. As can be seen from Table 1, there were more females than males in the sample. Specifically, there were 182 (61.5%) female students and 114 (38.5%) male students.

Table 1

Gender of Student Participants

Gender	*N*	%
Female	182	61.5
Male	114	38.5
Total	296	100.0

Table 2 describes the academic status of the student participants. This table indicates that the majority of the sample consisted of students with a regular academic status. Specifically, there were 259 (87.5%) students with a regular academic status and 37 (12.5%) students that were on probation/dismissal status.

Table 2

Academic Status of Student Participants

Academic Status	*N*	%
Probation/Dismissal	37	12.5
Regular	259	87.5
Total	296	100.0

Table 3 describes the frequency distribution of the ethnicity of the student participants. As it can be seen, the majority of the student participants were Caucasian followed by Latino, African American and Asian American. Specifically, there were 256 (86.5%) Caucasian students, followed by 12 (4.1%) Latino, 11 (3.7) African American, nine (3.0%) Asian American, two (0.7%) Native American, two (0.7%) Bicultural, two (0.7%) that identified as "Other," one (0.3%) Arabic and one (0.3%) Jewish.

Table 3

Ethnicity of Student Participants

Ethnicity	*N*	%
African American	11	3.7
Arabic	1	0.3
Asian American	9	3.0
Bicultural	2	0.7
Caucasian	256	86.5
Jewish	1	0.3
Latino	12	4.1
Native American	2	0.7
Other	2	0.7
Total	296	100.0

Table 4 describes the frequency distributions of the geographic location of the student participants' high school. As it can be seen, there was a fair representation from all five regions. Specifically, there were 85 (28.7%) students from a small to medium city high schools, 72 (24.3%) from small town high schools, 63 (21.3%) from suburban high schools, 48 (16.2%) from rural high schools and 28 (9.5%) from large city high schools.

Table 4

High School Geographic Location of Student Participants

Geographic Location	*N*	%
Large City	28	9.5
Rural	48	16.2
Small to Medium City	85	28.7
Small Town	72	24.3
Suburban	63	21.3
Total	296	100.0

Table 5 describes the frequency distributions of the education level of the student participants' father. As it can be seen, there was a fair representation from many levels. Specifically, there were 84 (28.4%) fathers of student participants with a High School degree, 82 (27.7%) with a Bachelors degree, 64 (21.6%) with a Masters degree, 51 (17.2%) with an Associates degree, eight (2.7%) with a Doctorate degree, six (2.0%) with less than high school education, and one (0.3%) that identified as "Other."

Table 5

Father's Education Level of Student Participants

Education Level	*N*	%
Associates	51	17.2
Bachelors	82	27.7
Doctorate	8	2.7
High School	84	28.4
Less than high school	6	2.0
Masters	64	21.6
Other	1	0.3
Total	296	100.0
Total	296	100.0

Table 6 describes the frequency distributions of the education level of the student participants' mother. As it can be seen, there was a fair representation from many levels. Specifically, there were 104 (35.1%) mothers of student participants with a Bachelors degree, 69 (23.3%) with a High School degree, 43 (14.5%) with a Masters degree, 40 (13.5%) with an Associates degree, 34 (11.5%) with a Doctorate degree, four (1.4%) with less than high school education, and two (0.7%) that identified as "Other."

Table 6

Mother's Education Level of Student Participants

Education Level	*N*	%
Associates	40	13.5
Bachelors	104	35.1
Doctorate	34	11.5
High School	69	23.3
Less than high school	4	1.4
Masters	43	14.5
Other	2	0.7
Total	296	100.0

Table 7 describes the frequency distributions of the current major of the student participants. As it can be seen, there was a fair representation from many majors in the college. Please refer to Table 7 for specific details.

Table 7

Current Major of Student Participants

Current Major	%
Agribusiness	6.8
Agriculture Communications	1.7
Agriculture Economics	5.4
Agriculture Education	5.1
Agriculture Engineering	8.8
Animal Health	13.9
Animal Science	12.8
Applied Biotechnology	4.7
Avian Biology	1.4
Biological Engineering	8.4
Biological Science	7.8
Dairy Science	2.4
Entomology	0.3
Environmental Chemistry	0.3
Environmental Economics and Management	6.1
Environmental Health Science	1.4
Food Science	4.4
Horticulture	2.4
Landscape Grounds & Management	1.0
Poultry Science	2.0
Turfgrass Management	1.0
Water and Soil Resources	1.4
Undecided	0.7
Total	100.0

Furthermore, descriptive statistics were also utilized to analyze the demographic variables represented in numerical values. Results indicated that the mean age of participants was 21.82 (SD = 5.3, Range 17-56). In addition, participants were asked to indicate the number of majors they enrolled prior to their current major. Participants had a mean of 0.82 (SD = 0.89, Range 0-4). Concerning the number of overall credit hours participants completed towards their degree, participants indicated a mean of 73.53 (SD = 38.69, Range 0-173). Concerning the number of University of Georgia credit hours participants completed, participants indicated a mean of 53.61 (SD = 38.72, Range 0-189). Finally, participants were asked to indicate the number of colleges/technical schools they have attended after high school and prior to entering the University of Georgia. Participants indicated a mean of 0.66 (SD = 1.04, Range 0-8).

