Career choice for doctoral students: a study of doctoral students in special education attending colleges and universities in California

Max Elvin Driggs

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CAREER CHOICE FOR DOCTORAL STUDENTS:
A STUDY OF DOCTORAL STUDENTS IN SPECIAL EDUCATION
ATTENDING COLLEGES AND UNIVERSITIES IN CALIFORNIA

A Dissertation Presented
To
The Faculty of the School of Education
Learning and Instruction Department

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Max Elvin Driggs
San Francisco
May 2009
This dissertation, written under the direction of the candidate’s dissertation committee and approved by the members of the committee, has been presented to and accepted by the Faculty of the School of Education in partial fulfillment of the requirements for the degree of Doctor of Education. The content and research methodologies presented in this work represent the work of the candidate alone.

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ABSTRACT

The shortage of highly qualified candidates for faculty positions in special education at institutions of higher education (IHEs) in California continues to constrain IHEs ability to train adequate numbers of classroom teachers. This descriptive study examined the current cohort of doctoral students majoring in special education at IHEs in California, using both quantitative and qualitative methods.

The participants were asked to respond to a survey based on the instrument developed by Smith et al. (2001) in their national landmark study of special education leadership for the Office of Special Education Programs (OSEP). Subsets of participants from each doctoral program in California were invited to participate in semi-structured interviews to discuss the particular factors that will influence their career choices. The surveys and interviews were analyzed using the framework of Social Cognitive Career Theory (SCCT) to identify which factors are most influential to special education doctoral students' career choices.
ACKNOWLEDGMENTS

This dissertation is dedicated to my daughter Alyson and my son James without whose presence in my life I would never have considered this endeavor. Alyson is a developmentally disabled adult with Downs’ Syndrome who is non-verbal and legally blind. She teaches me with her quiet and her persistence that our humanity is not grounded in our intellect, but in our compassion. James was also a developmentally disabled adult with Downs’ Syndrome who overcame his chromosomes every day of his life. He was my son, my best friend and the love of my life. He taught me about courage in the face of fear and the power of joy to overcome anger and despair. I would also like to acknowledge the strength and support of my wife, Susan, who held me and stood by me during some of the darkest moments of this process.

I want to thank my committee, Susan Evans, Ed.D., Lana Andrews, Ed.D., and Pamela Redmond, Ed.D. Their patience, advice, and support were indispensable to the completion of my program.

I want to thank the faculty of the Learning and Instruction department and the administration of the School of Education, who were my teachers and mentors and who became my colleagues and friends.

I want to thank my family and friends for their hearts and their hands and their prayers.

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CHAPTER I
INTRODUCTION

The United States continues to face widespread shortages of classroom teachers trained in special education and related fields (Esch, Chang, & Shields, 2005). One explanation for this shortage is the inability of colleges and universities to provide enough capacity in their teacher education programs to meet the demand for highly qualified K-12 special education teachers (Arends & Castle, 2003). This lack of capacity is directly related to a shortage of university faculty in special education teacher credential programs and of candidates in doctoral programs that develop special education leadership. In addition, only a small percentage of doctoral students in special education choose careers in higher education upon the completion of their studies. Ultimately, this situation could lead to an erosion of the status of institutions of higher education as the most effective and efficient method for training teachers.

A number of studies over the past 30 years have described the relationship between the special education teacher shortage in K-12 schools and the shortage of special education faculty in the colleges and universities that train special education teachers. Few studies have used the construction of career choice theory to look at the factors influencing the post-graduation choices of special education doctoral students. No study has examined the influence of these factors for traditional and non-traditional doctoral preparation programs for underrepresented doctoral candidates.

The present study applied the factors of Social Cognitive Career Theory (SCCT) to the career choices of graduate students currently in the process of attaining their doctorates in special education in the state of California. This study also used SCCT to...
determine the relative influence of the factors of career choice in traditional doctoral programs compared to non-traditional programs.

Background and Need

In the field of special education, the United States continues to struggle with critical shortages of fully certified special education teachers (M. Rosenberg, Sindelar, Connelly, & Keller, 2004). Both the literature of special education and the literature of teacher education describe more than 20 years of shortages in supplying the demand for well trained teachers for special education classrooms (Arends & Castle, 2003; Darling-Hammond, 1984; Smith-Davis, Burke, & Noel, 1984). These shortages exist in every region from Florida to California and from urban centers to rural districts (McLeskey, Tyler, & Sanders-Flippin, 2004; M. Rosenberg, & Sindelar, P, 2004; M. Rosenberg et al., 2004). Ninety-eight percent of the country’s school districts reported shortages of special education teachers in 2000 (Fideler, Foster, & Schwartz, 2000).

In the 1980s researchers began suggesting that the problem of special education teacher shortages would remain intractable without the adequate development of capacity in the national system of teacher training colleges and universities. The national shortage of special education teachers can be traced directly to the equally critical national shortage of faculty in Institutions of Higher Education (IHEs), which are traditionally responsible for training teachers (Sindelar & Rosenberg, 2003; Sindelar & Taylor, 1988; Smith & Lovett, 1987; Smith, Pion, Tyler, Sindelar, & Rosenberg, 2001). The paramount questions over this entire period remain constant. Who will train these special education teachers? How will IHEs respond to the demand for increasing numbers of well-trained special education professionals?
In the early 1950s, only 40 colleges and universities offered coursework in mental retardation and only 15 universities had the capacity to provide doctoral training in special education. In 1953, only 130 masters’ degrees and four doctorates were awarded for special education in the entire nation (Geiger, 1983; Smith-Davis et al., 1984). In 1958, Public Law 85-926, the Education of Mentally Retarded Children Act, was passed by Congress to “support the development of professionals who would provide leadership as university faculty and researchers and who would, in turn, train new personnel to serve children with mental retardation” (Hebeler, 1968; Kleinhammer-Tramill & Fiore, 2003). Over the next 20 years, the federal government sought to increase the capacity to train the necessary number of professionals to meet the implicit goals of PL 85-926. The number of special education teachers prepared, and the number of special education professors needed to increase the personnel preparation capacity of the nation’s IHEs, increased substantially (Kleinhammer-Tramill & Fiore, 2003). In 1976, the same year as the passage of PL 94-142, the Education of All Handicapped Children Act, 18,545 bachelor’s degrees an 14,144 masters’ degrees in special education were awarded, By 1983, there had been an increase from 40 colleges in the 1950s to 698 colleges offering degrees in special education (Geiger, 1983; Hebeler, 1968).

Smith and Salzburg (1993) published an article that argued for a national data collection system to provide current information on the supply and demand of special education leadership personnel. The described several possible causes for the shortage including increased career options for special education professional with doctorates; a declining number of doctoral graduates, and attrition had lead to decreasing applicants and increasing numbers of failed searches. They noted the impact of the shifting
commitment by the federal government towards the problem. Smith and Salzburg observed that while the number of institutions offering leadership preparation had increased steadily through the 1950s and 1960s, reaching 134 IHEs in 1964, by 1987 the number of institutions offering special education doctorates had fallen to 85 (Smith & Salzberg, 1994).

By 1998, the negative effect of overestimating supply and underestimating demand had been exacerbated by dramatic shifts in the economy of the country. A burgeoning student population in Florida, California, and the Southwest had begun to affect the already chronic shortages of adequately trained teachers (Pipho, 1998). Between 1992 and 1999, the country’s student population grew by 6.8 percent, from 68.86 million to 73.55 million. During the same period, the special education population grew by 20.3%, nearly three times greater than the rate of growth in the overall student population. Between 1992 and 1999, the number of special education teaching positions increased by 8% while the number of special education students had increased by more than 20% leading to a qualitative as well as a quantitative shortage (McLeskey et al., 2004). The quantitative shortage is expressed simply in terms of unfilled positions. The qualitative shortage is described in terms of the percentages of uncredentialed teachers being placed in special education classrooms. In 1991, 31.8% of newly assigned special education teachers were not fully certified. By 2002, the percentage of special education teachers that were under-qualified was 29%. The level of the qualitative shortage for teachers in the first three years of teaching is nearly twice as high for special education as it is for general education (McLeskey et al., 2004). The special education teacher shortage and the special education faculty shortage are inextricably linked.
The factors identified by Sindelar and Taylor in the late 1980s, and confirmed repeatedly in the 1990s, continue to resonate today. In the late 1990s, the Office of Special Education Programs (OSEP) funded a major research effort to investigate and describe the current condition of doctoral personnel preparation in special education (Smith et al., 2001). The study asked four major questions. First, what are the experiences of IHEs in filling positions for special education faculty? Second, what is the available supply of new doctorates seeking employment in IHEs? Third, what is the level of interest by doctoral students in pursuing careers in academia? Fourth, what is the current structural capacity of IHEs for producing special education faculty? Smith et al., (2001) surveyed university search committee chairs, special education department chairs, recent doctoral graduates, and current doctoral students enrolled in special education programs. The study's findings revealed a serious lack of capacity in IHEs to meet the demand for highly qualified teacher educators. In response to recent experiences of IHEs in hiring special education faculty, the study found that 30% of job searches were unsuccessful and that 20% of the unsuccessful searches were not re-advertised.

On the issue of the current supply of new doctorates seeking employment, the study found that approximately half of recent graduates were working full time in IHEs. When current doctoral students were questioned about their employment interests after graduation, they found that few of these students were interested in seeking employment in higher education. Finally, on the question of structural capacity, they found that the number of IHEs offering doctorates in special education had remained stable, but that most doctoral programs were small, producing few graduates, and that only half of the IHEs graduated two or more doctorates per year (Smith et al., 2001). The crux of the
problem, as suggested by Sindelar and Taylor (1988), Sindelar, et al. (1993), and Smith and Salzburg (1994), is a failure to invest in sufficient capacity for leadership personnel preparation which will lead to a worsening of the shortage of highly qualified special education teachers which, in turn, will lead to children with disabilities not receiving the services that they desperately need. Research has suggested that the classroom teacher shortage will not be relieved without a substantial investment in leadership personnel preparation (Arends & Castle, 2003).

The State of California reflects and amplifies the trends and conditions that are found nationally. According to the California Department of Education (CDE), in 2003-04, there were 681,969 K-12 students with disabilities. More than 48,000 teachers taught these students, however, 13% of those teachers were not fully credentialed compared with only 7% of general education teachers. Among first and second year teachers, 47% of special education teachers were not fully credentialed. In addition, during the 2003-04 school year, in schools serving between 90% and 100% minority students, 28% of all special education teachers were under prepared (CBED, 2004; Esch et al., 2005; Nougaret, Scruggs, & Mastropieri, 2005). In 2002-03, only 2,480 new credentials for special education were issued compared with 19,000 general education credentials.

Although there are more than 50 IHEs in California that offer special education teacher credentialing, many school districts and their counterparts in the California Department of Education believe that the State's IHEs are not adequately prepared to meet the demands of the special education teacher shortage by themselves. As a result, the California Teacher Credentialing Commission (CTC) has authorized school districts to partner with IHEs in the implementation of joint internship programs. Still, the
existing teacher training institutions in California do not have the capacity to train special education teachers in the numbers that are required (Esch et al., 2005; Nougaret et al., 2005).

While the imbalance of supply and demand in personnel preparation described by Smith et al. (2001) is a nationwide problem, the situation in California is dire. Between 1992 and 2000, doctoral programs in California granted an average of six earned special education doctorates per year; only two graduates per year pursued careers in higher education (Smith et al., 2001). Across the State, the shortage of special education teachers serving the needs of disabled students is related to the shortage of special education faculty in the State's IHEs. The shortage of special education faculty is also due to the relatively small number of IHEs that offer personnel leadership programs for future faculty. In 2003, there were only seven IHEs in California offering doctorates in special education. Today, the number of special education doctoral programs has decreased to five.

In order to investigate the shortage of special education faculty in California, Evans, Eliot, Hood, Driggs, Mori, & Johnson (2005) surveyed the department chairs at each of the IHEs that prepared special education classroom teachers. The study sought to describe the personal and professional characteristics of current special education faculty, the anticipated needs for special education faculty over the next five years, how many potential doctoral students were in the system, and what novel solutions could be implemented to increase the number and diversity of special education faculties at California IHEs.
The study produced some important insights into the condition of personnel preparation in the state of California. First, the study found IHEs used part-time faculty to prepare the majority of special education credential candidates. Secondly, over half of all tenure track professors were approaching retirement. Third, tenure track faculty failed to reflect the ethnic diversity found in the rest of California. Fourth, while special education department chairs projected the need for an additional 100 full-time faculty in the next five years, there were only 65 doctoral candidates in the State's pipeline, a number far lower than the number that other studies have suggested would be required (Evans et al., 2005; Smith et al., 2001).

The study by Evans et al. (2005) concluded that the number of doctoral programs in California and across the nation should be increased and that enrollments in current programs should be expanded. The study further suggested that the remaining questions are issues of quality. Do the IHEs in California have the organizational capacity to actively and creatively pursue solutions to the special education faculty shortage? When the data for the study were collected, large number of IHEs reported the intention to create professional preparation programs or to increase the enrollment in existing doctoral programs. That growth in capacity has not materialized.

In national studies of the special education faculty shortage, strategies have been suggested to improve the percentage of doctoral candidates who choose to pursue careers in higher education. These suggestions included targeting recruitment of doctoral candidates specifically for academic career paths, increased federal support for leadership training, the use of creative training models, mentoring doctoral students already in
existing programs, and improving the quality of working conditions in IHEs (Evans, Andrews, Miller, & Smith, 2003; Smith et al., 2001).

