COLLEGE STUDENT RESILIENCE: SELECTED EFFECTS OF SERVICE-LEARNING

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Resilience implies the concept of buoyancy. Specifically, it denotes an individual’s capacity to persevere and even do well in the face of adversity. Service-learning is pedagogy often used to enable students to apply classroom learning in a real world context. The goal of this study was to examine the effects of service-learning upon college student resilience. The study utilized a convenience sample of undergraduate students \((N = 172)\) across three disciplines including counseling, social work and kinesiology. In a pre-post test design, the CD-RISC was employed to measure resilience of the experimental and control groups. Factor analysis of the CD-RISC was also conducted in order to explore interrelationship of the variables among the data. One undergraduate sample \((N = 210)\) was used to conduct the EFA before determining a best fit factor structure for this study’s population.

A repeated measures analysis of variance was employed to detect any differences between pre-post test groups. No statistical significance was found across pre and post-test among the two groups \((p=.49, \eta^2=.00)\). However significant results were found between the experimental and control groups \((p=.00, \eta^2 =.09)\). Examination of mean score differences among demographic variable yielded interesting findings across the three disciplines as well as between age and gender of the participants. Findings indicated students given freedom of choice within service-learning logistics scored greatest gains in resilience.
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Lastly, this achievement is dedicated to my mom, whose faithful support was paramount in this journey. She rejoiced in and encouraged my dreams.

Verona “Vicki” Mercer

1941-2007
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CHAPTER 1
INTRODUCTION

Resilience has been defined as “the action or act of rebounding or springing back; the quality or fact of being able to recover quickly or easily from, or resist being affected by, a misfortune, shock, illness etc…” (Resilience, 2010). More specifically, resilience conveys the ideas of buoyancy, elasticity and adaptability. Masten, Best and Garmezy, (1990) referred to resilience not only as a process and an outcome but also as a “human capacity of successful adaptation despite challenging or threatening circumstances” (p. 426). Bernard (2004) encouraged educators to understand resilience as an innate capacity to be developed rather than a pre-existent trait possessed by some rather than all. Similarly, Reivich and Shattè (2002) identified resilience as a characteristic to be developed. They identified this capability as a “basic strength underpinning positive characteristics within a person’s emotional and psychological make up” (p. 59). They also stressed the importance of resilience as a source for consistent healthy functioning, while noting that a lack of resilience pre-disposes individuals to negative functioning.

Decades of resilience research have addressed qualities, processes and concepts (Garmezy, Masten, & Tellegen 1984; Masten & Garmezy, 1985; Masten, Best, & Garmezy, 1990; Rutter, 1985; Rutter, Maughan, & Mortimore 1979; Werner & Smith, 1982; Zimmerman & Arunkumar, 1994). The majority of these studies however, have focused on primary and secondary students and adults, thus creating a gap in resilience research regarding traditional college students ranging in ages from 18 to 25. Today’s college students are referred to as “millennials” (Howe & Strauss, 2000) and are
acclaimed as the “next great collegiate generation” (Howe & Strauss, 2007, p. 213). Experts in generational research Howe and Strauss (2007) described millennials as mature, responsible, young people who value authenticity and community service; they go on to portray millennials as exhibiting seven core traits: team oriented, special, sheltered, confident, pressured, conventional, and achievers.

Coomes and DeBard (2004) commended Howe and Strauss for their generations work and noted the overly positive characteristics conferred on millennials. Coomes and DeBard pointed out the humorous irony that Howe and Strauss are, themselves, millennial parents, and the optimistic proclamations regarding this generation fall right in line with Boomer parents descriptions of them. Other researchers and educators have also depicted some millennials as achievers, responsible, pressured, special but have also added varied perspectives of millennials as: (a) wanting immediate gratification and lacking in understanding as to why they are not able to get what they want – now, (b) children who have grown up overly protected, coached, pampered, and heavily grounded in messages of specialness; and (c) holding high – at times unrealistic – expectations of their own abilities, of others, and the world around them (Coomes, & DeBard, 2004; Sujansky & Ferri-Reed, 2009; Twenge, 2006).

Howard, Schiraldi, Pineda, and Campanella (2006) commended millennials for their commitments to communities, respect and teamwork. They also cautioned that these inherent strengths may also usher in susceptibility to personal and psychological impairment. As high achievers, millennials seem to be acutely sensitive to internal and external pressures to succeed including: expectations of self, parents or guardians, and others. Additional pressures may also include: personal transition and adaptation to
college, academic success, financial concerns, interpersonal relationship concerns, and social justice concerns (Bishop, Gallagher, & Cohen, 2000; Howard et al., 2006; Kadison & DiGeronimo, 2004).

It appears that students endeavor to deal with these pressures in several ways. Some effectively manage stress through healthy activities including exercise, eating balanced diets, cognitive strategies such as grounding and self talk, breathing exercises, talk therapy, or discussing personal issues with confidants as means to resolution and moving forward. Students who have not yet learned or assimilated effective methods of coping with external and internal pressures may attempt to deal with these forces through escapism, procrastination, withdrawal and other self-defeating behaviors such as binge drinking, unhealthy eating patterns, unsafe sexual practices or illegal or prescription drugs belonging to friends. These inappropriate responses place students at considerable risk for outcomes, which could result in physical, psychological, mental and/or emotional harm (McGrath, 2006).

Students who are engaged in these self-defeating behaviors may be communicating their need for help. College counselors provide an invaluable service on college campuses as they offer mental health services to students; crisis intervention; as well as prevention programs and mental health resources for faculty and staff as they seek to help undergraduates face new responsibilities of young adulthood; new responsibilities that may be perceived by some students as added stress.

Increasing pressures on millennial students combine with national reports of greater anxiety, depression and suicidal ideation in student populations, highlight a need for greater understanding of resilience, prevention, and intervention efforts to
foster resilience within and among undergraduate students. University professionals including college counselors have opportunity and obligation to contribute to students’ development and well being by educating students with necessary skills and opportunities to engender resilience, empowering them to gain from challenges inherent in college life and beyond.

One such opportunity, service-learning, generates a hopeful possibility to strengthen college student resilience. Service-learning is an experiential educational activity and a pedagogical tool which immerses students in community service opportunities. Through service-learning, students apply classroom knowledge to real-life situations as they endeavor to satisfy needs within the local and campus community (Jacoby, 1996; Wilczenski, & Coomey, 2007).

While service-learning has not yet been formally studied as a possible resilience building intervention; research demonstrates that participation in service-learning increases protective factors – defined as “supports and opportunities that buffer the effect of adversity and enable development to proceed” (Bernard, 2004, p. 8). Related studies indicate that proactive, empowering, and protective factors such as self-efficacy, personal growth, social awareness, social interactions, engagement, academic success, positive cognitive development, social interactions, self efficacy, career development, and spiritual growth can provide a meaningful framework for information (Astin, Vogelgesang, Ikeda, & Yee, 2000; Eyler, Giles, Stenson, & Gray, 2000; Kronick, 2007; Strage, 2004).

Statement of the Problem

Over 17 million undergraduate college students are projected to arrive on college
campuses in the next ten years according to the National Center for Educational Statistics (Planty et al., 2009). These new beginnings are exciting for many students and managed well by a sizable majority. However, there is reason for college and university personnel to be informed of possible concerns and hopeful interventions for cultivating student resilience in order to prepare students, faculty, staff and administrators to meet transitional challenges of moving toward independence.

According to Gallagher’s (2009) most recent college counseling center survey, Millennials are arriving on campus with increasing severity of psychological issues. The beginning of college life brings new adventures both inspiring and disconcerting as students leave behind established family ties, friendships, and community involvement and moves into new circumstances with relatively few immediate supports. This change often leaves students lonely and uncertain, possibly resulting in heightened anxiety and depression (Mounts, Valentiner, Anderson, & Boswell, 2006).

Stress and anxiety faced by students does not stop after the first critical six weeks or even after the first year. Academic and life stressors continue throughout the college journey. Twenge (2006) discussed anxiety and depression among college students. In her dissertation research designed to investigate generational differences, Twenge utilized anxiety assessment results from more than 40,000 college students between the decades of 1950s and 2000. She found that the average college student in the 1990s dealt with more anxiety than 85% of students from the 1950 students and 71% of students from the 1970s.

College student anxiety and its effects continue rising. American College Health Association (ACHA) (2009) asked 34,208 college students at 57 institutions about their
stress levels in the last year. The study was conducted primarily with 4-year private and public institutions of higher education \((n = 51)\) and was equally representative for schools across the northeastern \((n = 19)\), southern \((n = 18)\), and western \((n = 15)\) United States. Midwestern states \((n = 3)\) and 2-year colleges \((n = 3)\) were largely underrepresented in the study. Of those who participated, 84 percent of these respondent students reported feeling overwhelmed by all they had to accomplish at some point; nearly half affirmed feeling overwhelming anxiety at times and 40% rated their stress levels as above average. Twenty-eight percent reported their stress had disrupted their academic performance and 46% said they had experienced feelings of hopelessness at some point in the previous year. Slightly more than 5% reported intentional self-injury and 6% said they felt so depressed that they had seriously considered suicide within the year.

Students overcome by academic, emotional, cultural, and social, pressures may show signs of declining psychological and physical symptomology (Steinhardt & Dolbier, 2008). Students who feel anxiety and stress acutely, yet possess little understanding and knowledge of how to bring about change may contemplate suicide as a viable, possibly, only option for relief.

Grayson and Meilman (2006) noted that some students demonstrate resilience by managing stress effectively, whereas others lack knowledge, skills or motivation to deal with existing pressure and therefore, turn to self-defeating behaviors to deal with stressful situations. Some students utilize and abuse chemical substances including unsafe levels of alcohol, illegal drugs and prescription drugs of friends, while other students choose to participate in unsafe sexual practices.
Binge drinking, defined as consumption of large amounts of alcohol at one time, has become a serious issue on college campuses (Center for Study of Collegiate Mental Health (CSCMH), 2009; Galatas Von Steen, 2000). It is important to keep in mind that colleges differ widely in ratings of binge drinking; hence, the following reports are confounding. The U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA, 2009) and the National Institute of Alcohol Abuse and Alcoholism (NIAAA) (2008) reported approximately 40% or two of every five college students surveyed reported they had participated in binge drinking at least once during the previous two week period. ACHA (2009) reported that 15% of college students surveyed indicated they had consumed seven or more drinks in one sitting at their last social gathering and 3.4% acknowledged driving after five or more drinks. These and abundant similar data document that problem drinking elicits dangerous consequences threatening the well-being of numerous college students (Gintner & Choate, 2007).

In addition to the frequency and severity of drinking problems noted above, ACHA’s (2009) recent survey found substantial college student use of substances from tobacco to illegal drugs. ACHA noted that 13% of college students disclosed using a combination of drugs ranging from tobacco to cocaine, methamphetamines, and hallucinogens and 12.6% reported the previous month’s consumption of prescription drugs not prescribed to them indicate that 20% of fulltime college students use illicit drugs (SAMHSA, 2009).