Results for Hypotheses

This section focuses on the null and research hypotheses outlined in Chapter III. Each hypothesis was tested at the .05 level of significance. There were four main independent variables in this study. These variables included gender of participant (Male versus Female), Academic Status (Regular versus Probation/Dismissal), Ethnicity (Caucasian versus Non-Caucasian) and Geographic Location of High School (Large City, Rural, Small to Medium City, Small Town, or Suburban).

There were three dependent variables used in this study. The first dependent variable was the perceived ability to complete career decision related tasks as measured by the CDMSE—Short Form (Betz and Taylor, 2001). This variable measured the perceived efficacy of individuals to complete these tasks. The second dependent variable was the perceived barriers to academic and career development as measured by the Perceived Barriers Scale (Luzzo & McWhirter, 2001). This variable measured the perceived barriers individuals have to their own

academic and career development. The third and final dependent variable was the indication of how well the participant believes he or she will be able to overcome any perceived barriers, again, as measured by the Perceived Barriers Scale (Luzzo & McWhirter, 2001). This variable measures the perception of coping ability to overcome the perceived barriers. The next section will focus on each of the hypotheses. Each hypothesis will be addressed individually.

Null Hypothesis 1. There will be no statistically significant relationships among participants' scores on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping efficacy.

Research Hypothesis 1. There will be statistically significant relationships among participants' scores on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping efficacy.

A correlational matrix was conducted in order to assess for significant relationships between the following variables: career development self-efficacy, perception of barriers related to academic and career development, and perception of coping skills. Table 8 describes the results of this analysis. As it can be seen from the table, career decision self-efficacy is positively, moderately and significantly related with perception of barriers ($r = .47$, $p < .001$) and negatively, moderately, and significantly related to perception of coping efficacy ($r = -.42$, $p < .001$). The perception of barriers scale was scored such that high scores on perception of barriers indicate low perceived barriers, and the perception of coping efficacy scales were scored such that higher scores represented lower coping efficacy perception. The results supported the hypothesis. That is, the higher confidence participants have in career decision, the lower their

perceived barriers and the higher their perceived coping efficacy to overcome any possible barriers. Furthermore, and as expected, there is a negative, moderate and significant relationship between perception of barriers and perception of coping efficacy (r = -.54, p < .001). The more perceived barriers individuals have, the less their perceived coping ability to overcome them. Therefore, the null hypothesis is rejected, and the research hypothesis is supported, as significant relationships were found between the variables of interest of this study.

Table 8.

Correlational matrix between the variables of interest

	CDSE	**PB**	**PCE**
CDSE	**-----**	**.472****	**-.415****
PB		**-----**	**-.544****
PCE			**-----**

CDSE = Career Decision Self Efficacy PB= Perception of Barriers
PCE = Perception of Coping Efficacy **= p < .01

Null Hypothesis 2. There will be no statistically significant difference between participants with a regular academic status and participants on probation/dismissal status on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping efficacy.

Research Hypothesis 2. There will be a statistically significant relationship between participants with a regular academic status and participants on probation/dismissal status such that those on regular academic status are expected to report greater career development self-

efficacy, lower perception of barriers related to academic and career development, and greater perception of coping efficacy than participants on probation/dismissal status.

Three independent sample t-tests were conducted in order to identify statistically significant differences between participants with a regular academic status and participants on probation/dismissal status on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping skills. Results of these analyses are displayed in Tables 9, 10, and 11. The mean career decision self-efficacy score of students with a regular academic status (M = 96.30, SD = 12.50) was statistically significantly different from the mean career decision self-efficacy score of students with a probation/dismissal academic status (M = 90.40, SD = 12.15) (t (294) = 2.69, p = .007). These results indicate that students with a regular academic status have higher confidence on their career decision than students with a probation/dismissal academic status.

Table 9

Career Decision Self-Efficacy Scores Between Regular & Probation Academic Status

Academic Status	*N*	*M*	*SD*	*t*	*p*
Regular	259	96.30	12.50	2.694	.007
Probation/Dismiss	37	90.40	12.15		

Furthermore, the mean perception of barriers score of students with a regular academic status (M = 123.80, SD = 14.22) was statistically significantly different from the mean perception of barriers score of students with a probation/dismissal academic status (M = 116.28, SD = 18.23) (t (294) = 2.90, p = .004). These results indicate that students with a regular academic

status have significantly lower perceived barriers than students with a probation/dismissal academic status.

Table 10

Perceived Barriers Scores Between Regular and Probation Academic Status

Academic Status	*N*	*M*	*SD*	*t*	*p*
Regular	259	123.80	14.22	2.896	.004
Probation/Dismiss	37	116.28	18.23		

In addition, the mean perception of coping efficacy score of students with a regular academic status (M = 59.65, SD = 15.35) was statistically significantly different from the mean perception of coping efficacy score of students with a probation/dismissal academic status (M = 66.82, SD = 15.68) (t (294) = -2.65, p = .008). These results indicate that students with a regular academic status have significantly higher perceived coping efficacy than students with a probation/dismissal academic status.

Table 11

Perceived Coping Efficacy Scores Between Regular and Probation Academic Status

Academic Status	*N*	*M*	*SD*	*t*	*p*
Regular	259	59.65	15.35	-2.652	.008
Probation/Dismiss	37	66.82	15.68		

Null Hypothesis 3. There will be no statistically significant difference between males and females on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping efficacy.

Research Hypothesis 3. There will be statistically significant relationships between males and females such that males are expected to score higher than females on measures of career development self-efficacy, lower on measures of perception of barriers related to academic and career development, and higher on perceptions of coping efficacy.