Studies have begun to look at the factors that might motivate education doctoral candidates to seek careers in higher education (Arends & Castle, 2003; Lindholm, 2004). However, few studies have looked at these factors in relation to candidates for special education doctorates and no studies have focused on candidates in California. The labor market for doctoral level special education professionals remains highly competitive. With career options in research and development, professional and government institutions, and K-12 education all drawing from the same candidate pool, increasing numbers of special education professionals continue to be drawn into other career areas (Barkume, 1997). But financial incentives alone cannot explain the disparity between the number of new doctorates who choose careers in higher education and those who seek positions elsewhere. What factors, other than salaries, make higher education seem less attractive than other educational options? Studies have suggested that more in-depth research into these factors is necessary in order for IHEs to adopt responsive policies (Arends & Castle, 2003). A better understanding of how personal and environmental factors interact to shape the career choices of individuals who are seeking faculty positions may help IHEs attract more diverse candidates to the professorate as well as help relieve the acute shortages of special education faculty. Studies have indicated that while understanding this process is central to addressing chronic faculty shortages, there is little empirical work on graduate school education relative to other aspects of education research (Lindholm, 2004). According to Lindholm (2004), given the projected need for
recruiting large numbers of new faculty by IHEs, there is a need to look at vocational choice from an organizational standpoint.

Innovative programs that train leadership personnel exist in California and could serve as models for other IHEs. An article by Evans et al. (2003), described a program, which differed from traditional doctoral personnel preparation programs at most IHEs by targeting working professionals, offering classes primarily on evenings and weekends. The program focused on preparing doctoral candidates for faculty careers, recruiting and supporting diverse candidates, and preparing teacher-scholars to conduct research specific to minority K-12 students with disabilities in urban settings (Evans et al., 2003). This program is already having a measurable impact with 85% of doctoral graduates filling faculty positions at IHEs in California and in other states. Since the publication of the study by Smith et al. (2001), other colleges and universities have attempted to implement innovations similar to those outlined in the Evans study, but little is known about the efficacy or success of these changes in meeting the increased demands for faculty to train special educators.

This descriptive study surveyed all of the doctoral candidates currently in the California pipeline to determine which factors may be motivating their career choices. Do these factors vary in relationship to the type or model of personnel preparation program? Does the provision of financial support during the program encourage candidates to seek faculty positions upon graduation? Can an understanding of these factors be used to improve the diversity of teacher education programs by supporting the unique needs of doctoral students from underrepresented groups? Finally, it has been suggested, from a theoretical standpoint, that further research is needed to test, refine, and expand existing
models of career choice, specifically as they relate to understanding their significance to doctoral students seeking faculty appointments at IHEs (Lindholm, 2004). This study used the social cognitive career model developed by Lent, Brown, and others to seek to explain the choices that current doctoral candidates in special education are making with regard to seeking careers in higher education (Lent, Brown, & Hackett, 2002).

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targeting working professionals, offering classes primarily on evenings and weekends. The program focused on preparing doctoral candidates for faculty careers, recruiting and supporting diverse candidates, and preparing teacher-scholars to conduct research specific to minority K-12 students with disabilities in urban settings (Evans et al., 2003). This program is already having a measurable impact with 85% of doctoral graduates filling faculty positions at IHEs in California and in other states. Since the publication of the study by Smith et al. (2001), other colleges and universities have attempted to implement innovations similar to those outlined in the Evans study, but little is known about the efficacy or success of these changes in meeting the increased demands for faculty to train special educators.

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Theoretical Rationale

There are three general groups of theories that dominate the examination of career choice: developmental approaches, trait and factor approaches, and social learning approaches. The first approach, developmental theory, describes career choice as a process that unfolds over time and that consists of definable stages in which an individual is required to master specific skills before advancing to the next stage (Super, 1991). The second approach, trait and factor theory, assumes that a match between the person and the occupational environment will provide the most positive outcomes. In particular, that the most favorable outcomes occur when an individual's occupational preferences are realized (Holland, 1985). Finally, the approach of social learning theory asserts that the interaction between a variety of learning experiences and the environment will lead to changes in an individual's preferences toward various career goals. Initially this theory postulated three factors that influence career choice: self-efficacy, environmental events, and learning experiences (Hackett & Lent, 1992).

In the 1990s, researchers in career development and counseling began to bring the three basic theories of career choice and an number of other models together in a process of convergence. Many theorists have commented on the advantages of focusing on the commonalities among theories and expressed the desire to see richer models that would more accurately describe and explain the processes involved in career choice (Savickas, 1995). One such example of convergence is the Social Cognitive Career Theory (SCCT) described by Lent, Brown, and Hackett (Lent et al., 2002).

SCCT is grounded in the social learning theory of Bandura. Bandura (1986) proposed that career self-efficacy concepts, that is the beliefs that an individual has about
his or her ability to perform occupational tasks successfully, are the primary determinants of how long and how hard a person will work to master the skills required by that occupation (Bandura, 1986, 1997). Expanding on Bandura, SCCT reflects an emphasis on cognitive, self-regulatory, and motivational processes, along with the specific cognitive mediators, that allow learning experiences to guide career behavior (Lent et al., 2002).

SCCT incorporates a number of variables from social cognitive theory: (1) self-efficacy, (2) outcome expectations, (3) interests, (4) goal attainments, (5) activity choices, and (5) contextual influences, and describes the influence of these variables on the process of career choice. Self-efficacy is a set of self-beliefs that interact with behavioral and environmental factors. These beliefs are acquired and modified through personal attainment, vicarious learning, the influence of others, and personal psychological and emotional states (Bandura, 1997). Outcome expectations are the imagined consequences of adopting a given set of behaviors. Outcome expectations include the tangible rewards of success, personal pride in accomplishment, and satisfaction with that individual's personal performance (Ajzen, 1988; Barak, 1981). Contextual influences are the supports or obstacles that directly influence goal attainments (Lent, 2005). SCCT proposes that the process of career choice is influenced by the complex interaction among these three factors (Lent et al., 2002).

SCCT organizes the phenomenon of career choice into three interlocking models: (1) the interest development model, (2) the choice model, and (3) the performance model. Each of these models attempts to illuminate one element of the complex process of career choice. While these are unique models, each one relies on the relationship among four
variables, self-efficacy expectations, outcome expectations, goals attainments, and contextual influences. This study focused on the choice model (See Figure 1.)

**Figure 1. The Career Choice Model**

The SCCT model of career development describes a direct link between outcome expectations, self-efficacy and learning activities (Lent, Larken, & Brown, 1989). SCCT's model suggests that when people experience personal effectiveness (self-efficacy expectations) they develop expectations for positive outcomes (outcome expectations), and form intentions to increase participation in that activity (goal attainments) that are influenced by immediate supports or obstacles (Lent et al., 2002).

Self-efficacy, outcome expectations, goal attainments, and contextual supports or obstacles promote particular interests. The individual's interests influence his or her intentions to pursue particular career paths and the actions taken to implement these intentions lead to performance experiences. The degree to which individuals succeed or fail in these performance experiences form a feed-back loop that influences their feelings
of self-efficacy and their outcome expectations (Lent et al., 2002). This model has been useful in describing problems where self-efficacy is low while outcome expectations are high. For example, a career in medicine offers substantial rewards, but a person may not believe that they possess the resources required to accomplish that outcome. The model can also be used to describe situations where self-efficacy is high while outcome expectations are low, such as when women or students of color, who are highly qualified, fail to enter graduate programs because of the perception that they will be treated negatively regardless of their competency (Lent, 2005).

SCCT's performance model emphasizes the interaction between ability, self-efficacy, outcome expectations, and contextual supports or obstacles in determining goals and performance outcomes. Ability directly influences self-efficacy and outcome expectations. Stronger self-efficacy beliefs and positive outcomes promote more ambitious goals which help individuals sustain performance behavior (Lent et al., 2002).

This study examined how the variables of self-efficacy expectations, outcome expectations, goal attainments, and contextual supports or obstacles influence the career choices of current special education doctoral candidates in the California pipeline and how an understanding of these factors may inform the policies of IHEs in recruiting doctoral candidates who seek careers in higher education, including those from underrepresented groups.

Purpose of Study

This descriptive study examined the career choices of current special education doctoral students in California using the theoretical framework of social cognitive career theory. No other study has examined the development of career choice
for doctoral students in special education within the context of the relationship among
various factors described in the SCCT model. This information is needed in order to
understand the continuing shortages of special education professionals seeking careers in
higher education (Evans et al., 2005; Smith et al., 2001).

Using California as a case, this study used a combination of quantitative and
qualitative methods to describe the characteristics of the participants and to identify which
SCCT factors are most significant in motivating special education doctoral candidates to
seek faculty positions in colleges and universities training special education teachers.
Further, this study attempted to determine if changes in the traditional model of
professional personnel preparation could significantly increase the numbers of doctoral
graduates in special education who seek academic careers, including those from
underrepresented groups.

The significance of this study for IHEs will be demonstrated as colleges and
universities seek to plan the future development of special education doctoral programs.
IHEs will be addressing the problem of bringing new candidates into these programs in
addition to developing the faculty within their teacher training programs to meet the
demands of public education for highly qualified special education teachers.
Research Questions

1. What are the characteristics of the cohort of doctoral candidates in special education currently enrolled at IHEs in California and how do they compare to the participants in national studies?

2. How do the factors found in the career choice model of SCCT, self-efficacy, outcome expectations, and contextual influences affect career choice after graduation?

Definition of Key Terms

Career Choice

Career choice is comprised of the complex interaction of factors, such as self-efficacy, outcome expectations, and contextual influences that form an individual's decision to choose one career path over another (Lent et al., 2002).

Contextual Influences

Contextual influences are the immediate environmental elements that support an individual's pursuit of their interests and goals or form barriers that reduce the quality of performance outcomes (Lindley, 2005). "What are the costs and benefits for me of participating in a particular activity? Mentoring and grant funding are examples of supports, while the high cost of graduate education is the single most obvious example of a barrier. In this study, contextual influences were measured by the survey instrument and by the interview protocol developed for this study.

Outcome Expectations

Outcome expectations are the beliefs an individual has about the consequences or outcomes of engaging in a particular set of behaviors (Bandura, 1986). "What am I going
to get out of this?" In addition, SCCT asserts that outcome expectations are grounded in an individual's values. People are unwilling to develop outcome expectations for activities that don't engage their values and passions (Lent, Brown, & Hackett, 1994). In this study, outcome expectations were measured by the survey instrument and by the interview protocol developed for this study.

**Non-Traditional Doctoral Programs**

Non-traditional doctoral programs typically allow the participation of students already working as professionals. They provide opportunities for teaching practicums in graduate settings. Ultimately, because of intentional outreach and more flexible scheduling frameworks non-traditional programs attract and support a more diverse student population than is found at their traditional counterparts (Evans et al., 2003).

**Self-efficacy**

Self-efficacy is the sum a person's perceptions concerning his or her ability to organize and execute a particular set of actions in the service of accomplishing a specific outcome (Bandura, 1986). "Can I do this?" Beliefs about what an individual is capable of are dynamic and influenced by environmental factors. Self-efficacy may be acquired or modified in four primary ways: personal accomplishment, vicarious learning, social persuasion, and affective states (Bandura, 1997). When a doctoral student has the opportunity to successfully teach other adult learners in a university setting, his or her belief in their ability to make a positive contribution to higher education increases. SCCT suggests that this enhanced belief in the student's abilities will significantly influence their post-graduate career choices. In this study, self-efficacy were measured by the survey instrument and by the interview protocol developed for this study.
Traditional Doctoral Programs

Traditional doctoral programs in higher education have three primary characteristics. The first characteristic of these programs is that they require full time residency at their institution. For most students this precludes their ability to support themselves with full time employment outside of the institution. The second characteristic is a primary focus on research. While the development of research skills is a crucial attribute for doctoral students, if they are to pursue faculty appointments after graduation also they need experience in developing and implementing curriculum. Finally, traditional doctoral programs because of their cost and scheduling constraints are criticized for failing to support ethnic and economic diversity (O'Neal, 2002).

Underrepresented Groups

In a study of the university faculty in California, by Evans et al. (2005), the researchers found that the professorate was predominantly White and female. While California has one of the most diverse student populations in the nation, teacher credential programs continue to maintain faculties that fail to reflect that diversity (Evans, et al, 2003). For the purposes of this study, underrepresented groups include racial and ethnic minorities as well as men.
CHAPTER II
REVIEW OF LITERATURE

The shortages of college and university faculty in special education are a reflection of the interaction of institutional policy environments and individuals' choices in career selection. This review of the literature will describe the research regarding the development of Social Cognitive Career Theory (SCCT), the application of SCCT to hypotheses about the career development process in specific groups, and research into the shortages of faculty in IHEs, specifically in special education.

Theories of Career Development

Prior to the 1990s, the field of career development theory was dominated by four theories: Holland's theory of personality and vocational choice (1985, 1997), Krumholtz's social learning theory (1979, 1990), Super's developmental theory (1990), and Dawes and Lofquist's work adjustment theory (1984). These theories shared the common objective of predicting the congruence of an individual's personality with his or her occupation (Osipow, 1990). Based on this insight, researchers began work on constructing a more unifying model that described the process of career choice (Savickas & Lent, 1994). One outcome of this work was the development of Social Cognitive Career Theory (SCCT) (Lent et al., 2002).