Although many college students have reported utilizing safe-sex practices (Eisenberg, 2001), ACHA (2009) revealed only 52% of students having intercourse
reported utilizing contraceptives. Others reported no use of protection or uncertainty whether their partner used contraceptives, placing themselves at risk for sexually transmitted infections (STIs) and/or unintended pregnancies. The Centers for Disease Control (CDC, 2009) recently reported record high numbers of STIs chlamydia and gonorrhea, with over half of reported cases coming from young women ages 15-24. These and similar consequences of at-risk sexual behaviors generate formidable concerns among college students (Galatas Von Steen, 2000).

These and similar studies portray a generation of college students who face considerable pressures and experience pronounced levels of stress compared to previous generations. It appears they might be less equipped than previous generations to deal with their stress. Perhaps there is a viable need for efforts toward prevention and intervention aimed at empowering college students to recognize and appropriate internal resilience qualities for perseverance and the strengthening of one’s inner resources to promote socially, mentally, emotionally, and academically healthy choices and greater college student life satisfaction and achievement.

Resilience studies are not new to higher education. While there are numerous studies devoted to early concepts of resilience in undergraduate students; these studies were called academic resilience and focused on aspects such as persistence, hardiness and retention (Morales, 2008; Morales & Trotman, 2004). This investigator found few studies concentrated on psychological and personal resilience. Rather, the majority of resilience studies examined in comprehensive literature focused on persistence, hardiness, adjustment, retention, and specific protective factors such as self-efficacy which might affect these characteristics (Boyer, 2005; Carter, 2006; Chemers, Hu, &
Garcia, 2001; Gerdes, Mallinckrot, 1994; Lifton, Seay, & Bushko, 2004; Maddi, & Khoshaba, 1994; Maddi, Harvey, Khoshaba, Fazel, & Resurreccion, 2009; Tinto, 2006-2007). In addition, assessments used in these studies were designed to measure specific protective factors such as self-efficacy (Niiya, Crocker, & Bartmess, 2004; Li, 2008) as opposed to resilience. This author found few studies employing resilience-specific instruments (Brown, 2008; Scarcia-King, 2007; Steinhardt & Dolbier, 2008) such as those used in the present study.

Purpose of the Study

The goal of this study was to investigate effects of service-learning upon college student resilience for purposes of discerning implications for practice and research. This study incorporated the use of the Connor-Davidson Resilience Scale (CD-RISC). The CD-RISC measures three overall levels of resilience (low, medium and high) visible through total scores (Connor & Davidson, 2003).
CHAPTER 2
LITERATURE REVIEW

This literature review centers on college student resilience, college student development and service-learning. Specifically, the focus was on resilience, including definition, history, protective factors of resilience, resilience as it applies to college students and college student development. The college student development section presents an overview of prominent student development theories by Arthur Chickering and William Perry and connects these theories to both resilience and service-learning. Finally, Service-learning portions of the literature review include service-learning roots in higher education, definitions and the critical components of service-learning and benefits of service-learning for college students.

Resilience

Definition

Resilience encompasses a myriad of concepts, with synonyms including hardiness, endurance, invulnerability, adaptation, and persistence (Carter, 2006; Lifton, Seay, & Bushko, 2004; Walker, Gleaves, & Grey, 2006; Zimmerman, M.A., & Arunkumar, R., 1994.) The term “resilient” drawn from physical sciences, describes materials or substances, which are able to return to initial form once exposed to external pressures that bend, stretch and compress (Bosworth & Walz, 2005).

Definitions of human resilience mirror this meaning but vary according to investigators and studies. Werner and Smith (1992) studied children raised in challenging conditions including parents managing mental illness, alcoholism and social economic backgrounds below poverty level. In this study, they defined resilience as “the
[child’s] ability to overcome these odds to become competent, confident, caring individuals” (Werner & Smith, 1992). Similarly, Henderson (2007a) defines resilience as “an ability to bounce back from adversity” (p. 9). Masten (2001) described resilience as a process of adaptations yielding positive outcomes in the face of challenges or obstacles (p. 228). These threats might range from tragedy and trauma to adversity, short-term hardship and ongoing life stressors (Newman 2005). Richardson (2002) summarized “resilience” by focusing on a “process of coping with adversity, change, or opportunity in a manner that results in the identification, fortification, and enrichment of resilient qualities or protective factors” (p. 308). Most recently, Zautra (2009) offers a two part comprehensive definition for resilience. First, resilience is about “recovery” (p. 1935) and a person’s (family, community and other groups) ability to face and rebound from negative life stressors. Second, resilience is about “sustainability” (p. 1936) or the human capability to remain and to carry on despite oncoming challenges.

Thus, according to professional literature, resilience is defined as the human ability to prevail over stressors and toward growth, through threats and challenges. Resilience is described as the process by which one copes with change and life difficulties and emerges with increased stamina, determination, self awareness and self confidence.

**History**

In social sciences, resilience is a concept derived from longitudinal studies investigating child growth, development, coping and stress. Pioneers in resilience research include Garmezy (1971), Werner, Beirman and French (1971); Werner & Smith (1977, 1982); and Rutter, Maughan, Matimore, Ouston, & Smith (1979).
During a 1970 meeting of the American Orthopsychiatric Association, Garmezy (1971) presented fundamental research examining several studies regarding ecological factors of childhood contributions to adult pathology. Garmezy drew his colleagues’ attention to an unexpected and hopeful phenomenon in the literature: the “invulnerable child” (p. 114). He used this term to describe a percentage of children, in the study, who overcame detrimental ecological environments to live healthy and productive adult lives. Garmezy challenged the modern day malady-focused paradigm, which assumed problematic childhood equaled maladaptive adulthood and pointed out that these children had “upset predictive tables to [become] hallmarks of competence” (p. 114). His work introduced the term “invulnerable,” engendering the modern use and concept of resilience.

Unbeknownst to Garmezy (1971), Werner, Beirman, and French (1971) in a simultaneous independent study, were publishing the beginnings of a concurrent longitudinal child development study, which would produce results concurring with the “invulnerable child” phenomenon. According to the majority of literature reviewed by this author, the Werner et al. (1971) longitudinal child study and sequel studies by Werner and Smith (1977, 1982) appear to be the foundation upon which subsequent personal and psychological resilience works are built (Riegel & Rosenwald, 1975).

Beginning as early as 1954, a multidisciplinary team employed by the Department of Health, Hawaii, set out to understand child growth and development by following a cohort nearly 700 children from prenatal existence to 10 years of age. The goal of the study was to investigate effects of high-risk conditions such as: chronic poverty, disorganized home environments damaged by alcoholism or parental mental
illness on child development. In this first study, two-thirds of the children grew up in highly stressful home environments and developed serious behavior or learning problems. Unexpected findings revealed approximately one-third of the cohort matured into competent, well adjusted and high functioning adults (Werner et al., 1971).

In order to learn more about this difference, Werner and Smith (1977) conducted and published findings of a second and third study focused on the same cohort of children as they progressed through adolescence into adulthood. In the final two studies, Werner and Smith contrasted the behaviors, care giving environments and outcomes of the “resilient” children and their troubled peers. Overall, resilient children were described by caregivers, pediatricians and teachers as: socially orientated, engaged, good reading and reasoning skills, achievement oriented. Resilient teens had a network of family and friends for support, one or more close friends and a role model; developed positive self-concepts and used internal locust of control. Finally, they found resilient adults living in contexts far from their traumatic upbringing (Werner & Smith, 1982).

Rutter et al. (1979) conducted another longitudinal study focused on academic environmental influence in the lives of children and youth. They noticed students spend 15 thousand hours in formal schooling from kindergarten to high school graduation, thus giving educators optimal opportunity to foster an environment that builds in protective factors and cultivates resilience. Rutter et al. found that successful schools shared common characteristics of including fostering of self-esteem, maintaining and communicating high expectations, and consistent academic focus. Over time, the data showed a positive correlation between the presence of these characteristics and
student success. Inversely, data demonstrated a direct correlation between the absence of these conditions and problematic student behaviors.

These pivotal works began studies in resilience that have continued for three decades and resulted in numerous beneficial findings for social science disciplines including psychology, psychiatry, education, and sociology (Bernard, 2004; Masten, 2001; Richardson, 2002). According to Bernard (2004) a myriad of significant accomplishments in resilience have resulted from these studies including the founding of the positive psychology movement, creation of various government agencies devoted to promoting resilience and overall health for children, adolescents and adults, as well as the establishment of international foundations for investment in the welfare of youth. This 30 year period also encompassed extensive study of resilience, with findings reported in various multidisciplinary journals and venues (Bernard 2004).

Bernard also noted the exponential growth of attention given to resilience reflected in the Social Sciences Citation Index. In the 1980’s the Index included twenty-four entries of resilience. In the 1990’s there were 735 references to resilience and by 2004, the date of publication for Bernard’s book, research entries for resilience were well on their way to doubling the total of studies in both the 1980’s and 1990’s (Bernard, 2004).

Protective Factors

Other foundational resilience works include Garmezy, Masten and Tellegen (1984) and Rutter (1985). These studies elucidated the concept of protective mechanisms or protective factors which Garmezy et al. (1984) defined as the interplay of personal attributes, biological inclinations, circumstances and environmental
surroundings which “act to contain expressions of deviance or pathology” (p. 109). In other words, protective factors include interactions among and between internal and external factors, empowering an individual to forego maladaptive behaviors and embrace constructive and beneficial responses to the stressors they encounter. Internal protective factors may include personal strengths such as: flexibility or adaptability, tenacity, positive self efficacy or confidence in ones’ ability to succeed, leadership skills, emotional intelligence, communication skills, motivation to achieve, problem solving, and self-directed learning. External factors include: supportive relationships through family, friends, and mentors as well as caring and encouraging environments at home, at school and in the community.

Protective factors are numerous and include individual/peer, school, family, and community factors. As one example, a list of 40 developmental assets was compiled through the work of the Search Institute (1996) (Bosworth & Walz, 2005; Henderson, 2007b; Milstein & Henry, 2008). Educators and school counselors have used these assets for identification and promotion of protective factors as well as for the development of healthy productive children and adolescents; thereby developing student’s resilience.

Research in Higher Education

Decades of research have addressed resilience qualities, processes and concepts. The majority of these studies have focused on children, middle and high school students and adults, leaving a gap in traditional college students ages 18-25. Though early studies were not devoted to studying college student populations, these pivotal research outcomes were still foundational for university and college
administrators, faculty and staff to begin rethinking the importance of college student resilience and its implications for retention.

Resilience research in higher education began to take shape through academic attrition and retention research, which authors also referred to as persistence or hardiness (Boyer, 2005; Lifton et al., 2004; Tinto, 2006-2007). These are now more aptly termed academic or educational resilience (Morales, 2008). Academicians quickly noted through these studies that scholastic performance and resilience are intimately affected by a student’s personal and psychological beliefs about themselves, others and the world around them. As a result, a fuller understanding of personal and psychological resilience moved into focus for college student mental health practitioners (Banyard & Cantor, 2004; Emmons, 2007; Li, 2008; Parr, Montgomery, & DeBell, 1998).