Three independent sample t-tests were conducted in order to identify statistically significant differences between males and females on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping skills. Results of these analyses are displayed in Tables 12, 13, and 14. The mean career decision self-efficacy score of female students (M = 95.59, SD = 12.84) was not significantly different from the mean career decision self-efficacy score of male students (M = 95.52, SD = 12.23) (t (294) = 0.05, $p > .05$). These results indicate that male and female students have similar confidence on their career decision self-efficacy.

Table 12

Career Decision Self-Efficacy Scores Between Male and Female Students

Gender	*N*	*M*	*SD*	*t*	*p*
Female	182	95.59	12.84	0.049	.961
Male	114	95.52	12.23		

Furthermore, the mean perception of barriers score of female students (M = 121.71, SD = 14.33) was not significantly different from the mean perception of barriers score of male students (M = 124.69, SD = 15.79) (t (294) = -1.68, p = .095). These results indicate that both male and female students have similar perceived barriers.

Table 13

Perceived Barriers Scores Between Male and Female Students

Gender	*N*	*M*	*SD*	*t*	*p*
Female	182	121.71	14.33	-1.675	.095
Male	114	124.69	15.79		

In addition, the mean perception of coping efficacy score of female students (M = 61.01, SD = 16.10) was not significantly different from the mean perception of coping efficacy score of male students (M = 59.79, SD = 14.67) (t (294) = 0.66, p > .05). These results indicate that both male and female students have similar perceived coping efficacy. In conclusion, the above the null hypothesis is supported, and the research hypothesis is rejected.

Table 14

Perceived Coping Efficacy Scores Between Male and Female Students

Gender	*N*	*M*	*SD*	*t*	*p*
Female	182	61.01	16.10	0.658	.511
Male	114	59.79	14.67		

Null Hypothesis 4. There will be no statistically significant difference between Caucasian and Non-Caucasian participants on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping efficacy.

Research Hypothesis 4. There will be statistically significant relationships between Caucasian and Non-Caucasian participants such that Caucasians are expected to score higher than Non-Caucasians on measures of career development self-efficacy, lower on measures of perception of barriers related to academic and career development, and higher on perceptions of coping efficacy.

In order to address this hypothesis, all the Non-Caucasian ethnicities were grouped together so that the Caucasian group can be compared to the Non-Caucasian group. Three independent sample t-tests were conducted in order to identify statistically significant differences between Caucasian and Non-Caucasian participants on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping skills. Results of these analyses are displayed in Tables 15, 16, and 17. The mean career decision self-efficacy score of Caucasian students (M = 95.37, SD = 12.12) was not significantly different from the mean career decision self-efficacy score of Non-Caucasian students (M = 96.78, SD = 15.36) (t (294) = 0.66, $p > .05$). These results indicate that Caucasian and Non-Caucasian students have similar confidence on their career decision self-efficacy, thus supporting the null hypothesis on this measure.

Table 15

Career Decision Self-Efficacy Scores Between Caucasian and Non-Caucasian Students

Ethnicity	*N*	*M*	*SD*	*t*	*p*
Caucasian	256	95.37	12.12	0.659	.510
Non-Caucasian	40	96.78	15.36		

Furthermore, the mean perception of barriers score of Caucasian students (*M* = 123.89, *SD* = 14.49) was significantly different from the mean perception of barriers score of non-Caucasian students (*M* = 116.24, *SD* = 16.32) (*t* (294) = -3.05, *p* = .002). These results indicate that Caucasian students have less perceived barriers as compared to Non-Caucasian students. Thus the null hypothesis is rejected and the research hypothesis is accepted on this measure.

Table 16

Perceived Barriers Scores Between Caucasian and Non-Caucasian Students

Ethnicity	*N*	*M*	*SD*	*t*	*p*
Caucasian	256	123.89	14.49	-3.051	.002
Non-Caucasian	40	116.24	16.32		

In addition, the mean perception of coping efficacy score of Caucasian students (*M* = 60.38, *SD* = 15.34) was not significantly different from the mean perception of coping efficacy score of Non-Caucasian students (*M* = 61.57, *SD* = 16.99) (*t* (294) = 0.45, *p* > .05). These results indicate that both Caucasian and Non-Caucasian students have similar perceived coping efficacy. The null hypothesis is supported for this measure.

Table 17

Perceived Coping Efficacy Scores Between Caucasian and Non-Caucasian Students

Ethnicity	*N*	*M*	*SD*	*t*	*p*
Caucasian	256	60.38	15.34	0.449	.654
Non-Caucasian	40	61.57	16.99		

Null Hypothesis 5. There will be no statistically significant difference between the different levels of participants' high school geographic location on career development self-efficacy, perception of barriers related to academic and career development, and perception of coping skills.

A Multiple Analysis of Variance (MANOVA) was conducted in order to identify differences between the five high school geographic locations (large city, rural, small to medium city, small town and suburban) on the three dependent variables (career development self-efficacy, perception of barriers related to academic and career development, and perception of coping skills). The study met the assumptions of a Multiple Analysis of Variance (MANOVA) design.

The results of the MANOVA indicated no significant differences on the dependent measures (Wilks' Λ= .982, F (4, 291) = 0.451, $p > .05$, multivariate $\eta^2 = .006$). As expected, the individual analyses of variances (ANOVAs) on each dependent variable were also non-significant.

