COLLEGE STUDENT LIFE STRESS AND
RESILIENCY IN RELATION TO WAYS OF THINKING
AND LEARNING

By

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Abstract: This research study investigated college student life stress, resiliency and attitudes toward thinking and learning situated within the theoretical framework of resilience viewed through a social ecological perspective (Ungar, 2011). This Social Ecological Conceptualization of Resilience examines the interactions of protective factors and risk factors within cultures and contexts affecting individuals and groups. The culture of the university and the context of the classroom have an ability to add to college student life stress. Investigating the impact of learners’ attitudes toward thinking and learning as connected or separate knowers could provide insight into the development of resiliency skills, lessening college student life stresses. This research study sought to discover if within the Social Ecological Conceptualization of Resilience, college students’ attitudes toward thinking and learning could moderate the anticipated relationship between stress and resiliency. One hundred fifty-seven complete data sets resulted from this study. Three quantitative instruments based on Likert-type scales along with four demographic questions were included in an online survey made available to students taking courses within the College of Education at Oklahoma State University. The quantitative instruments included the Attitudes Toward Thinking and Learning Survey (ATTLS), Student-life Stress Inventory (SSI) and How Resilient Are You? (HRAY) assessment. Multiple descriptive analyses, frequency distributions, and correlations, were employed on the data resulting in small statistically significant relationships between stress and resiliency and between resiliency and Ways of Knowing. However, the data failed to produce statistically significant results for Connected Knowing serving as a moderator between stress and resiliency and failed to produce statistically significant results for Separate Knowing serving as a moderator between stress and resiliency.
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CHAPTER I

INTRODUCTION

Seeking a college degree is a journey of learning and students face numerous challenges along this journey (Drake, 1991). Challenges faced by students include personal and academic stressors. Personal stresses involve daily frustrations and hassles, interpersonal relationships, lack of resources, and conflicts that can extensively impact a student’s well-being (Gadzella, 1991; Hamilton, 2006; Horsman, 2000; Lazarus, 1969; Selye, 1978). Combining an individual’s personal stress with the academic stressors of competition, deadlines, and overload of coursework can result in student life stress that impacts learning and ultimately the completion of a degree (Hamilton, 2006). Students’ reactions to stressors or their abilities to cope physiologically, emotionally, behaviorally, and cognitively can support or hinder their pursuit of learning goals (Gadzella, 1991; Hamilton, 2006; Horsman, 2000; Lazarus, 1966; Lazarus & Folkman, 1984; Selye, 1978). In addition, students’ attitudes toward thinking and learning may have an impact on their ability to achieve their academic goals (Galotti, 1998; Galotti, Clinchy, Ainsworth, Lavin & Mansfield, 1999; Galotti, Drebus, & Reimer, 2001; Horsman, 2000). Students who overcome obstacles, meet challenges and achieve their academic goals are said to be resilient in the face of adversity related to college student life stress (Siebert, 2005, 2010; Siebert & Karr, 2008; Wilks
& Spivey, 2010). The focus of the study was to describe college students’ life stress, and whether students’ attitudes toward thinking and learning had a moderating effect on their resiliency.

**Theoretical Framework**

Resiliency has been a topic of research for more than seven decades specific to the fields of psychology, psychiatry and physiology. As a concept, resilience is viewed on a continuum of success or adaptation (Tusaie & Dyer, 2004). Tusaie and Dyer (2004) explain the resilience literature is comprised of the psychological aspects of coping and the physiological aspects of stress.

Siebert (2005) defined resiliency as coping in a positive or functional way when faced with change, pressure, setbacks or adversities. Successful coping strategies can range from setting boundaries, exercising, and scheduling regular pleasurable activities, to learning to forgive and accept what cannot be changed, to seeking therapeutic and medication interventions from professional sources (American Association for Health Education, 2001; American Psychiatric Association DSM IV, 1994; Burge, 2009; Driver, 1979; Welle & Graf, 2011). Maladaptive behaviors would imply the opposite of successful coping (Garmezy, 1971, 1973). Siebert (2010) suggested that people can learn coping skills, and thus increase resiliency in the face of life stressors.

Resilience research has moved beyond the foundational dualistic view of coping and maladaptation, to understanding the broader concept of resilience by viewing the construct as (1) a process (Olsson, Bond, Burns, Vella-Brodrick, & Sawyer, 2003), (2) an outcome (Olsson et al., 2003; Vinson, 2002), (3) a set of traits in an individual (Jacelon, 1997), and (4) factors of cultural and contextual diversity (Liebenberg & Ungar, 2011; Marrs & Benton, 2009). As resilience research has sought to investigate individual protective factors, family protective factors and social protective factors, theoretical frameworks have expanded. Protective factors are thought to be personal or environmental assets that relate to or assist in positive adaptation under stressful or adverse circumstances or resources, individual or environmental, that minimize the impact of risk (Rutter, 2006). Individual protective factors include such characteristics in an individual’s personality as a
high intelligence quotient, courage, hope, and spiritual perspective formation (Winterowd, Harrist, Thompson, Worth, & Carozzi, 2005). Family protective factors involve family atmosphere, family support and family resources (Garmezy & Rutter, 1983). Social protective factors involve health resources and social integration into one’s community, and society (Eisenberg, Spinrad, & Morris, 2002).

For years, resiliency research has focused on psychopathology and special populations of at-risk groups such as children, adolescents, individuals living in poverty, persons with mental illnesses or those facing traumatic life stresses (Garmezy, 1971, 1973, 1987; Garmezy, Masten & Tellegen, 1984). The past few decades have witnessed an upsurge and expansion in resiliency research, as researchers sought to understand its implications in greater varieties of settings and populations (Kolar, 2011; Liebenberg & Ungar, 2009; Ungar, 2012). With the onset of positive psychology, interest has grown in the study of individuals or groups doing a particularly exceptional job of exhibiting successful coping strategies known as high-level resiliency skills (Siebert, 2005).

Four waves of resiliency research have been outlined in the literature (Kolar, 2011). The advancement of resilience research is generally credited to Garmezy (1971, 1973) who focused his studies on positive adaptation, growth and resistance under adverse circumstances. The first wave of resilience research was informed by Garmezy and his colleagues in their work “to identify the correlates and markers of good adaptation among young people expected to struggle because of their genetic or environmental risk” (Masten & Obradovic, 2006, p. 14). The research was focused on several specific assets of individuals or the protective factors thought to be associated with the atypical resilience they exhibited. The second wave of research in resilience focused on discovering the processes and mechanisms thought to account for resiliency behaviors in individuals coping well in the face of adversity (Liebenberg & Ungar, 2009; Masten & Obradovic, 2006). Liebenberg and Ungar (2009) as well as Masten and Obradovic (2006) agreed that the concepts represented by the first two waves of resilience research resulted in accurate descriptions of the resilience construct. Divergent views were taken on the third and fourth waves.
Masten and Obradovic (2006) defined the third wave of resilience research as the development of prevention, intervention and policy targeting the need for resilience among vulnerable groups (Kolar, 2011). Liebenberg and Ungar (2009) classified the third wave in respect to the investigation of resources, both internal and external, that contributed to resilience in individuals (Kolar, 2011). As Masten and Obradovic (2006) recognized the broader context of policy and intervention, Liebenberg and Ungar (2009) acknowledged the resources immediate to and within the individual.

Masten and Obradovic (2006) concluded that research within the fourth wave focused on individual differences and environmental risk levels or gradients describing the research literature as centered on differences in abilities, resources, environments, risks, and opportunities (Kolar, 2011). Liebenberg and Ungar (2009) identified the fourth wave resilience research as an extension of the third wave building upon the internal and external resources of individuals to include the culture and context that impacts individuals and their abilities to cope (Kolar, 2011). While these differences in perspectives related to the growing literature on resilience research represented only one aspect of varying views, it is important to note that it exposed two different attempts to integrate past conceptualizations of resilience for guiding future research.

**College Student Life Stress**

Stress is pervasive with personal stresses being part of everyday life and including daily frustrations and hassles, interpersonal relationships, lack of resources, and conflicts (Lazarus, 1966, 1969; Lazarus & Folkman, 1984; Selye, 1936, 1956, 1978). Although students identify academic stress as the number one issue facing them during their college years (American College Health Association, 2003; Hamilton, 2006), academic stress is only one component of the stressors that impact students’ ability to learn and successfully complete college. Personal stress involving frustrations, conflicts, pressures, changes, and self-imposed issues in combination with stress in the
college environment may result in stress levels that can impede learning and ultimately interfere with the completion of a degree. Stress in the college environment can be referred to as academic stressors and includes students’ perceptions of mastery of the extensive knowledge base needed for academic success (Carveth, Gesse, & Moss, 1996), students’ awareness of predictable times throughout the semester when stress increases due to studying for and taking exams and competing for grades (Lynch, 2008), and students’ perception of the large amount of content to be mastered in relatively short amounts of time (Abouerier, 1994; Archer & Lamnin, 1985; Britton & Tesser, 1991; Kohn & Frazer, 1986).

Stress in general has been defined as, “a negative emotional state occurring in response to events that are perceived as taxing or exceeding a person’s resources or ability to cope” (Hockenbury & Hockenbury, 2010, p. 541). Feldman (2012) defined stress as “a person’s response to events that are threatening or challenging” (p. 473). Both definitions indicate that whether or not one experiences stress in any given situation is dependent on their cognitive appraisal of the circumstance (Lazarus & Folkman, 1984; Storch, Gaab, & Kuttel, 2007; Tomaka, Blascovich, Kelsey, & Leitten, 1993). What may be minor to one may be major to another in the realm of stress, because of the resources seemingly available for addressing and handling the situation. If it seems one has the coping abilities and those coping efforts prove successful, the potentially stressful situation can decrease, and if not, the stress may appear to increase and perhaps last longer (Gadzella, Masten, & Stacks, 1998).

Stress can have both psychological and physiological effects. Psychological stress effects refer to stresses that evoke mental or emotional responses which can affect the domains of cognition and behavioral functioning. Physiological stress effects refer to stresses which pertain to a person’s bodily reactions that can affect organ functioning (Selye, 1975, 1978). The stress relationship of psychological stress and physiological stress, like any relationship, is reciprocal in that each has the ability to affect the other. Selye, an endocrinologist, with his 1936 text *A Syndrome Produced by*
Diverse Nocuous Agents and his 1956 text The Stress of Life was among the first to bring the concept of stress into public view. He later wished he had used the more accurate term strain instead of stress, but realized once the word had caught on there was no changing it. His famous quote expresses the pervasiveness of stress. He believed that no one was immune or totally exempt from stress, and that the only persons free from stress were those dead, stating that, “complete freedom from stress is death” (Costley, Santana-Melgoza, & Todd, 1991). Stress can range from mild to moderate to severe and even be debilitating or cause death (Murphy & Archer, 1996). Students’ ability to cope, or their reactions to stressors whether psychological, physiological, or a combination of the two, can support or hinder their learning pursuits.

Gadzella (1991) developed the Student-Life Stress Inventory (SSI) to assist individuals in identifying the differences in and the relationship between stressors and reactions to stressors. Stressors are defined as situations and circumstances that are viewed as taxing to the coping capabilities of an individual (Feldman, 2012; Gadzella, Fullwood, & Ginter, 1991; Hockenbury & Hockenbury, 2010). Reactions to stressors are defined as any voluntary or involuntary physiological, behavioral, emotional or psychological responses an individual exhibits when experiencing stress (Feldman, 2012; Gadzella et al., 1991; Hockenbury & Hockenbury, 2010). The accumulation of stress and reactions to stress can be exacerbated in the lives of college students due to the additional pressures and demands of the college environment (Goodman, Corcoran, Turner, Yuan, & Green, 1998). The world of the student is complicated by frustrations, conflicts, pressures, changes, and self-imposed stressors and when the college environment places further demands on students’ cognitive processing, these negative implications of student life stress can be compounded and result in a lack of learning (Horsman, 2000) and reduction in graduation rates (Hamaideh, 2011).

For this study, academic stress combined with issues faced in college students’ personal lives, identified as personal stresses or stressors, have been conceptualized as “student-life stress” (Gadzella, 1991). Hamaideh (2011) stated that the nature of the university environment, which is
continually changing, has the potential for causing students to experience high levels of stress. As increasing numbers of university students are experiencing physical and mental health issues (Hamilton, 2006; Hamaideh, 2011), it is reasonable to assume that these are due in part to increased college life stresses (American College Health Association, 2003).