Rickinson (1997) showed that greater levels of anxiety lowered academic performance; she also found that by educating students with cognitive behavioral interventions as well as stress management techniques, undergraduate students levels of stress and anxiety were significantly reduced. Furthermore, Rickenson noted that all participating students in her study graduated. This research demonstrated beneficial results of utilizing resilience interventions to empower students to self-regulate their stress levels. Students coping skills improved thereby increasing a personal sense of resilience and ultimately motivation and persistence to graduate.

Steinhardt and Dolbier (2008) also investigated student coping skills. In their study, undergraduates who participated in a resilience education program geared to increase coping strategies and protective factors of optimism, positive affect, self-esteem and self-leadership showed increased resilience and coping strategies including
greater problem solving, positive affect, self-esteem, and self-leadership. The resilience education program also appeared to reduce depressive symptoms, negative affect, and perceived stress. It can be inferred from this study that students who were taught to cultivate protective factors and resilience strategies, had better academic performance, increased likelihood of graduation and successful future handling of stressful life situations.

Given the increased severity of mental health issues college students are bringing to campus, college counselors, educators and administrators would be prudent to find ways to empower students to identify protective traits, characteristics, and strengths within themselves. This strategy could provide motivation and inspiration to move students through challenges and obstacles one step at a time.

College Student Development Theory

Resilience and human development have been allied since the 1970s as researchers investigated the human capacity to adapt, persevere and overcome stress, hardship and conflictual surroundings (Masten & Obradovich, 2006). Early resilience research outcomes consistently implied the presence of an intrinsic human tendency for “self-righting”; a protective means for human development that rises above limitations of social class, ethnicity and geography (Bernard, 2007; Werner & Smith, 1992). Therefore, Masten (2001) surveyed resilience literature and concluded that resilience was not an unusual occurrence rather a shared fundamental agency of human adaptation or development.

According to Bernard (2007), after researching decades of resilience and human development, resilience studies have authenticated early theoretical models of human
psychosocial, cognitive, moral and spiritual development such as Erikson, Piaget, Kohlberg, Gilligan, and Fowler – theorists who support assumptions of inherent predisposition toward growth. Bernard ultimately concluded that the process of developing resilience is synonymous with the process of healthy human development (Bernard, 1991; 2007). These early models of human development were not specific to college student development, however, later theorists observed relevance to undergraduate students and applied these ideas to this population (Chickering & Reisser, 1993; Parks, 1986; Perry, 1981).

In higher education, professionals are encouraged and challenged to foster student development in various domains. The Council for the Advancement of Standards in Higher Education (CAS) (2008) lists developmental outcomes in six different categories including: knowledge, cognitive complexity, intrapersonal development, interpersonal competence, humanitarianism and civic engagement, and practical competence. These six domains appear to contain equivalents to 50 internal and external developmental assets or protective factors identified by Search Institute and Social Developmental Research Group researchers. Based on the foundational work of the Search Institute (1996); these assets or protective factors are considered vital contributors for empowering resilience, healthy young adult development and successful transition into adulthood (Benson et al., 2004).

According to the Search Institute (1996), the fewer assets young people possess, the higher probability, they will engage in risk-taking behaviors such as substance abuse and other antisocial behaviors. As higher education personnel endeavor to strengthen these protective factors associated with resilience, caring personal
relationships are formed, hence a greater likelihood that young people will make healthy and positive choices leading to student success (Bernard, 2004; Henderson, 2007b).

Students in higher education encounter a variety of complex issues within in these domains (Kitzrow, 2003; Landlow, 2006; McGrath, 2006). In order to understand students and the dilemmas they face, as well as to offer effective assistance in promoting their growth and development or resilience; knowledge of developmental theories specific to undergraduate students is invaluable (Evans, Forney, & Guido-DiBrito, 1998).

Among student development professionals there are several foundational theories which formulate a knowledge base helpful in understanding and explaining college student experience, predicting of possible future actions or choices, guiding interactions, programming, prevention and intervention decisions with students (McEwen, 2003). For purposes of this review, only two foundational theorist work will be considered for additional relevance to resilience and service-learning.

**Chickering**

Psychosocial theorist Arthur Chickering's (1969) seven vectors theory of development and later augmentations of his theory (Chickering & Reisser, 1993) seem to be most notable among student development professionals (Evans, 2003). Chickering’s initial work was most influenced by Erikson’s young adult sequential stages encompassing identity and intimacy. Chickering and Reisser vectors of development consist of seven developmental tasks (or vectors) summarized as “major highways for journeying toward individuation…and also toward communion with other individuals, groups…and global society” (Chickering & Reisser, 2003, p. 181). The seven vectors
include: developing competence, managing emotions, autonomy to interdependence, interpersonal relationships, establishing identity, developing purpose and developing integrity. In contrast to Erikson’s age-specific, sequential stages, Chickering and Riesser clearly assert the uniqueness of each student’s singular approach and resolution on their pathway to independence and interdependence (Chickering & Reisser, 1993).

Inspection of Chickering and Reissner’s (1993) vectors elucidates college student protective factors that promote resilience. Chickering’s seven vectors are key ingredients for promoting student success (Benson et al., 2004); particularly his first vector of developing competence or mastery in intellectual, physical, and manual skills. Masten & Obradovic (2006) research study affirms a positive correlation between resilience and competence. Students who ranked high in resilience measures, also ranked high in competence measures.

Participation in service-learning research also shows clear connections of positive growth in Chickering and Reisser seven vectors including: developing competence, Interpersonal, Interdependence, developing mature relationships, establishing identity and developing purpose (Astin & Sax, 1998; Astin, Vogelgesang, Ikeda, & Yee, 2000; Astin et al., 2006; Conway, Amel, & Gerwien, 2009; Eyler, Giles, & Braxton, 1997; Jones & Abes, 2004; Kronick, 2007; Stavrianopoulos, 2008).

**Perry**

Cognitive theories address intellectual development or how students make meaning of the information they receive (Evans, Forney, & Guido-DiBrito, 1998). William Perry’s intellectual scheme, an extensive theory of intellectual development was originally published in the late 1960’s but twenty years later revised to present a more
succinct conceptualization (Evans, Forney, & Guido-DiBrito, 1998). Perry built upon the foundation of Piaget and concentrated his studies on the college student population, thereby, building a bridge between child, adolescent and young adult cognitive development (Love & Guthrie, 1999). Perry outlined possible positions on nine continuums of intellectual development simplified by three overarching concepts: dualism, multiplicity, relativism.

The first of his positions, referred to as dualism, is characterized by dichotomous views of the world wherein authority figures should be omniscient and information is processed in either-or pictures. For example, conclusions are good or bad, and right or wrong and may lead to student resistance in receptivity to new ideas, cultures or ways of being. In the classroom setting, students adhere to their duty of information absorption while exhibiting little tolerance of uncertainty and expressing their need for structure and covert imperatives (Perry, 2003).

Multiplistic thinkers make up the second category of Perry’s scheme. Students in this domain still value absoluteness, but accept multiple views thus tolerating ambiguity. Authority figures are no longer omniscient and allowed to be uncertain because in the multiplistic perspectives exist. There is no right or wrong answer to be attained; all opinions expressed are accepted. These students advocate equality for all opinions and legitimacy of an opinion is established by the fact of personal ownership and expression. For example, students in a classroom discontinue inquiry of supporting evidence by concluding: “my opinion is right because I have it” (Perry, 2003, p. 477).

The third basic concept is relativism is in stark contrast to dualistic and multiplistic stages. Here, students have developed appreciation for opposing viewpoints
but acceptance and validity of an opinion depend on supporting evidence. Students become more engaged in learning, reflecting on possible conclusions. Students who share a relativistic perspective no longer see themselves as passive empty vessels to be filled but rather engaged active learners, choosing among researched alternatives, and responsible for their own education (Evans, Forney, & Guido-DiBrito, 1998; Perry, 2003).

Drawing on years of resilience and development literature, Bernard (1991b) categorized into four categories several personal strengths or protective factors that exemplified resilient students: social competence, problem solving, autonomy, and sense of purpose. For purposes of this cognitive section, only Bernard’s cognitive function category of problem solving will be highlighted. Her problem solving domain includes critical thinking skills, planning, flexibility, resourcefulness (Bernard, 2004). Problem solving also encompasses reasoning, decision making or metacognition skills. (Secretary’s Commission on Achieving Necessary Skills (SCANS) Report, US Department of Labor, 2002). Regardless of the synonym used for cognitive development; progressive intellectual growth is a trait of resilient students (Bernard, 2004).

Through examination of Bernard’s list, it is simple to see how students prone to dualistic thinking are generally low in protective factors such as flexibility to agree with, ponder and manipulate several alternate ideas. Flexibility is a vital life skill and according to Bernard one of the most named resources for successful life outcomes. Students who are unable to adapt to change are susceptible to increasing levels of stress and anxiety. Vital to college academic and student success is the development of
critical thinking skills and insight. Dualistic and even multiplistic thinkers are exempt from higher order thinking skills due to their focus on absolutes, thus insight for change is minimal. Insight allows students to make meaning of their adversity and instill hope, insight empowers students to move beyond their circumstances (away from victimhood) to hope and action toward change (Bernard, 2004).

Resilience traits, personal strengths, assets, protective factors are synonymous and can be employed to empower students to overcome life stressors, persevere through transition, learn, change and grow to new levels of functioning and development.

Resilience protective factors of intellectual development and service-learning are linked through several studies affirming consistent academic or cognitive gains on assessments. Service-learning demonstrates a shared history of showing positive correlations between participation in service-learning and positive cognitive and academic outcomes (Conway, Amel, & Gerwien, 2009; Eyler & Giles, 1999; Novak, Markey, & Allen, 2007; Strage 2000; Strage, 2004).

Service-Learning

Service-Learning Roots in Higher Education

Intentional education and engagement of college students for dynamic citizenship has been a banner of purpose of higher education since 1636 - the inception of Harvard, America’s oldest institution of post secondary learning. (Jacoby, 1996). According to Jacoby (1996), the timeline for service-learning in higher education began in 1862 when the American Land-Act was passed, thereby offering those involved in agriculture and industry the opportunity to experience service-learning with students.
Soon after, Woodrow Wilson, [eventual] president of Princeton University, espoused an attitude of service as preeminent in giving colleges and universities an honorable place in American society. Advocates of service-learning continued alliances between higher education and government initiatives such as the National Science Foundation, the GI Bill and the National Defense Education Act of 1958 (Boyer, 1994; Jacoby, 1996).

Service from college to community for social justice issues surfaced in the 1960s when President Kennedy introduced the Peace Corps. In 1965, service-learning was inherent in the creation of Volunteers in Service to America (VISTA) as college and graduate students comprised the majority of volunteers for these agencies. The National Center for Service-Learning was established in 1969 and shortly after combined offices with VISTA and the PeaceCorps to create a federal agency called ACTION. Just one of ACTION’s earlier projects included over 10,000 college students representing over 100 colleges (Jacoby, 1996).