Specifically, the individual ANOVA on career decision self-efficacy revealed that there was no significant main effect of self-efficacy between the groups (F (4, 291) = 0.441, $p > .05$,

multivariate η^2 = .006). Therefore, no post-hoc analysis was needed. In addition, the individual ANOVA on perceived barriers revealed that there was no significant main effect of perceived barriers between the groups (F (4, 291) = 0.260, p > .05, multivariate η^2 = .004). Therefore, no post-hoc analysis was needed. Finally, the individual ANOVA on perceived coping efficacy revealed that there was no significant main effect of coping efficacy between the groups (F (4, 291) = 0.654, p > .05, multivariate η^2 = .009). Therefore, no post-hoc analysis was needed. In conclusion, there is no support for this hypothesis.

Null Hypothesis 6. Age, gender, ethnicity, academic status, high school geographic location, mother's and father's education level, credit hours competed, number of colleges entered prior to attending current institution, number of majors chosen prior to current major, perceived barriers and perceived coping skills will not significantly predict career decision self-efficacy.

A Stepwise Multiple Regression Analysis was conducted in order to evaluate if age, gender, ethnicity, academic status, high school geographic location, mother's and father's education level, credit hours competed, number of colleges entered prior to attending current institution, number of majors chosen prior to current major, perceived barriers and perceived coping skills were significant predictors of career decision self-efficacy. The predictors in the regression equation were age, gender, ethnicity, academic status, high school geographic location, mother's and father's education level, credit hours competed, number of colleges entered prior to attending current institution, number of majors chosen prior to current major,

perceived barriers and perceived coping skills. The criterion variable was the career decision self-efficacy score as measured by the CDMSE-Short Form.

Results indicated that there were four significant predictors of career decision self-efficacy. Specifically, perception of barriers accounted for a significant variance of career decision self-efficacy, F (1,294) = 84.10, $p < .001$; R = .472, $R^2 = .222$ (adjusted $R^2 = .220$). In addition, perception of coping efficacy added significant variance to career decision self-efficacy (F (2,293) = 51.00, $p < .001$; R = .508, $R^2 = .258$ (adjusted $R^2 = .253$). Furthermore, ethnicity added significant variance to career decision self-efficacy (F (3,292) = 35.96, $p < .001$; R = .519, $R^2 = .270$ (adjusted $R^2 = .262$). Finally, the number of hours completed towards one's degree added significant variance to career decision self-efficacy (F (4,291) = 28.51, $p < .001$; R = .531, $R^2 = .282$ (adjusted $R^2 = .272$). No other variable in the regression equation was a significant predictor of career decision self-efficacy. Therefore, there is some support for this hypothesis.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

The purpose of this study was to determine whether students enrolled in a college of agriculture differ on measures of career decision self efficacy (Betz & Taylor, 2001) depending on probation versus no probation academic status. The study was also interested in exploring whether students enrolled in a college of agriculture differ on measures of perceived barriers and supports to academic success, as well as in perceptions of coping skills (Luzzo & McWhirter, 2001). Gender, ethnicity, geographical location of a student's high school, and other contextual factors are considered respective to their influence on career decision self-efficacy, perception of barriers to career and academic development, and coping self-efficacy. Results were expected to have bearing on thinking and planning regarding student retention and the provision of reasonable services in order to facilitate the career and academic development of students.

In support of the first hypothesis, there was a statistically significant relationship between career decision self-efficacy and perception of barriers. Students who perceived themselves as having a higher career decision self-efficacy reported having a lower perception of barriers to career and academic development. Essentially, this means that students who view themselves as being capable of making effective career and academic related decisions also perceive fewer obstacles in their way toward achieving related goals. Although it is not known from this research which comes first, fewer perceived obstacles or career decision self-efficacy, it is clear that these constructs are intimately connected for students engaged in the academic process.

Likewise, there was a statistically significant relationship between career decision self-efficacy and perception of coping efficacy. Students perceiving themselves as able to make career and academic related decisions also perceived that they were better able to cope with any barriers or obstacles that might present challenges for them. Again, it is not known from this study whether perceived ability to make career and academic decisions informs one's perceptions of coping efficacy, or vice versa. What is known is that these constructs are related, and that students scoring higher on career decision self efficacy can be thought of as generally well-prepared to manage difficulties as they arise in personal and environmental contexts.

Further, there was a statistically significant negative relationship between students' perception of barriers and students' perceptions of coping efficacy. Students perceiving more barriers to career and academic development viewed themselves as less capable of managing challenges that threaten their career and academic goals. Implications are that students who find themselves with greater barriers to academic success are less likely to believe they can achieve goals, and may be in greater need of identifying contextual supports early in their academic pursuits. Students left to fend for themselves in the face of greater perceived obstacles are not as likely to believe that they will, in actuality, achieve their stated goals.

This fits the model explained in SCCT (Lent, Brown, & Hackett, 1994), that self-efficacy beliefs are intricately connected and dynamically interact with personal and contextual factors. Barriers and supports to career and academic development have been identified as contextual factors in the literature (Lent, Brown, & Hackett, 2000) and are important considerations for student retention and academic progress. In this study, findings indicate that in order for students to develop career decision self-efficacy, lower perception of barriers and higher

perception of coping efficacy would be desired, and for which appropriate interventions can be designed.

Regarding students on regular academic status versus students with a probation/dismissal status, significant differences were found on measures of career decision self-efficacy, perception of barriers, and perception of coping efficacy. First, students on regular academic status reported higher career decision self-efficacy than students on probation/dismissal status. Prior research indicated that self-efficacy was especially relevant to students who tended to achieve fewer academic goals (Multon et al., 1991) suggesting differential saliency of self-efficacy depending on academic status.