Social Cognitive Career Theory is anchored in Bandura's (1986) social cognitive theory. Bandura identified a number of factors that he believed had significant roles in guiding the individual's psychological and social development. These included constructs of self-efficacy, outcome expectations, and goal attainments (Bandura, 1997). Self-efficacy expectations are an individual's beliefs that he or she can successfully perform a given task. Self-efficacy is the product of four primary sources: personal performances,
these are a person's talents and abilities; vicarious learning or beliefs formed by observing the accomplishments of others; social persuasion, others assuring another of his or her ability; and finally, physiological or affective states (Bandura, 1997).

Outcome expectations are individuals' beliefs that a specific performance or behavior will produce a given consequence or reward. Outcome expectations are the product of a person's previous experience of the rewards that accompanied a successful performance. There are a number of types of beliefs that create outcome expectations. For example, the possibility of a material reward for an exceptional performance or simply the personal satisfaction of successfully completing a difficult task (Bandura, 1997).

Goal attainments are an individual's decision to join in a particular activity or to attempt to accomplish a specific outcome (Bandura, 1986). The goal setting process in which personal interests lead to decisions concerning desired outcomes is central to SCCT (Lent et al., 2002).

The SCCT provides an interlocking representation of two models, career interest, and career choice (Lent et al., 2002). This study focused on the career choice model. The career choice model includes the components of the career interest model. The career interest model describes how self-efficacy and outcome expectations directly influence the formation of career interests (Lent et al., 2002). As people experiment in a number of activities, they develop beliefs about the activities in which they have been successful and the intrinsic or extrinsic rewards that they have received. These experiences, in turn, influence the areas that draw an individual's focused attention or interests. In this model, interests are a function of self-efficacy beliefs and outcome expectations. The model implies that if individuals are not given adequate opportunities to experience self-efficacy
and positive rewards for successful performance that they will be unlikely to pursue academic and career goals, even if they have previously demonstrated aptitude for those activities (Lent et al., 2002). This is particularly relevant to this study's inquiry into the career choices of underrepresented groups as members of those groups may not have had the number of opportunities necessary to form or sustain academic career goals.

The SCCT model of career choice contains the career interest model, whose factors are shaded in the figure. This combination demonstrates the evolutionary development of career interests into career choices. In addition to the development of career interests, the career choice model focuses on the diverse personal, contextual, and learning influences that affect career choice (Lent et al., 2002). The career choice model provided this study with a useful construct. Figure 2 has three sets of components. The first set of components is the linear model that describes the progression of self-efficacy and outcome expectations influencing interests, interests coalescing into goals, goals informing activity choices, and ultimately opportunities for career choice. The second set of components demonstrates the interactive relationship of self-efficacy, outcome expectations, and contextual influences, as well as their direct influence on interests, goal attainments, and activity choices. There are two types of contextual elements noted in the SCCT literature (Lent et al., 2002). The first group of contextual elements is the distal influences of background abilities and personal inputs. These elements include skill development, cultural and gender roles and socialization processes. Contained in the second group of contextual elements are the proximal influences of supports and barriers that influence an individual's decisions at critical points (See Figure 2)
For this study, the SCCT model of career choice offers a framework for analyzing the career choice behaviors of doctoral students in special education. The constructs of SCCT of interest to this investigation are self-efficacy, outcome expectations, interests, goal attainments, and contextual variables. These constructs form an interactive set of influences on career choice. Personal inputs, as well as background and abilities are described as having been formed by late adolescence. While they are important to the development of self-efficacy, and outcome expectations, they are not direct influences on the academic career choices of graduate students (Lent et al., 2002).

Self-efficacy refers to a dynamic set of personal beliefs or understandings of an individual's ability to implement the course of actions necessary to accomplish a specific goal (Bandura, 1997; Lent, 2005). In research on SCCT, the most frequent schemas and measurements for self-efficacy are content self-efficacy, that is, a person's beliefs in his or her ability to perform a set of specific tasks, and coping self-efficacy, that is, the belief in one's ability to overcome obstacles as they arise (Lent et al., 2002). These sources are
relevant to the understanding of self-efficacy and the application of this construct to the measurement of factors in career contexts (Lent & Brown, 2006).

Outcome expectations are beliefs about the probable consequences of completing a particular set of tasks. While self-efficacy is focused on "Can I do this?" outcome expectations are the imagined consequences, "If I try this, what will happen?" (Lent et al., 2002).

Goal attainments are defined as a person's intention to engage in a particular task or to attain a particular outcome (Bandura, 1986). The SCCT has described two types of goals: choice content goals, or the type of activity a person chooses to engage in, for example, the choice of a doctoral emphasis, and performance goals, or the level of skill a person is determined to demonstrate, by analogy, a student's intention to maintain a high grade point average in a graduate program.

Interests refer to a person's patterns of likes, dislikes, or indifferences regarding his or her participation in a given behavior. They emerge out of the sum of a person's previous experiences of successful performance and reward. People are attracted to a set of goals on the basis of their particular interests (Lent & Brown, 2006). Previous experience in teaching adult learners or opportunities to participate in research could predispose a given doctoral student to set of goal of seeking an appointment in an IHE, while another candidates experience in curriculum design or administration could lead them to set goal of employment in public school administration or consulting.

Contextual influences are the supports or barriers that directly impact an individual's goals and actions toward attainment in a given domain. These supports or barriers are an important focus of research in SCCT because of their predictive
relationship to goal attainment, (Lent, 2005). One example of the significance of contextual variables for goal attainment is the role of mentors in supporting an individual's aspirations. Other examples of the importance of contextual variables are the decision of an IHE to provide teaching opportunities for doctoral candidates, or encouraging research in partnership with experienced faculty.

There has been considerable empirical research supporting the validity of the constructs of SCCT and the efficacies of the SCCT in providing a framework for the explanation of educational and career choice. Meta-analyses by Lent, et al. (1994) suggested that self-efficacy and outcome expectations accounted for substantial variance in vocational and educational interests. The overall effect size estimates for self-efficacy were \( r = .52 \) and for outcome expectations the effect size estimates were \( r = .53 \), indicating that each of these factors account for 25% of the variance in vocational and educational choices. Meta-analyses of SCCT’s choice hypotheses found that career choice was strongly predicted by interests with an effect size of \( r = .60 \) (Lent et al., 1994). In a replication of the Lent, et al. (1994) study by Rottinghaus, et al., (2003) using 53 samples and over 37,000 participants, suggested a strong correlation of self-efficacy to interests with an effect size of \( r = .60 \) (Lent et al., 1994). In a replication of the Lent, et al. (1994) study by Rottinghaus, et al., (2003) using 53 samples and over 37,000 participants, suggested a strong correlation of self-efficacy to interests with \( r = .59 \) (Rottinghaus, Larson, & Borgen, 2003). In this study, SCCT provides the structure for the examination of the participants' process of career choice.
Career Choice in Higher Education

The common perception of the relationship of supply to demand of faculty in higher education during the 1980s and 1990s was that there were too many doctoral applicants pursuing too few employment opportunities in higher education. This led to increased reliance on part-time or itinerant faculty who could be hired or fired easily because they lacked tenure. Because there were so many candidates seeking positions at IHEs, the compensation for assistant or associate faculty positions remained uncompetitive compared with the salaries and benefits offered by institutions outside of higher education (Barkume, 1997). The beliefs of doctoral students and potential doctoral students concerning the possibility of a career in Higher Education (HE) have been in agreement with these perceptions. In reality there is a growing body of evidence, beginning in the 1990s, that the labor market in higher education was, perhaps, not as saturated as had been believed. There may be areas of shortage in specific disciplines and these shortages may be confounded by increasing rates of attrition in the ranks of veteran faculty (Arends & Castle, 2003).

One study on the supply and demand for college and university faculty (Arends & Castle, 2003) investigated the problem at 752 member institutions of the American Association of Colleges for Teacher Education (AACTE). The researchers sought to discover the number of vacancies that IHEs were attempting to fill, the number of applicants, the number of minority hires, and the perceived cause of any failed searches. A two-page survey instrument was sent to each of the member institutions and over 400 surveys were returned, a response rate of 54%.
They found that number of applicants applying for faculty positions had fallen 19% between 1997 and 1999. During the same period, the percentage of failed job searches remained steady at 25%. Of the faculty positions filled between 1996 and 1998, minorities filled 21%, while non-minorities filled with 79% (Lindholm, 2004). Twenty-five percent of searches ended in failure (Arends & Castle, 2003). Reasons for the shortages included competition with career options in non-higher education positions (73%), and uncompetitive salaries in comparison to non-higher educations positions (72%). Sixty-two percent of search committees failed to find any appropriate candidates.

Arends and Castle suggested that there is a significant need to make predictions about future demand for faculty over the next 5-10 years and concluded that research is needed to understand which factors, in addition to salary, make faculty positions at IHEs less attractive than employment in other settings.

A study of career choice in the professorate (Lindholm, 2004) examined 36 professors who held full-time tenure track appointments at a large research-based university. The participants were representative of all of the disciplines and departments in the liberal arts college. The study investigated the vocational development of college and university professors and specifically the factors that shaped their career choices.

The researcher conducted individual, semi-structured interviews and identified four major principles based on Astin's career choice model (Lindholm, 2004). The first principle was that work behavior is intended to meet three basic needs: survival, pleasure, and contribution. The second was that career choices are based on expectations concerning the availability of alternative forms of work. The third was that expectations are shaped socialization and early experiences as well the individual's perceived
opportunities. Finally, that career expectations can be changed in response to changes in opportunity (Astin, 1984). Lindholm used these principles to construct the interview question. Interview data were recorded, transcribed and content analyzed for common patterns and emerging themes (Lindholm, 2004). The findings were based on interviews where the participants were asked to speak about their personal attraction to academic work, the processes through which their career interests developed, and the people or experiences that were influential in shaping their individual career choices. Lindholm found that the participants noted their need for autonomy, independence, and individual expression. The appeal of faculty work was based on intellectual curiosity, opportunity, and encouragement. Participants spoke repeatedly about the opportunities that they had experienced to develop academic interests. The professors reported strong feelings of competence in both their discipline and with academics in general. They identified multiple career pathways including intentional career choices, and serendipitous opportunities. For individuals who did not come from academic families, their professors often contributed to their aspirations for faculty careers (Lindholm, 2004).

Lindholm concluded that intrinsic influences such as autonomy and creativity as well as the influence of a mentor were extremely important to the professor's decision to pursue a career in higher education. She also pointed out a significant need for future research to test, refine, and expand existing models of career choice particularly with regard to careers in the professorate (Lindholm, 2004).

Career Choice for Special Education Doctoral Graduates

The literature concerning career choice for special education doctoral graduates is sparse. Despite 20 years of concern about the growing shortage of candidates to fill
special education faculty positions at IHEs there are only a handful articles on all aspects of the shortage. There are only a few studies directly concerned with elements of career choice for special education doctoral students, one doctoral dissertation, and one major national study on the faculty shortage.

A small study by Smith and Lovett (1987) examined data collected from a sample of 19 doctoral programs that offered degrees in special education. Those institutions had graduated, on average, a total of 100 Ph.D.s and Ed.D.s each year between 1980 and 1984. Based on these data, Smith & Lovett predicted that 27% of new doctoral graduates would seek careers at colleges and universities (Smith & Lovett, 1987). This figure was significantly lower than a report by the Office of Educational Research and Improvement (OERI) published the same year which indicated that over 40% of doctoral graduates in education had the intention of pursuing either research or teaching careers in higher education ("Digest of Educational Statistics," 1987). A year later, these data and predictions were reviewed and analyzed by Sindelar and Taylor (1988) as part of an inquiry into the possible correlation between reductions in federal support for leadership preparation and declining enrollments in programs that prepared doctoral-level special education professionals. They concluded that earlier research had overestimated the supply of new doctorates by overlooking the number of graduates who already held positions at universities. These students were in the doctoral pipeline either to maintain their current employment or to advance on the pay scale. Thus, they did not represent an increase in the capacity of IHEs to train additional special education teachers. Sindelar and Taylor also concluded that the previous study had underestimated the total demand outside of higher education for doctoral graduates (Sindelar & Taylor, 1988).
Sindelar and Taylor's study (1988) further suggested several possible factors that might explain the declining enrollments in special education doctoral programs as well as the declining number of graduates seeking faculty positions. One reason was the non-competitive rewards offered by IHEs. Unlike their counterparts in other disciplines, most applicants to doctoral programs in special education were returning to university after already establishing successful careers outside of higher education. Frequently, these students would have achieved positions that exceeded the salaries offered for entry-level appointments by IHEs. Graduate students in special education were nearly 10 years older than their counterparts in other disciplines. As a result, these candidates had greater family responsibilities and financial obligations, which made them less mobile when they considered careers in the professorate. Finally, Sindelar and Taylor suggested that a steady decline in federal assistance had made the pursuit of doctoral study a prohibitively expensive choice considering the earning potential that these professionals enjoyed in other fields. They noted that their data suggested the necessity to invest in both teacher preparation and leadership preparation (Sindelar & Taylor, 1988). A failure to address both shortages would diminish the IHEs ability to cope with future shortages of qualified applicants to fill vacant faculty positions and further exacerbate shortages of highly qualified teachers in special education classrooms.