The overwhelming interest in and enthusiasm for service-learning in the 1960s and 1970s soon waned due to tolerance of paternalistic attitudes, failure to effectively integrate service and learning in the classroom, and the existence of one-sided relationships within the service-learning interactions. Despite this down turn, however, service-learning advocates stayed connected and formed organizations where they assessed past programs, evaluated both positive and negative feedback, and exchanged ideas. Efforts of these supporters resulted in a new spark of enthusiasm for service-learning in the late 1980s (Kendall & Associates, 1990). The Education Commission of the States, in 1985, launched Campus Compact: Project for Public and Community Service (Jacoby, 1996). Today, Campus Compact remains in the forefront
of service-learning advocacy in higher education. It maintains a network of over 33 state offices and has published numerous research reports and contributions to the field of service-learning. Its membership includes over 1100 college and university presidents as well as 6 million students who volunteer to serve their communities (Campus Compact, 2007, 2009).

The precepts of service, social justice and civic engagement - educate a citizen and build a nation - have been foundations upon which higher education was built. Just as it began in 1636, it continues today; college and university mission statements still include not only teaching and research but also service (Boyer, 1994).

Definition

The term “service-learning” was first coined in 1967 through the work of Southern Regional Education Board members Robert Sigmon and William Ramsey. Since that time, advocates of service-learning have concentrated on formulating principles of good practice, while a universal definition remains untethered (Eyler & Giles, 1999; Sigmon 1990).

Solidifying a common definition for service-learning has been a challenge due to the numerous ideas and concepts associated with the two terms “service” and “learning” (Stanton, 1991). Service-learning has at one time or another been classified as a program, philosophy, experience and/or pedagogy (Jacoby, 1996). In fact, more than 200 definitions have been brought out in the literature over the course of the last 20 years (Stelljes, 2008).

According to Wilczenski and Coomey (2007), most educators utilize parameters set by the National and Community Service Act (Learn and Serve, 1990) in order to
assist with the understanding of service-learning. First, service-learning involves student participation in structured and coordinated service opportunities geared to meet needs within the community. Second, services are coordinated through the schools and structured time is integrated into the academic curriculum during which student’s may reflect on and process their experiences. Third, service-learning includes opportunity for students to acquire knowledge and skills, then apply them in real-life community situations. Finally, service-learning is a strategy which extends learning beyond the classroom and cultivates a sense of caring and civic responsibility (National and Community Service Act, 1990, p. 5).

In order to further conceptualize service-learning, Sigmon (1994) authored a typology with the following use of the terms “service” and “learning:” (1) “service-LEARNING” when learning objectives are accentuated; (2) “SERVICE-learning” when service is the goal; (3) “service learning” absence of a hyphen indicates independent service and learning objectives; (4) “SERVICE-LEARNING” when service and learning objectives are equivalent and interdependent (p. 2).

Based on these foregoing parameters then, service-learning can be essentially defined as a mode of experiential education within the curriculum where service and learning objectives are in tandem, students are engaged in meeting needs within the community and rotations of reflection and engagement are applied so that learning is optimized (Wilczenski & Coomey, 2007).

**Service-Learning Distinctives: Reflection and Reciprocity**

Literature elucidates two necessary components which effectively differentiate service-learning from volunteerism: reflection and reciprocity (Eyler & Giles, 1999;
Jacoby, 1996; Stavrianopoulos, 2008; Valerius & Hamilton, 2001; Wilczenski & Coomey, 2007). Volunteer programs found in higher education share goals with service-learning and are intended to benefit both student and community by nurturing attitudes of caring, compassion, multicultural awareness and appreciation. Yet, traditionally these programs do not involve: (1) time intentionally structured for reflection and communication about the student’s service experience, (2) the meaning derived from that experience, and (3) benefits of the service experience for both student and community partners. Service-learning educators take seriously this reflective and reciprocal component.

Reflection

Reflection is a bridge between service and learning (Hatcher & Bringle, 1997). Eyler and Giles (1999) creatively refer to the hyphen in the term service-learning as reflection, the “critical link between service and learning” (p. 4). The inclusion of reflection in service-learning is derived from the writings of educational philosopher John Dewey. Dewey’s philosophy and advocacy for experiential learning appears to be the integral work which inspired utilization and research of service-learning as an effective means of learning for students (Giles & Eyler, 1994; Giles, 1990; Jacoby, 1996). Dewey’s non-traditional perspective on experiential learning inspired educators to reconsider the concept of learning and how it occurs. Dewey insisted that personal experience was the conduit for meaningful learning and that contemplation of one’s experience strengthened learning as meaning was built from the interface of knowledge and experience (Dewey, 1959).

Robert Coles (1993) encouraged educators of all levels in higher education to
include more than simple service into a curriculum. Rather, learning is accelerated as students interact with other students, participate in self-examination, reflect, and openly discuss course materials and life applications. Cole concluded, “this is the purpose, after all, of colleges and universities – to help one generation after another grow intellectually and morally through study and self-scrutiny such study can prompt” (p. 148). Finally, reflection is listed as one of the five best practices and critical elements of service-learning (Jacoby, 1996, p. 31). Reflection is among the Federal government’s key accountability and evaluation requirements for funding a program designated as service-learning (National Community Service Act of 1990).

Reciprocity

Reciprocity is a second critical component characterizing service-learning (Jacoby, 1996). Effective service-learning involves collaborative and egalitarian relationships in which parties involved both contribute and receive benefits of the time spent together. Reciprocity stands in opposition to a one-way relationship where the recipient is a sole benefactor (Valerius & Hamilton, 2001). In service-learning, reciprocity invalidates a hierarchical perspective and purports inclusiveness, giving a voice to all participants. Mintz & Hesser (1996) and Kendall (1990), discussed the specific structure of service-learning as a symbiotic relationship where all involved, including staff, faculty and students are each in turn, learners, servers and teachers. Kendall (1990) further demonstrated that reciprocity in service-learning establishes shared respect and responsibility (p. 22). In the preamble of their foundational conference publication, Honnet and Poulsen (1989) summarized this reciprocal relationship by stating, “service for the common good…service combined with learning,
Service-Learning Benefits

Since the early 1990s, service-learning’s impact on college students has been widely researched through qualitative and quantitative means in order to measure various domains of college student development. Research has shown college student engagement, specifically service-learning, yields meaningful outcomes in student development for personal growth (self knowledge, identity, attitudes and values), spiritual growth (sense of purpose and meaning as well as personal belief systems), social awareness and engagement (multicultural awareness, sensitivity, activism), academic and cognitive gains (critical thinking skills, GPA) and career development (career decision making skills and choosing a service career).

Personal growth. Personal growth is paramount in college student development as students are deepening their sense of identity and purpose in the world. College students are seeking a place of belonging and significance while gaining understanding of their own attitudes, values and beliefs. Research has shown service-learning to be an effective tool for what Robert Kegan, calls “self-authorship” or “the ability to reflect upon one’s beliefs, organize one’s thoughts and feelings in context of, but separate from, the thoughts and feelings of others and literally making up one’s mind” (Baxter Magolda, 1999, p. 6). Literature abounds with studies advocating for service-learning as effective pedagogy for personal growth, self awareness and understanding, self efficacy, and a sense of belonging (Astin & Sax, 1998; Astin, Vogelgesang, Ikeda, & Yee, 2000; Jones & Abes, 2004; Jones & Hill, 2001; Stavrianopoulos, 2008; Strayhorn, 2008).
Social awareness and engagement. Data strongly supports positive outcomes with regard to service-learning’s impact on interpersonal growth and development of leadership potential in college students (Astin & Sax, 1998; Eyler & Giles, 1999; Strage, 2004; Strayhorn, 2008). Increased multicultural awareness, sensitivity and social activism are also stimulated by service-learning (Giles & Eyler, 1994; Moely, McFarland, Miron, Mercer, & Ilustre, 2002). Students who participated in service-learning venues in college reported a stronger commitment to civic engagement and serving their communities (Astin et al., 2006; Moley et al., 2002; Prentice, 2007; Sax & Astin, 1997).

Spiritual growth. Koth (2003) gave examples of the beneficial results of combining service-learning and spiritual growth. He defined spirituality as that which provides purpose, meaning and inspiration plus action to develop constructive relationships. Making a note of the general tendency to confuse spirituality and religious traditions, Koth differentiated this quest for deeper meaning, purpose and that which is “sacred” to an individual (p. 4) as “spiritual but not religious” (p. 4), and provided examples for institutions of higher education to incorporate into service-learning curriculum. Further investigation of research also demonstrates the impact of service-learning upon college student’s sense of purpose and meaning (Eyler & Giles, 1999; Jacoby, 1996). Spiritual growth encompasses a student’s belief system and provides purpose of work and career. Because colleges and universities exist to prepare students for their life’s work, institutions of higher education are increasingly adding to their curricula activities including reflection, introspection and practical experience such
as service-learning (Sikula & Sikula, 2005). These activities cultivate an environment
designed to deepen spiritual growth.

**Academic and cognitive gains.** Several studies showed service-learning
improved understanding of course material and promoted integration of educational
experience into real life situations. Research further showed improved critical thinking
skills, increased GPA, and enhanced learning outcomes, as well as greater course
(Berson & Younkin, 1998; Moely et al., 2002; Novak, Markey, & Allen, 2007;
Stavrianopoulos, 2008; Strage, 2000; Stelljes, 2007).

**Career development.** Examination of the positive effects of service-learning
impact on career development of college students demonstrates that engagement in
such a program provided relevant experience and skills necessary for wide range of
found that some students, albeit an exception in his study, not only changed majors but
also changed jobs and that those who did so found greater job satisfaction.

**Well-being.** Evidence substantiated that the act of helping others results in one
helping oneself. Luks (1991) offered a compiled list of various health benefits directly
resulting from participation in altruistic activities. Among these benefits were increased
likelihood of strengthening the immune system, reported decrease of felt physical pain,
release of emotions critical for good health (such as optimism, joy), decreased
incidence of negative attitudes (such as hostility) and reduction of stress (p. 82-83). In
corroboration with these findings, researchers Waite and Tatchell (2005) confirmed
modest health benefits for university students participating in service-learning.
Literature illustrated that service-learning utilized as a teaching tool, combined with structured opportunities for intentional reflection and reciprocity, appeared to produce consistently positive results in the lives of college students both individually and socially, augment individuals' college experience, and contribute to increased personal protective factors (i.e. sense of self confidence and efficacy, social awareness gains, academic and cognitive improvement, enriched purpose and meaning, enhanced direction for career pursuits) thereby positively contributing to college students’ resilience.
Although resilience research studies are numerous, resilience inquiries examining personal resilience in college students remain scarce. Resilience research in this population could provide further understanding of how student resilience is affected by educators’ efforts within student development. One program that appears to increase academic and personal protective factors, which boost resilience, is service-learning. To date, there appears to be one project (Monsour, 1999) so focused. Review of pertinent literature found no further studies investigating service-learning’s effect upon undergraduate college student resilience as measured by a resilience instrument.

In light of the paucity of study on the matter, this investigation sought to examine the effects of service-learning on college student resilience. A quasi-experimental study was conducted using a pre-test post-test design with a convenience sample of in a large public student-focused research university. Students were enrolled in eight undergraduate courses across three disciplines: counseling, social work and kinesiology. Each discipline offered one course with a service-learning component for the experimental group and one without a service-learning component for the control group.