Considering that academic self-efficacy has been found to contribute to the understanding of academic performance (Gore Jr., 2006), one conclusion from this finding could be that students on regular academic status, and therefore on track academically, perceive no reason to question career and academic decisions due to their experience of adequate progress toward goals. This conclusion fits with findings that self-efficacy tends to be formed by progress toward goals (Zimmerman & Bandura, 1994; Zimmerman et al, 1992; Hackett et al., 1992), and also fits assumptions of SCCT that the development of self-efficacy is partly informed by a person's active participation in career-related academic activities (Lent et al., 1994). Another possible explanation for this finding is that students on probation/dismissal status approach their career and academic development with less specificity than students on regular academic status, resulting in a potentially more diffuse approach to academic commitment.

Students on regular academic status differed significantly from students on probation/dismissal status on their perceptions of barriers to career and academic development. Students who reported being on regular academic status perceived fewer barriers to career and

academic goals than students on probation/dismissal status. One way to understand this is that students on probation and dismissal may in fact enter academic pursuits with a higher level of perceived personal and contextual barriers, which may in turn impede academic progress. This explanation is consistent with SCCT theoretical understanding of the role of barriers to career and academic progress (Lent et al., 1994; Lent et al., 2000). However, it is also possible that one function of being placed on academic probation or dismissal is that the status itself may be perceived as a barrier to educational attainment by some students, thereby priming students to be aware of barriers in the academic context.

One final finding regarding students on regular academic status versus students on probation/dismissal status was that students on regular academic status reported higher coping efficacy than students on probation/dismissal status. In keeping with SCCT (Lent et al., 1994; Lent et al., 2000) perhaps students on probation perceive themselves as less efficacious in coping with barriers partly as a result of the process of triadic reciprocity in the formation of their perceived self-efficacy. For example, as personal academic goals are not met, outcome expectations for academic success are adjusted more negatively along with perceived self-efficacy. This process indicates that students already having difficulty academically may begin to perceive themselves as inefficacious in coping with what seem to be increasing barriers. Without a commensurate increase in contextual supports, students would likely find it difficult to regain necessary positive academic experiences in order to reform efficacy beliefs, outcome expectations, and personal goals.

Interestingly, and contrary to some research findings on gender and self-efficacy (Betz & Hackett, 1981; Hackett & Betz, 1989; Lent, Lopez & Bieschke, 1991; Luzzo & McWhirter, 2001; Smith, 2001), no significant differences were found between males and females on

measures of career decision self-efficacy, perception of barriers, or perception of coping efficacy. However, more recent has shown variable effects of gender, including findings similar to those in this study (Lopez et al., 1997; Hackett et al., 1992; Hackett et al., 1990).

It seems important to note that gender differences are not apparent in this study on measures of career decision self-efficacy, perception of barriers, and coping efficacy. One possible explanation for the lack of differences between male and female students may be that females, in general, are currently exposed to a wider range of career opportunities, thereby developing interests and positive career self-efficacy beliefs. This has merit according to theoretical and empirical literature related to women's experience of self-efficacy, supports and barriers, and coping efficacy (Lent et al., 2000). Alternatively, women and men across the range of majors may exhibit similarities in career decision self-efficacy, perception of barriers, and coping skills, but within a given major could experience differences on these measures. In this alternative case, the nature of this study may not distinguish nuances of differences by specific major. Also, consider that participants reported high academically achieving mothers. It is plausible that women growing up in homes with high achieving female role models would develop an increased sense of career decision self-efficacy, and higher perceptions of coping self efficacy.

Considering ethnicity, Caucasian and non-Caucasian students were found to have significant differences on measures of perception of barriers, but not on career decision self-efficacy or on perception of coping efficacy. Previous research findings have indicated that persons of color tend to experience significantly greater barriers to career and academic achievement (Chronister & McWhirter, 2004; Luzzo, 1993) and that people of diverse ethnic groups, while generally perceiving the ability to cope with barriers or engage contextual supports

(Chronister & McWhirter, 2004; Flores & O'Brien, 2002) may benefit from intentional focus on identifying barriers and the supports to overcome them (Flores & O'Brien, 2002). Findings from a study on students' experiences of supports and barriers at historically Black universities versus mostly White universities (Lent et al., 2005) indicated that African American students benefited from supports embedded in the fabric of the historically Black universities, and that though the sample generally reported few barriers, career and academic goals tended to be more strongly influenced through barriers than through supports.

In this current study, non-Caucasian students tended to perceive more barriers to career and academic goals than did Caucasian students. Career decision-making self-efficacy and perception of coping efficacy were rated similarly by Caucasian and non-Caucasian students, indicating that by ethnicity, students in general felt confident in making career and academic related decisions, and in being able to cope with barriers as they arise to career and academic goals. Considering the implications of this finding, it appears that most students, regardless of ethnicity, believe they are able to proceed toward academic goals, but that non-Caucasian students tend to cope with more perceived barriers than non-Caucasian students. Albert and Luzzo (1999) stressed the importance of considering "structural, cultural, and sociopolitical barriers" when working with people along their career needs, which raises the question of how to provide stronger and more visible supports to non-Caucasian students in order to create a safer, more validating academic context in which students may continue toward their career goals.