Research in the 1990s continued to suggest a dissonance between the ongoing demand for special education classroom teachers and the ability of IHEs to provide the staffing necessary to offer enough capacity in special education teacher training programs to meet the demand. A study by Dil, Geiger, Hoover, & Sindelar (1993) was designed to expand the database on the supply and demand of special education personnel preparation
programs. The study sought to examine the number of faculty positions that had been available in special education from 1984-88 and to describe the characteristics of the available positions, the strategies used to fill the positions, the degrees of success that IHEs had in filling the openings, and the characteristics of individuals hired. Finally, the study wanted to discover the number and type of faculty positions in special education that were anticipated between 1989 and 1994 (Dil, Geiger, Hoover, & Sindelar, 1993). The researchers surveyed 969 special education programs listed in the *National Directory of Special Education Personnel Preparation Programs* and generated responses from 322 IHEs, approximately a 40% response rate. The IHEs reported that 216 available positions were advertised for faculty in special education between 1984 and 1988. Available positions were primarily in the areas of learning disabilities, early childhood special education, and multi-categorical special education. The study reported a steady decline in the number of applicants and that more than 22% of positions went unfilled. Most of the successful applicants were white females between the ages of 30-40. Most strikingly, respondents anticipated a 38% increase in new positions between 1989 and 1994 (Dil et al., 1993).

A study by Sindelar, et al. (1993), a follow-up to the previous study, was concerned with the continuing problem of declining numbers of special education doctoral graduates and increasing numbers of faculty vacancies in IHEs. The prior study had predicted that the demand for doctoral graduates in special education would surpass the supply. The 1993 study confirmed that, over an 11 year period, the number of doctoral graduates had decreased by nine each year while the number of job vacancies advertised in the *Chronicle of Higher Education* had increased by almost one per year (Sindelar,
Buck, Carpenter, & Watanabe, 1993). They suggested four factors that were possibly exacerbating the decline in the number of special education doctoral graduates and the increase in the number of faculty vacancies in IHEs preparing both special education teachers and leaders. The first factor was a continued decrease in federal support for leadership preparation. During the 1980s there was a steady reduction in real dollars earmarked to support the training of special education doctorates. The second factor was an increasing number of faculty retirements. A large number of professors had entered the field during the expansion of the 1960s and 1970s and were now reaching retirement age simultaneously. The third factor contributing to the problem was increased availability of employment opportunities outside of higher education. Public school districts were seeking qualified administrators and regional research institutes were interested in hiring new researchers. The fourth factor was the growing demand for special educators trained in specialized areas. Initially, special education teachers had been generalists, but, as the field grew, there developed a demand for specially trained teachers in speech pathology, occupational therapy, and learning disabilities, as well as other areas of emphasis. The study noted that while the total amount of federal support for leadership preparation had increased, the purchasing power of that investment had been diminished by inflation and did not appear sufficient to produce an adequate supply of graduates. Finally, the researchers warned that failing to support leadership preparation could result in the inability of IHEs to prepare a sufficient number of special education teachers to meet the demand (Sindelar et al., 1993).

The following year Smith and Salzberg (1994) posited that the shortage of special education faculty had reached critical proportions and warned that if the situation were not
addressed, the entire field of special education would be harmed. While there were dwindling numbers of doctoral candidates seeking careers in higher education, the number of faculty positions remained constant. The authors also asserted that without additional federal funding, the shortage would inevitably grow worse (Smith & Salzberg, 1994). Smith and Salzberg suggested that one response to the crisis could be the creation of a national database to track the changing needs of special education and to provide critical information to policy-makers. Further, relevant data could include doctoral student recruitment, demographics on current candidates, and student's areas of emphasis, patterns of student's career choices, changes in demand for specializations in the field, demographics on special education faculty, and the success or failure of searches to fill open faculty positions. Without such data, IHEs and governmental agencies would be unable to effectively respond to the situation (Smith & Salzberg, 1994).

In 1994, a study by Minner, Ellworth, and Prater investigated the experiences of recent doctoral graduates seeking faculty appointments at IHEs. The researchers surveyed a sample of 62 out of 100 recent graduates who had agreed to participate in the study. Minner et al. (1994), identified typical job searches, described the application requirements of the IHEs, collected journal responses to the problems that emerged and finally conducted a focus group to discuss those issues. The study described a serious dissonance between the expectations of the graduates and their experiences with search committees. Participants reported long waits to hear from IHEs regarding their possible interest in offering them a position, they felt that interview processes were unfair, and that committees had little consideration for the financial impact of campaigning for a post that there was little possibility of them winning. The
researchers acknowledged limitations to their study, primarily the response rate, but also the need to investigate the themes that had emerged with the novice faculty (Minner, Ellsworth, & Prater, 1994).

Tyler (1996) surveyed 123 recent graduates of special education doctoral programs to investigate their career choices and to determine which factors supported or blocked them from seeking faculty appointment (Tyler, 1996). The study sought to answer a number of important questions. The questions ranged from the characteristics of new graduate students in special education doctoral programs to the nature of the positions recent doctoral graduates were willing to accept.

The Tyler study focused on the career paths available to special education doctoral candidates after graduation. Two survey instruments were developed. Over 300 surveys were sent out, but only 123 respondents met all of the criteria for participation in the study. Of the 123 individuals who responded, 53% had accepted positions in higher education. Graduates who accepted positions at IHEs typically earned 25% less, on average, than their peers who had chosen employment outside of higher education (Tyler, 1996).

Regarding the type of job accepted by graduates, slightly over half of the graduates had taken employment in IHEs. The researcher felt that this supported the hypothesis that teaching in IHEs was no longer the premier career choice of doctoral graduates. The study concluded that individuals who had been teachers, whether in K-12 classrooms or adjunct faculty at an IHEs, before entering doctoral programs were the most likely to take positions in higher education. The study found a significant relationship between what graduates had done before entering a doctoral program and the
type of employment that they accepted upon graduation. The study sought to discern the
effect of age, gender, and marital or family status on the career choices of recent
graduates. Respondents averaged over 40 years of age, were predominately female,
European American, and married. Most of the graduates who accepted positions at
universities did so without having to relocate. The fifth research question sought to
discover the differences between graduates who had taken tenure track positions, non-
tenured positions, or positions outside of higher education. The study concluded that
there were no significant differences among those groups. Finally, what factors had
affected the decision to enter or not to enter higher education. Most of the graduates that
had taken positions at universities stated that their primary reasons for the choice were
intrinsic or value based factors. Among the graduates who accepted positions outside of
higher education, the most common reasons for their choice were based on salaries and
benefits, followed closely by their resistance to relocation (Tyler, 1996).

One area of concern in the literature is the paucity of information that is focused
on specific sub-groups within academic disciplines. Ryndak, Webb, and Clark (1999)
conducted an analysis of job offerings for special education faculty at IHEs. The
researchers examined advertisements in the Chronicle of Higher Education and noted each
advertisement's focus on disability categories, disability level, age related expertise, and
changes in educational service and teacher education programs. The researchers
suggested that part of the failure of teacher education programs to meet the demand for
special education teachers is grounded in their need to hire faculty with more specific
areas of expertise, such as vision specialists, resource specialists, occupational therapists,
In 1999 the Office of Special Education Programs (OSEP) funded a large-scale national study of the shortage of special education faculty. Prior to this study, the most recent information on the career paths of special education doctorates was the study by Tyler (1996) who examined the career choices of a relatively small number of recent doctoral graduates. Virtually nothing was known about students currently enrolled in special education doctoral programs, their characteristics, or their interest in pursuing a career in higher education. Under the leadership of Deborah Deutsch Smith, a team of nationally respected researchers undertook to determine first, if there really was an imbalance between the supply of individuals with doctorates in special education and the demand for their services; second, if the imbalance did exist, what were the features of the problem; and finally, how might the problem be resolved (Smith et al., 2001).

The researchers organized the study around four questions: What have been the recent experiences of colleges and universities in hiring special education faculty? What is the available supply of new doctorates seeking and obtaining faculty positions? To what extent are current doctoral students interested in academic careers? What is the current capacity of doctoral training programs for producing special education faculty? Four surveys were designed to address the four questions in depth. The first was a survey of search committee chairs. The second was a survey of doctoral programs in special education. The third was a survey of the career experiences of recent doctorates. The final survey explored the characteristics and career goals of current doctoral students in special education (Smith et al., 2001).

In response to the experience IHEs were having in filling open faculty positions in special education, the study suggested that while the number of tenure track faculty
openings in colleges and universities had remained constant, the number of qualified applicants had fallen by 50%. Regarding the supply of new doctorates available to fill open faculty positions, the study found that while special education doctoral programs were successful at creating educational leaders, only half chose employment at IHEs with the result that many positions remained unfilled. Special education doctoral students continued to indicate that they found employment outside if higher education to be more financially attractive, with less that 45% indicating their intention to assume faculty positions. Finally, in response to the capacity of current doctoral programs to train sufficient numbers of doctoral graduates to fill faculty positions, the study found a number of obstacles. First, less than half of the nation's special education doctoral programs were able to recruit a sufficient number of candidates to create effective cohorts. Second, that special education doctoral programs are not adequately selective in admitting candidates to their programs. Finally, the researchers found that IHEs have great difficulty providing adequate financial support for doctoral students (Smith et al., 2001). The current study has benefited from both the findings of the OSEP report and from the structure of that study's survey instrument.

The most recent research dealing with the national shortage of special education faculty is a study by Washburn-Moses & Therrien (2006). Washburn-Moses specifically examined the effect of Special Education Leadership Personnel Grants on increasing the number of students enrolled in special education doctoral programs, enhancing their educational experience, and promoting their decision to enter the professorate (Washburn-Moses & Therrien, 2006). The study noted that since the study by Smith et al., funding for the preparation of doctoral students in special education has increased
120%. However, there were no data on the impact of the increased funding because no national review of the condition of special education doctoral education had been conducted since 1999 (Washburn-Moses & Therrien, 2006).

Washburn-Moses created an on-line survey focusing on current doctoral students from 78 doctoral programs nationwide. Using elements of the instrument from the Smith, et al. (2001) study and researcher designed series of open-ended participant satisfaction questions. The instrument was piloted with a sample of 31 doctoral students from three programs for reliability of the sections not drawn from the Smith study. Those sections were found to have high reliability scores. These questions are significant for the current study because they were focused on the participants' satisfaction with their training and their perception of how well they had been prepared. The researcher was able to collect data from 83% of the institutions studied and responses were received from 38.2% of currently enrolled doctoral students (Washburn-Moses & Therrien, 2006).

Washburn-Moses compared her findings to the OSEP study conducted by Smith et al. (2001). The demographic characteristics of the current cohort of doctoral candidates were very similar to the characteristics of those in the OSEP report. In contrast to the OSEP study, however, the Washburn-Moses study found that more of the participants expressed a greater intention to pursue a faculty career, they were younger, more of them were enrolled full time, more of them had institutional support, and they were taking less time to complete their doctorates. It was speculated that these differences were a reasonable result of the increase in federal funding.

The Washburn-Moses study is a well-constructed description of the state of doctoral education in special education nationally. The study's use of an on-line
instrument and open-ended questions provide support for the methodology employed in the current study. However, the Washburn-Moses study did not examine the intrinsic factors that may be motivating doctoral candidates to seek postgraduate appointments in the faculties of IHEs.

As a consequence of the Smith study, there have been several research studies that built on their findings. The first was a study that examined the shortage of special education faculty in California (Evans et al., 2005). This was a descriptive study that used phone interviews to collect data from the special education chairperson at 42 IHEs in California, including seven that offered doctorates in special education. The study examined the characteristics of current faculty; teaching assignments, age, diversity, and salary, as well as the current and anticipated needs of IHEs for special education faculty in California. It found that increasing numbers of credential students were being taught by non-tenure track or adjunct faculty, 53% of the professorate was over the age of 50, 78% of tenure track faculty was white, and that average entry-level salaries were below $45,000. These findings confirmed the results of the Smith study.

In addition, the study found that 45% of IHEs reported failed searches for faculty openings and a wide spread belief that the need for at least 100 new tenure track faculty by 2005. This was in contrast to the fact that there were only 65 doctoral candidates enrolled in special education doctoral programs or that historically only one third of those that graduated would seek careers in higher education. The study provided a dramatic picture of how severe the faculty shortages were in California (Evans et al., 2005). The data from the Evan's study, along with the Smith study, and the Washburn-Moses study provide the foundation for the current research.
This review of the literature demonstrates the existence of three convergent elements in higher education. The first element is that a theoretical foundation exists that can be used to describe the factors that motivate career choice. SCCT has a substantial body of research supporting the efficacy of this theory to describe and predict the career choice patterns of graduate students (Lent & Brown, 2006). The second element is the research that exposes a pattern of faculty shortages in specific disciplines. One of these impacted academic disciplines is special education (Arends & Castle, 2003). The final element is a substantial body of research suggesting that the faculty shortages in special education at IHEs has been at critical levels for at least two decades (Evans et al., 2005; Smith et al., 2001; Washburn-Moses & Therrien, 2006). This evidence compels the present research to examine the career choices of doctoral students enrolled in special education programs at colleges and universities in California.
CHAPTER III
METHODOLOGY

The shortage of highly qualified candidates for faculty positions in special education at institutions of higher education (IHEs) in California continues to constrain IHEs' ability to train adequate numbers of classroom teachers. This study examined the current cohort of doctoral students majoring in special education at IHEs in California. The participants were asked to respond to a survey based on the instrument developed by Smith et al. (2001) in their national landmark study of special education leadership for the Office of Special Education Programs (OSEP). Subsets of participants from each doctoral program in California were invited to participate in a semi-structured interview to discuss the particular factors that influence their career choices. The surveys and interviews were analyzed using the framework of Social Cognitive Career Theory (SCCT) to identify which factors are most influential to special education doctoral students' career choices.