This study compared differences between pre and post Connor Davidson Resilience Scale (CD-RISC) scores (Connor & Davidson, 2003) between service-learning group members and non service-learning group members. The methods and procedures section addresses the research question, research hypothesis, definition of
terms, participant selection, instrumentation, procedures, data collection and data analysis.

This study sought to answer the research question: Is college student resilience improved by participation in service-learning as measured by an increase on the total score of the Connor-Davidson Resilience Scale (CD-RISC)?

Research Hypothesis

Based on previous research which suggests that several protective factors, which strengthen resilience, are increased as a result of service-learning experiences; the following hypothesis was derived to answer the previous research question. From pre-test to post-test, college students who participate in service-learning experience will achieve an increase on the Connor-Davidson Resilience Scale (CD-RISC) total score when compared to students who do not participate in service-learning.

Definition of Terms

For purposes of this study the following terms are operationally defined:

Resilience: “the ability to bounce back, adapt, endure, persevere, and recover quickly from adversity. It can also be defined as a process of coping with adversity, change or opportunity in a manner which results in identification, fortification and enrichment of resilient qualities or protective factors (Bernard, 1991, Connor & Davidson, 2003, Richardson, 2002, p. 308; Steinhardt & Dolbier, 2008, p. 445; Zatura, 2009).

Service-learning: “a form of experiential education where learning occurs through cycles of action and reflection as students work with others in applying their [course content] knowledge to solve a community problem and, at the same time, reflect
upon their experiences to gain deeper understanding of complex issues for themselves” (Wilczenski & Coomey, 2007, p. 4.).

**Protective Factors:** “influences that modify, ameliorate, or alter a person’s response to some environmental hazard that possibly predisposes [them] to a maladaptive outcome” Rutter (1985, p. 600). Protective factors or influences can include circumstances, personality, traits, that appear to modify, and at times reverse, negative forces and outcomes and allow individuals to effectively navigate negative life stressors (Bernard, 1991).

**Factor:** Because this study utilizes both factor analysis and analysis of variance, it seemed important to note the difference between these definitions in order to avoid confusion. “In factor analysis use of the word ‘factor’ refers to a group or clump of related variables, (whereas), in analysis of variance techniques the word ‘factor’ refers to the independent variable” (Pallant, 2007, p.180).

**Participant Selection**

Human subjects approval from the University Internal Review Board was obtained before beginning this study. Students eligible for participation in this study had to be enrolled in the approved undergraduate courses of counseling, social work and kinesiology, have obtained university classification as undergraduate freshman, sophomore, junior or senior, and range in ages from 17-25. Participants in the study were recruited from the undergraduate population of a 36,000 student-focused, public research university located in the southwest part of the United States. Total undergraduate enrollment for the university was 28,000 students. Of the undergraduate students enrolled, 11% reported their ethnicity as African American; 5% Asian/Pacific
Islander; 49% Caucasian; 11% Hispanic; and .06% reported American Indian/Alaskan origins.

Ethnicity reported by participants included: 17.7% African American; 3.7% Asian American/Pacific Islander; 62.3% Caucasian; 11.6% Hispanic/Latino American; 2.8% Multiracial or Bi-racial American; 0.5% Native American; and with 1.4% reporting other ethnicity. No subjects were eliminated based on ethnicity. All participants were between the ages of 17-25. Table 1 describes the reported demographic variables of participants.

Table 1

*Demographic Information for Participating Undergraduate Students (N=210)*

<table>
<thead>
<tr>
<th>Service-Learning</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>79</td>
</tr>
<tr>
<td>Males</td>
<td>55</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>134</td>
</tr>
<tr>
<td><strong>Average Age</strong></td>
<td>21</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td>African American</td>
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</tr>
<tr>
<td>Asian / Pacific Islander</td>
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</tr>
<tr>
<td>Caucasian</td>
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</tr>
<tr>
<td>Hispanic / Latino</td>
<td>18</td>
</tr>
<tr>
<td>Multi or Bi-racial</td>
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</tbody>
</table>

*(table continues)*
Table 1 (continued).

<table>
<thead>
<tr>
<th></th>
<th>Service-Learning</th>
<th>NO Service-learning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ethnicity (cont’d)</strong></td>
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<td></td>
</tr>
<tr>
<td>Native American</td>
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<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>134</td>
<td>80</td>
</tr>
</tbody>
</table>

| **Educational Status**|                  |                     |
| Freshman              | 9                | 4                   |
| Sophomore             | 28               | 23                  |
| Junior                | 54               | 32                  |
| Senior                | 43               | 21                  |
| **Total**             | 134              | 80                  |

Other demographic variables sought in this study included: major, previous service-learning experience, lifetime volunteer experience number of events and hours, family income and religious preference.

The target sample size for this study was 60 students however, due to permission granted to recruit subjects from counseling, social work and kinesiology courses, the obtained sample size was 240 undergraduate students. According to Tabachnick and Fidell (2007) 200+ cases is considered a large sample (p. 80). Of the 240 students who agreed to participate, a total of 24 were excluded from final analysis because they exceeded age limit, and 2 were exempted because they did not meet the
requirement of undergraduate status. Therefore a total of 214 students participated in the pretest portion of the study.

Instrumentation

For quantitative measure of this study, the Connor-Davidson Resilience Scale (CD-RISC) (Conner & Davidson, 2003) was chosen as the primary instrument for data collection. The CD-RISC is a 25 item, 5-point Likert scale with rating responses including: 0 (not true at all), 1 (rarely true), 2 (sometimes true), 3 (often true) to 4 (true nearly all the time). The instrument measures levels of resilience or qualities that enable one to cope, adapt, bounce back and even thrive in adversity; qualities such as perseverance, tenacity, goal achievement, self-efficacy and competence, feelings of control and perception of meaning.

The CR-RISC yields a total resilience score from 1 to 100. A larger score indicates higher levels of resilience. This instrument was chosen because of it has been established as a well-validated measure of the resilience construct (Campbell-Sills & Stein, 2007) with sufficiently high reliability scores (Ahern, Kiehl, Sole, & Byers, 2006; Connor & Davidson, 2003; Khoshouei, 2009). CD-RISC total score analysis yielded internal consistency, Cronbach’s alpha of 0.89 and a test-retest reliability correlation coefficient of 0.87 (Connor & Davidson, 2003).

The CD-RISC has also been noted for strength in measuring levels of resilience in various populations and ethnicities. Brown (2008) examined African American resiliency and protective factors. Khoshouei (2009) evaluated CD-RISC with Iranian students and Yu & Zhang (2007) assessed the instrument’s factor structure among the Chinese population. Currently, the CD-RISC has been translated into 16 different
languages including: Afrikaans, Chinese, Dutch, Farsi, French, German, Hindi, Italian, Japanese, Kiswahili, Korean, Norwegian, Portuguese, Russian, Spanish and Turkish (Davidson & Conner, 2009).

The notability of the CD-RISC has been established and its properties continue to be researched and refined. Campbell-Sills and Stein (2007) applauded the instrument as exceptional for resilience measurement and discussed the instruments future value and pertinence as factor structure improvements produce a more coherent scale. In their analysis, Campbell-Sill and Stein found fluctuating factor structures and raised question regarding the factor analysis performed by original authors. Other authors have questioned CD-RISC underlying factor structure and obtained fewer structures than the original five factors (Khoshouei, 2009; Yu & Zhang, 2007).

The CD-RISC was normed utilizing a multi-study approach including six groups of individuals. First a group of adult participants drawn from random sample based on a general US population which Conner and Davidon (2003) and Davidson and Connor (2009) refer to as “non help-seeking” (Group 1, \( n = 577 \), mean score 80.7)); Group 2 labeled primary care outpatients (\( n = 139 \), mean score = 71.8); Group 3 included private practice psychiatric outpatients (\( n = 43 \); mean score = 68.0); Group 4 derived from generalized anxiety disorder (GAD) study participants (\( n = 25 \); mean score = 63.4); and finally two studies including clients with PTSD (group 5, \( n = 22 \); mean score = 47.8; Group 6, \( n = 22 \), mean score = 52.8) (Connor & Davidson, 2003, Davidson & Connor, 2009). Since the publication of the original scale, two other studies have utilized CD-RISC within American college and university setting and enrolled students (Campbell-Sills & Stein, 2007; Steinhardt & Dolbier, 2008).
Procedures

Human subjects approval from the university’s Internal Review Board (IRB) was sought and approved before this study began. Once IRB approval was granted, the researcher attended undergraduate classes to request student participation. Students were given a choice to participate and it was made clear that no penalty to course grade would result if they declined participation.

Service-learning was included within existing course curricula for these classes. In this study, the lengths of service experience were similar across the three disciplines. There was some disagreement in the literature on the amount of time needed for service-learning to be considered effective. Kaye (2004) suggests that a carefully planned service-learning project can have equal impact on students if they participate for one day or an entire semester. However, RMC Research Corporation (2008) and the National Service Learning Clearing House recently published *Standards and Indicators for Effective Service-Learning Practice* which included specific parameters of at least one semester of service-learning as associated with positive outcomes as evidenced in a study by Billig, Root and Jesse (2005). These authors studied duration of service-learning and found the longer the service time, the greater the impact on civic responsibility, meaningfulness of experience and subject of study.

Based on these criteria and literature supported encouragement for educators to consider a semester experience for students, the participants in this study, were required to spend 10 to 15 hours outside class time, or approximately one hour a week for a semester in order to complete their service-learning experience.

Logistics for service-learning experiences differed by discipline and were pre-
determined by the course instructor. Kinesiology students participated in a pre-determined structured practicum site, working among children with disabilities. During this experience, students were responsible for interviewing children, assessing, planning, and implementing lessons and activities to meet a child’s physical rehabilitation needs. Students were expected to keep reflective log entries of their experiences by including reflection on what they learned, relationship, pertinence and application of course materials, teamwork and benefits for themselves and individuals they were serving.

One study of service-learning found particular effectiveness as students were given options and allowed input into their choice of service-learning assignments and populations with whom they worked (Moely, Furco, & Reed, 2008). Accordingly, in this study, students enrolled in service-learning counseling and social work courses were given several options according to their preferences and were ultimately responsible for setting up their own service-learning experience.

Counseling students were also provided with a further choice to participate in a personal behavior change project or a service-learning project. Each project was similar in parameters and time expectations: (1) both were given opportunity to learn applicable class material, (2) both were expected to apply class content through investment either in personal change by overcoming a habit or personal change through investing in the lives of others, (3) both were expected to write reflection papers on their experiences and personal growth. In order to provide service options for students, the researcher obtained permission from the university’s volunteer center director to utilize the database containing over 300 university and local organizations who had at one time or
another partnered with the university to obtain volunteers.

Students who did not have previous knowledge of service-learning sites and opportunities were given researcher’s contact information. Students who inquired were asked the following questions: (1) what two populations are you most interested in working with? (2) What are personal or social justice issues that interest you? (3) What are your future career goals or interests? Based on these preferences, researcher matched students and organizations, gave students multiple options and contact information for each. Students were then required to contact sites and set up their service-learning experience according to criteria set forth in the syllabus. As the study progressed, only the counseling students participating in service-learning took initiative to contact the researcher to obtain a list of choices.