Perception of barriers, perception of coping efficacy, ethnicity, and number of hours completed toward one's degree were found to contribute significantly to the prediction of career decision self-efficacy. From other findings in this study, we know that as perception of barriers increases, and perception of coping efficacy decreases, then career decision self-efficacy

decreases. Furthermore, non-Caucasian students are likely to perceive greater barriers to academic goals. Finally, the more hours a student completes toward her or his degree, the more likely it is that self-efficacy will increase. Findings by Gore, Jr. (2006) suggested that self-efficacy beliefs are better predictors of academic performance after students have gained experience through completion of coursework, which is consistent with findings of Kahn and Nauta (2001).

From the concept of triadic reciprocity in SCCT (Lent et al., 1994) we can surmise that as contextual barriers act to negatively influence self-efficacy, and as the ability to cope with these barriers also decreases, students would be at greater risk for lowering academic outcome expectations, and for failing to reach or altering personal academic and career goals. Also, a person's cultural context and experience of ethnicity would be important to understand regarding their personal experience of barriers. A possible supportive factor seems to be increased hours toward major, which can be supported through careful planning of intended career and major and through advising for appropriate course load.

Conclusions

The results of this study indicate that as perception of career and academic barriers increases for students, then career decision self-efficacy is reported to be lower by students in the College of Agricultural and Environmental Sciences at the University of Georgia. Also, as students perceive fewer barriers and the ability to cope with barriers to career and academic goals, career decision self-efficacy is higher.

There was no difference between males and females in the study on career decision self-efficacy, perception of barriers, or perception of coping skills. Regarding ethnicity, non-

Caucasian students perceived more barriers to career and academic goals than did Caucasian students, but no differences were found between Caucasian and non-Caucasian students on measures of career decision self-efficacy and perceptions of coping skills. Perception of barriers, perception of coping efficacy, ethnicity, and number of hours completed toward one's degree each contributed to the prediction of career decision self-efficacy.

Students on regular academic status reported higher confidence in their abilities to make effective career and academic decisions than did students on probation/dismissal status. Furthermore, students on probation/dismissal status perceived more barriers and lower confidence in their abilities to cope with these barriers than did students on regular academic status, as was hypothesized.

Recommendations for application

Given that clear and significant differences have been found in students on probation/dismissal status versus students on regular academic status, it is important to provide academic counseling services (Rojas et al., 2002). Academic counseling services could provide primary prevention through the screening of students for perception of current barriers and their abilities to cope with barriers, along with screening for career decision self-efficacy.

One application of a screening protocol might be to help with early identification of any student who seems to be experiencing a sense of insurmountable or increasing barriers in order to facilitate the identification and utilization of existing student supports, or to assist the student in developing such supports as necessary. Such primary prevention efforts may be considered during orientation to the college, or perhaps as part of an introductory course.

Particularly regarding non-Caucasian students, efforts at reducing the number of perceived barriers may be useful in creating an environment that is instrumentally experienced as supportive of career and academic goals. One suggestion would be to create supportive mentoring relationships utilizing more advanced students of color, as well as the formation of supportive groups which could meet periodically to share supports as well as to process any barriers that appear to be impeding progress or adding undue strain to the student.

Limitations

The population in this study was primarily and heavily Caucasian, making it necessary in a quantitative study to combine ethnic groups in order to examine differences between Caucasian and non-Caucasian students. Because of this combination of groups, two difficulties arise regarding generalizability of the results. First, the paradigm of comparing Caucasian with non-Caucasian students suggests an unintended bias toward understanding other ethnic groups from the perspective of the dominant social majority group. Second, differences between students of multiple ethnic groups are not known. We can say that in this sample Caucasian students perceived fewer barriers than all other ethnic groupings combined, but we do not know whether this trend holds for each ethnic group.

Another limitation in this study is that due to the descriptive design of the study, the effects of barriers and supports on career decision self-efficacy over time are not known. Pre-tests would help note whether self-efficacy changes as a result of academic experience, and how fluid perceptions of barriers and coping efficacy are in relation to career decision self-efficacy.

Although no gender differences were found on career decision self-efficacy, perception of barriers, or perception of coping efficacy, these results were based on males and females

participating in the study across all majors for the College of Agricultural and Environmental Sciences. Generalizability, as a result, to males and females in specific majors should be cautiously approached. It is not known whether males and females would differ within specific majors on the measures issued, or whether there exists variability in differences among males and females in specific majors. For example, it is not known from this study whether males may report higher career self-efficacy than females in some particular majors, and if females may report higher career self-efficacy than males in other majors, all under the umbrella of the college.

One further limitation is based on the nature in which data was gathered via internet-based approach. The internet-based survey attracted high percentage of students on regular academic status, and although enough students on probation participated for generation of results by statistical analysis, a question still remains regarding whether students on probation/dismissal status participated at a lower rate than students on regular academic status. Should students on probation/dismissal status perceive more barriers, lower coping self-efficacy, and lower career decision self-efficacy, it could be argued that this group of students would be disinclined to participate in research connected to career and academic development as fully as students on regular academic status.

Future Research

Future research could utilize a qualitative or mixed research design in order to access the experiences of members of ethnic groups that are represented in small numbers compared to the overwhelmingly Caucasian student population of the sample group. Qualitative and mixed designs might also provide a richer look at the specific types of barriers and supports

experienced by students, and possibly provide a deeper understanding of the experience of the student on probation/dismissal status.

Additional research on gender and contextual supports and barriers with students on probation/dismissal status could examine students by specific major in order to determine whether such supports and barriers are more salient by gender depending on the academic experience one chooses. While this research could be quantitative in part, lower numbers of available students per major may necessitate linking research efforts across universities with similar academic programs, or utilizing qualitative methods.