**Adult Learning**

Learning is most often defined as a relatively permanent change in behavior due to past experiences (Feldman, 2012; Hockenbury & Hockenbury, 2010). Knowles (1970) identified the concept of learning during adulthood as andragogy. Utilizing adults’ lived experiences, Knowles (1970) revealed the importance of student-centered environments. He suggested that the most conducive environment to learning in adulthood contain and concentrate on student-centered principles rather than methodology-based practice focused on content delivery (Conti & Kolody, 1999; Merriam & Cafferrera, 1999; Merriam & Cunningham, 1993; Merriam, 1993, 2001). Core principles of andragogy necessitate that education for adults demonstrate responsiveness to learners’ need to know, self-concept, prior experiences, readiness to learn, orientation to learning, and motivation to learn (Conti & Fellenz, 1991; Knowles, Holton, & Swanson, 1998). Variations exist among adult learners in terms of situational and subject-matter arenas, and goals and purposes for learning. Individual learner differences also include all aspects of a learner’s background; motivations for learning; learning strategies and styles; learning needs, interests, and goals (Silberman & Auerbach, 1998). For this study, the researcher examined individual learner differences based on students’ attitudes toward thinking and learning (Galotti, et al., 1999).

Adult students’ attitudes toward thinking and learning were investigated through learner’s Ways of Knowing in respect to Separate Knowing (SK) and Connected Knowing (CK) (Clinchy, 1990; Galotti et al., 1999). These two types of knowing are within the category of procedural knowing. SK refers to learners who primarily engage in separating their personal beliefs and feelings
from the material shared in the learning environment (Belenky, Clinchy, Goldberger, & Tarule, 1997). Traditional environments in academia have often favored this type of disassociation of personal feelings and beliefs from learning. CK refers to learners who primarily appraise their learning experiences through their personal experiences and by empathizing with others (Galotti, et al., 1999). Insight for educators of adults as to the predominant learning attitudes their students possess, as connected or separate knowers, may facilitate their students’ learning and potentially affect students’ stress and resilience (Galotti, Drebus, & Reimer, 2001).

**Stress, Resiliency and Adult Learning**

Stress and adult learning have been the focus of numerous studies. Hamilton (2006) found that college life can be extremely stressful for students, for many internal and external reasons, and established both graduate and undergraduate students experienced a myriad of health-related difficulties as they sought to earn their degrees. Regardless of the health issues that affect students, Hamilton (2006) discovered that academic stress was identified as college students’ major impediment. The devastating effects of chronic stress on adult literacy learners was revealed by Horsman (2000) as having immense negative impact on learning. Chronic stress encompasses personal stress, academic stress, and national psychological stress.

As American citizens have faced horrendous man-made and natural disasters in the past two decades, psychologists have noted a national psychological stress. The presence of this stress is accentuated by the media and cannot be avoided by students as participants in society (Berger, 2008; Cullen, 2009; Hockenbury & Hockenbury, 2010; Feldman, 2012). Experiencing stress from many sources, college students have the potential for their learning, and success in college to be negatively impacted, unless they possess high resiliency skills or resiliency skill improvement assistance is provided.
Statement of the Problem

Multiple traumatic events are common in the course of individuals’ lives (Kessler, Sonnega, Bromet, Hughes & Nelson, 1995). Such events coupled with day to day pressures of a personal nature impact individuals’ responses to later events, making the effects of traumatic experiences cumulative (Follette, Ploysny, Bechtle, & Naugle, 1996; Goodman, Dutton, & Harris, 1997). This accumulation of stress and reactions to stress can be intensified in the lives of college students.

The world of the student is complicated by frustrations, conflicts, pressures, changes, and self-imposed stressors. These student-life stressors can manifest and result in reactions that may have negative implications for an individuals’ physiological, emotional, behavioral and cognitive well-being. In the college environment that places demands on students’ cognitive processing, these negative implications of student life stress can be further compounded and result in a lack of learning (Horsman, 2000). A problem exists in that the classroom environment is a social context that impacts learners academically and psychologically, specific to college student life stress. Student life stress in conjunction with college expectations can have a negative impact on learning as students pursue their degrees. Being aware of students’ ways of knowing may minimize the negative impact of the context on individuals by decreasing their stress, and increasing their resiliency to promote student success. The impact of these stressors on college students can be diminished for students possessing strong resiliency behaviors or those willing to learn resiliency and stress reduction skills (Siebert, 2005). Resiliency in college students has the potential for increased learning and increased graduation rates.

Purpose of the Study

The purpose of this study was to describe stressful life events experienced by college undergraduate and graduate students and whether their attitudes toward thinking and learning had a moderating effect on their perceived resilience. Extensive research on the concept of resiliency has sampled a variety of populations including but not limited to children and adolescents at risk, workforce populations, and adult survivors of abuse. However, a gap existed in the research literature
related to adult college students and the moderating effects of their learning attitudes on stress and resiliency. Through the use of research questions and hypotheses, this study investigated college student-life stress, resiliency and their ways of thinking and knowing to determine if Connected Knowing or Separate Knowing may have moderating effects on student-life stress and resiliency.

**Research Questions and Hypotheses**

The following research questions and hypotheses were used to guide the data collection and analysis of the data for this study (Gay, 1987, 1996; Merriam & Simpson, 1984). Because research questions usually guide descriptive studies, the use of research questions guided the exploration of the participants’ response patterns on the three instruments used in this study. Eight hypotheses were used to test the relationships within and among the students’ responses (Gay & Airasian, 2000).

**Research Questions:**

1. What stressors do college students experience?
2. How do college students react to stress?
3. How do participants score on a measure of resiliency?
4. What is the relationship between stress and resiliency?
5. How do participants score on a measure of Ways of Knowing?
6. What is the relationship between resiliency and Ways of Knowing?
7. How does Connected Knowing moderate the relationship between stress and resiliency?
8. How does Separate Knowing moderate the relationship between stress and resiliency?

**Hypotheses:**

The following hypotheses were used to explore the relationships among the variables for which data were collected in this study. The following are null hypotheses with their corresponding alternative hypotheses that were tested:

\[ H_{01} \quad \text{There is no significant relationship between student life stress and resiliency} \]
There is a significant relationship between student life stress and resiliency experienced by participants.

H₁  There is a significant relationship between student life stress and resiliency experienced by participants.

H₀₂  There is no significant relationship between resiliency and Ways of Knowing.

H₂  There is a significant relationship between resiliency and Ways of Knowing.

H₀₃  There is no significant moderation by the Ways of Knowing concept of Connected Knowing (CK) on the relationship between stress and resiliency.

H₃  There is a significant moderation by the Ways of Knowing concept of Connected Knowing (CK) on the relationship between stress and resiliency.

H₀₄  There is no significant moderation by the Ways of Knowing concept of Separate Knowing (SK) on the relationship between stress and resiliency.

H₄  There is a significant moderation by the Ways of Knowing concept of Separate Knowing (SK) on the relationship between stress and resiliency.

Significance of the Study

The findings of this study could have implications for adult learners in college classroom settings by opening dialogue regarding stress, reactions to stress, learning attitudes, and resilience (Bronfenbrenner, 2005; Brookfield, 1986; Knowles, 1989; Wenger, 2001). Dialogue centered on personal and academic stress can assist students in identifying stressors and provide support for their conscious assessment of their individual situations (Siebert & Karr, 2008). Similarly, examining the physiological, emotional, behavioral, and cognitive reactions to stress through conversation can assist college students in recognizing similarities of experiences amongst one another and promote an accepting and encouraging environment (Horsman, 2000). A discussion of learning attitudes can aid students’ self-reflection of their own attitudes and increase their awareness of their own as well as others’ perspectives, prior experiences, goals and needs in learning. Resilience, when shared through open dialogue in the college classroom, can highlight evidence of strength, perseverance, triumph
over adversity, determination and successes. Taken together, this study can serve as an impetus for students’ growth in their academic pursuits (Siebert & Karr, 2008).

**Limitations of the Study**

As data were collected by an electronic survey available to the College of Education at Oklahoma State University, demographics limited the generalizability of the results from the sample to other student populations. Additionally, as this was self-report survey research, issues of social desirability related to answer selection was a concern. Social desirability refers to a respondent’s wish to be viewed favorably by others and may result in an over-reporting of socially desirable responses and an under-reporting of socially undesirable responses. Specific to this survey, stressors and reactions to stressors were worded somewhat negatively and could have occurred more than what the respondents chose to report.

**Summary**

All people experience stress, and college student life stress is compounded by numerous factors related to student issues and the college environment. Resiliency exists in varying degrees among college students and can assist in decreasing the physiological, emotional, behavioral, and cognitive impact of stress if students possess or learn higher levels of resiliency skills. With the understanding of adult learners’ Ways of Knowing, the possibility exists to further decrease stress and increase resiliency in the lives of college students.
The purpose of this study was to describe stressful life events experienced by college undergraduate and graduate students taking course in the College of Education at Oklahoma State University and whether their attitudes toward thinking and learning had a moderating effect on their perceived resilience. Learning has been studied for many years and from many perspectives with an absence in the literature specific to college students’ life stresses and resilience. This chapter examines the historical development of resilience, resilience from a social ecological conceptualization, and education as an intervention to minimizing student life stress during college.

Resilience

Resilience is a process that negotiates the relationship between adversity and positive adaptation. Adversity can be defined as any stress, trauma, or difficult situations or circumstances an individual or group faces comprising life stresses (Masten, 1994). Stress can be defined as any event, situation or circumstance perceived by individuals to be beyond their abilities to cope or successfully overcome (Sinha, 2001). Positive adaptation can be defined in
terms of coping abilities and skills at avoiding or managing difficult situations, adversities or stresses (Luthar, D’Avanzo, & Hites, 2003). Resilience presents from the existence of the two components, adversity and positive adaptation.

Although resilience, under various terms and with numerous emphases in a variety of fields of interest, has been investigated for more than a century, the past 50 years have witnessed a concentrated effort and sense of urgency to comprehend, describe, and define the concept. The evolution of resilience research was interpreted by Kolar (2011) through the identification of decades of research that was termed waves of research. The various emphases of resilience research over the past five decades were succinctly defined in terms of waves based on the foci of the research, emergence of terminology, and the populations under study (Kolar, 2011). The four waves detailed research involving individual developmental psychopathology during the 1970s; individual regulatory systems and processes in the 1980s; prevention, intervention, and policy-making concentrated on vulnerable populations in the 1990s; and the examination of individual differences, environmental risk gradients, cultural and contextual settings, and access to external resources within society in the two decades of the new millennium (Kolar, 2011; Masten & Obradovic, 2006; Liebenberg & Unger, 2009).

The 1970s highlighted the concept of resilience by studying maladaptive behaviors in children and adults with schizophrenia. The research centered on the capacity of some individuals to adapt normatively in the presence of adverse mental health diagnoses. As behavioral scientists witnessed good adaptation in individuals thought to be incapable of demonstrating such resilience, a concentration on identifying and understanding the traits displayed in individual schizophrenics and at-risk children laid the foundation for future work in resilience (Garmezy, 1971; Zigler & Glick, 1986). Studying resilience from the perspective of an individual’s personality traits or coping styles, had limitations however. Conceiving some individuals as invulnerable, hardy, or resistant, was “antithetical to the human condition”
(Felsman & Vaillant, 1987, p. 304), and implied contemptuousness for those who were not resilient. Ryan (1971) examined this identification of resistant characteristics as blaming the victim, suggesting that those who failed to display such resistant characteristics were diseased or pathological. Risk factors, protective factors and potential assets emerged in the literature as potential descriptors to examine and explain such atypical development to individual maladaptation. Moving beyond the fixed nature of resilience, or what had often been described as resistance, the next decade of resilience research investigated the mechanisms and processes that could explain behaviors resulting in positive adaptation.

Research in the 1980s was characterized by efforts to uncover the mechanisms, regulatory systems and processes that accounted for the aforementioned protective factors or potential assets in resilient individuals (Kolar, 2011). Research delved into multiple adverse conditions including socioeconomic disadvantage, maltreatment, parental mental illness, community violence, catastrophic life events, and chronic illnesses to discover the protective factors or behaviors exhibited to create adaptive profiles (Kolar, 2011). These efforts were designed to discover personal qualities such as high intelligence, autonomy, or self-esteem that accounted for resilient behaviors in adverse conditions (Masten & Garmezy, 1985). Attention to the underlying mechanisms of resilience was essential in advancing theory and research into practical applications to assist those facing adversities (Cicchetti & Toth, 1991, 1992; Luthar, 1991; Rutter, 1987, 1990). As research continued, an acknowledgement that resilience could arise from factors internal and external to the individual began to emerge. This development of understanding evolved to include the study of internal factors specific to the attributes of children or individuals, as well as the external factors and aspects of their family circumstances, and characteristics in the wider scope of their social systems and environments (Bronfenbrenner, 1979; Masten & Garmezy, 1985; Smith, 1982; Werner & Smith, 1982, 1992).