Though not an exhaustive list, examples of service-learning experiences included

- Reading to preschoolers, developing curriculum and application activities for this populations with the university literacy program
- Serving children and adults with disabilities through local equine therapy center
- Mentoring and tutoring elementary school children with local organization
- Visiting and assistance with group activities at local nursing homes
- Providing support and assistance in the home of families where a loved one is dying as volunteer with Hospice organization
- Volunteer intakes and office assistance for local government agency which provides services for ex-offenders released from prison
Participants were also required to record and submit reflective writings on service-learning experiences as a means to improve learning outcomes and deepen the meaning of service activities (Hatcher & Bringle, 1997). Course content in approved courses included basic people skills and helping skills, as well as skills specific to each discipline such as listening skills, conflict resolution, social justice issues and multicultural competencies. In the cycle of service-learning, student were provided with course content, then applied their knowledge in their service-learning assignments. Students then recorded their experiences through reflective writing activities and returned to class the following week to share their experience and process outcomes and implications through large or small group discussions and activities.

Data Collection

This study consisted of a quasi-experimental, pre-post-test control group design, utilizing a convenience sample of various sections of undergraduate courses including the three disciplines of counseling, social work, and kinesiology. For each discipline, one course offered a service-learning component within the syllabus and one course did not contain a service-learning element. Students who participated in service-learning (experimental group) and students who did not participate in service-learning (control group) were compared for differences in total score on the CD-RISC. There were two data collection points during this study.

The pre-test was administered during the second week of class to give professors and instructors time to go over course requirements and collect data before students began service-learning. Students who had given their consent to participate were provided written and oral instructions for completing the Connor-Davison...
Resilience Scale (CD-RISC) assessment and a demographics questionnaire. Post assessments were administered one week prior to final examinations to give students time to complete service-learning experiences as well as reflective writing assignments.

To ensure confidentiality of data collected, students were asked to provide the initials of their name and six digits of their birthday (MM/DD/YY). From these letters and numbers, random identification codes were assigned to each participant. Once assessments were completed and collected; they were secured in a locked area accessible only by the researcher. Data were entered into a statistics data base and analyzed by PASW version 18, formally called SPSS.

Data Analysis

As previously explained in the participant selection section, the study began with 240 participants. Of the 240 students who completed the CD-RISC pretests, 24 were excluded because they exceeded age limits, and 2 did not meet the requirement of undergraduate status. Thus, a total of 214 students met the requirements and participated in the pretest portion of the study. However, four participants did not fully complete pre-test items and were excluded from pretest data analysis, resulting in a final sample size of \( n = 210 \) divided into two groups: (1) experimental group of students who completed service-learning projects \( (n = 132) \); and (2) a control group of students who did not participate in a service-learning experience \( (n = 78) \).

Once the sample was obtained and groups formed, the researcher addressed discrepancies in the literature concerning the factor structure of the CD-RISC instrument employed. Literature showed reliability of the CD-RISC as strong and established convergent validity; yet, the factor structure of the five original subscales appeared to be
unstable (Campbell-Sills & Stein, 2007). Therefore, the author chose to conduct an exploratory factor analysis (EFA) to explore interrelationship of variables among the data set and to establish a more stable factor structure with which to measure the given population.

Steps for performing the factor analysis were taken from Keiffer (1999) and Pallant (2007). Before beginning the factor analysis from the pre-test data, participant data \((n = 210)\) were analyzed for variable descriptives including range, mean, standard deviation, skewness and kurtosis. Skewness and kurtosis for experimental and control groups were found in acceptable ranges which implied realistically normal distribution of the data. Table 2 in the results section displays findings from pre-test data descriptives. Second, acceptability of sample size was determined. For sample size to be considered appropriate for factor analysis, Keiffer’s (1999) suggested guideline is a ratio of 5:1 or five participants for each variable. The original CD-RISC instrument contained 25 variables. Therefore, a sample size of 125 was considered sufficient to move forward with the analysis. The obtained sample size of 214 produced an approximate ratio of 8:1; therefore, the sample size was deemed sufficient to confidently perform the factor analysis.

Third, according to Keiffer (1999), the extraction method for common variance must be identified. Both principal component analysis (PCA) and principle factors analysis (PFA) are possible tools for extraction. According to Gorsuch (1983) an increasing number of variables (approx 30) results in very little difference in interpretations of PCA and PFA. Therefore, when the researcher considered the sufficient number of variables in the CD-RISC instrument (25 variables), it was decided
to use PCA for the extraction method in this analysis. Orthogonal rotation was used in this analysis.

The fourth step Keiffer (1999) addressed was factor retention. According to factor analysis researchers (Henson & Roberts, 2006; Keiffer, 1999; Zwick, & Velicer, 1986) multiple decision rules should be used when choosing which factors to retain. Four tests were conducted including the Kaiser-Guttman rule (Eigenvalue>1); scree plot, parallel analysis and minimum average partial were also examined. Kaiser-Guttman rule (Eigenvalue>1) identified five factors for extraction. Both scree plot and parallel analysis implied the presence of 2-3 factors to retain, and finally a minimum average partial test suggested only 1 factor be retained.

According to Zwick and Velicer (1986), both parallel analysis and minimum average partial were identified as methods with the greatest accuracy when projecting retention of factors. Therefore, both parallel analysis and minimum average partial results were given preference when considering the number of factor structures to retain. Items were removed if low factor pattern coefficients or low communality (less than .350) were produced. After each item was removed, a new component analysis was performed resulting in total of eight separate analyses. Three factor structures were identified including a 1, 2, and 3 factor model. Aligning with the minimum average partial projection; the 1 factor model stood out as the most interpretable structure given the theory in the literature.

To test the data utilizing analysis of variance, the researcher was given a choice to use factor scores derived from the factor analysis or to use traditional sum scores. Briefly explained, factor scores take into account the regression equation produced by
the factor analysis. Each item is multiplied by the factor structure coefficient calculated for that item. It is important to note that only a one factor structure model, as in this study, is each item’s calculated coefficient equal to the communality (or variance explained in the item by all the factors - shared variance). Therefore, the item is multiplied by the coefficient, in this case equaling the communality, before it is added to the next item. For example, [i.e. (Item 24*.586) + (Item 23*.508) etc..] to calculate the final factor score (Grice, 2001). On the other hand, traditionally utilized sum scores, consist of each item multiplied by 1 [i.e. (Item 24*1) + (item 23*1) etc…]. As the author considered which score to use in analyzing the data, it appeared use of the factor score would produce a more concise and refined picture of the data. Therefore, factor scores were used to calculate all results. Results from the factor analysis are discussed in the results section.

Once the factor analysis was completed and final factor structure retained, a one way analysis of variance (ANOVA) was conducted on pre-test data in order to verify equality of the experimental and control groups. Statistical and practical significance of the data were determined by utilizing repeated measures analysis of variance (RM-ANOVA). A RM-ANOVA analyzed the effect of service-learning participation (experimental and control groups) and time (pre and post-test) upon the dependent measure or the total score of Connor-Davidson Resilience Scale.

Finally, according to Maddi and Khoshaba (1994) hardiness, synonymous with resilience, can be viewed as an index of mental health. Therefore, clinical relevance of resilience can be determined based on examined student gain scores.
CHAPTER 4
RESULTS

The goal of this study was to consider the impact of service-learning upon college student resilience, their capacity to endure, adapt and move forward through life stressors. Results of service-learning's impact on college student resilience data analysis are presented in this chapter in two main sections. First, results of the factor analysis which determined the model from which the data were analyzed and, second, results of the analysis of variance (ANOVA). Statistical and practical significance for experimental and control groups were addressed within the ANOVA section, and a final sub-section focuses on clinical significance found in the study.

Factor Analysis

A rotated component matrix (orthogonal rotation) of the original 25 item CD-RISC revealed five possible factor structures. Similar to the five structures founded by instrument authors Connor and Davidson (2003). However, one structure contained only two items which did not meet the guideline of at least three significant loadings for factor identification (Zwick & Velicer, 1986), therefore these items were not retained. One structure contained five items, two of which were cross-loaded and three of which contained unrelated themes thus these items were not retained. Over all, eight principle component analyses were performed and each time items were removed due to low (<.350) factor pattern structure coefficients. The final model consisted of 11 items across one factor explaining 47% of the variance within the items. Factor 1 was most saturated with Items 4, 5, 10, 11, 12, 14, 16, 17, 22, 23, and 24 and was named Resilience. Reliability estimates were calculated for this revised scale Cronbach’s alpha
( α=.884). Table 2 below outlines the factor pattern structure matrix rotated to varimax criterion. These items are abbreviations of the complete assessment items.

Table 2

*Factor Pattern Structure Coefficient*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Communality (h²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD-RISC4</td>
<td>Deal with whatever</td>
<td>.393</td>
</tr>
<tr>
<td>CD-RISC5</td>
<td>Past success helps</td>
<td>.395</td>
</tr>
<tr>
<td>CD-RISC10</td>
<td>Best efforts given</td>
<td>.411</td>
</tr>
<tr>
<td>CD-RISC11</td>
<td>Achieve goals</td>
<td>.507</td>
</tr>
<tr>
<td>CD-RISC12</td>
<td>Don't give up</td>
<td>.570</td>
</tr>
<tr>
<td>CD-RISC14</td>
<td>Stay focused</td>
<td>.427</td>
</tr>
<tr>
<td>CD-RISC16</td>
<td>Not discouraged easily</td>
<td>.457</td>
</tr>
<tr>
<td>CD-RISC17</td>
<td>See self as strong person</td>
<td>.498</td>
</tr>
<tr>
<td>CD-RISC22</td>
<td>Control</td>
<td>.410</td>
</tr>
<tr>
<td>CD-RISC23</td>
<td>Like challenges</td>
<td>.508</td>
</tr>
<tr>
<td>CD-RISC24</td>
<td>Achieve despite roadblocks</td>
<td>.586</td>
</tr>
</tbody>
</table>

Though not considered high, these commonalities did match Campbell-Sills and Stein (2007) CD-RISC communalities for a one factor structure instrument (.40 -.70) and the reliability of this data set was considered strong, therefore, it was concluded that the author would use only the total factor score on these items of the CD-RISC to represent a measure of resilience in this student population and to analyze the data.

Analysis of Variance (ANOVA)

*Pre-test Data*

To test for pre-existing group differences, a one-way analysis of variance (ANOVA) was conducted to compare experimental and control groups on pre-test CD-RISC scores. The following assumptions for one way between groups ANOVA were met: interval level of measurement, independence of observations, normal distribution and homogeneity of variance. The one way ANOVA for pre-test data yielded $F(1, 208) =$
17.10, \( p = .00 \), partial \( \eta^2 = .07 \). The results are displayed in Table 3. The data suggested a statistically significant difference preexisting in the groups (\( p = .05 \)) and the actual difference between the groups as a medium. The effect size calculated using eta squared, was .07. Cohen’s (1988) guidelines were used to interpret partial \( \eta^2 \) effect size: .01 = small, .06 = medium, and .14 = large.