Design and Variables

In this descriptive study, the researcher examined the shortage of special education faculty in California using two instruments. The first instrument was an in-depth survey developed by Smith et al. (2001), which was used to identify the intrinsic, and extrinsic factors that influence the career choices of special education doctoral candidates. The second instrument was an interview protocol to collect in-depth information on the education experiences of the doctoral students currently enrolled in special education programs at IHEs in California. The purpose of this mixed methods design was to obtain empirical results using the survey on the population of California special education doctoral students and explore, more deeply, the process of
career choice by employing a semi-structured interview protocol with a smaller number of individuals. The survey was used to compare the characteristics of the 2007 California cohort of doctoral students in special education with the national cohorts described by the OSEP report (Smith et al., 2001), and the research of Washburn-Moses (Washburn-Moses & Therrien, 2006). At the same time, the social cognitive process of career choice was explored in individual interviews with a subset of California doctoral students in special education.

The primary constructs of SCCT are self-efficacy, outcome expectations, goal attainments, interests, activity choices, and contextual influences. According to Lent and Brown, (2006), these factors are active processes that affect career choice and attainment. These constructs serve equally well as dependent or independent variables depending on whether the focus of the research is causal or outcome based (Lent & Brown, 2006). In this outcome based study, all of these factors are held to be independent variables and career choice is the dependent or outcome variable. Figure 3 shows the relationship of the independent variables to the dependent variable (See Figure 3).

Figure 3. Career Choice Model Showing Variables.
Working backwards, there is a direct linkage from the dependent variable of career choice after graduation to interests and goal attainments; goal attainments and interests link to self-efficacy, outcome expectations and contextual supports and barriers. This study examined how special education doctoral candidates felt about their ability to succeed in a graduate program (self-efficacy), what they expected to gain from their success (outcome expectations), and the degree to which their goals were supported (contextual supports/barriers). In addition to the independent variables derived from the SCCT model, three other variables were important to this study: traditional doctoral programs, non-traditional doctoral programs, and underrepresented populations. The relative efficacy of the approach of traditional and non-traditional in increasing the numbers of minority faculty in IHEs has become an important policy question for colleges and universities in California. A special interest of this investigation is the inclination of ethnically diverse doctoral students in special education to enter the professorate.

Two instruments, the Survey of Doctoral Students in Special Education and the Career Choice Interview Protocol were used to collect data on the variables of interest to this study; self-efficacy, outcome expectations, contextual influences, interests, goal attainments, and career choice after graduation. Each of these instruments are discussed in the instrument section.
Research Questions

1. What are the characteristics of the cohort of doctoral candidates in special education currently enrolled at IHEs in California and how do they compare to the participants in national studies?

2. How do the factors found in the career choice model of SCCT, self-efficacy, outcome expectations, and contextual influences affect career choice after graduation?

Instruments

Survey Instrument

The Survey of Doctoral Students in Special Education was based on the survey developed by Smith et al. (2001) and was used with permission in the current study. The original survey consisted of six sections. Three sections of the survey were primarily demographic and included questions about areas of academic concentration or age, ethnicity, and marital status. The remaining three sections focused on reasons for entering a doctoral program, student support issues, and post-graduate plans. The only major change for this study was the elimination of Section B, Educational Background. This section featured a list of all of the colleges and universities attended by the participant since high school and the researcher decided that this information was not relevant to this study's research questions. Several items in the remaining sections were eliminated because they were redundant or not relevant to the variables of this study.

Each item in the Survey of Doctoral Students in Special Education was linked to one of the independent variables, the dependent variable or provided demographic data. (see Appendix A) Items 37-44 and item 45 were used to measure self-
efficacy. Items 26 and 36 were used to measure outcome expectations. Items 7, 8, 9, 11, 18, and 20 were used to measure contextual influences. Items 26, 27 and 28 were used to measure career choice after graduation. Items 1-6, and 46-55 are demographic questions and were used for a cross comparison of samples between the current study and the study by Smith et al. (2001). This survey was used to address both of the research questions. The final version of the survey instrument was constructed with Remark Web Survey and hosted on a secure server at www.calspedoc.org.

*Interview Protocol*

The Career Choice Interview Protocol (see Appendix B) was designed by the researcher using a series of open-ended questions to collect in-depth information, on the experiences of a stratified by program subset of volunteer participants, with an emphasis on the impact of SCCT factors on career choice. Particular attention was focused on the participants' perceptions of how well they felt they were being prepared to enter the professorate. General questions were used, as well as probes, in order to elicit a narrative description of their process of career choice. These questions were suggested by the research of Lindholm, (2004) who examined the factors that encourage an individual's aspirations for a career in higher education. Item 7, describe the opportunities you have had to improve your research skills; and item 8, describe opportunities you have had to improve your practice as a teacher of adult learners, were related to self-efficacy. Item 1, what attracted you to this particular program; and item 4, were there particular people who were influential in shaping your career choice, were related to contextual influences. Item 3, when did you decide to pursue a career in higher education; item 5, what specific experiences influenced your career choice; item 6, are you more inclined to teaching
adult learners or to doing research in education, were related generally to outcome expectations. Item 2, how would you describe the doctoral program that you are enrolled in, was related to describing a program as either traditional or non-traditional. Item 9, what personal values or characteristics motivated you to enter a doctoral program in special education, was focused on intrinsic motivations. The Career Choice Interview protocol was used to address research question 2. These items were reviewed for content validity by a panel of researchers prior to the implementation of the protocol. These items were reviewed for content validity by a panel of researchers prior to the implementation of the protocol.

Participants

Participants were drawn from the ranks of doctoral students in special education currently enrolled in the 5 IHEs in California that offer a doctorate in special education. Most of the programs are small, while one or two are fairly robust. It was estimated that between 60 and 100 doctoral students were currently enrolled in special education programs at IHEs in California, 56 responded to the request for participation channeled through their department chairs, and received passwords; 46 participants completed the survey. Smith et al., (2001), described the characteristics of doctoral students in special education: the majority of their participants were women (82%), almost 18% were ethnic minorities, half were in their 40s, nearly two-thirds were married, and nearly all had come from careers in education (Smith, et al, 2001). One goal of this study was to compare doctoral students in special education in California today with their national counterparts of eight years earlier.
Procedures

The department chairperson of each college or university in California with an active doctoral program offering a degree or specialization in special education was contacted and solicited for his or her support with the survey component of the study. The chairperson was given a letter describing the importance of the study. The chairpersons were asked to forward the information on how to participate in the study to their student along with a letter encouraging their support and all of the chairpersons agreed with these procedures.

When the participant went to the web site, he or she saw a page that described the study, what the data would be used for, and the potential risk for the participant. When the participants entered their access code, completed answering the survey questions, and clicked the submit button, they documented their informed consent. The data collected from the completed surveys was automatically downloaded to a secure computer and stored on an encrypted and biometrically protected hard drive.

After submitting the form, participants became part of a pool in the interview portion of the study. A sub-set of two students from each of the five programs were randomly selected for participation in the follow-up interview. The researcher contacted participants who were selected to complete the semi-structured interview portion of the study. If one of the students did not want to participate, the next randomly selected person in the subset was contacted until two interviews from IHE had been scheduled. At this point arrangements were made to complete the interview by telephone. Each interview lasted between 30 minutes and one hour and was tape-recorded. The recordings were
transcribed and stored on the encrypted hard drive along with the data from the survey instrument.

Data Analysis

Data from the survey were analyzed using the Statistical Program for the Social Sciences (SPSS). The demographic results addressed research question one by describing the characteristics of doctoral students in special education currently enrolled at IHEs in California. The results this study were compared with those of the national studies by Smith et al. (2001). The survey questions that focused on the participant's satisfaction with the program and his or her plans for employment after graduation were used to address research question two.

Data from the interviews were coded and analyzed. Content analysis was done based on the transcripts of ten 30-minute interviews conducted with two participants from each of the five IHEs providing doctoral programs in special education. Statements in the transcripts were coded for their relevance to 1 of 3 elements of SCCT: self-efficacy, outcome expectations, and contextual supports and barriers. Particular focus was given to the perceived affect of those supports and barriers on the participants intended career choice after graduation. Interview transcripts were further analyzed with regard to participants’ perceptions of the structure of their programs. Statements were coded by whether the programs were perceived as being structured traditionally, or non-traditionally. Finally, the transcripts were analyzed for the underlying values of participants that contributed to their pursuit of a doctorate in special education or would contribute to them seeking careers in higher education. Statements were coded in terms of those values falling into 1 of 2 categories: intrinsic motivators or extrinsic motivators.
The transcripts were cross-referenced within and across categories by two raters. Inter-rater reliability was established by measuring the percent of agreement between the two raters. Inter-rater reliability was 70%. Discrepancies were resolved through discussion between the two raters until consensus was reached for the remaining 30%. The resulting data were used to address research question two.

Protection of Human Subjects

This descriptive study used participants who are currently enrolled as doctoral candidates in special education at colleges and universities in California. The participants were not be contacted directly by researcher unless they volunteered to participate in the interview portion of the study. The participants were given a considerable level of security as the survey data was encrypted and password protected. However, there was still the risk that information about their participation could have remained cached on their computer and that their Internet service provider could log their access to the survey. To ensure that participants were informed of the potential risks, they received notification of the risks along with their access code when their department chairperson initially contacted them. Personal information and all data that were collected by the researcher were kept on an encrypted and biometrically protected hard drive in a locked file.
CHAPTER IV
RESULTS

The literature suggests that K-12 student achievement is positively correlated to the quality of their teachers yet there continues to exist a significant shortage of credentialed special education teachers both nationally and in California. The shortage of highly qualified candidates for faculty positions in special education at institutions of higher education in California still constrains the capacity of institutions of higher education (IHEs) to train adequate numbers of classroom teachers.

This study examined the current cohort of doctoral students majoring in special education at IHEs in California. The researcher contacted program chairpersons at IHEs that had been identified as having doctoral programs in special education (N=5). Program chairs were asked to solicit the participation of interested candidates for the study. Participants were then contacted by the researcher and given password-protected access to an on-line survey. The survey was constructed using the instrument developed by Smith, et al, (2001) for the national study, Survey of Doctoral Students in Special Education. From a potential population of between 60 and 100 doctoral students currently enrolled in special education programs at IHEs in California, 56 received passwords and 46 (82%) completed the survey. Data were collected during the Spring, 2007. Two participants from each doctoral program in California were invited to participate in a semi-structured interview to discuss the particular factors that influence their career choices. The surveys and interviews were analyzed using the framework of Social Cognitive Career Theory (SCCT) to identify which factors are most influential to special education doctoral students' career choices.
Research Question One Results

1. What are the characteristics of the cohort of doctoral candidates in special education currently enrolled at IHEs in California and how do they compare to the participants in national studies?

The data collected from participants in this study were analyzed separately and then compared with those in the Smith study by gender, marital status, age, race, relocation status, student status, financial support, career aspirations, and overall program satisfaction. In the current study, participants were 15% male, and 85% female; 70% were either married or living in a similar relationship. Participants ranged in age from 25 years to 59 years of age, the age distribution was bi-modal with 33% of respondents in their 30s and 33% in their 50s. The average age of participants was 41 with a standard deviation of 11.6 years. The majority of participants were white (n= 32, 70%), with the largest minority group being African American (n=7, 15%), followed by Hispanic (n=3, 9%), and Asian (n=2, 4%). Only 11% of participants had relocated to enroll in their doctoral program. Seventy-three percent were full time students carrying six or more units per semester. Seventy-eight percent of the respondents received financial support through grants or fee waivers. Almost two thirds (63%) of respondents reported their intention to seek employment at an IHE or research institute upon graduation. Finally, the majority (78%) reported being either completely or mostly satisfied with the overall experience at their IHEs.

The Smith study was aimed at graduate students who were enrolled in Spring, 1999 in all of the special education programs in the nation. (Smith, et al, 2001) The
findings of the current study are consistent with the results of the Smith study with several notable exceptions (see Table 1). In the current study the percentage of students expressing the intention to seek faculty positions after graduation is dramatically higher. Seventy percent of participants in the current study want careers in higher education compared with only 44% of participants in the national study. The percentage of students with dependent children is 40% lower than the Smith study.

Table 1. Comparison of the California Participants with the Smith Participants

<table>
<thead>
<tr>
<th></th>
<th>California, 2007 N = 46</th>
<th>Smith Study, 1999 N = 1267</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>85% Female</td>
<td>82% Female</td>
</tr>
<tr>
<td>Married or in a similar relation</td>
<td>70%</td>
<td>66%</td>
</tr>
<tr>
<td>Participants with dependent children</td>
<td>37%</td>
<td>53%</td>
</tr>
<tr>
<td>White</td>
<td>70%</td>
<td>82%</td>
</tr>
<tr>
<td>Non-white</td>
<td>30%</td>
<td>18%</td>
</tr>
<tr>
<td>Participants relocating for doctoral program</td>
<td>24%</td>
<td>21%</td>
</tr>
<tr>
<td>Participants enrolled full-time</td>
<td>74%</td>
<td>21%</td>
</tr>
<tr>
<td>Participants receiving financial support</td>
<td>78%</td>
<td>69%</td>
</tr>
<tr>
<td>Participants intending to seek employment in higher education</td>
<td>70%</td>
<td>44%</td>
</tr>
<tr>
<td>Participants expressing satisfaction with their doctoral program</td>
<td>78%</td>
<td>74%</td>
</tr>
</tbody>
</table>
With regard to underrepresented groups, the percentage of non-white students (30%) was significantly greater in the current study than the percentage in the national study (18%). However the percentage of male students (15%) was even slightly lower in the Smith study (18%). The percentage of students (74%) enrolled full time in their doctoral studies was significantly higher in the California cohort than in the national cohort (21%), even given that in California graduate students are only required to carry 6 units to be considered full time. Finally, the percentage of students in the current study receiving financial support is higher (78%) compared with the national study (69%).