The continuation of resilience research into the 1990s, or the third wave of resilience research, sought to understand and develop prevention and intervention methods to shape policy
development for the promotion of resilience among groups of vulnerable individuals (Kolar, 2011). The emphasis was on the development of the positive qualities and environments necessary to promote healthy emotional and behavioral responses to adverse situations in individuals and groups. This decade of research saw a shift in focus from simply studying the environmental, family or individual factors that were involved in the demonstration of resiliency, to increased interest in how certain factors may contribute to positive outcomes and how to develop programs to assist individual and societal needs (Cowen, 1994; Cowen, Work & Wyman, 1997; Luthar & Cushing, 1999). Such a focus on external intervention for the nurturing of resilience behaviors could be seen through the development of the Early Head Start Program in 1995. The program was designed to promote healthy parental outcomes for pregnant women in America; emphasize the growth, learning, and development of children from birth to age 3 years; and support healthy family functioning. This program was developed in complement to the Head Start program that had begun under President Lyndon Johnson in 1964. Another example of external intervention was the creation of Family Justice Centers in cities around the United States during the 1990’s for assisting individuals and family members facing issues as they sought to exit domestic violence situations.

With the turn of the 21st century, resilience researchers had embraced the understanding of resilience as a process- and outcome-based phenomenon and began examining resilience in terms of the dynamic interaction between risk and protective factors within the individual and within the environment (Liebenberg & Ungar, 2009; Olsson et al., 2003). In turn, researchers introduced contextual and cultural diversity to the framework of resilience in an effort to better conceptualize resilience on a broader scale. This contextualization of resilience assisted researchers in discovering the variable and interactive nature of internal and external factors and risks that ranged from individuals to social to societal levels. Egeland, Carlson and Sroufe (1993) noted that individual-environment interaction understanding was essential for examining the
dynamic relationship between risk and protective factors, and could be better understood in respect to individual-environment fluctuations based on an individual’s past and present experiences with society and in light of social support. Environmental risk gradients or the levels of risk associated with specific contexts of time, setting, and situations existed in varying degrees for each individual and fluctuated based on past, present, and future exposure (Evans & Kantrowitz, 2002). Ungar (2011) conceptualized this expanded resilience research as inclusive and representative of a social-context or social ecological understanding of previously omitted contexts and groups. Taken together, contextual or background understanding of individuals’ meaning-making, beliefs, values, and practices was essential for interpreting their communications and actions, as individuals have been influenced by and are thus a part of their experiences and practices (Masten & Obradovic, 2006). Visions for the future of resilience research included focusing on discursive, expansive, and conversational negotiations and culturally-specific interpretations by individuals and groups as they navigate and successfully or unsuccessfully adapt to their relative situations (Liebenberg & Ungar, 2009; Luther, Sawyar, & Brown, 2006).

Equipped with the broadened concept of resilience based on the evolution through all its decades of research, this study examined resilience in perspective to Ungar’s (2011) social ecological conceptualization. The social ecological conceptualization of resilience suggests that resilience cannot be separated from an individual’s context or culture as the constructed patterns or sets of values and practices of an individual were vital to shaping the process of resilient growth and adaptation (Ungar, 2005, 2011). Within each individual exists the potential to be resilient based on the individual’s biology and environment. The situations into which individuals are born, live and grow, as well as the coping abilities they have developed and the risks they have experienced contribute to their culture and context, and inevitably to their resilience (Siebert, 2005, 2010; Siebert & Karr, 2008).
Social Ecological Conceptualization of Resilience

In psychological and sociological terminology, social ecology refers to the interactions of human beings with their environments and is most universally associated with the work of Bronfenbrenner (Stokols, Lejano & Hipp, 2012). As resilience perspectives increasingly found their way into various fields for deeper understandings of the dynamics of social-ecological systems, its applications have been continually broadening from their beginnings in the realm of ecology. A current definition in the socio-ecological literature views resilience as a system’s capacity to absorb disturbance and have the capability to reorganize as change is occurring so that the organism is still able to retain the same essential functioning, structuring, identity and feedback (Walker & Meyers, 2004). Resiliency is about being persistent and robust to disturbance, upheaval, stress, change, challenges, and disruptions to a system’s operation, by either adapting, avoiding or reorganizing. This all involves learning, as learning is basically changing the mode of operating or behavior an individual has previously used to exist in an environment.

Bronfenbrenner’s (1979) conceptualization of the complex layers of environments and environmental influences through bi-directional and multi-dimensional interactions with individuals is referred to as the Social Ecological Theory of Development. Queralt (1996) explained this ecosystemic perspective as “a way of thinking and organizing knowledge that emphasized the interrelatedness and interdependency” between the natural social systems of family (Bronfenbrenner, 1986), organizations and groups, communities (Wenger, 2001), societies, global environments, and the individuals who live within them (p. 17). Human development, therefore, involves “a continuous process of adaptation and accommodation between individuals and their environment[s]” (Queralt, 1996, p. 17) encompassing their physical, social, cognitive, and cultural experiences. To investigate resilience within such contextualization, the terms context and culture must be operationalized.
Context and culture are intertwined and, in fact, inseparable from the being of an individual. Context is the situational experiences of time and environment of an individual at any given moment and culture is the set of beliefs, ideals, norms, standards, and social responses of an individual. Both, context and culture influence the cognitive, emotional, and behavioral reactions of an individual and are in turn impacted by the environmental response of their actions. This reciprocity of actions as informed by contextual and cultural ways of being has been used to guide research in social work and environmental study for the past century. It has only been within the past 20 years that resiliency has been studied with respect to this understanding. The social ecological conceptualization of resilience demonstrates the reciprocity of the individual and the environment, and emphasizes the cultural and contextual factors involved in the development of protective processes that increase resiliency.

Ungar (2011) framed this social ecological conceptualization by stressing the critical importance of environmental characteristics that are most facilitative of resilience, or capable of increasing protective factors, are those that allow for individuals, families, and communities to access, navigate, and employ resources. He suggested that the greater an individual's exposure to risk, the more potential for resilience when addressed in contextual terms that are culturally specific and nurtured both internally and externally to the individual (Ungar, 2011). The social ecological conceptualization of resilience as defined by Ungar (2012) was selected as the framework for this study, based on its recognition that individuals possess internal and external capabilities for overcoming stress, risk and adversity when addressed through contextual and cultural understanding.

Contextual and cultural responses to resilience require the acknowledgement of populations experiencing adversity to assist in defining the processes individuals, families and communities use to adapt, cope, or take advantage of resources or assets available when facing significant, acute or chronic stress, or their compounded effects (Luthar, Cicchetti, & Becker, 2000; Ungar, 2011). Understanding the bidirectional relationship of individuals and their
environments in combination with the accumulative impact of positive and adverse life events, supports the dynamic and fluctuating nature of resilience based on situational experiences and creates hope for discovering processes and methods to assist college students in increasing their personal resiliency skills (Bronfenbrenner, 1979; Siebert, 2005, 2010; Siebert & Karr, 2008). The multi-dimensional and multi-determined aspects of resilience, within a contextual and cultural understanding, lends credibility to the idea that the university classroom setting may have immeasurable potential for exploring and expanding protective capabilities within individuals (Walsh, 1998; Wenger, 2001).

The ecological balance of the many interacting systems in students’ lives is dynamic (Germain, 1991), with risk and protective factors within the classroom being under the control of the instructor to varying degrees (Horsman, 2000; Rutter, 1985). The social ecological conceptualization of resilience supports educators in establishing a classroom environment concerned with learner interaction and the introduction of protective factors (Walker, 2001). Through a concentrated effort to nurture protective factors in a risk-minimizing environment, educators have the capacity to impact the learners within their classrooms and reach a broader sphere of influence by way of a rippling effect throughout the students’ ecological systems. Werner and Smith (1992) have suggested that the right combination of protective factors received at any stage of life have the potential to outweigh the negative impacts created by exposure to multiple risk factors and can be cultivated through any relationship within the ecosystem, such as family, education, and social policies. Unger (2012) supports this finding and suggests that facilitative environments are more influential than individual-level variables to developing, strengthening and sustaining the processes associated with resilience.

Education and Stress

Stress and learning have been the focus of numerous studies and have revealed approaches to teaching and learning and overall understanding of stress. College can be an
extremely stressful time in a person’s life, whether it is due to societal expectations, self-imposed expectations, relationship-focused situations, faculty-induced phenomenon, or any combination of these and other factors (Hockenbury & Hockenbury, 2010; Ross, Neibling & Heckert, 1999). Hamilton (2006) found that graduate and undergraduate students identified back pain, depression, asthma, ear-nose-and-throat-related illnesses, repetitive stress injury, and anxiety disorder, as some of their top health challenges during their college career, with stress being identified as their major academic impediment. It is believed (Gadzella & Baloglu, 2001) that life experiences are important when one seeks to obtain realistic and accurate information on stress in individuals. Adults are more than the sum total of all the experiences they have had, but every experience a person goes through has the potential to make a profound effect on their development (Lincoln & Guba, 1985). Since stress can be cumulative throughout the lifespan, much depends upon the coping strategies individuals’ develop, and especially as they seek to learn.

Horsman (2000) in her book *Too Scared to Learn: Women, Violence and Education* recounted years of research on the devastating effects of chronic stress, violence and abuse on literacy learners throughout Canada. These accounts from interviews, discussions, observations, seminars and website interactions have clearly delineated how stress can negatively impact students and their learning. Horsman (2000) clearly stated, “Unless education at all levels acknowledges the violence in the lives of women and children, along with its impacts on learning, many students will not only fail to learn, but may also experience the educational setting as a silencing place or another site of violence, where they are controlled and diminished by institutional structures or classroom interactions and shamed by their failure to learn” (p. 7). Her extensive research involving countless literary learners, counselors, therapists, program directors, instructors and policy makers was motivated by her belief that an effort had “to begin to build a bridge between therapeutic and educational discourses to encourage greater exchange of knowledge between the two fields, and to contribute to the development of new discourses and practices that conceptualize the intersection between violence and learning (Horsman, 2000, p. 7).
Horsman sees reconceptualization as crucial because of the minimizing and pathologizing that have dominated previous understandings of learners’ problems due to stress and the vital necessity to recognize the need in its context for facilitating the development of educational practices that will enable learning for all (Anderson-Darling, McWey, Howard, & Olmstead, 2007; Claxton & Murrell, 1987; Harren, 1979; Lakeav, 2006, 2009; Leatherwood & O’Connell, 2003; Horsman, 2000).

It should be noted that stress and learning literature is now including the concept that as the United States embarks upon the second decade of the 21st century, there is a national psychological stress unifying citizens (Feldman, 2012; Hockenbury & Hockenbury, 2010). The shared experiences of horrific events such as the Murrah Federal Building bombing (1995); Columbine High School shootings (1999); “9/11” or September 11, 2001 when terrorists attacked the Twin Towers in New York City; and various other natural and man-made disasters faced by Americans have had specific and varying stress-filled effects on citizens, and have the potential to create new dimensions of stress for students in college classrooms (Berger, 2008; Cullen, 2009; Feldman, 2012; Hockenbury & Hockenbury, 2010). An understanding of this national psychological stress is a call to all educators to identify and respond to the signs of stress and abuse exhibited by students in classroom settings. Understanding how learning attitudes may be able to moderate resiliency can positively impact college students’ learning by decreasing the negative effects of stress. Creating learning environments that are enjoyable, psychologically safe, interactive, and inviting has the potential to promote the positive aspects of connected and separate knowing increasing students’ empathetic as well as critical thinking skills and opportunities for success (Csikszentmihaly, 2008; Piirto, 1999, 2002; Sternberg, 1990; Sternberg, Grigorenko, & Oh, 2001; Wenger, 2001). This study informs the research on resiliency specific to reducing student life stress through understanding students’ ways of knowing (Siebert & Karr, 2008; Sternberg, 1997; Sternberg & Grigorenko, 1997).
Education as Intervention

The field of learning during adulthood, identified by Knowles (1970) as andragogy is distinguished from pedagogy, or learning in childhood. Andragogy has been explored by practitioners in the social sciences for over a century (Knowles, 1989; Rogers, 1969). Andragogy has come to represent a large body of literature that conveys the importance of student-centeredness in adult learning environments (Knowles, 1989; Knowles et al., 1998; Merriam & Caffarella, 1999). Merriam (2001) elucidates the concept of adult learning as follows:

It is doubtful that a phenomenon as complex as adult learning will ever be explained by a single theory, model, or set of principles. In the first half of this century [1900s], psychologists took the lead in explaining learning behavior; from the 1960s onward, adult educators began formulating their own ideas about adult learning, and in particular, about how it might differ from learning in childhood. Both of these approaches are still operative. Where we are headed, it seems, is toward a multifaceted understanding of adult learning, reflecting the inherent richness and complexity of the phenomenon. (p. 1-2)

The concept that adults learn differently than children based on adults’ lived experiences has led to a focus on the learner, or learner-centeredness, as an alternative to the methodology-centered instructional design perspective (Feuer & Gerber, 1988). Core principles of andragogy require that education for adults be responsive to learners’ need to know, self-concept, prior experiences, readiness to learn, orientation to learning, and motivation to learn (Knowles et al., 1998). Figure 1 delineates these core principles at the center of the Andragogy in Practice model (see Figure 1). The model helps explain such variations as individual learner differences, situational and subject-matter differences, and goals and purposes for learning that include individual growth, societal growth, and institutional growth (Knowles et al., 1998).