Table 3

*One-way Analysis of Variance for Pre-Test Data*

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>( p )</th>
<th>( \eta^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Groups</strong></td>
<td>15.82</td>
<td>1</td>
<td>15.82</td>
<td>17.11</td>
<td>.000</td>
<td>.07</td>
</tr>
<tr>
<td><strong>Within Groups</strong></td>
<td>192.34</td>
<td>208</td>
<td>.92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>208.17</td>
<td>209</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The pre-test data descriptives of the experimental and control group are provided in Table 4 below. The experimental group who participated in service-learning (\( n = 132 \)) scored higher at pre-test than the control group who did not have a service-learning experience (\( n = 78 \)). However, it should be noted that since pre-existent group differences were present, results should be interpreted with caution.

Table 4

*Pre-Test Data Descriptives for Experimental and Control Groups.*

<table>
<thead>
<tr>
<th></th>
<th>( n )</th>
<th>Min.</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experiment</strong></td>
<td>132</td>
<td>-5.761</td>
<td>1.797</td>
<td>.171</td>
<td>.995</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>78</td>
<td>-2.784</td>
<td>1.797</td>
<td>-.396</td>
<td>.901</td>
</tr>
<tr>
<td><strong>ALL</strong></td>
<td>210</td>
<td>-5.761</td>
<td>1.797</td>
<td>-.039</td>
<td>.998</td>
</tr>
</tbody>
</table>
Pre and Post Data

Hypothesis: From pre-test to post-test, college students who participate in service-learning experience will achieve increase on the Connor-Davidson Resilience Scale (CD-RISC) total score when compared with student who do not participate in service-learning.

To address this hypothesis, a repeated measures analysis of variance (RM-ANOVA) was conducted to assess the effect of service-learning intervention (independent variable) on participant’s CD-RISC scores (dependent variable) across two time periods (pre-test, post-test) and two groups (experimental and control). The following assumptions for the repeated measures analysis of variance (RM-ANOVA) were met: interval level of measurement, independence of observations, normal distribution, homogeneity of variance and sphericity). It should be noted that the number of participants decreased for the post-test administration. Of the 210 students who turned in pre-test data, only 172 of those students were present during class and chose to participate in the post-test portion of the study.

The results showed no significant effects within-subject tests for service-leaning groups and time, Wilks lambda =.48, \( F(1, 17) =.997, p =.49 \), partial \( \eta^2=.00 \), indicating no statistically or practically significant changes in either group’s resilience scores pre to post. However, there were statistically significant difference (\( p =.00 \)) and moderate practical significance (\( \eta^2=.09 \)) effect between subjects, indicating differences between resilience scores for those who participated in service-learning and those who did not participate. Again, Cohen’s (1988) guidelines were used to interpret partial \( \eta^2 \) effect size: .01 = small, .06 = medium, and .14 = large. Results for the RM-ANOVA are presented in Table 5.
Table 5

Repeated Measures Anova: Within and Between Effects

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within</td>
<td>.118</td>
<td>1</td>
<td>.118</td>
<td>.485</td>
<td>.487</td>
<td>.00</td>
</tr>
<tr>
<td>Groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>27.24</td>
<td>1</td>
<td>27.24</td>
<td>17.11</td>
<td>.000</td>
<td>.09</td>
</tr>
<tr>
<td>Groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>208.17</td>
<td>209</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A summary of the mean differences between groups across time is reflected in Table 6.

Table 6

Effects of Service-Learning for Experimental and Control Groups Across Two Time Periods

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th></th>
<th>Post-test</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Mean</td>
<td>Std. Dev.</td>
<td>n</td>
</tr>
<tr>
<td>Experimental</td>
<td>118</td>
<td>.16</td>
<td>.99</td>
<td>118</td>
</tr>
<tr>
<td>Control</td>
<td>54</td>
<td>-.40</td>
<td>.89</td>
<td>54</td>
</tr>
<tr>
<td>Total</td>
<td>172</td>
<td>-.01</td>
<td>.99</td>
<td>172</td>
</tr>
</tbody>
</table>

Those who participated in service-learning scored higher on resilience from pre-test to post-test, although the difference is very small. It also appears those who did not participate in service-learning experiences declined in resilience scores from pre to post-test, though again the difference is slight. Figure 1 provides a graph for visual inspection of mean differences among experimental and control groups.
Since no significance was found between pre and post scores for each group were found, it was decided to assess for any possible differences among the disciplines of counseling, social work and kinesiology. An RM-ANOVA was conducted and yielded similar results for no statistical or practical significance within each discipline, Wilk’s lambda = .99, $F(2, 166) = .49, p = .61, \eta^2 = .006$. There was a small practical effect or difference among each group’s pre and post mean scores Wilk’s lambda = .98, $F(2, 166) = 1.96, \eta^2 = .02$. The mean differences among the disciplines for pre and post-test are shown below in Table 7.

Figure 1. Mean differences for experimental and control groups pre to post-test.
Table 7

*Mean Differences between Experimental and Control Groups for Disciplines*

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th></th>
<th>Post-test</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Mean</td>
<td>Std. Dev.</td>
<td>n</td>
</tr>
<tr>
<td>Counseling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>8</td>
<td>.46</td>
<td>1.04</td>
<td>8</td>
</tr>
<tr>
<td>Control</td>
<td>21</td>
<td>-.56</td>
<td>.79</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>-.11</td>
<td>1.83</td>
<td>29</td>
</tr>
<tr>
<td>Kinesiology</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>76</td>
<td>.20</td>
<td>1.04</td>
<td>76</td>
</tr>
<tr>
<td>Control</td>
<td>20</td>
<td>-.17</td>
<td>.87</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td>.03</td>
<td>1.90</td>
<td>96</td>
</tr>
<tr>
<td>Social Work</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>34</td>
<td>.01</td>
<td>.89</td>
<td>34</td>
</tr>
<tr>
<td>Control</td>
<td>13</td>
<td>-.49</td>
<td>1.06</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>-.48</td>
<td>1.95</td>
<td>47</td>
</tr>
</tbody>
</table>

Counseling students who participated in service-learning showed the greatest gain in resilience scores. For students who participated in service-learning, kinesiology showed the second greatest gain in scores and social work students showed a decline in scores from pre to post-test. Students who did not participate in service-learning seemed to start with lower resilience scores in all three disciplines. Among students who did not participate in service-learning, counseling and social work students showed gains in resilience scores, and kinesiology students showed a decline from pre to post-test scores. Figure 2 provides a visual illustration for the mean differences for the three disciplines pre to post-test.
A final unexpected difference was found in the demographic results pre to post which showed test mean differences regarding age and gender. Figure 3 below illustrates gender and age differences between pre and post-test data for those who participated in service-learning experiences. Based on these pre-test data in Figure 3, it appears the undergraduate men scored higher in resilience at younger ages than the female population. In the post-test data, the undergraduate women scored higher than the men along with a more gradual climb with age. Interestingly, both groups showed a decrease in resilience after age 24.
Clinical Significance

An intervention is said to have clinical significance if it can be shown to enhance the client’s quality of life (Kazdin, 1999). Researchers of clinical significance want to know if a treatment has helped the client in everyday life. In this study, to further examine service-learning and its impact on college student resilience individual student pre and post-test scores were examined for gains. Clinical significance was determined by calculating the number of college students participating in service-learning who showed improved resilience scores. Of the 118 students who participated in service-learning, 55%, or 66 students achieved an increase in their CD-RISC resilience score over the course of the study.
CHAPTER 5
DISCUSSION

This study originated from my experience teaching an interpersonal skills undergraduate counseling course. As part of a creative final examination experience, students were asked to choose one of five assignments to see how well they would integrate class learning once outside the classroom and in settings where interpersonal skills were required. Students were given three weeks to complete the assignments. Each assignment required the student to set up and initiate interactions where s/he would spend time focused on giving to or doing something on behalf of another person. Considering the service-based nature of the counseling profession and Millennial students’ desire to make a difference in the world around them; it was not surprising that students showed great excitement about completing the final. Yet, it was surprising to witness the highly positive anecdotal results students shared in classroom presentations and reflection papers.

Students shared authentic stories of psychosocial changes— not merely in the lives of those they served – but their own. Students: (a) shared perspective changes about realities of serving others and by extension, a renewed commitment to the service-oriented profession into which they were moving, (b) gained new understanding of their strengths and growth areas in relating to people, (c) reported increased protective factors related to resilience – self efficacy, competence, and purpose; (d) made career decisions, and (e) stated increased personal integration and understanding of course material and applications. Once students left the classroom, the question was pondered, “if students reported this much change for a three week
assignment, what could be accomplished in an entire semester?” This initial experience was the basis for this study, which investigated service-learning’s effect upon college student resilience.

Previous service-learning studies found that students who engage in service-learning demonstrated improvement in key protective factor areas such as: self efficacy (Astin & Sax, 1998; Astin, Vogelgesang, Ikeda, & Yee, 2000); cognitive and academic gains (Jameson, Clayton, & Bringle, 2008; Stavrianopoulos, 2008; Strage, 2000); social awareness and civic engagement (Eyler, & Giles, 1999; Strayhorn 2008). According to Bernard (2004) these phenomena make up key protective factors needed to increase student resilience.

In light of these studies and personal experience, it was hypothesized that participation in service-learning would increase college student resilience as measured by the Connor Davidson Resilience Scale (CD-RISC). This discussion section addresses four parts: (a) study outcomes and implications, (b) recommendations, and (c) limitations of current study.

Outcomes and Implications

Overall results of this study found that students who participated in service-learning, as well as those who did not participate in service-learning showed no statistical or practical difference in resilience scores from pre to post-test. Small to moderate differences between pre and post-test mean scores for each group were noted; however, because pre-test data analysis showed pre-existing group differences, it cannot be confidently inferred that service-learning was the primary change-agent for student’s resilience. Although, the study’s results did not support the directional
hypothesis or concur with previous findings regarding service-learning’s positive impact on protective factors which strengthen resilience; did produce unexpected results within mean differences between: (a) experimental and control groups, (b) the three disciplines, and (c) individual demographics for gender and age, and (d) gain scores. Implications of these unanticipated findings are discussed below.

*Differences among Experimental and Control Groups*

Examination of overall pre and post-test mean differences appeared to indicate that those who participated in service-learning showed some gain in resilience scores. Based on numerous studies regarding positive contributions of service-learning an outcome of strengthened resilience was expected. One might also expect resilience scores to be relatively unchanged for those who did not participate in a service-learning experience. Therefore, it was confounding to find that in all three disciplines, the control group scored moderately lower in resilience at pretest and showed an even greater decline in resilience scores at post-test.

The control group’s apparent lower resilience scores could be linked to differences in sample size, timing in administration of the pre-tests or some other factor. This finding could highlight the need for college counselors and professionals to be cognizant of specific weeks in the semester that might contain more stress for students and to watch for students during these seasons when they may underestimate their personal resilience strengths. Another possible implication of the pretest differences might be that students who choose service-learning courses or are planning service-based careers have greater resilience than those who choose courses without service-learning components. A future study could consider the relationship between such
variables might give further insight into factors of resilience for undergraduates pursuing degrees within the helping professions.