Research Question Two Results

2 How do the factors found in the career choice model of SCCT, self-efficacy, outcome expectations, and contextual influences, affect career choice after graduation?

This study examined how special education doctoral candidates felt about their ability to succeed in their chosen career as a result of the acquisition of a specific set of skills (self-efficacy), what they expected to gain from their successful completion of their graduate education (outcome expectations), and the degree to which they felt that their goals are being supported by their universities, departments, and advisors (contextual supports/barriers). The Survey of Doctoral Students in Special Education and the Career Choice Interview Protocol were used compare these factors with the participants intention to seek faculty positions at IHEs after graduation.
Quantitative Results for Question 2

The survey instrument was used to compare the career choices of the participants with their responses to survey items that are believed to be indicative of the SCCT’s traits (see Appendix A). Items 37-44 and item 45 were used to measure self-efficacy. Item 26 and 36 were used to measure outcome expectations. Items 7, 8, 9, 11, 18, and 20 were used to measure contextual influences. Items 26, 27 and 28 were used to measure career choice after graduation.

Self-efficacy

Items 37-44 asked respondents to rate their satisfaction with the training that they have received in specific areas of their doctoral studies and item 45 asked them to rate their overall satisfaction with the skill sets taught in their program (see Table 2). For items 37-44, not all respondents rated each of the specific areas because they may not have received training in those areas at the time of their completion of the survey. However, 100% of respondents were able to rate their overall satisfaction with their program and 78% stated they were completely or mostly satisfied with the training that they had received.
Table 2. Satisfaction with training areas.

<table>
<thead>
<tr>
<th>Training Area</th>
<th>n</th>
<th>Percentile Expressing Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>34</td>
<td>89%</td>
</tr>
<tr>
<td>Research and Evaluation</td>
<td>41</td>
<td>89%</td>
</tr>
<tr>
<td>Diagnosis and Assessment</td>
<td>29</td>
<td>83%</td>
</tr>
<tr>
<td>Cultural Diversity</td>
<td>32</td>
<td>80%</td>
</tr>
<tr>
<td>Consultation</td>
<td>33</td>
<td>79%</td>
</tr>
<tr>
<td>College Teaching</td>
<td>31</td>
<td>76%</td>
</tr>
<tr>
<td>Elementary and Secondary Content</td>
<td>20</td>
<td>71%</td>
</tr>
<tr>
<td>Administrative Support</td>
<td>22</td>
<td>60%</td>
</tr>
</tbody>
</table>

**Outcome Expectations**

Item 26 asked respondents to identify their career plans immediately after graduation and item 36 asked respondents to rate their assessment of the job market for faculty positions at IHEs for applicants with their training. Sixty-seven percent of respondents indicated that they would seek a job that was different from what they were currently doing or did before entering their doctoral program. Twenty percent indicated that they intended to remain in their current positions, but this may reflect that portion of students who already hold administrative or faculty positions and are seeking their doctorate in order to maintain those positions. Ninety-five percent of respondents
indicated that they believed that the job market in higher education for special education doctorates was either good or excellent. Most respondents expressed strong positive outcome expectations for the completion of their doctoral studies.

**Contextual Influences**

Item 7 asked participants to state the number of doctoral programs to which they had applied for admission. Seventy percent of participants responded that they had only applied to a single doctoral program. This is comparable with the findings of the Smith study (72%) and suggests that doctoral students in special education are likely to be resistant to relocating. Items 8 and 9 sought to discover the proximity of participants to the graduate schools where they had been admitted. Ninety-three percent are attending institutions in their state of residence and 45% are attending programs in their city of residence. This is also comparable with the findings of the national study. Clearly, the data suggest that relocating to attend a particular institution is a significant obstacle to the pursuit of a doctoral degree. In response to item 11, 33% participants responded that financial support is a primary factor for choosing a particular program while only 10% cited having to relocate as a primary factor (see Table 3).
<table>
<thead>
<tr>
<th>Factors for choosing a particular institution</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>The amount of financial support</td>
<td>15</td>
<td>33%</td>
</tr>
<tr>
<td>Program concentration</td>
<td>7</td>
<td>15%</td>
</tr>
<tr>
<td>The opportunity to work with specific faculty</td>
<td>5</td>
<td>11%</td>
</tr>
<tr>
<td>The need to relocate</td>
<td>5</td>
<td>11%</td>
</tr>
<tr>
<td>Programs reputation</td>
<td>3</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Proximity of family</td>
<td>1</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Geographic location</td>
<td>4</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Needs of family</td>
<td>2</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Programs’ commitment to the special need of its students</td>
<td>4</td>
<td>&lt;10%</td>
</tr>
</tbody>
</table>
Items 18 and 19 sought to determine the types and relative importance of financial assistance as barriers or supports to seeking a special education doctorate. Over two thirds of respondents received a tuition waiver or stipend for their doctoral studies in the previous academic year. Over 70% feel that receiving some form of institutional financial support was a significant factor in their studies; only 24% were funded their program with personal or familial resources (see Table 4). *Career Choice*

A key variable of interest in this study was career choice after graduation. The items that suggest what the choices might be are items 26, 27, and 28. Questions 26 asked participants to state whether they would stay in their current position, change positions, or pursue post-graduate study. Over two-thirds responded that they were going to seek a different position than currently held, 20% indicated that they would stay in the same position, and a little over 10% said that they would seek a post-doctoral position. Question 27 dealt with participants’ choices regarding the specific types of settings in which they would want to work directly after graduation. Over half of respondents felt that they would be working at a four year college or university, and one fifth indicated a preference for research at a college-affiliated research institute, and approximately 10% planned to work in public school administration. One question asked participants to select the general category of employment that they intended to seek. Over 70% of respondents expressed their intention to seek faculty positions in higher education, while 30% thought that they would remain in K-12 or other settings.
Table 4. Financial sources of support.

<table>
<thead>
<tr>
<th>Sources of financial support</th>
<th>N</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fellowship, Grant, or Scholarship</td>
<td>23</td>
<td>50%</td>
</tr>
<tr>
<td>Family Income</td>
<td>7</td>
<td>15%</td>
</tr>
<tr>
<td>Loans</td>
<td>5</td>
<td>11%</td>
</tr>
<tr>
<td>Earnings from Employment</td>
<td>4</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Research Assistantships</td>
<td>1</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Teaching Assistantships</td>
<td>2</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Traineeships</td>
<td>0</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Dissertation Grant</td>
<td>1</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Paid Internship or Practicum</td>
<td>1</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Personal Savings</td>
<td>0</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Employer Reimbursement</td>
<td>0</td>
<td>&lt;10%</td>
</tr>
</tbody>
</table>

Qualitative Results for Question 2

The last question on the on-line survey asked respondents if they would be willing to participate in a brief telephone interview. Thirty-nine responded affirmatively and ten participants were selected at random, two from each of the five participating IHEs. Participants were contacted by phone, an appointment was scheduled, and then they
participated in a 30-minute interview (see Appendix B). Participants were asked what attracted you to this particular program; how would you describe the doctoral program that you are enrolled in; when did you decide to pursue a career in higher education; were there particular people who were influential in shaping your career choice; what specific experiences influenced your career choice; are you more inclined to teaching adult learners or to doing research in education; describe the opportunities you have had to improve your research skills; describe opportunities you have had to improve your practice as a teacher of adult learners; and what personal values or characteristics motivated you to enter a doctoral program in special education?

The vast majority of interviewees described strong personal values and life experiences that led them to pursue an advanced degree in special education. Many had family members who had disabilities or they had participated in volunteer activities within the disability community as teenagers or young adults. The majority of the participants said that they had limited opportunities to engage in research, none had published independently of their professors, and most said that they had limited opportunities to teach adult learners, typically one or two classes in a credential program. Most stated that they had applied to particular institutions because of the reputation of that college or the particular of research at that institution, but admitted that being offered substantive financial support and the proximity of the institution to family or current employment were most important. All of the participants described a close mentoring relationship with at least one member of the faculty, usually their committee chairperson if they had reached proposal or dissertation development. All but one interviewee had been a special education teacher, a special education administrator, or both, before
beginning their doctoral studies. Most of the participants described their doctoral programs as traditional, but in fact described programs that did not require full time residency in the program. Most of the programs were described as partnerships between research institutions and teacher preparation schools. Participants in the early years of training expressed more enthusiasm for a career in the professorate than did those who were in dissertation development or who had recently completed their doctoral defenses.

Summary of Findings

This study sought to create a picture of the 2007 cohort of doctoral students in special education at colleges and universities in California. The study compared this cohort with that of the national study completed by Smith (Smith, et al, 2001) for the Office of Special Education Programs (OSEP). The data suggest that the two cohorts appear similar, but the California cohort had some significant differences that may reflect the cultural diversity of the state and the impact of increased grant support in the last decade. The second objective of this study was to use Social Cognitive Career Theory (SCCT) to analyze the survey responses of the participants to the constructs of self-efficacy, outcome expectations, contextual supports and obstacles, and career choice after graduation. Because of the small sample size of this study and a lack of variance in the survey responses it was impossible to correlate the variables in question. However, analysis of the data did provide interesting descriptive findings about those variables. Finally, the studies qualitative data suggests some insights into the decision making process of this cohort of graduate students in special education. These findings are discussed in Chapter 5.
CHAPTER V
DISCUSSION

This descriptive study examined the career choices of current special education doctoral students in California using the theoretical framework of Social Cognitive Career Theory (SCCT). No other study has examined the development of career choice for doctoral students in special education within the context of the relationship among various factors described in SCCT. Using California as a case, this study used a combination of quantitative and qualitative methods to describe the characteristics of current special education doctoral candidates in California and to identify which SCCT factors are most significant in motivating them to seek post-graduation faculty positions in colleges and universities training special education teachers.

Discussion

The first question of this study addresses the characteristics of the cohort of doctoral candidates in special education currently enrolled at IHEs in California with the objective of comparing them with comparable special education doctoral student samples in a national study. The researcher adapted the survey instrument used by the Smith study (Smith et al., 2001) for use as an on-line survey. Five institutions of higher education (IHEs) were identified as offering doctoral degrees in special education and a request for participation was made through each institution’s department chairperson. Respondents were given passwords and asked to complete the survey. Fifty-six students responded and 46 (82 %) completed the on-line survey. The data from the survey were then compared to the data from the Smith study.
The Smith study identified four questions. Those questions included data on the recent experiences of IHEs in hiring special education faculty; the available supply of new doctorates seeking and finding positions at IHEs; the extent that current doctoral students were motivated to academic careers; and the current capacity of IHEs to produce special education faculty (Smith et al., 2001). Within the context of the situation in California, the current study focused on the demographics of the potential supply of new doctorates and their aspirations toward careers in academia.

The Smith study (2001) described the national cohort of doctoral students in special education by gender, marital status, age, race, relocation status, student status, financial support, career aspirations, and overall program satisfaction. The profile of the national cohort in 1999 was predominately female (82%). About 18% of these students represented ethnic or racial minorities. Fifty percent of this population was over 42 years old, two thirds were married or in a similar relationship, and over half of them had dependent children. Over 90% of the doctoral students studied had already begun careers in education prior to application to graduate school. The data suggested that age, marital status, dependent children, and established careers all were factors that limited the ability of students to relocate for graduate training or for careers in higher education (Smith et al., 2001). Data from the current study found demographic factors conformed to those of the Smith study with some exceptions. In the California cohort the most significant difference was in the number of doctoral students in California aspiring to careers in higher education. Another difference was in number of full time students. The California sample differed from the national data set in that almost three quarters of the California respondents were enrolled full time. However, since a full time doctoral
student is enrolled for six or more units per semester, it is likely that many were working while they attended the university. Another area of difference was in the number of students from underrepresented groups, with the California sample indicating nearly a 50% increase in the representation of ethnic and racial minorities. This may reflect the diversity found in California or the active recruitment of students from underrepresented groups. The small number male doctoral students (15%) suggest that they continue to be an underrepresented group. In addition, there were significantly fewer students with dependent children, approximately 30%. There was slight increase reported in financial aid between the two groups, 78% for the California cohort and 69% for the Smith study. With regard to the factors of age, marital status and having previously established careers, factors that were considered in the Smith study to be most limiting to the possibility of successfully finding career positions in higher education after graduation, the two cohorts are virtually identical demographics (see Table 1).

In terms of program satisfaction, the Smith study found that the majority of students were satisfied with their doctoral program (74%). With respect to specific areas of training such as intervention, research and evaluation, diagnosis and assessment, cultural diversity, consultation, college training and elementary and secondary content, the Smith study reported that three-fifths of the students held positive views of the training that they had received in their programs. Finally, 44% of the national study indicated the aspiration to seek faculty positions in higher education. In the current study, the levels of program satisfaction were similar to the national cohort, but the aspiration of participants to seek faculty positions in higher education was significantly
higher (70%). This may reflect the perception of students in the current study that they will be able to find employment in higher education within the state of California.