Guaraci and Lieberman (2009) explain resiliency in the context of institutional growth in their article entitled “Sustaining Transformation: Resiliency in Hard Times.” They purport that universities and colleges have to chart their own course in remaining resilient, and that stasis is not an option. In efforts to maintain public trust and market competitiveness in this global cycle of recession, fiscal stress, scrutiny and demographic realignment that colleges and universities
currently face, they propose seven areas for resiliency each institution must individually investigate to remain viable. These include curriculum reforms, assessment, governance, finances, facilities, faculty vitality and community-based learning. If the institution is to remain resilient and competitive, there must also be demonstration to the public of sustained progress in scholarship and student learning, service, research, and financial viability. The concept of faculty vitality is of interest to this study if students are to experience increased learning through decreased stress and increased personal resilience in an institutionally resilient setting.

FIGURE 1

![Diagram of Andragogy in Practice](image-url)

Figure 1-1. Andragogy in practice (Knowles, Holton, and Swanson, 1998).
From the Andragogy in Practice model, this study focused on the adult learning principle identified as Prior Experience of the Learner, represented as #3 in Figure 1. Prior Experience of the Learner refers to the individual differences students present in the college classroom based on lived experiences. Such individual differences include the students’ backgrounds, learning styles, motivations, needs, interests, and goals related to learning (Silberman & Auerbach, 1998). Different learning styles have been an important topic for educational researchers for decades (Globerson & Zelnicker, 1989; Rayner & Riding, 1997; Riding, 1997, Sternberg & Grigorenko, 1997). The question has been “whether or not there exist stable, predictable, individual differences in the way people acquire, structure, or process information, and approach or perform different learning or problem-solving tasks.” Clinchy and her team of researchers (1990) worked to address the question of predictable differences within individuals’ nature of knowing in their development of Women’s Ways of Knowing. Although geared toward the adult female learner, Women’s Ways of Knowing provided the foundation for the work of Galotti et al. (1999) in developing Ways of Thinking and Knowing.

Related to andragogy, Women’s Ways of Knowing (Belenky, Clinchy, Goldberger & Tarule, 1997) can be extended to include the larger population of adult learners. Assumed within the Ways of Knowing construct, adult learners possess and use methods to make sense of multiple sources of information that exist within them (prior experiences) and beyond them (new learning) (Clinchy, 1990; Galotti, Kozberg, & Farmer, 1991). As informed by prior experiences in relation to new learning, these methods can positively or negatively impact individuals’ perceptions of self and their learning (Globerson & Zelnicker, 1989; Horsman, 2000; Maehl, 2000; Pintrich & Garcia, 1994; Ryan, Kuhl, & Deci, 1997). The impact of negativity on self can intensify individuals’ perceived relationship with the world and hinder their pursuit of learning; whereas, a positive impact on self in relation to learning has the potential to increase learning and individuals’ perceived relationship with the world (Eisenberg, Spinrad, & Morris, 2002; Horsman, 2000).
Ways of Thinking and Knowing dichotomized learners’ intentions, approaches and performance specific to acquiring knowledge. These approaches were identified as separate knowing and connected knowing. Separate knowing has been defined by Clinchy (1990) as being objective and analytical, involving critical thinking and encompassing a detached evaluation of an issue. “Separate knowers attempt to ‘rigorously exclude’ their own feelings and beliefs when evaluating a proposal or idea” (Belenky et al., 1997, p. 111). Clinchy (1990) defined connected knowing as subjective and empathetic, involving relational goals of seeking alliance with others and seeking to understand multiple perspectives.

Analyzing adult learners’ ways of thinking and knowing may serve to explain the variations in college students’ successes when faced with life stress. Understanding students’ intentions, approaches and actions toward learning could impact the stress and resiliency students’ experience in their educational careers. For the purposes of this study, the researcher focused on examining learners’ individual differences specific to ways of thinking and learning. Separate Knowing (SK) and Connected Knowing (CK) refer to learners’ methods of interaction with multiple sources of knowledge based on their epistemological assumptions of self and relationship to the world (Clinchy, 1990; Galotti et al., 1999). SK refers to learners who primarily engage in critical analysis and separate their personal beliefs and feelings from shared content within the learning environment. CK refers to learners who predominantly evaluate learning involvements through their personal experiences and through empathizing with others within the context of the learning environment (Galotti et al, 1999). For the connected knower, the relevance of context in the development of knowledge is based on the fundamental value of learners’ experience within a CK-oriented setting.

Understanding adult students’ learning attitudes, as to whether their ways of thinking and learning classify them as connected or separate knowers, can provide insight for educators working with adult populations. The different cognitive and learning styles of connected and separate knowers can potentially influence learners’ successes and failures within the college
classroom (Galotti, Drebus, & Reimer, 2001). As stress is accumulating and resiliency skills are being developed from a lifetime of experiences, so are students’ ways of knowing in relation to their attitudes toward thinking and learning (Erikson, 1982; Gardner, 1997, 2010; Goleman, 1995; Kogan, 1983; Luthar & Cushing, 1999; Struthers, Perry, & Menec, 2000).

Viewing the college classroom environment in terms of the social ecological conceptualization of resilience presents an opportunity for the needs of adult learners to be met. Reviewing Knowles’ core concepts of adult learners provides direction when combining college student life stress, learning, and resiliency in the social contextual and cultural setting of the college classroom. There are six basic core principles of adult learning (Knowles et al, 1998). These include learners’ need to know, self-concept, prior experiences, readiness to learn, orientation to learning, and motivation to learn. Learners’ need to know is specific to identifying the why, what, and how the learning relates to their personal lives. The development of the learners’ self-concept requires a degree of autonomy and self-directedness in their own learning (Merriam, 2001). This would suggest an opportunity for adult learners to make decisions or have control over topics of discussion, projects, or presentations. The core principle of capitalizing on learners’ prior experiences assists them in viewing their experiences as sources of knowledge and resources to be drawn upon. Extending the concept of prior experiences, the learner’s readiness to learn is dependent on how learning is related to their lives and how the tasks at hand complement their schema. Making learning relevant and meaningful to the adult learner may be enhanced in an environment that is problem-oriented and supportive of learners as individuals with their own orientation to learning. Meeting these first five basic principles of adult learning naturally supports the sixth principle of motivation. When learning is meaningful, relevant and responsive to the individual, it holds an intrinsic value to the learner resulting in academic participation that is rewarding and worthwhile. Wenger’s (2001) text Communities of Practice: Learning, Meaning, and Identity situates the core values of andragogy within the culture and context of the classroom, succinctly defining the method of meeting adult learners’ needs as
communities of practice. Communities of practice can be interpreted as learning environments that have the potential to introduce or nurture protective factors in a risk-minimizing environment for college students.

Adult students’ needs can be met through the understanding and intermingling of adult learning concepts with the social ecological conceptualization and contextualization of the classroom. Wenger’s concepts concerning the importance of active participation by the learner demands that instructors create communities of practice and focus on “participation [as it] has broad implications for what it takes to understand and support learning” (p. 7). Participation is fostered as individuals are able to make meaning from the content, engage in and participate through discussions, and be an active part of the community in which they are learning and become transformative learners whose lives are changed because of the learning experience (Valde & Kornetsky, 2002). This inclusive connectedness complements the six core principles of andragogy and is foundational to acknowledging students’ stresses and abilities to cope as they pursue their college degree.

As classrooms function with respect to communities of practice, recognition of students’ attitudes towards thinking and learning becomes paramount in facilitating discussions. If educators have an understanding of the two types of learners, separate and connected, the environments created in the classroom can be inclusive of the positive attributes inherent in each type and skillfully blend the two. Whereas, traditional academic environments have been predominantly content-driven, educators who understand and value the inclusion of students’ ways of knowing may be able to offer their students content enriched by discussion, shared experiences, critical thinking, empathy, and coping abilities. Students’ identities are “rich and complex [when] they are produced within the rich and complex set of relations of practice” known as communities of practice (Wenger, 2001, p. 162).

The three levels of protective factors in this context and culture of classroom could be viewed as the student interacting on the individual-, the social- and societal-level. The
individual-level protective factors may include the unique personality characteristics, prior knowledge, skills, abilities and talents each student brings to the learning experience. The social-level protective factors may include the support and networking of peers, inside and outside of the classroom, as students bond through shared experiences and create networks of social support with classmates. The societal-level factors may include the community, school, cultural norms, and institutional supports, and can positively benefit the learner by providing an awareness of what the university or college offers students by way of supports such as financial aid or counseling. These three levels of protective factors in life have classroom applicability, because they are interactional in nature and representative of the diverse influences students bring to contribute. The environment created in each community of practice within the college setting can potentially limit or contribute to individual students’ cognitive processes and abilities to be resilient. If students feel welcome and relaxed, as opposed to stressed, when they enter classrooms, their potential for learning increases, as do their critical thinking skills and possible opportunities for college and lifetime success (Csikszentmihaly, 2008; Piirto, 1999, 2002; Sternberg, 1990; Sternberg & Grigorenko, 1997). This study was designed to investigate students’ ways of knowing as possible moderators to increase the resiliency and reduce the stress students in college experience.

Summary
This chapter examined the historical development of resilience, resilience from a social ecological conceptualization, and education as an intervention to minimizing student life stress during college. Resilience research over the past 50 years was defined in terms of waves to represent the ebb and flow of ideas and terminology (Kolar, 2011). The four waves included individual developmental psychopathology; individual regulatory systems and processes; prevention, intervention, and policy-making; and cultural and contextual settings within society (Kolar, 2011; Masten & Obradovic, 2006; Liebenberg & Unger, 2009). The social ecological
conceptualization of resilience builds on the fourth wave of cultural and contextual settings and demonstrates the reciprocity of the individual and the environment.

With resilience framed as a social ecological conceptualization, the critical role of the classroom as an environment capable of facilitating protective factors was viewed through the lens of andragogy (Gailbraith, 2004: Knowles et al, 1998). Andragogy outlined the principles of adult learning and communicated the importance of student-centeredness in college learning environments. Acknowledging learners’ attitudes toward thinking and learning and facilitating these attitudes within student-centered learning environments or communities of practice, may positively increase students’ resilience. This literature review provided the foundation for the examination of student-life stresses and resilience in relation to students’ attitudes toward thinking and learning. It examined whether the two attitudes toward thinking and learning, termed as Connected Knowers or Separate Knowers, moderated the relationship between stress and resilience in college students.
CHAPTER III

METHODOLOGY

This chapter provides an overview of the methods used in this study. It addresses recruitment and participation of college students, data collection and analysis procedures, and the individual instruments that composed the survey. The survey consisted of five instruments and seven demographic questions, although only data from three of the instruments and four demographic questions were utilized to answer the research questions. This quantitative study used regression techniques to identify the moderating effect of two learning attitudes on the relationship between student life stress and resiliency.

Participants

Participants in this study consisted of students in the College of Education from Oklahoma State University pursuing graduate and undergraduate degrees. Letters for instructors to read in their classes or post online, as well as flyers hung throughout the building where the college is housed, were used to solicit participation after IRB approval was granted (Appendix A). The website containing the approved study was posted on a data collection website available to College of
Education instructors and students. This data collection website referred to as Sona Systems, is a system established within the college to promote research and research participation. It is managed by a site director and adheres to IRB policies. This website provides opportunities for participants to earn course credit and for researchers’ access to a sample of university students taking courses within the college of Education at Oklahoma State University ranging from freshman to graduate student levels.

For their participation in this study, students received one research hour of credit, as completing the survey was anticipated to take students up to one hour online. The research participation management website, Sona Systems, was chosen as an IRB-approved way to protect the privacy of the participants and provide a link to students where the data collection website hosting the survey could be found.

Approval was received from the Institutional Review Board (IRB) on February 20, 2011, prior to the study being linked to the College of Education’s Sona System. All participants were treated in accordance with IRB guidelines and data collection spanned three semesters, March 1, 2011 to November 3, 2011. Upon participation in this study students were provided a brief description of the purpose of the study, a participation agreement, and a consent form that explained the study and their rights as participants.