This study focused primarily on perception of barriers among students. Future studies could focus on the examination of supports, both the influence of perceived supports on career and academic self-efficacy, and on specific supports experienced by students who are confident in their abilities to make career and academic decisions. Along with this, the presence of familial or group support, which may be considered by some students, raises the interesting question of whether the well-studied construct of self-efficacy may include, or be related to, the idea of community-based efficacy (Lindley, 2006). It would seem refreshing in some ways to recognize the concept of self-efficacy as being at least partially embedded in individualistic culture, and to attempt to formulate culturally aware iterations of a possible evolution of this construct to include a more collectivist perspective where applicable.

Finally, more research investigating the effectiveness of interventions on coping efficacy could be helpful to determine how to facilitate development of students' abilities to address and overcome career and academic barriers, and whether this relates to development of career decision self-efficacy and achievement of academic goals. For example, creation of mentoring relationships for students in academic trouble, or forming groups to support students on

probation/dismissal status in making may be useful not only for their pragmatic application, but for the opportunity to study the impact on struggling students in order to seek effective alternatives to facilitate student success.

Final Thoughts

The world of the undergraduate student can be a wonderfully exciting one, but may also include, for some, unexpected challenges to one's career and academic goals. Through the examination of career and academic self-efficacy beliefs, perceptions of barriers to academic goals, and students' confidence to overcome barriers in their career and academic development, additional resources may be brought to bear in the form of institutional supports toward the goal of student retention, as well as to create a more supportive environment. The career and academic development of these students is not only in their best interest, but benefits the university, as well as the society into which these students emerge as being appropriately prepared for careers that fit their interests and beliefs about how they may contribute, or cast off and constrained into occupations that they had little belief they could reach beyond.

The implications of the findings in this study are that students, who can decrease perceptions of barriers and increase their perceptions of their abilities to overcome barriers, may develop a stronger confidence in their abilities to choose appropriate careers. Academic counselors, administrators, and psychologists interested in studying vocational development each have a role in facilitating development of career and academic self-efficacy, which in turn assists students in developing more positive outcome expectations and personal goals.

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APPENDICES

APPENDIX A

Statement of Consent

Statement of Consent

Dear Student:

You are invited to participate in a research study titled "Coping Efficacy and Perception of Barriers Among Students in the College of Agricultural and Environmental Sciences: A Social Cognitive Career Theory Approach to Understanding Differences Between Students on Academic Probation versus Regular Academic Status" conducted by Kevin M. Shepard, Department of Counseling and Human Development Services, University of Georgia, 706-542-1812, under the direction of Dr. Brian A. Glaser, Department of Counseling and Human Development Services, University of Georgia, 402 Aderhold Hall, Athens, GA, 30602.

The purpose of this research is to understand better how career decision-making self-efficacy and perception of barriers to education influence a student's experience, and to study differences in coping efficacy and perception of barriers between students who are on regular academic status and students who are on academic probation. If you choose to participate in this study, your participation will involve the following:
* completing an online survey that includes basic demographic questions and that asks you to select responses to questions about your academic and career decision-making as well as responses to perceived barriers to education.

Completion of the survey is expected to take a maximum of 25 minutes. Please note that Internet communications are insecure and there is a limit to the confidentiality that can be guaranteed due to the technology itself. However, once I receive the completed surveys, I will store them in a locked cabinet in my office and will destroy them and any names and contact information that I have by June, 2006. Any information that is obtained in connection with this study and that can be identified with you will remain confidential except as required by law. If you are not comfortable with the level of confidentiality provided by the Internet, please feel free to contact me for a paper copy of the survey that you may fill out by hand and return by mail with no return address on the envelope.

Your participation in this survey is strictly voluntary. You may withdraw at any time without penalty, or skip any questions you feel uncomfortable answering. Closing the survey window will erase your answers without submitting them. Additionally, you will be given a choice of submitting or discarding your responses at the end of the survey.

If you have any questions do not hesitate to ask now or at a later date. You may contact Kevin Shepard at 706-542-1812, or kshep262@uga.edu.

Thank you for the invaluable help that you are providing by participating in this research study.

Sincerely:

Kevin M. Shepard
Department of Counseling and Human Development Services
University of Georgia
402 Aderhold Hall
Athens, GA 30602
kshep262@uga.edu
706-542-1812

Additional questions or problems regarding your rights as a research participant should be addressed to: The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-mail address IRB@uga.edu.

By completing this survey you are agreeing to participate in the research. Please begin the survey now by clicking in the "Yes" button below.

APPENDIX B

Preliminary E-mail Recruitment

Preliminary E-mail Recruitment

Subject: Study for CAES Students

Dear Student:

As an undergraduate student in the College of Agricultural and Environmental Sciences (CAES), you will be invited to participate in a study related to your academic experience. Your experiences as a student regarding career and academic decisions, and your perception of barriers to education will be very helpful for this dissertation study aimed at discovering information useful to aiding student retention and academic success.

Participation is on a voluntary basis, and will not influence positively or negatively your academic status in the CAES. You may discontinue the study at any time. You must be at least 18-years old to participate. Participants completing the survey will be eligible to voluntarily submit an e-mail address or phone number in order to register for a drawing. Five winners will be selected, and the prizes are as follows: 1) Apple I-pod shuffle digital audio player; 2) $20 Gift certificate to Red Lobster restaurant; 3) $15 Gift Certificate to Borders Book Store; 4) $5 Gift Certificate to Red Lobster restaurant; 5) $5 Gift Certificate to Red Lobster restaurant.