The similarities between the characteristics of the participants in the current study and those of the participants in the Smith study are as problematic as the differences between them are promising. In the nine years between the two studies, federal financial support for professional preparation programs has increased significantly (Kleinhammer-Tramill, Tramill, & Brace, 2008; Washburn-Moses & Therrien, 2006). Changes in the structure of programs that train doctoral students in special education have included partnerships between IHEs that focus on research and IHEs that specialize in teacher preparation with some relaxation of residency requirements (Evans et al., 2003; Evans et al., 2005). In spite of this, the median age of doctoral students in special education remains high. This continues to mean that many of these students have established careers prior to beginning their doctoral training and that the opportunity cost of leaving those careers for a career in higher education remains prohibitive (Sindelar & Taylor, 1988). Increases in the levels and availability of financial subsidies for doctoral students in special education may have improved the racial diversity of the candidate pool in California and certainly may be responsible for the significant increase in the full time enrollment of these students (Washburn-Moses & Therrien, 2006). This may also have contributed to a significant increase in the students’ intention to pursue faculty careers at IHEs.

The second question in the current study compared responses to items in the survey instrument that corresponded to factors of the career choice model of SCCT, self-efficacy, outcome expectations, and contextual influences, in order to analyze their affect
on career choice after graduation. The study also used the Career Choice Interview Protocol to examine these factors as well as questions about the participants perception of the structure of the programs in which they were enrolled and the participants motivation to seek employment in higher education. Self-efficacy expectations are an individual's beliefs that he or she can successfully perform a given task. Self-efficacy may be acquired or modified in four primary ways: personal accomplishment, vicarious learning, social persuasion, and affective states (Bandura, 1997). For example, when a doctoral student has the opportunity to successfully teach other adult learners in a university setting, his or her belief in the ability to make a positive contribution to higher education may increase.

The current study found that most doctoral students in special education were satisfied or mostly satisfied in specific areas of training provided by their doctoral program. Studies suggest that feelings of satisfaction in skills training reflect a person’s perception of their level of self-efficacy (Lent, 2005; Washburn-Moses, 2008). However, the results of the interview protocol suggest that very few students were given any significant opportunities to develop their skill sets for teaching adult learners and several respondents expressed apprehension about their abilities to teach upper division or graduate level classes. Similar results were found in the area of conducting research or preparing research for publication. Several of the respondents stated that they had worked on publishing research or presenting research at conferences with the support of professors, but none had published on their own and only a few had presented their independent research in a national or regional forum. The SCCT model suggests that if individuals are not given adequate opportunities to experience self-efficacy and positive
rewards for successful performance that they will be unlikely to pursue academic career goals, even if they have previously demonstrated aptitude for those activities (Lent et al., 2002). This may ultimately lead to doctoral candidates not choosing careers in higher education.

Outcome expectations are beliefs about the probable consequences of completing a particular set of tasks. While self-efficacy is focused on "Can I do this?", outcome expectations are the imagined consequences, "If I try this, what will happen?" (Lent et al., 2002). Outcome expectations are the product of a person's previous experience of the rewards that accompany a successful performance. There are a number of types of beliefs that create outcome expectations. For example, the possibility of a material reward for an exceptional performance or simply the personal satisfaction of successfully completing a difficult task (Bandura, 1997).

In the current study, when participants were asked about the potential employment opportunities in higher education, they had strong positive responses. During interviews, some students expressed concerns about the economic rewards or working conditions, but remained highly motivated by the desire to make contributions to the field of special education through the training of teachers.

Contextual influences are the supports or barriers that directly impact an individual's goals and actions toward attainment in a given domain. These supports or barriers are an important focus of research in SCCT because of their predictive relationship to goal attainment and career choice, (Lent, 2005). In the context of programs engaged in professional preparation there are a variety of supports and barriers. The barriers include the need to relocate to attend programs or to find employment after
graduation, the cost of graduate education, and the need to balance their education with other career and familial responsibilities. Most respondents in the current study did not feel that attending programs or finding employment after graduation were important barriers. However, these responses were given in spite of the fact that the survey had suggested that very few of the participants had chosen to relocate in order to attend their college or university. While some of the students already held positions in higher education, most did not. Their choice not to relocate for training suggests that they may not relocate to accept faculty appointments at IHEs.

Supports included the availability of financial support, professional mentoring, and opportunities to participate in research or teaching (Washburn-Moses, 2008). The single area of contextual support that the majority of respondents in the current study found most important were offers of financial support. The second area of contextual support considered important by respondents in the current study was the mentoring relationship with program faculty or committee chairpersons (Lindholm, 2004). These responses suggest that financial support for doctoral studies may offset the opportunity costs of changing a career, and that close mentoring relationships are vital to supporting decisions about career choice after graduation.

Conclusions

1. Increases in federal support and changes in the training regimes at IHEs have changed the basic characteristics of the California cohort primarily by allowing larger percentages of full time enrollment. This in turn could increase in the number of participants that will choose faculty positions at IHEs after graduation.
2. There has been a significant increase in the number of underrepresented groups in California, particularly in racial and ethnic minorities. But this has not held true for a persistent underrepresentation of males.

3. There has been a dramatic increase in the aspirations of the current cohort of doctoral candidates in special education to seek faculty positions in higher education.

4. The majority of doctoral students in special education at IHEs in California receive inadequate opportunities to engage in research or to practice the craft of teaching adult learners sufficient to assure the development of a strong set of self-efficacy beliefs during their graduate experience.

5. The SCCT model offers a robust framework for understanding the factors that motivate doctoral students in special education to consider careers in higher education.

6. The participants in the current study, in general, believe that they are receiving appropriate support from their IHEs in terms of financial aid and mentoring.

7. The participants in the current study demonstrated an adequate expectation of attaining a faculty position at an IHE.

Limitations

The researcher has identified six limitations to the current study. First, the selection of participants made it difficult to find an accurate number for the total population of doctoral students in special education at the five institutions studied. Students were contacted indirectly through their department chairs and only those who responded initially had the opportunity to participate. The study design may have missed students who failed to be notified or were not identified by their departments or who
undertook their training at IHEs that do not have established doctoral programs in special education.

Second, the sample size was small (N=46) which impaired the analysis of a number of the items. For example the factor of race had to be reduced to white and non-white because of extremely small numbers of some minority groups. The third limitation was the time constraint for data collection and interview process that was limited to approximately a six-week window during Spring, 2007. That time frame limited the ability of the researcher to find additional participants. A fourth limitation may be with the survey instrument itself. Some of the items were worded awkwardly leading to participants being confused; several important items were framed as “select all that apply”. This meant that there might not have been enough responses to draw conclusions. Fifth, a larger pool of interview participants could have significantly enriched the qualitative data. Participation was limited to two students from each of the five IHEs. This limited the diversity of the students that responded. Finally, the study was primarily of students who were currently enrolled. That means that the dependent variable of career choice after graduation was not measured. Only the intention to pursue faculty appointments at IHEs was measured. Since the intention to do something fluctuates over time with new students frequently being more enthusiastic in their outcome expectations than students who have advanced to candidacy, there is no adequate way of knowing what choice they will ultimately make.

Recommendations for Future Research

This descriptive study used a combination of quantitative and qualitative methods to describe the characteristics of current special education doctoral candidates in
California and to identify which SCCT factors are significant to motivating them to choose to accept appointment to faculty positions in colleges and universities training special education teachers. The study was conducted over a six-week period in Spring, 2007 using an on-line survey and telephone interviews. Because of the small size of the sample, some of the most interesting data had to be derived from the qualitative protocol used in the telephone interviews.

Future investigations should include a more developed qualitative measure. Focus groups could be used so participants can discuss and compare impressions of their doctoral training. They would also be able to compare their perceptions of the expectations of IHEs in terms of the relative value of particular skill sets in research or graduate experiences in teaching adult learners. A larger study using a survey instrument similar to the one used in the current study, would allow a factor analysis of the survey items against the variable factors of Social Cognitive Career Theory.

Recommendations for Practical Application to Education

The implications of the findings of the current study for application to education are both at the policy level and at the program level. There appears to be a serious dissonance between the characteristics of the consumers that doctoral programs in special education target, how students are trained in those programs as they currently exist, and how candidates are recruited and vetted in the faculty hiring process at IHEs that train special education teachers for the K-12 classroom.

The data from the current study suggested that, beyond academic competencies, the applicants to doctoral programs in special education are highly motivated by intrinsic beliefs about the people that are served by special education professionals, and by the
impact of those people have had in the applicants’ life experience. The potential applicant is typically a public school teacher or administrator who believes that by becoming a teacher of teachers he or she will have a multiplier effect on the production of positive outcomes for the disabled community. The applicants to these programs are typically not in their mid-20s, coming directly out of a bachelors or masters program with the intention of becoming a professor or a researcher.

When students in the current study enter a special education doctoral program, the data suggest that they are not doing so as discerning consumers of theoretical research, but rather as adults with established careers in education who are choosing their college or university more on the basis of current proximity, scheduling flexibility, and financial support than the national reputation or their facilities for research. These are the students most likely to resist relocation or to find the opportunity cost of taking a faculty position at an IHE to be prohibitive. A productive policy of these programs would be to offer their students a substantial number of opportunities to engage in research and teaching experiences necessary to encourage students to choose careers in higher education. Instead, many of these students will earn their doctorates with minimal research and teaching experience.

Traditionally, when IHEs seek to increase the size of their faculty or replace a retiring professor, the skills that are most sought, research experience and teaching ability, are typically not the skills in which recent graduates have the greatest experience. In addition, there is an unwritten prohibition among many IHEs against reaching into their own pool of earned doctorates in order to fill open positions. Of course, like all
employers IHEs are looking for the brightest, the best, and those who offer the potential of the longest and most productive careers.

Colleges and universities in California face unique challenges having adequate applicant pools for search committees to select future faculty. The results of this study suggest that IHEs may want to revisit both how they train their doctoral students and how they select their faculty. If the institution is focused on publishing research it may offer research preparation at the expense of teaching competencies. However, if the institution’s focus is on teacher education, it may want to focus on teaching experience over research. Given the current doctoral training regime, the data suggest that finding both is an unlikely outcome.

Summary of the Study

This descriptive study examined the career choices of current special education doctoral students in California using the theoretical framework of Social Cognitive Career Theory. This study used a combination of quantitative and qualitative methods to describe the characteristics of the participants and to identify which SCCT factors are most significant in motivating special education doctoral candidates to seek faculty positions in colleges and universities training special education teachers. The study sought to survey all of the doctoral students in special education attending IHEs in California using an on-line survey based on a previous national study of doctoral students in special education. Also, the study conducted a series of telephone interviews with a subset of the survey participants.

The survey was conducted during a six-week period during the spring semester of 2007. Five institutions of higher education (IHEs) that had established special education
doctoral programs in California were identified as offering doctoral degrees in special education and a request for participation was made through each institution’s department chairperson. Respondents were given passwords and asked to complete the survey. Fifty-six students responded and 46 completed the on-line survey. A subset of participants from each doctoral program in California was invited to participate in a semi-structured interview to discuss the particular factors that influence their career choices. The surveys and interviews were analyzed using the framework of Social Cognitive Career Theory (SCCT) to identify which factors are most influential to special education doctoral students' career choices.

The results were mixed with a number of limitations. Because of the small sample size and the homogenous nature of the sample demographic characteristics there was not sufficient variance in the survey data to establish a statistically significant relationship between that data and the factors of Social Cognitive Career Theory. The data did suggest some note worthy findings. There has been a dramatic increase in the aspirations of the current cohort of doctoral candidates in special education to seek faculty positions in higher education, which may be associated with increased federal support for doctoral programs in California. The SCCT model does provide a robust tool for framing an understanding of the factors that motivate doctoral students in special education to consider careers in higher education.

Implications for future research should include a more developed qualitative measure to exam the elements of SCCT in relationship to career choice and perhaps a series of focus groups that discuss and compare the participants impressions of their
doctoral training with their perception of the expectations of IHEs in terms of the relative value of research versus teaching experience.

The implications of this study for educational practice will be demonstrated as colleges and universities seek to plan the future development of special education doctoral programs. IHEs will be addressing the problem of bringing new candidates into these programs in addition to developing the faculty within their teacher training programs to meet the demands of public education for highly qualified special education teachers.
REFERENCES


Tyler, N. C. (1996). *An analysis of factors affecting the career decisions of doctoral graduates in special education: can the demand for special education faculty be met?* Albuquerque, NM: University of New Mexico. Document Number


Appendix A

Survey of Doctoral Students in Special Education

Type of Doctoral Program

1. In Spring, 2007, are you currently enrolled as a doctoral student in Special Education?
   - [ ] Yes, I am a doctoral student in a Special Education program.
   - [ ] No, but I am a recent graduate of a doctoral degree in Special Education.

2. What doctoral degree are you working toward or have recently completed?
   - [ ] Ed.D or D.Ed.
   - [ ] Ph.D.
   - [ ] Other (specify)

3. In what field(s) is this doctoral degree?

4. What is your primary area of specialization or concentration within Special Education?

5. What college or university do you attend?

6. What year in your doctoral program have you completed?

Experiences in Applying to Doctoral Programs in Special Education

7. Approximately how many doctoral programs had you applied prior to or concurrently with the program you entered?

8. Were any of these programs more than 100 miles from where you were living at the time you applied for admission?
   - [ ] Yes
   - [ ] No

9. Were any of these programs in:
   (Select all that apply)
   - [ ] The same city in which you were then living.
   - [ ] Other cities, but in the same state in which you were then living.
   - [ ] States other than the one in which you were then living.
   - [ ] Countries other than the one in which you are now living.