**Difference among Disciplines**

Closer examination of results among and between the three disciplines yielded interesting findings. For the experimental group, there were noticeable mean differences among and between counseling, kinesiology and social work students. Kinesiology students showed a decline in resilience scores. Social work students showed some gain and counseling students achieved the greatest increase in resilience scores.

Differences in the logistics of service-learning in each course may have contributed to this distinction. Kinesiology students were required to do service-learning as a part of their course grade. Student’s service-learning experience consisted of a pre-determined practicum assignment and population. Social work students were also required to do service-learning as a part of their course grade but students were given choices as to what they would do and the population with whom they would work. Counseling students’ service-learning experience differed from both kinesiology and social work in that they were given one further option to choose service-learning.

Counseling student were allowed to choose between a service-learning project or another semester project called a behavior change project. The behavioral change project focused on working on oneself to bring about change while the service-learning option focused on working with others to bring about constructive change. In this case, it seems to make sense that a student’s freedom of choice might be another contributor to strengthening resilience, or perhaps one attitude found in resilient individuals is a high value of serving others.
Some students reported that service-learning increased a sense of self efficacy, hardiness, tenacity, and fostered feelings of competence as implied by responses to CD-RISC questions, and some students indicated they did not experience change, suggesting that all students may not benefit from service-learning. This finding suggests that the students who achieved the greatest gains in resilience were the ones for whom service-learning was truly a choice. Students were not told they must participate. Rather, they were invited to participate. Perhaps there is wisdom in this finding, to consider the benefit of options for students. Educators might consider offering service-learning as one of several options that could accomplish the course objectives and provide a meaningful learning experiences for students. Moley, Furco, and Reed (2008) found similar results. In their study, students who were given preferences of assignments then matched to those preferences, showed more positive learning outcomes than those whose preferences were not matched.

Difference among Age and Gender

In this study both men and women students showed drops in resilience after the age of 24. Perhaps this is due to sample size of this age group in comparison, however, this finding may also indicate a need for resilience building interventions for non-traditional age undergraduate students. It was also noted that men showed higher resilience at younger ages in this study. Perhaps age and/or gender affects a student’s perception of their resilience -- an interesting possibility for future study. College student cognitive development may also aid in understanding to this finding. Perry (1968) and King and Kitchener (2004) suggested that higher levels of thinking enable students to
think critically about and thus respond to life situations with greater balance and open mindedness.

*Differences among Gain Scores*

Finally, the most encouraging finding in this study came from examining gain scores for those who participated in service-learning. An examination of gain scores revealed an increase in resilience scores for 55% of the students who participated in service-learning. It appears that change did take place for over half of the experimental group. Thus, although findings of this study were not significant or lacked power to document positive change in a qualitative world; the experience of the service-learning appears to have been a change-agent in the lives of students who participated and likely in the lives of those the students served. The change was noted by the increase in scores on item responses that implied greater self efficacy, achievement, tenacity and persistence – thus resilience.

Based on this study’s results, it was difficult to determine if differences or changes in resilience were due to service-learning experiences or a myriad of other possibilities such as: student differences, cultural differences, environmental attributes, other influences in student’s lives or the true construct measured by the one factor structure of the CD-RISC. Both service-learning and increasing resilience are important contributors to college student growth and development; at this juncture, it seems more information is needed to assess service-learning’s true impact on college student resilience.
Recommendations

Resilience has many qualities and many determinants and it still appears to be a powerful survival force in human nature. Zatura, Hall, & Murray (2008) concluded that better understanding of resilience distinctives and attributes are still needed. Perhaps future studies regarding service-learning and resilience will produce a better understanding of how service-learning impacts college student resilience. Based on the results of this study, the following are offered as recommendations for further study:

1. Conduct a replication study utilizing a mixed methods model to further investigate the true nature of change for students participating in service-learning as well as change for those who did not participate in service-learning.

2. Utilize other measurement instruments (i.e. stress scale, protective factors) to assess student’s psychological wellbeing before and after the study as well as investigating specific factors that increase or decrease student resilience.

3. Conduct a study utilizing different models of service-learning to determine if one or more models tend to strengthen resilience for students.

4. Conduct a study with multiple measurement points throughout the service-learning experience.

This study did not verify a substantial link between service-learning and resilience, however several studies have established positive correlations between participation in service-learning and improved academic and psychosocial well being (Astin, Vogelgesang, Ikeda, & Yee, 2000; Eyler, Giles, & Braxton, 1997; Jones & Abes,
Further recommendations for the integration of service-learning and resilience are as follows.

Service-learning appears to be a pedagogy that higher education professionals can endorse to help illuminate student strengths and build on existing ones. Faculty who choose to use service-learning as augmentation to classroom learning might be encouraged to give service-learning as an option rather than a requirement and to add questions to reflection paper assignments that could foster resilience in students. Questions such as: What personal strengths helped you in your experiences? How could those strengths help you in daily relationships and in challenges you face in life? How might those strengths help you in your future career choice? Faculty who are serious about fostering resilience might add a week of lectures regarding resilience helping students identify personal protective factors and asking them to identify the strengths in those whom they are serving.

Although service-learning is not something counselors can use with clients necessarily, the concept of helping others as a treatment strategy is not a new concept. Counselors themselves know the therapeutic aspect of helping others, college students, growing through adolescence into young adulthood can gain a wider worldview by reaching out to others. Helping clients identify personal strengths and empowering them to use those abilities to give back to others or the community around them increases resilience as well as fosters purpose and direction for students.

Limitations

The results of this study will add to the literature regarding college student resilience and perhaps provide new ideas regarding creative way to build college
student resilience. However, several limitations in this study should be taken into account. First, the findings indicated a pre-existent difference between groups, which could have impacted the results. The sample in this study was demographically homogeneous. More specifically, it was a convenience sample of undergraduate college students at one undergraduate institution. The institution of higher education where the study took place is considered diverse, but it cannot be said that its undergraduate population is equally representative. The majority of students identified themselves as Caucasian, Americans, who came from middle class social economic levels and held a Christian religious preference. Therefore, results cannot be generalized to children, adolescents under 16 years of age, adults over the age of 25 or those with other ethnicities, education levels, social economic backgrounds or religious preferences. The Connor-Davidson Resilience Scale (CD-RISC) presents possible bias limitations for this study. First, respondent veracity is an assumption in any self report modality. The CD-RISC is a self-report measure holding the potential to introduce bias thus influencing the accuracy of results. Additionally, the CD-RISC has no reverse scored items, which also introduces the possibility of bias within a study.

Regardless of these limitations, this study has contributed to literature in the separate fields of resilience, service-learning and college student development. The study has also added literature correlating college student resilience and service-learning, which to date, has been virtually non-existent and it has potential for contributing to continued efforts in studying properties of the CD-RISC instrument’s use in defining and measuring college student resilience.
APPENDIX

INFORMED CONSENT
Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, risks, and benefits of the study and how it will be conducted.

**Title of Study:** College Student Resilience: The Effects of Service-Learning

**Investigators:** Dr. Carolyn Kern, PhD, LPC, NCC (Principal Investigator)  
Carol Mercer, MA (Key Personnel)  
University of North Texas  
Department of Counseling, Development & Higher Education

**Purpose of the Study:**
You are being asked to participate in a study to investigate the effects of service-learning on college student resilience. Service-Learning involves opportunity for college students to take classroom learning and apply it to real world situations. Service-learning occurs through cycles of action or service within the local community setting and reflection or structured papers and discussions within the classroom setting. These service opportunities are geared to meet the needs of the local community. Examples are numerous and might include participation in building Habitat for Humanity house or reading to children at the local library. Resilience has been defined as an ability to cope with transition, change, or adversity. Resilience is an inherent trait in human beings and one that can be strengthened with new understanding of self and learned skills. It is the hope of the investigator that this study will confirm an effective intervention of fostering resilience in college students.

**Study Procedures:**
You will be asked to complete a demographic form, questions regarding some of your previous experience with service-learning. You will also be asked to complete a questionnaire in class before you begin your service-learning experience and following the conclusion of your service-learning experience. The questionnaire will take approximately 15-20 minutes of your time.

**Foreseeable Risks:**
As in any new situation, there is a possibility of physical, emotional or psychological risk involved in service-learning projects. You may encounter risks physically if you are participating in projects that require physical activity such as helping with construction of Habitat for Humanity house. UNT Health Center is available should a medical situations arise; appointments for medical attention may be made by calling 940-565-2333. Some individuals may experience a degree of emotional of psychological discomfort if the individual they are trying to help responds unexpectedly (i.e. individual you are helping appears frustrated instead of grateful); should this be the case, resources are available to help. First, your instructor, will be available to discuss your assignment and personal experiences, both the principal investigator and key personnel of this study will be available to discuss your needs, counseling services are available through UNT Counseling & Testing (students only; 940-565-2741) or the Counseling Program Counseling and Human Development Center (all individuals; 940-565-2970). Your decision whether or not to participate in the research portion of this study will have no bearing on your grade in this course. You are welcome to contact the principal investigator or key personnel (contact information below under Questions About the Study section) should you experience any concerns related to your participation in this study.

**Benefits to the Subjects or Others:**
Participating in this study will provide opportunity to real world application and experience of classroom learning. It may provide you with opportunities related to your vocation such as greater clarity of vocational choices, experience for resume, and possibly future references for resume and applications to future jobs.
Compensation for Participants
Students choosing to participate in this study will be offered opportunity to be entered in a drawing for one of eight $25.00 gift cards to your choice of one of the following: UNT Bookstore, Starbucks, Target, Panera, Chick-fil-a, McAllisters Deli, Wal-Mart, or Itunes. Your chances of winning a $25.00 gift card are 1 in 25. Drawings will be held at the end of April, immediately following the submission of the final questionnaire for all participants. Gift Cards will be delivered to winning students week before finals week. Students whose course does not contain a service-learning component will also be offered an interactive resilience presentation designed to increase personal and psychological resilience.

Procedures for Maintaining Confidentiality of Research Records:
Your participation in this study is confidential and anonymous. You will create a code number based on your birth date and initials. This code will be used so that we may match your questionnaire responses to each other while keeping survey responses anonymous. Your signed consent form will be kept separate from your survey responses, and these forms will be secured in a locked filing cabinet. Responses will be analyzed in group form only, and your name will never be stored in the results database.

Questions about the Study
If you have any questions about the study, you may contact Carol Mercer (Carol.Mercer@unt.edu) or Dr. Carolyn Kern (Carolyn.Kern@unt.edu).

Review for the Protection of Participants:
This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

Research Participants’ Rights:
Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

- Dr. Carolyn Kern or Carol Mercer or key personnel has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you must be at least 18 years of age to participate in this study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- You have been told you will receive a copy of this form.

________________________________________
Printed Name of Participant

________________________________________
Signature of Participant                        Date

For the Principal Investigator or Designee:
I certify that I have reviewed the contents of this form with the subject signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

________________________________________
Signature of Principal Investigator or Designee   Date
REFERENCES