There were 239 individuals who participated in the survey, yielding a complete data set with 157 participants. Participant demographics are represented in Tables 1 to 4. Table 1 displays participants’ genders, with 75.8 percent of the participants identifying themselves as female, and 24.2 percent identifying themselves as male.
Table 1

*Distribution of Respondents’ Gender*

<table>
<thead>
<tr>
<th>Gender</th>
<th>$f$</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>119</td>
<td>75.80</td>
</tr>
<tr>
<td>Male</td>
<td>38</td>
<td>24.20</td>
</tr>
<tr>
<td>Total</td>
<td>157</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 2 shows that the participants’ ages ranged from 18 years to 51 years ($M=22$). Slightly more than 76 percent of the respondents identified themselves as being between the ages of 18 to 23 years. The remaining 24.5 percent of the respondents identified themselves as being 24 to 29 years of age (16.3%) and 7.7 percent of the respondents identified their ages as over 30. Data regarding age was not available for ten respondents. This sample is typical for research completed at a university.

Table 2

*Distribution of Respondents’ Current Age*

<table>
<thead>
<tr>
<th>Age</th>
<th>$f$</th>
<th>%</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-23</td>
<td>112</td>
<td>71.40</td>
<td>76.20</td>
</tr>
<tr>
<td>24-29</td>
<td>24</td>
<td>15.30</td>
<td>16.40</td>
</tr>
<tr>
<td>30-51</td>
<td>11</td>
<td>10.90</td>
<td>7.70</td>
</tr>
<tr>
<td>Total</td>
<td>147</td>
<td>93.60</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>10</td>
<td>6.40</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>157</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>

The educational status of participants, listed in Table 3, displayed that 21 respondents identified themselves as freshman, 18 as sophomores, 35 as juniors, 37 as seniors and 44 as graduate students. Information was not available on 2 of the respondents. The distribution is smaller for freshman and sophomores, with a larger number of respondents self-identifying as
junior, seniors, and graduate students. This is typical for university students as they become more acclimated in their later college years and are more aware and participatory in research studies.

Table 3

Distribution of Respondents’ by Year in College

<table>
<thead>
<tr>
<th>Year in College</th>
<th>f</th>
<th>%</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>21</td>
<td>13.40</td>
<td>13.50</td>
</tr>
<tr>
<td>Sophomore</td>
<td>18</td>
<td>11.50</td>
<td>11.60</td>
</tr>
<tr>
<td>Junior</td>
<td>35</td>
<td>22.30</td>
<td>22.60</td>
</tr>
<tr>
<td>Senior</td>
<td>37</td>
<td>23.60</td>
<td>23.90</td>
</tr>
<tr>
<td>Graduate</td>
<td>44</td>
<td>28.00</td>
<td>28.40</td>
</tr>
<tr>
<td>Total</td>
<td>155</td>
<td>98.70</td>
<td>100.00</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>1.30</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>157</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>

Table 4 lists the self-reported racial groups of the participants. The majority of individuals identified themselves as White (82.8%). African Americans represented 5.7% of the participants and Native Americans comprised 5.1%. Hispanics (2.5%), Asians (1.9%), and Others (1.9%) accounted for the remaining 6.3% of the sample. The majority of respondents identified as White, which is reflective of Oklahoma’s population.

Table 4

Distribution of Respondents’ Race

<table>
<thead>
<tr>
<th>Race</th>
<th>f</th>
<th>%</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>9</td>
<td>5.70</td>
<td>5.70</td>
</tr>
<tr>
<td>Asian</td>
<td>3</td>
<td>1.90</td>
<td>1.90</td>
</tr>
<tr>
<td>Hispanic</td>
<td>4</td>
<td>2.50</td>
<td>2.50</td>
</tr>
<tr>
<td>Native American</td>
<td>8</td>
<td>5.10</td>
<td>5.10</td>
</tr>
<tr>
<td>White</td>
<td>130</td>
<td>82.80</td>
<td>82.80</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>1.90</td>
<td>1.90</td>
</tr>
<tr>
<td>Total</td>
<td>157</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>
Instruments

Data from three quantitative instruments based on five- and seven-point Likert-type scales along with four demographic questions included in the survey were used for this study. The quantitative instruments included the Attitudes Toward Thinking and Learning Survey (ATTLS), the Student-Life Stress Inventory (SSI), and How Resilient Are You? (HRAY) assessment. Demographic questions included standard informational items: gender, age, college status, and race. Additional collection of data and information from two other instruments included in the survey, three qualitative and seven additional demographic questions were included for later analysis without requiring additional involvement of the participants.

Attitudes Toward Thinking and Learning Survey (ATTLS)

The ATTLS is a 20-item instrument that measures an individual’s ways of knowing (Galotti et al., 1999). This survey has two subscales, each consisting of 10 statements based on thinking and learning attitudes. One subscale is identified as Connected Knowing (CK) indicating an attitude predominantly consistent with understanding another person’s point of view or an empathic way of knowing. The other subscale is identified as Separate Knowing (SK) indicating an attitude primarily characterized by objectivity and detachment.

The ATTLS has a 7-point Likert-type scale ranging from Strongly Agree to Strongly Disagree. Agreement with the 10 odd-numbered items on the scale indicated a participant’s attitude toward learning as predominantly Connected; while disagreement or less agreement with the 10 odd-numbered statements indicates a participant’s attitude toward learning as predominantly separate. The second subscale, composed of the 10 even-numbered items, relate to characteristics associated with an attitude of thinking and learning as SK. Agreement with these statements suggests a participant’s attitude toward learning that as primarily Separate; as disagreement or less agreement with these statements indicate a participant’s attitude toward learning as predominantly Connected. Potential scores for each subscale range from 10 to 70 (Galotti et al., 1999).
Galotti et al. (1999) created the items for ATTLS based on the work of Belenky and Clinchy. The original papers that generated the book *Women’s Ways of Knowing* were used to select quotes that later became statements to discriminate between the two ways of knowing (Galotti et al., 1999). The authors patterned their approach “after the efforts of others who had previously attempted to develop a valid and reliable instrument to objectively identify ways of knowing and by research that identified the two distinct components of separate and connected knowing” (Galotti et al., 1999, pp. 748-749).

Content validity for ATTLS was established through field-testing and factor analysis of 383 undergraduate students’ responses (Galotti et al., 1999). The demographics for this test group included 182 men and 201 women, of which 83% self-identified as white, and 17% as members of a minority group. Through four separate testing administrations, the original 50-item instrument was reduced to 20 items following factor analysis with a .45 cut score related to commonalities. Having selected .45 as the magnitude of the commonality assisted the researcher in determining the relatedness of the items. Although considered low to moderate, commonalities ranging from .40 to .70 are common in the social sciences and considered acceptable (Costello & Osborne, 2005). The resulting instrument consisted of 10 items to represent CK and 10 items to represent SK. Reliability was established for the ATTLS by measuring the internal consistency of the two scales. The CK subscale had a coefficient alpha of .83, and the SK subscale had a coefficient alpha of .77 (Galotti et al., 1999). DeVellis (2003) identified Cronbach’s coefficient alpha above .70 as a good indicator of a scale’s internal consistency. With alphas of .77 and .83, the ATTLS demonstrates good internal consistency.

*Student-Life Stress Inventory (SSI)*

The SSI is a 51-item self-report inventory developed by Gadzella based on Morris’ theoretical model of stressors and reactions to stressors (Gadzella, 1994; Gadzella & Baloglu, 2001). It is comprised of two subscales representing nine categories. The subscales are identified as Stressors and Reactions to Stressors with five categories specific to Stressors and four
associated with Reactions to Stressors. The five categories of Stressors include Frustrations, Conflicts, Pressures, Changes, and Self-Imposed. The four categories representing Reactions to Stressors are Physiological, Emotional, Behavioral, and Cognitive Appraisal. Each category consists of 2 to 14 statements for a total of 51 statements. Participants selected their responses to the individual statements using a 5-point Likert-type scale. The scale ranged from 1 to 5, with 1 denoting participants identification with Never having engaged in this behavior, 2 indicating Seldom participation, 3 signifying a participant Occasionally engaging in the behavior, 4 indicating Often participation, and 5 denoting a participant engaging in the behavior Most of the Time. To score the instrument all items are added with statements 50 and 51 being reverse-coded prior to scoring. For subscale one, Stressors, the first 23 statements are totaled resulting in scores ranging from 23 to 115. A high score indicates the behaviors correlated with the stressors are exhibited more often by the participant and a smaller score indicates these stress behaviors are exhibited less often. To score the second subscale, Reactions to Stressors, the first three sections delineating Physiological, Emotional, and Behavioral stress (statements 24 through 49) are summed, with the fourth section of Cognitive Appraisal (statements 50 and 51) being reverse-coded prior to totaling the score for subscale two. Scores range from 28 to 140. A high score indicates predominantly negative reactions to stressors, with a low score indicating less negative reactions to stressors.

Gadzella devised the SSI with the assistance of groups of students who were studying stress and based it on Morris’ theoretical model to “reflect students’ life experiences on and off campus” (Gadzella, 1994, p. 396). Several studies have confirmed the SSI’s reliability and validity (Gadzella, 1991; Gadzella, Masten, & Stacks, 1998). Cronbach’s alpha for the instrument has resulted in values ranging from .52 (Frustration) to .85 (Change) with Pearson product-moment correlations ranging from .57 (Cognitive) to .76 (Emotional) with an overall Cronbach’s alpha of .76 and an overall correlation of .78 (Gadzella, 1994). Nunnally (1988) recommended a Cronbach’s coefficient alpha of .7 or higher to demonstrate acceptable internal
consistency of a scale. With the SSI’s overall alpha of .76, it follows Nunnally’s (1988) recommended level and is considered reliable in measuring college students’ stressors and reactions to stressors (Misra & McKeen, 2000). In 1993, the content validity for the SSI was reported using ANOVA to confirm there were significant differences among students for the stress levels in the nine categories further demonstrating the validity of the instrument in measuring the constructs for which it was designed (Gadzella & Bologlu, 2001).

*How Resilient Are You? (HRA)*

The HRA is a 20-item self-report inventory developed by Siebert. Research in resiliency psychology has provided some evidence as to why some people are more resilient than others (Siebert, 2005). Siebert (2005) developed statements for the HRA assessment from 30 years of research on resiliency and observable key attitudes, attributes and abilities displayed in highly resilient people. The HRA uses a 5-point Likert-type scale in which participants rank themselves on each statement, with 1 point indicating very little agreement and 5 indicating very strong agreement with each statement. The points are then summed. Scores may range from 20 to 100, with a low score indicating that the participant rated themselves as having low resiliency abilities and a high score indicating that the participant rated themselves as having high resiliency abilities (Siebert, 2005).

Siebert used two different methods to categorize participant scores in his literature for HRA. One method required totaling the scores and categorizing the scores as follows: scoring 75-100 = highly resilient; 65-75 = better than most; 55-65 = low; but adequate; 45-55 = struggling; and 20-45 = help recommended (Siebert A. & Karr, M., 2008). The second method for categorizing scores Siebert used was based on three groupings. The three groups were identified as Low Resilience, Middle Resilience, and High Resilience. In this scoring system Low Resiliency was represented by scores ranging from 20-50, Middle Resiliency with scores ranging from 70-89, and High Resiliency having a score of 90-100. A Low Resilience score is any self-rating score under 50 points. Scores in this range of 20 to 50 indicate that a person may
not handle pressures, struggles and difficulties well and may not learn useful information from these types of experiences. They may feel hurt when criticized, helpless and hopeless (Siebert, 2005; Siebert, 2010; Siebert & Karr, 2008). Scores in this range indicate a person may benefit from seeking help either professionally or through self-help by studying resiliency literature and learning how to develop the skills necessary to becoming more resilient (Siebert, 2005; Siebert, 2010; Siebert & Karr, 2008). A middle score ranging from 70 to 89 indicates the participant has adequate resiliency skills. A score of 90 to 100 indicates a highly resilient individual who enjoys learning new ways to become even better as they face adversities, setbacks, and difficult circumstances (Siebert, 2005; Siebert, 2010; Siebert & Karr, 2008).