10. Which of the following contributed to your decision to enroll in the doctoral program at your present institution?
   (Select all that apply)
   - [ ] The opportunity to work with specific faculty members.
2. The amount of financial support offered to me by the program.
3. The specific concentration of the program.
4. The program’s national reputation in Special Education.
5. The fact that I would not have to relocate.
6. The fact that I would be near family or friends.
7. The attractive geographic location.
8. The job, career, or educational needs of my spouse, partner, or children.
9. The program’s commitment to addressing special needs of its students.

11. Which of the reasons that you marked in number 10 was the MOST important reason for enrolling in this doctoral program?

12. When did you first enroll in this doctoral program?
   Year/Semester

13. Is this doctoral program more than 100 miles from where you were living at the time you applied for admission to this program?
   Yes No

14. Did you relocate in order to enroll as a doctoral student in this program?
   Yes No

---

**Current Doctoral Study**

15. In Spring of 2007, were you considered by your institution to be a:
   - 1. Full-time student, even if you worked full-time or part-time.
   - 2. Part-time student.
   - 3. Other. (specify)

16. Since you first enrolled in this doctoral program, have you been primarily a:
   - 1. Full-time student.
   - 2. Part-time student.

17. Which of the following BEST describes your current status in the doctoral program?
   - 1. I still have to complete required course work for my doctoral degree.
   - 2. I have completed all required course work for my doctoral degree.
   - 3. I have passed the required qualifying exams for my doctoral degree.
   - 4. The proposal for my dissertation research has been formally approved.
   - 5. I have completed my doctoral dissertation defense.

18. During this past academic year (Spring of 2006 through Spring of 2007), did you receive a tuition waiver or discount for your doctoral studies?
   - Yes
   - No

19. Since you first enrolled in this doctoral program, which of the following sources of money
have you used to cover living and/or educational expenses associated with your doctoral training?
(Select all that apply)

☐ 1 Loans
☐ 2 Research assistantship
☐ 3 Teaching assistantship
☐ 4 Traineeship
☐ 5 Fellowship, grant, or scholarship
☐ 6 Dissertation grant
☐ 7 Paid internship or practicum
☐ 8 Personal savings
☐ 9 Other personal earnings from outside jobs
☐ 10 Spouse's, partner's, or other family earnings or savings
☐ 11 Employer reimbursement/assistance

20. Of the types of support for living and/or educational expenses which you marked in number 19, which has been the MOST important to you?

21. Why do you consider this type of support to be the most important?

22. Which statement BEST describes your current employment status?

☐ 1 Employed full-time
☐ 2 Employed part-time
☐ 3 Held a graduate fellowship
☐ 4 Not employed

23. Which category BEST describes your current position?

☐ 1 Faculty in a college or university
☐ 2 Teaching or the provision of direct services in an elementary or secondary school, a school system or another type of organization
☐ 3 Educational administration
☐ 4 Research
☐ 5 Other type of position (specify)

Postgraduate Plans

24. As of August 2007, will you have completed all requirements for your doctoral degree?

☐ Yes
☐ No

25. If no, when do you expect to receive your doctoral degree?

26. What are your immediate plans upon receiving your doctoral degree in Special Education?
27. In what type of setting do you plan to work?
   - 1 Pre-school or K-12 setting
   - 2 A school system district office
   - 3 Another type of educational organization
   - 4 A 2-year college
   - 5 A 4-year college
   - 6 A university affiliated research institute
   - 7 A state government agency
   - 8 A federal government agency
   - 9 A research institute not affiliated with a university
   - 10 A non-profit organization, other than the above
   - 11 A for-profit organization, other than the above

28. What category BEST describes the type of position that you plan to have upon completing your doctoral degree?
   - 1 Faculty at a college or university
   - 2 Teaching or providing direct services in a K-12 institution
   - 3 Educational administration
   - 4 Research
   - 5 Other type of position (specify)

29. Which of the following factors are important to your choice of position?
   (Select all that apply)
   - 1 Salary
   - 2 Fringe benefits
   - 3 Opportunities for promotion
   - 4 Degree of interesting work
   - 5 Job security
   - 6 Working conditions
   - 7 Staff with whom I will be working most closely
   - 8 Populations with whom I will be working
   - 9 Desire to not relocate or move to another city or state
   - 10 Geographical location of the job
   - 11 Career, employment, or other needs of the family
   - 12 Other (specify)
30. Of the reasons you marked in number 29, which was the MOST important to you?

31. Are you currently seeking or have you already obtained a “career path” position that will begin after you complete your degree?
- 1 Yes, I have signed a contract or made a definite commitment for work or study.
- 2 Yes, I am negotiating with one or more specific organizations.
- 3 Yes, I am seeking a position, but have not any specific prospects as yet.
- 4 No, I am not currently seeking a position.
- 5 Other (specify)

32. Which of the following resources did you use in seeking a position? (Select all that apply)
- 1 Faculty or advisor
- 2 College or Department placement office
- 3 Professional recruiters
- 4 Professional meetings or conferences
- 5 Postings on the world wide web
- 6 Newspapers
- 7 Professional journals
- 8 Informal networking
- 9 Direct contacts

33. In seeking a position, approximately how many different faculty or non-faculty positions did you apply for?

34. In seeking a position, approximately how many different faculty or non-faculty job offers did you receive?

35. Was the job offer that you accepted your first choice?
- 1 Yes, it was my first choice
- 2 No, I would prefer to have obtained the same choice at a different institutions.
- 3 No, I would have preferred a different position (specify)

39. Based on your own observations, how do you rate the job market for individuals who graduate from your doctoral program?
- Poor
- Fair
- Good
- Excellent

At this point in time, how satisfied are you with your doctoral program in terms of training you
In, If not applicable leave blank:

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<td>45. At this point in time, how satisfied are you with your doctoral program overall?</td>
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**Background Information**

46. Are you:
   - Male
   - Female

47. What is your marital status?
   - Married
   - Living in a marriage-like relationship
   - Widowed
   - Separated/divorced
   - Never Married

49. Not including yourself, how many dependents do you have? [ ]

50. What is your citizenship status? [ ]

51. With which ethnicity do you most closely identify?
   - 1 White
   - 2 Black/African American
   - 3 Hispanic
   - 4 Asian or Pacific Islander
   - 5 American Indian, Alaskan Native

52. In what month and year were you born? (mm/yyyy) [ ]
53. Are you a person with a disability?  
     □ Yes  □ No

54. Is a member of your immediate family a person with a disability?  
     □ Yes  □ No

55. If yes to either, which category BEST describes the nature of the disability?

---

Would you be interested in participating in a follow-up interview?

     □ Yes  □ No  □ Unsure

[Submit] [Reset]
Appendix B

The Career Choice Interview Protocol

1. What attracted you to this particular program?
2. How would you describe the doctoral program that you are enrolled in?
3. When did you decide to pursue a career in higher education?
4. Were there particular people who were influential in shaping your career choice?
5. What specific experiences influenced your career choice?
6. Are you more inclined to teaching adult learners or to doing research in education?
7. Describe the opportunities you have had to improve your research skills?
8. Describe opportunities you have had to improve your practice as a teacher of adult learners?
9. What personal values or characteristics motivated you to enter a doctoral program in special education?
Appendix C

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Career Choice for Doctoral Students in Special Education

Signature of Applicant       Date

Signature of Adviser         Date
Background and Rationale

This descriptive study will examine the career choices of current special education doctoral students in California using the theoretical framework of social cognitive career theory. No other study has examined the development of career choice for doctoral students in special education within the context of the relationship among various factors described in the SCCT model. This information is needed in order to understand the continuing shortages of special education professionals seeking careers in higher education.

Description of Sample

Participants will be drawn from the ranks of doctoral students in special education currently enrolled in IHEs in California. Five IHEs offer doctorate in special education. Most of the programs are small, while one or two are fairly robust. A conservative estimate of the current cohort of doctoral students pursuing special education doctorate in California is less than 100 and more probably between 50 and 60.

Recruitment Procedure

The department chairperson of each college or university in California with an active doctoral program offering a degree or specialization in special education will be contacted and solicited for his or her support with the survey component of the study. The chairperson will be given a letter describing the importance of the study and will be provided with an access code for each potential participant. Chairperson will be asked to forward the information on how to participate in the study to their student along with a letter encouraging their support. Since there are only five programs in California, it is anticipated that the chairpersons will agree to have their students participate. After
submitting the survey form, participants will be asked if they are willing to take part in the interview portion of the study. Upon their affirmation a sub-set of 2-3 students from each of the five programs will be directed to a response form that goes directly to the researcher. The researcher will contact participants who elect to complete the semi-structured interview portion of the study and arrangements will be made to complete the interview by telephone.

**Subject Consent Process**

Subjects will receive a written notification of the risks along with their access code when they are initially contacted by their department. When the participants enter their access code, complete answering the survey questions, and push the submit button, they will have documented their informed consent.

**Procedures**

The department chairperson of each college or university in California with an active doctoral program offering a degree or specialization in special education will be contacted and solicited for his or her support with the survey component of the study. The chairperson will be given a letter describing the importance of the study and will be provided with an access code for each potential participant. Chairperson will be asked to forward the information on how to participate in the study to their student along with a letter encouraging their support. Since there are only five programs in California, it is anticipated that the chairpersons will agree to have their students participate.

When the participant goes to the web site, he or she will see a page that describes the study, states what the data will be used for, and explains the potential risk for the
participant. When the participants enter their access code, complete answering the survey questions, and push the submit button, they will have documented their informed consent. The data collected from the completed surveys will be automatically downloaded to a secure computer and stored on an encrypted and biometrically protected hard drive. After submitting the form, participants will be asked if they are willing to take part in the interview portion of the study. Upon their affirmation a sub-set of 2-3 students from each of the five programs will be directed to a response form that goes directly to the researcher. The researcher will contact participants who elect to complete the semi-structured interview portion of the study and arrangements will be made to complete the interview by telephone. The interview will last between 30 minutes and one hour and will be tape-recorded. The recordings will be transcribed and stored on the encrypted hard drive along with the data from the survey instrument.

Potential Risks to Subjects

This descriptive study will use participants who are currently enrolled as doctoral candidates in special education at colleges and universities in California. The participants will not be contacted directly by researcher unless the participants have volunteered to participate in the interview portion of the study. The participants will be given a considerable level of security as the survey data will be encrypted and password protected. However, there is still the risk that information about their participation could remain on their computer and their Internet service provider could log their access to the survey.
Minimization of Potential Risk

To ensure that participants are informed of the potential risks, they will receive a written notification of the risks along with their access code when they are initially contacted by their department. When the participant goes to the web site, he or she will see a page that describes the study, states what the data will be used for, and explains the potential risk for the participant. When the participants enter their access code, complete answering the survey questions, and push the submit button, they will have documented their informed consent.

After submitting the form, participants will be asked if they are willing to take part in the interview portion of the study. Upon their affirmation a sub-set of 2-3 students from each of the five programs will be directed to a response form that goes directly to the researcher. The researcher will contact participants who elect to complete the semi-structured interview portion of the study and arrangements will be made to complete the interview by telephone. The interviews will be transcribed and stored on the encrypted hard drive along with the data from the survey instrument.

Potential Benefits to Subjects

The subjects will be offered copies of the study results distributed through the participating departments. The result may offer subjects insight into their own career choice process.

Cost to Subjects

The only cost to subjects will be their time to complete the survey and interview.
Reimbursement/Compensation to Subjects

None

Confidentiality of Records

The data collected from the completed surveys will be automatically downloaded to a secure computer and stored on an encrypted and biometrically protected hard drive. Personal information and all data that are collected by the researcher will be kept on an encrypted and biometrically protected hard drive in a locked file.
Appendix D

Informed Consent

INFORMED CONSENT

Dear Colleague,

Thank you for your decision to participate in this survey. Please read the information below, and print a copy of this form for your records. Feel free to contact me at (510) 377-6526, or at mdriggs@mac.com if you have any questions.

Other questions and concerns can be addressed to:

IRBPHS
School of Education, Room 203
Department of Counseling Psychology
2130 Fulton Street
San Francisco, CA 94117-1080
(415) 422-6091 voice
(415) 422-5528 fax
irbphs@usfca.edu

Taking the survey required giving me a username, e-mail address, and you receiving a password. Having completed the survey will make you eligible for participation in a drawing for a 4G Apple Nano in the flavor of your choice. You will be contacted through your e-mail address.

The primary benefit of your participation will be the opportunity to provide information on the aspirations and experiences of doctoral students in special education enrolled in programs in California. Taking the survey will only cost you the time that it takes to complete the form. The researcher will not benefit from your participation in this study beyond publishing and disseminating the results.

If you decide to withdraw from or to "opt out" of this survey after agreeing to participate, and registering, you can contact me at the e-mail above and I will discard your login information, e-mail address, and responses.

Your responses to the Career Choice Survey will remain entirely confidential. I will only report aggregate information on the process of making career choices. When the results of this evaluation are published or presented at meetings, your identity will not be disclosed.

CONSENT TO BEGIN THE CAREER CHOICE SURVEY

By selecting "I agree to participate", the "Yes" button, and submitting this page; you are verifying that:

- You have read the above information regarding this study’s purpose and procedures;
- You have been given the opportunity to contact the researcher with any questions that you have about the study;
- You voluntarily agree to have your responses included in this study.

Thank you for your time and support.

I agree to participate.