If you agree to participate, you will be provided with a link to a website, at which you may complete requested surveys. Survey completion time is expected to take between 20-30 minutes. Should you be interested in completing the study, but prefer to do so through paper-copy of surveys, please contact me as listed below in order to receive a packet of information.

This study will begin in approximately one week, and you will be sent a follow-up e-mail to this one providing you with the necessary links to the study surveys.

Thank you for your help and consideration!

Regards:

Kevin M. Shepard
Academic Counseling Program
Office of Academic Affairs
College of Agricultural and Environmental Sciences
Kshep262@uga.edu
352-562-4344 (C)

APPENDIX C

Secondary E-mail Recruitment

Secondary E-mail Recruitment

Subject: Study for CAES students

Dear Student:

As an undergraduate student in the College of Agricultural and Environmental Sciences (CAES), you will be invited to participate in a study related to your academic experience. Your experiences as a student regarding career and academic decisions, and your perception of barriers to education will be very helpful for this dissertation study aimed at discovering information useful to aiding student retention and academic success.

Participation is on a voluntary basis, and will not influence positively or negatively your academic status in the CAES. You may discontinue the study at any time. You must be at least 18-years old to participate.

If you agree to participate, click on the link to a website, at which you may complete requested surveys. Survey completion time is expected to take between 20-30 minutes. Should you be interested in completing the study, but prefer to do so through paper-copy of surveys, please contact me as listed below in order to receive a packet of information.

http://www.surveymonkey.com/s.asp?u=208501130729

Thank you for your help and consideration! Please note that this is the second of three e-mails concerning this study, and that in approximately one week a follow-up e-mail will be sent to allow you the opportunity to participate if you so choose. Participants completing the survey will be eligible to voluntarily submit an e-mail address or phone number in order to register for a drawing. Five winners will be selected, and the prizes are as follows: 1) Apple I-pod shuffle digital audio player; 2) $20 Gift certificate to Red Lobster restaurant; 3) $15 Gift Certificate to Borders Book Store; 4) $5 Gift Certificate to Red Lobster restaurant; 5) $5 Gift Certificate to Red Lobster restaurant.

Regards:

Kevin M. Shepard
Academic Counseling Program
Office of Academic Affairs
College of Agricultural and Environmental Sciences
Kshep262@uga.edu
352-562-4344 (C)

APPENDIX D

Follow-up E-mail

Follow-up E-mail

Subject: Study for CAES students

Dear Student:

As an undergraduate student in the College of Agricultural and Environmental Sciences (CAES), you will be invited to participate in a study related to your academic experience. Your experiences as a student regarding career and academic decisions, and your perception of barriers to education will be very helpful for this dissertation study aimed at discovering information useful to aiding student retention and academic success.

Participation is on a voluntary basis, and will not influence positively or negatively your academic status in the CAES. You may discontinue the study at any time. You must be at least 18-years old to participate.

If you agree to participate, click on the link to a website, at which you may complete requested surveys. Survey completion time is expected to take between 20-30 minutes. If you have already completed the surveys, thank you for your participation!
Should you be interested in completing the study, but prefer to do so through paper-copy of surveys, please contact me as listed below in order to receive a packet of information.

http://www.surveymonkey.com/s.asp?u=208501130729

Thank you for your help and consideration! Participants completing the survey will be eligible to voluntarily submit an e-mail address or phone number in order to register for a drawing. Five winners will be selected, and the prizes are as follows: 1) Apple I-pod shuffle digital audio player; 2) $20 Gift certificate to Red Lobster restaurant; 3) $15 Gift Certificate to Borders Book Store; 4) $5 Gift Certificate to Red Lobster restaurant; 5) $5 Gift Certificate to Red Lobster restaurant.

Regards:

Kevin M. Shepard
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APPENDIX E

Demographic Questions

Demographic Questions

1. My gender is…
2. The number of overall credit hours I have completed toward my degree is approximately…
3. The number of UGA credit hours I have completed is approximately…
4. My current academic status is…
    a. Regular (Never Placed on probation during academic career)
    b. Regular (Cleared probation in my academic career)
    c. Scholastic Probation (1st Semester of Probation)
    d. Continued Probation (2 or more semesters of probation)
    e. Returning from 1st Dismissal
    f. Returning from 2nd Dismissal
5. My ethnicity/racial background is…
    a. African-American
    b. Asian American
    c. Caucasian/White
    d. Latino(a)/Hispanic
    e. Native American
    f. Other (please specify)
6. The number of colleges/technical schools I have attended after high school, and prior to entering the University of Georgia is…
7. My current major is…
8. The number of majors I have enrolled in prior to my current major is…
9. My age is…

10. My high school (from which I graduated) was located in…

    a. A large city

    b. A small to medium city

    c. A small town

    d. A suburban area

    e. A rural area

    f. Other (please specify)

11. My mother's highest level of completed education is…

    a. Doctoral Degree

    b. Master's Degree

    c. Bachelor's Degree

    d. Associates Degree

    e. High School

    f. Less than High School

    g. Other (please specify)

12. My father's highest level of completed education is…

    a. Doctoral Degree

    b. Master's Degree

    c. Bachelor's Degree

    d. Associates Degree

    e. High School

    f. Less than High School

    g. Other (please specify)