In the second method of categorizing scores, scores ranging from 50-69 were not assigned to a particular category. In place of a specific categorical identification, Siebert (2005) provided a narrative to explain the scores. The narrative suggested the participants underrated themselves with respect to being resilient and recommended that participants within this scoring range seek interaction with others to determine an accurate score allowing for categorization within the existing three categories, Low Resilience, Middle Resilience, and High Resilience. For the purpose of this study, Siebert’s non-descriptive category was identified as Middle-Low Resilience to assist in simplifying the categorization of participants’ scores. This identification of a fourth category took into consideration both scoring methods identified by Siebert. As neither method contained equitable point distribution among the categories, the researcher redefined the categories with the following ranges of scores: High Resilience = 80-100, Middle Resilience = 60-79, Middle-Low Resilience = 40-59, and Low Resilience = 20-39. Operationalizing these category titles based on both of Siebert’s scoring methods, High Resilience reflects a high level of resilience in which a participant is “better than most” at handling or overcoming obstacles; Middle Resilience suggests adequate skills in resiliency; Middle-Low Resilience represents participants’ identification with limited resiliency skills and abilities; and Low Resilience reflects inadequate abilities to overcome difficulties (Siebert & Karr, 2008, p. 143).
Procedures

Following IRB approval, the link to the survey was posted to the participant management system (Sona) website. Data collection lasted for three semesters: spring, summer and fall of 2011. Upon accessing the survey through the Sona-system, participants completed 91 Likert-type items, and four demographic questions. At the close of data collection, the researcher transferred the data sets from Sona-systems website to SPSS v. 20.0. Of the 239 surveys collected, there were 157 useable sets of data after suspected repeat submissions were removed. Suspected repeat submissions were identified as identical sets of data that were submitted consecutively and assumed to be the result of participants pressing the submit button multiple times.

The following instruments and analyses were used to address the research questions in this study:

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Data Source</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What stressors do college students experience?</td>
<td>SSI</td>
<td>Frequency distribution</td>
</tr>
<tr>
<td>2. How do college students react to stress?</td>
<td>SSI</td>
<td>Frequency distribution</td>
</tr>
<tr>
<td>3. How do participants score on a measure of resiliency?</td>
<td>HRAY</td>
<td>Frequency distribution</td>
</tr>
<tr>
<td>4. What is the relationship between stress and resiliency?</td>
<td>SSI HRAY</td>
<td>Correlation</td>
</tr>
<tr>
<td>5. How do participants score on a measure of Ways of Knowing?</td>
<td>ATTLS</td>
<td>Frequency Distribution</td>
</tr>
<tr>
<td>6. What is the relationship between resiliency and Ways of Knowing?</td>
<td>HRAY ATTLS</td>
<td>Correlation</td>
</tr>
<tr>
<td>7. How does Connected Knowing moderate the relationship between stress and resiliency?</td>
<td>SSI HRAY ATTLS</td>
<td>Regression</td>
</tr>
<tr>
<td>8. How does Separate Knowing moderate the relationship between stress and resiliency?</td>
<td>SSI HRAY ATTLS</td>
<td>Regression</td>
</tr>
</tbody>
</table>
Summary

Upon receiving IRB approval, participants were recruited through an online management system website and given one research credit for their completion of the 95-item survey. Three quantitative instruments based on Likert-type scales along with four demographic questions were included in the survey. The quantitative instruments included the Attitudes Toward Thinking and Learning Survey (ATTLS), Student-life Stress Inventory (SSI) and How Resilient Are You? (HRAY) assessment to answer the research questions and to test the hypotheses.
CHAPTER IV

FINDINGS

This study used descriptive, correlation and regression analysis to identify the moderating effects of connected and separate learning attitudes on the relationship between student life stress and resiliency. This chapter contains findings specific to the eight research questions.

College Student Stressors

College students in this study experienced each of the five stressors as defined by Gadzella (1991): Frustrations, Conflicts, Pressures, Changes, and Self-Imposed. Slightly more than 87 percent of the students reported experiencing Frustrations. Frustrations experienced included delays in reaching goals, daily hassles, lack of sources (money for auto, books), failures in accomplishing goals, not being accepted socially, dating disappointments, and feelings of denied opportunities (Gadzella, 1991). Of this 87.7 percent, the majority of the scores fell within the Seldom (26.8%) and Occasionally (34.8%) categories. This suggested that more than 60 percent of the students in this sample experienced Frustrations at a low level. Ninety-seven percent of the participants reported experiencing Conflicts. Conflicts were defined as choices facing
participants in which they had to choose from two or more desirable alternatives, two or more undesirable alternatives, or a goal with both positive and negative alternatives (Gadzella, 1991). Of this 97 percent, the majority of the scores fell within the Seldom (21.2%) and Occasionally (52.4%) categories. With more than 70 percent of the participants selecting degrees of time associated with an infrequency of happenings, it was found that conflicts were experienced at a low level. The stressor of Pressures was reported as being experienced by slightly more than 98 percent of the students. Pressures experienced included competition on grades; work; deadlines (papers due, payments to be made); overload (attempting too many things at one time); and interpersonal relationships (family and/or friends’ expectations, work responsibilities) (Gadzella, 1991). Of this 98.4 percent, the majority of the scores fell within the Often (36.0%) and Most of the Time (26.9%) categories. This suggested that more than 60 percent of the students in this sample experienced Pressures at a high level. In contrast, more than 91 percent of the students reported experiencing Changes in their lives. As a stressor, Changes is defined as rapid unpleasant changes, too many changes occurring at the same time, and changes which disrupted the student’s life and/or goals, categorically as Seldom (29.1%) and Occasionally (40.3%) (Gadzella, 1991). Selecting the frequency categories of Seldom and Occasionally, suggested that the participants experienced Changes at a low level. Ninety-seven percent of the respondents reported experiencing Self-Imposed stressors. Self-Imposed stressors were defined as experiences associated with competition, being noticed and loved by all, worrying about everything and everybody, procrastinating, searching for a perfect solution, and worrying or getting anxious about taking tests (Gadzella, 1991). Of this 97.6 percent, the majority of the scores fell within the Often (28.0%) and Most of the Time (29.8%) categories leading the researcher to conclude that 57 percent of the students in this sample experienced Self-Imposed stressors at a high level. The summative score of Subscale 1 Stressors demonstrated that 35.7% of participants had total scores that placed them in the low level of experiencing stressors (see Table 5). Participants with total scores that placed them in the high level of experiencing
stressors represented 64.3 percent of the sample (see Table 5). With a range of 23 to 115 points representing the summative scores of Subscale 1 Stressors, a high score was defined by scores 70 to 115, and indicated participants experienced stressors more often than those who scored 23 to 69. Scores ranging from 23 to 69 were identified as low and indicated that participants had little experience with the stressors of Frustrations, Conflicts, Pressures, Changes, and Self-Imposed.

Table 5

**Frequency Distribution of Summative Scores for SSI Subscale 1: Stressors**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid %</th>
<th>Cum %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>56</td>
<td>35.7</td>
<td>35.7</td>
<td>35.7</td>
</tr>
<tr>
<td>High</td>
<td>101</td>
<td>64.3</td>
<td>64.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>157</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

**College Student Reactions to Stress**

College students in this study experienced each of the four reactions to stressors as defined by Gadzella: Physiological, Emotional, Behavioral, and Cognitive Appraisal. Slightly more than 59 percent of the students reported experiencing Physiological reactions to stressors. Physiological reactions included sweating; stuttering; trembling (being nervous, biting fingernails); rapid movements; exhaustion; irritable bowels, peptic ulcers, etc.; asthma, bronchial spasms, hyperventilation; backaches, muscle tightness, teeth grinding; hives, skin itching, allergies; migraine headaches, hypertension, rapid heartbeat; arthritis, overall pains; viruses, colds, flu; weight fluctuations (Gadzella, 1991). Of the 59.6 percent of respondents who reported experiencing physiological reaction to stressors, 31.2 percent selected the frequency categories of Seldom (18.6%) and Occasionally (20.6%). The remaining 40.4 percent of the participants identified Never experiencing physiological reactions to stressors. What this means is that slightly less than 80 percent of the students in this sample experienced Physiological reactions to stressors at a low level or not at all. Similarly, more than 84 percent of the students reported
experiencing Emotional reactions to stressors. Emotional reactions to stressors included experiencing fear, anxiety, worry, anger, guilt, grief, or depression (Gadzella, 1991). Of this 84.7 percent, the majority of the scores fell within the Occasional (27.4%) and Often (21.5%) categories, resulting in more than 63 percent of the participants having experienced Emotional reactions to stressors at a low level or not at all, and 37.4 percent of the participants having experienced Emotional reactions to stressors at a high level. Behavioral reactions to stressors were reported as having been experienced by 51 percent of the students. Behavioral reactions included crying, abusing others, abusing self, smoking, being irritable or defensive, attempting suicide, and isolating self (Gadzella, 1991). Of the 51 percent, the majority of the scores fell within the Seldom (14.9%) and Occasionally (19.2%) categories. However, 48.5 percent of the participants identified Never experiencing Behavioral reactions to stressors while 17.4 percent fell within the high scores of Often (11.6%) and Most of the Time (5.8%). Overall, slightly less than 82 percent of the students in this sample experienced Behavioral reactions to stressors at a low level or not at all. In contrast, more than 99 percent of the students reported experiencing Cognitive Appraisal reactions to stressors. Cognitive Appraisal reactions included students having thought about and analyzed the stress associated with specific situations and whether the strategies they used were most effective (Gadzella, 1991). Of this 99.7 percent, the majority of the scores fell within the Occasionally (38.9%) and Often (25.8%) categories. Cognitive Appraisal reactions to stressors were experienced at a low level or not at all by 58.3 percent of the sample and 41.7 percent had experienced Cognitive Appraisal reactions to stressors at a high level.

The summative score of Subscale 2 Reactions to Stressors demonstrated that 82.8 percent of participants had scores that placed them in the low level of experiencing reactions to stressors (see Table 6). A low level of reactions to stressors would assume individuals who had little to no physiological, emotional, behavioral, or cognitive appraisal reactions present in response to stressors. Participants with scores that placed them in the high level of experiencing reactions to
stressors represented less than a fifth of the sample, 17.2 percent (see Table 6). A high level of reactions to stressors would assume individuals who experienced physiological, emotional, behavioral, or cognitive appraisal reactions to stress Often to Most of the Time. With a range of 28 to 140, a high score was defined by scores of 85 to 140, and identified participants who experienced reactions to stressors more often than those who scored 28 to 84. Scores ranging from 28 to 84 were identified as low and indicated that participants had little experience with the reactions to stressors of Physiological, Behavioral, Emotional and Cognitive Appraisal.

Holistically, the summative score of the SSI ranged from 51 to 255 including both subscale scores. Participants with total scores that placed them in the high level of experiencing stress scored within the range of 155 to 255. Overall, the participants expressed a high level of stressors coupled with low level reactions to stressors equating to a summative scaled score that placed slightly less than 60% in the category of experiencing low stress. The remaining 40% produced scores that placed them in the category of experiencing high stress.

**Table 6**

*Frequency Distribution of Summative Scores for SSI Subscale 2: Reactions to Stressors*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid %</th>
<th>Cum %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Reactions</td>
<td>130</td>
<td>82.8</td>
<td>82.8</td>
<td>82.8</td>
</tr>
<tr>
<td>High Reactions</td>
<td>27</td>
<td>17.2</td>
<td>17.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>157</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

**Resiliency**

The summative score produced on the HRAY for each participant was associated with one of the four categories of resiliency: Low Resilience (20-39), Middle-Low Resilience (40-59), Middle Resilience (60-79), and High Resilience (80-100) (Siebert, 2005). Table 7 presents the
frequency distribution of respondents in the four categories with Low Resilience and Middle-Low Resilience collapsed into one category identified as Low Resilience. Slightly less than one percent of the students’ summative scores qualified them for the category of Low Resilience. Low Resilience was defined as an awareness of difficult situations without the ability to effectively resolve them or an inability to appropriately handle pressure often resorting to a feeling of helplessness and hopelessness (Siebert, 2005).

Slightly more than 54 percent of the respondents’ scores qualified them for the Middle Resilience category. The Middle Resilience category represented individuals with a self-confidence and “good ability to bounce back” or the ability to “become better and better” as they learned from adversities (Siebert, 2005, p. 18). High Resilience represented the second highest percentage of students for this study. Individuals with scores associated with High Resilience were assumed to be “very good at bouncing back from life’s setbacks” (Siebert, 2005, p. 18).

Overall, the majority of students in this study, 128 of 157 participants or 81.5 percent, self-scored items on the HRAY resulting in a summative score that placed them in the categories of Middle to High Resilience.

Table 7

| Frequency Distribution of Summative Scores for Resilience |
|-----------------|---------|
| **Low Resilience (20-59)** | 29 | 18.5 |
| **Middle Resilience (60-79)** | 85 | 54.1 |
| **High Resilience (80-100)** | 43 | 27.4 |
| **Total** | 157 | 100.0 |
**Stress and Resiliency**

To examine the relationship between perceived stress in college students’ lives and perceived resiliency a scatterplot of the scores from the SSI and HRAY was created. The scatterplot showed a weak, negative relationship. To determine the significance of the relationship, a correlation was run on the data using the Pearson product-moment correlation coefficient (see Table 10). The correlation was $r = - .218$ that was significant at $p < .01$ suggesting that as students' perceived stress levels decreased, resiliency increased; and as students’ perceived stress levels increased, resiliency decreased.

**Ways of Knowing**

College students’ Ways of Knowing were identified in this study based on individual summative subscores from the ATTLS instrument. The two Ways of Knowing defined by Galotti (1998) as Connected Knowing (CK) and Separate Knowing (SK), presented with a $r = .365, p \leq .01$. Thus, participants scoring high on one subscale did not prevent them from scoring high on the other subscale. Similarly, the participants scoring low on one subscale did not prevent them from scoring low on the other subscale. College students in this study were assigned to one of four categories based on their summative scores for each of the subscales (see Table 8). Beyond the categories of CK and SK, the researcher found an overlap of these constructs. Participants were identified as 1.0 if their scores were low in CK and low in SK; they were identified as 2.0 if they scored high in CK and low in SK; they were identified as 3.0 if they scored low in CK and high in SK; and they were identified as 4.0 if they scored high in CK and high in SK. Slightly more than 6 percent of the students scored as being low in both CK and SK. Low CK/SK suggested individuals who were emotionally and cognitively passive. Having scored low in both areas would assume to define a student who would choose not to participate or who would not have the ability to extend themselves in the learning environment and avoid reaching out to others or engaging with content (Galotti, 1998). Individuals scoring high in CK and low in SK
represented 31.8 percent of the participants. Scoring high in CK and low in SK represented Galotti’s construct of an empathetic, insightful, thoughtful, cooperative, and understanding learner (1998). Similarly, the 2.5 percent of students who scored high in SK and low in CK represented the construct of an SK learner. This type of learner can be defined as an individual who is objective, controversial, evaluative, argumentative, logical and analytical (Galotti, 1998). The largest category of learners (59.2%) scored high in both CK and SK. Without an operationalized definition from Galotti (1998), the researcher determined that a high CK/SK learner could be defined as an individual who possessed the skills and abilities associated with both constructs. Viewed optimistically, it could be noted that high CK/SK learners possessed a balance of empathy and judgment making them able to think critically yet be supportive of their fellow learners. Viewed pessimistically, it could be noted that high CK/SK learners were indecisive and unable to identify individual strengths suggesting an inability to be self-reflective.

**Table 8**

*Frequency Distribution of Summative Scores for Connected and Separate Knowers*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid %</th>
<th>Cum %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Low CK/Low SK</td>
<td>10</td>
<td>6.4</td>
<td>6.4</td>
<td>6.4</td>
</tr>
<tr>
<td>2 High CK/Low SK</td>
<td>50</td>
<td>31.8</td>
<td>31.8</td>
<td>38.2</td>
</tr>
<tr>
<td>3 High SK/Low CK</td>
<td>4</td>
<td>2.5</td>
<td>2.5</td>
<td>40.8</td>
</tr>
<tr>
<td>4 High CK/High SK</td>
<td>93</td>
<td>59.2</td>
<td>59.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>157</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Resiliency and Ways of Knowing**

To examine the relationship between perceived resiliency and college students’ Ways of Knowing, specific to CK and SK, a scatterplot of the scores from the HRAY and ATTLS was created. The scatterplot showed a weak, positive relationship between resiliency and CK and a weak positive relationship between resiliency and SK. To determine the significance of the
relationships, correlations were run on the data using the Pearson product-moment correlation coefficient (see Table 10). The correlations were significant for both CK ($r = .399, p < .01$) and SK ($r = .220, p < .01$). The positive correlation between resiliency and CK suggested that as resiliency increased, CK increased; and as CK increased, resiliency increased. The positive correlation between resiliency and SK suggested that as resiliency increased, SK increased; and as SK increased, resiliency increased.

Stress and Resiliency Moderated by Connected Knowing

To examine the moderating effect of CK on the relationship between perceived college students’ life stress and resiliency, descriptive statistics, correlations, and a model summary were run on the data. The Pearson product-moment correlation coefficients are presented in Table 10. The correlation was significant for the relationship between stress and resilience ($r = -.218, p < .01$); however, when the moderator variable (CK) was added to the predictor variable of stress, the correlation was not significant (see Table 9). R Square Change was 0.000 when the interaction variable was added to the predictor variable and moderator variable. This change was not statistically significant, $F = .100, p = 0.752$. This interaction suggests that the presumed moderator does not moderate the effects of the predictor on the outcome variable. Table 9 displays elements of the Model Summary demonstrating that the interaction of the moderator variable on the outcome of resilience was not statistically significant for moderating the effects of stress. The relationship between stress and resiliency cannot be said to be positively or negatively impacted by an attitude toward thinking or learning of CK.
Table 9

Model Summary for Resilience, CK, Stress, and Moderating CK

<table>
<thead>
<tr>
<th></th>
<th>R Square</th>
<th>R Square Change</th>
<th>F Change</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>without interaction variable</td>
<td>.238</td>
<td>.238</td>
<td>24.086</td>
<td>.000</td>
</tr>
<tr>
<td>with interaction variable</td>
<td>.239</td>
<td>.000</td>
<td>.100</td>
<td>.752</td>
</tr>
</tbody>
</table>

Stress and Resiliency Moderated by Separate Knowing

To examine the moderating effect of SK on the relationship between perceived college students’ life stress and resiliency, descriptive statistics, correlations, and a model summary were run on the data. The Pearson product-moment correlation coefficients are listed in Table 10. The correlation was significant for the relationship between stress and resilience \( r = -0.218 \) \( p < .01 \); however, when the moderator variable (SK) was added to the predictor variable of stress, the correlation was not significant (see Table 10). R Square Change was 0.007 when the interaction variable was added to the predictor variable and moderator variable. This change was not statistically significant, \( F = 1.281, p = 0.260 \). This interaction suggests that the presumed moderator does not moderate the effects of the predictor variable on the outcome variable. Table 11 displays elements of the Model Summary demonstrating that the interaction of the moderator variable on the outcome of resilience was not significant for moderating the effects of stress. Simply, the relationship between stress and resiliency cannot be said to be positively or negatively impacted by an attitude toward thinking or learning of SK.
Summary

This study employed quantitative measures and analysis to determine the moderating effects of connected and separate learning attitudes on the relationship between student life stress and resiliency. In performing multiple descriptive analyses, frequency distributions, and correlations, the researcher found small statistically significant relationships between stress and resiliency and between resiliency and Ways of Knowing. However, no statistically significant relationship was found for Connected Knowing serving as a moderator between stress and resiliency, nor was it found for Separate Knowing serving as a moderator between stress and resiliency.
The final chapter of this dissertation includes a summary of the study results followed by a discussion of the findings. This discussion provides interpretations of the findings related to prior research and recommendations for future research. The purpose of this descriptive correlational study was to examine the moderating effect of student attitudes toward thinking and learning on the relationship between college student life stress and resiliency.

**Summary**

This study examined the three concepts of college student life stress, resiliency, and ways of thinking and learning. It sought to discover if moderating effects existed based on college students ways of thinking and learning in relation to their stress and resiliency. This study used descriptive, correlation, and regression analyses to identify relationships and determine their practical and statistical significance in respect to answering the research questions proposed in Chapter I.
There were 239 individuals who participated in the survey, yielding a complete data set with 157 participants. Female participants outnumbered male participants 3 to 1, with participants ranging in age from 18 to 51 years. Students’ levels of education varied among freshmen, sophomores, juniors, seniors and graduate students. Three-fourths of the participants were undergraduate students, with approximately one-fourth of the participants being graduate students. Racially the percentages were not as evenly distributed. Whites represented the largest majority with only a fifth of the sample distributed among African Americans, Native Americans, Hispanics, Asians and Others.

College students in this study experienced each of the five stressors of Frustrations, Conflicts, Pressures, Changes, and Self-Imposed stressors to varying degrees. More than three-fifths of the students in this sample identified the stressor of Pressures as occurring Often or Most of the Time. Pressures experienced by students included competition on grades, work, and relationships with spouses and/or friends; meeting deadlines on school work, bills; the overload of attempting too much at once; pressures due to interpersonal relationships with family and/or friends’ expectations; and/or work responsibilities. Equally, more than three-fifths of the students identified Self-Imposed stressors as being experienced Often or Most of the Time. Self-Imposed stressors include students’ experiences with competition and winning; wanting to be loved and noticed by all; worrying a lot about everyone and everything; having the tendency of procrastination or putting off things that need to be done; the feeling they must find perfect solutions to problems undertaken; and worrying or getting anxious about taking exams. College students in this sample experienced stressors at a high level.

College students in this study experienced each of the four reactions to stressors: Physiological, Emotional, Behavioral, and Cognitive Appraisal reactions. Although the scores related to reactions to stressors were equally distributed suggesting that no one reaction was experienced more often than another reaction, it was notable that slightly less than half of the participants indicated they Never experienced Physical or Behavioral reactions to stressors.
Physical reactions to stressors included such items as sweaty palms; rapid movements; exhaustion; backaches, teeth grinding; migraines or headaches, hypertension, rapid heartbeats; and weight fluctuations. Behavioral reactions to stressors included such behaviors as crying; abusing others either verbally or physically; abusing oneself with behaviors like the use of drugs; using defense mechanisms; and separating oneself from others or isolating. Collectively, college students in this study reported experiencing reactions to stressors at a low level.

As students rated themselves on the statements referring to their resilience, less than one percent self-identified in the category of Low Resiliency with the majority of participants falling within the category of Middle Resiliency. When stress and resiliency were examined together, a weak, statistically significant negative relationship was revealed, suggesting that as students’ perceived stress decreased, their perceived resiliency increased; and as students’ perceived stress increased, their perceived resiliency decreased.

The data regarding students’ perceived Ways of Knowing placed participants into one of four categories. Although the instrument designed to measure Ways of Knowing provided for two categories, it was found that scoring high on one subscale did not preclude an individual from scoring high on the second subscale resulting in four categories to identify participants’ attitudes toward thinking and learning. More than fifty percent of participants fell within the category of combined learning tendencies of high CK and high SK suggesting that they held attitudes that were both empathetic and critical.

When resiliency and Ways of Knowing were analyzed collectively, a weak, positive relationship was revealed with statistically significant correlations. In investigating the moderating effects of attitudes towards thinking and learning on the relationship between Stress and Resiliency, no moderating effects were found due to the weak, relationship between stress and resiliency, and due to the weak relationship between resiliency and attitudes toward thinking and learning. Thus, the relationship between stress and resiliency is neither positively nor negatively impacted by attitudes toward thinking or learning.
Discussion

Analysis of the data regarding the research questions and hypotheses proposed in Chapter I, lead to the following findings. This study discovered that participating college students experience high degrees of stress, while experiencing low levels of reactions to stressors. It determined, using correlation analysis that a statistically significant weak and negative relationship existed between stress and resiliency and a statistically moderate and positive relationship existed between resiliency and ways of knowing. This meant the null hypotheses one and two could be rejected and the alternative hypotheses accepted. Further analysis was conducted based on the existence of systematic relationships.

When the moderator variable CK was added to the predictor variable, stress, the correlations were almost non-existent and not statistically significant, which meant that students’ attitudes of connected knowing did not moderate the effects of stress on resiliency within this study. Simply, students’ ways of knowing as connected knowers and learners did not appear to decrease their stress or increase their resiliency. When the moderator variable SK was added to the predictor variable, stress, the correlations again were almost non-existent, revealing that students’ attitudes of separate knowing did not moderate the effects of stress on resiliency within this study. Thus, students’ ways of knowing as separate knowers and learners did not appear to decrease their stress or increase their resiliency. Running these two moderating effects led to the conclusion that null hypotheses three and four could be accepted.

Interpretations of the Findings

In interpreting the findings it must be noted that the overwhelming majority of students who participated in the study were White females. The limited demographics represented in this study restricted its generalizability to a broader context. The diversity among college students that exists within the general population was not accurately represented in this sample and a replication of this study with a different sample may not reproduce this study’s findings. It is
recommended that this study be replicated with a larger, more diverse sample to examine the validity of the findings.

Pressures and Self-Imposed stressors presented as being experienced by the participants more often than the stressors of Frustrations, Conflicts, and Changes. The researcher anticipated that the stressor of Pressures would present as it included components that appeared to be most directly related to college-life experiences: grade competition, relationships with friends; meeting school deadlines; managing overloads; and balancing relationships and responsibilities. Self-Imposed stressors was also expected to present as it related to college students’ experiences with competition and winning; having the tendency to procrastinate; and worrying or getting anxious about taking exams. Overall, college students in this sample experienced stressors at a high level. These findings are consistent with other studies that have investigated stress in college students and support the conclusion that stressors are high in college students due to the multitasking demands of managing life issues alongside academic requirements (Hamilton, 2006). Adult students seeking college degrees are burdened by the exigencies of their lives apart from school, such as bills, taxes, relationships, health, as well as the academic demands of course attendance, assignments, deadlines, exams and the like.

No one reaction to stress was identified as being experienced more often than another reaction to stress. Interestingly, almost half of the students indicated never experiencing Physiological or Behavioral reactions to stress. Physiological reactions to stressors included such items as sweaty palms; rapid movements; exhaustion; backaches, teeth grinding; migraines or headaches, hypertension, rapid heartbeats; and weight fluctuations. Behavioral reactions included crying; abusing others either verbally or physically; abusing oneself with behaviors like the use of drugs; using defense mechanisms; and separating oneself from others or isolating. The researcher interpreted these results in relation to the limitations of the study outlined in Chapter I. The issue of social desirability related to answer selection centered on respondents’ wishes to be viewed favorably by others may have resulted in an underreporting of socially undesirable responses.
Specific to this survey, reactions to stressors could have been viewed as being socially undesirable as they referenced relatively taboo associations of engaging in abusive behaviors of drug use, for example.

Overall participants in this study identified their reactions to stressors as being low level. It is conceivable that this low level of reactions to stress identified by these participants, especially related to physical reactions, was due to their lack of association between bodily responses and stress rather than their lack of actually experiencing bodily reactions. The participants may have associated physical reactions in the survey with medical conditions rather than symptoms of stress. This assumed lack of recognition related to the relationship between stress and involuntary physical or bodily reactions may serve as a starting point for discussing issues of stress and resilience in the college classroom. Students’ awareness to the link between physical reactions and stress could assist in identifying areas promoting such stress and increase the students’ ability to cope or correct the stress-inducing situation.

Less than one percent of respondents identified themselves as possessing Low Resiliency, with the majority of participants falling within the category of Middle Resiliency. The large percentage of students self-reporting as being resilient may be due to the fact that they possess the characteristics of a resilient person as defined by Siebert (2010) to include empathy, intuition, trust, creativity, and problem-solving. However, the high levels of stress noted by participants on the SSI, does not support such a conclusion. Another explanation of this high percentage may be due to the optimistic wording of the instrument and the need to maintain a positive self-concept or the influence of responding in socially desirable ways.

More than fifty percent of participants fell within the category of combined attitudes toward thinking and learning, represented by scoring high on the subscale for CK and high on the subscale for SK. This combined category was not discussed or present in the literature studied but was assumed, by the researcher, to be a combination of the positive qualities inherent in both types of knowing. In absence of a literature base, these findings cannot be said to be of practical
significance and was not analyzed beyond identifying it as a construct and recommending that future research delve into investigating the Ways of Knowing instrument and its resulting constructs.

When resiliency and Ways of Knowing were analyzed collectively, a weak, positive relationship was revealed with statistically significant correlations. Although statistically significant with CK ($r = .399, p < .01$) and SK ($r = .220, p < .01$), the correlation between resiliency and Ways of Knowing was not of practical significance due to its weak relationship. The constructs of CK and SK were not sufficient for assessing college-students attitudes related to thinking and learning specific to the context of the learning environment. Investigating learning styles rather than attitudes may have provided more insight into the practices of andragogy and learners’ attitudes on resilience than was found with the ATTLS. In turn, the investigation of the attitudes towards thinking and learning as moderating effects on the relationship between stress and resiliency presented with non-statistically significant results which were expected based on the weak relationship found between ways of knowing and resilience.

Recommendations for Future Research

Galotti et al. (1999) created the ATTLS to discriminate between the two ways of knowing as separate or connected knowers. However, this study found that scoring high or low on one way of knowing did not exclude an individual from scoring high or low on the other way of knowing. Four constructs were found in analyzing the data from this study. It is recommended that future research investigate the instrument and the resulting constructs. It is also recommended that future research investigate college-student life stress in its relation to resilience in finer detail than was accomplished in this study. Separating the five stressors from the four reactions to stressors and examining each individually in their relation to resilience could benefit scholars in determining which of the elements have a greater relationship with resiliency.
Additionally, future research may benefit from the development of a broader resiliency scale that includes features of the concepts and constructs encompassed in the social ecological conceptualization of resilience. Resiliency researchers can add much to the literature as they continue delving deeper into individuals’ and groups’ interactions with and within their environments.

Visions for the future of resilience research also include focusing on discursive, expansive, and conversational negotiations and culturally-specific interpretations by individuals and groups as they navigate and successfully or unsuccessfully adapt to their relative situations (Liebenberg & Ungar, 2009; Luthar, Sawyer, & Brown, 2006). The classroom environment is a social context that impacts learners academically and psychologically, specific to college student life stress. Since, student life stress in conjunction with college expectations can have a negative impact on learning as students pursue their degrees, bringing awareness of students’ stress, resiliency and learning attitudes through specific dialogue concerning these topics of considerable concern and interest may minimize the negative impacts of the context by decreasing stress and increasing resiliency to promote student success through such participatory awareness (Wenger, 2001).
REFERENCES


APPENDIX A
Oklahoma State University Institutional Review Board

Date: Monday, February 21, 2011
IRB Application No: ED116
Proposal Title: Student Life Stress, Learning Strategy Preferences, Ways of Knowing, Decision-Making Styles, and Resiliency in Undergraduate Students at a Large Midwestern University

Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 2/20/2012

Principal Investigator(s):
Pamela Circo Webb
8211 S. 75th East Ave
Tulsa, OK 74133

Steven Harrist
434 Willard
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

\[Signature\]

Sheila Kennison, Chair
Institutional Review Board
Directions: Indicate your level of agreement with each of the following items. You do not need to dwell on each statement; give the first response that comes to your mind.

You may easily move from one item to the next by pressing the Tab key.

1. When I encounter people whose opinions seem alien to me, I make a deliberate effort to “extend” myself into that person, to try to see how they could have those opinions.
2. I like playing devil’s advocate – arguing the opposite of what someone is saying.
3. I can obtain insight into opinions that differ from mine through empathy.
4. It’s important to me to remain as objective as possible when I analyze something.
5. I tend to put myself in other people’s shoes when discussing controversial issues, to see why they think the way they do.
6. In evaluating what someone says, I focus on the quality of their argument, not on the person who is presenting it.
7. I’m more likely to try to understand someone else’s opinion that to try to evaluate it.
8. I find that I can strengthen my own position through arguing with someone who disagrees with me.
9. I try to think with people instead of against them.
10. One could call my way of analyzing things “putting them on trial,” because of how careful I am to consider all of the evidence.
11. I feel that the best way for me to achieve my own identity is to interact with a variety of other people.
12. I often find myself arguing with the authors of books I read, trying to logically figure out why they’re wrong.
13. I always am interested in knowing why people say and believe the things they do.
14. I have certain criteria I use in evaluating arguments.
15. I enjoy hearing the opinions of people who come from backgrounds different from mine – it helps me understand how the same things can be seen in such different ways.
16. I try to point out weaknesses in other people’s thinking to help then clarify their arguments.
17. The most important part of my education has been learning to understand people who are very different from me.
18. I value the use of logic and reason over the incorporation of my own concerns when solving problems.
19. I like to understand where other people are “coming from,” what experiences have led them to feel the way they do.
20. I spend time figuring out what’s “wrong” with things; for example, I’ll look for something in a literary interpretation that isn’t argued well enough.
Directions: This inventory contains statements dealing with student-life stress. Read it carefully, and respond to each statement as it has related or is relating to you as a student. Use the 5-point scale which indicates the level of your experiences as Never, Seldom, Occasionally, Often and Most of the Time.

You may easily move from one item to the next by pressing the Tab key.

As a student:
1. I have experienced frustrations due to delays in reaching my goals.
2. I have experienced daily hassles which affected me in reaching my goals.
3. I have experienced lack of sources (money for auto, books, etc.).
4. I have experienced failures in accomplishing the goals I set.
5. I have not been accepted socially (become a social outcast).
6. I have experienced dating frustrations.
7. I feel I was denied opportunities in spite of my qualifications.

I have experienced conflicts which were:
8. Produced by two or more desirable alternatives.
9. Produced by two or more undesirable alternatives.
10. Produced when a goal had both positive and negative alternatives.

I experienced pressures:
11. As a result of competition (on grades, work relationships with spouse and/or friends).
12. Due to deadlines (papers due, payments to be made, etc.).
13. Due to an overload (attempting too many things at one time).
14. Due to interpersonal relationships (family and/or friends’ expectations, work responsibilities).

I have experienced:
15. Rapid unpleasant changes.
16. Too many changes occurring at the same time.
17. Changes which disrupted my life and/or goals.

As a person:
18. I like to compete and win.
19. I like to be noticed and loved by all.
20. I worry a lot about everything and everybody.
21. I have a tendency to procrastinate (put off things that have to be done).
22. I feel I must find a perfect solution to the problems I undertake.
23. I worry and get anxious about taking tests.

During stressful situations, I have experienced the following:
24. Sweating (sweaty palms, etc.).
25. Stuttering (not being able to speak clearly).
26. Trembling (being nervous, biting fingernails, etc.).
27. Rapid movements (moving quickly from place to place).
28. Exhaustion (worn out, burned out).
29. Irritable bowels, peptic ulcers, etc.
30. Asthma, bronchial spasms, hyperventilation.
31. Backaches, muscle tightness (cramps), teeth grinding.
32. Hives, skin itching, allergies.
33. Migraine headaches, hypertension, rapid heartbeat.
34. Arthritis, overall pains.
35. Viruses, colds, flu.
36. Weight loss (can’t eat).
37. Weight gain (eat a lot).

When under stressful situations, I have experienced:

38. Fear, anxiety, worry.
40. Guilt.
41. Grief, depression.

When under stressful situations, I have:

42. Cried.
43. Abused others (verbally, and/or physically).
44. Abused self (use of drugs, etc.).
45. Smoked excessively.
46. Was irritable towards others.
47. Attempted suicide.
48. Used defense mechanisms.
49. Separated myself from others.

With reference to stressful situations, I have:

50. Thought and analyzed about how stressful the situations were.
51. Thought and analyzed whether the strategies I used were most effective.
Statements from the How Resilient Are You?

Directions: Rate the frequency that the following items apply to you using the following scale:
Never, Occasionally, Fairly Many Times, Very Often, Always.
You may easily move from one item to the next by pressing the Tab key.

1. In a crisis or chaotic situation, I calm myself and focus on taking useful actions.
2. I’m usually optimistic. I see difficulties as temporary and expect to overcome them.
3. I can tolerate high levels of ambiguity and uncertainty about situations.
4. I adapt quickly to new developments. I’m good at bouncing back from difficulties.
5. I’m playful. I find the humor in rough situations, and can laugh at myself.
6. I’m able to recover emotionally from losses and setbacks. I have friends I can talk with.
   I can express my feelings to others and ask for help. Feelings of anger, loss and discouragement don’t last long.
7. I feel self-confident, appreciate myself, and have a healthy concept of who I am.
8. I’m curious. I ask questions. I want to know how things work. I like to try new ways of doing things.
9. I learn valuable lessons from my experiences and from the experiences of others.
10. I’m good at solving problems. I can use analytical logic, be creative, or use practical common sense.
11. I’m good at making things work well. I’m often asked to lead groups and projects.
12. I’m very flexible. I feel comfortable with my paradoxical complexity. I’m optimistic and pessimistic, trusting and cautious, unselfish and unselfish, and so forth.
13. I’m always myself, but I’ve noticed that I’m different in different situations.
14. I prefer to work without a written job description. I’m more effective when I’m free to do what I think best in each situation.
15. I “read” people well and trust my intuitions.
16. I’m a good listener. I have good empathy skills.
17. I’m non-judgmental about others and adapt to people’s different personality styles.
18. I’m very durable. I hold up well during tough times. I have an independent spirit underneath my cooperative ways of working with others.
19. I’ve been made stronger and better by difficult experiences.
20. I’ve converted misfortune into good luck and found benefits in bad experiences.
VITA

Pamela Anne Circo Webb

Candidate for the Degree of

Doctor of Philosophy

Thesis: COLLEGE STUDENT LIFE STRESS AND RESILIENCY IN RELATION TO
WAYS OF THINKING AND LEARNING

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Biographical:

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Completed the requirements for the Doctor of Philosophy in Educational Psychology at Oklahoma State University, Stillwater, Oklahoma in December, 2012.

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Completed the requirements for the Bachelor of Science in Organizational Leadership at Southern Nazarene University, Tulsa, Oklahoma in December, 2000.

Experience:

Department of Defense - Defense Logistics Agency (DLA) Distribution Oklahoma City, Oklahoma, Emphasis Programs Coordinator, Program and Management Analyst, 2009 to present.

Adjunct Professor, Tulsa Community College, Tulsa, Oklahoma, Liberal Arts Department, Psychology and Sociology courses, 2005 to present.

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