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The relationship between self-directed learning readiness and resilience among graduate students

Mary Glenette Robinson

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To the Graduate Council:

I am submitting herewith a dissertation written by Mary Glenette Robinson entitled "The relationship between self-directed learning readiness and resilience among graduate students." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

Ralph G. Brockett, Major Professor

We have read this dissertation and recommend its acceptance:

Accepted for the Council:


Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

To the Graduate Council:

I am submitting herewith a dissertation written by Mary G. Robinson entitled "The Relationship Between Self-Directed Learning Readiness and Resilience among Graduate Students." I have examined the final paper copy of the dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.


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and recommend its acceptance:

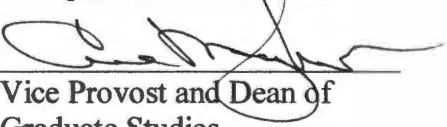

Dr. George W. Harris


Dr. Luther M. Kindall


Dr. R. Steve McCallum


Mr. Alan H. Wallace

Accepted for the Council:


Vice Provost and Dean of
Graduate Studies

**THE RELATIONSHIP BETWEEN SELF-DIRECTED LEARNING READINESS
AND RESILIENCE AMONG GRADUATE STUDENTS**

**A Dissertation
Presented for the
Doctor of Philosophy Degree
The University of Tennessee, Knoxville**

**Mary G. Robinson
December 2003**

Thesis
2003b
.R62

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DEDICATION

This dissertation is dedicated to my son, Brandon Adaryl Anthony, and my parents, Norris Robinson (deceased) and Mary Ella George Robinson.

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I am deeply appreciative to each member of my dissertation committee. Dr. Ralph G. Brockett guided and mentored me during this process. Dr. George W. Harris encouraged me to take this journey. Dr. Luther Kindall supported me along the way. Dr. R. Steve McCallum provided assistance with the statistical analysis. Mr. Alan Wallace located scholarly literature.

Cary Springer, statistical consultant, assisted with the data analysis for this study. Joan Dolence, dissertation consultant, provided information for the final draft.

Brandon Adaryl Anthony, my dear son, supported me during this process. My parents, Norris Robinson (deceased) and Mary Ella George Robinson encouraged striving for excellence.

Finally, I am thankful to God for allowing me to accomplish this goal.

ABSTRACT

The purpose of this study was to investigate the relationship between self-directed learning readiness and resilience among graduate students. A convenience sample of 148 graduate students was selected from three departments in the College of Education, Health, and Human Sciences at the University of Tennessee, Knoxville. Participants were administered the Self-Directed Learning Readiness Scale (SDLRS) developed by Guglielmino (1977), the Resilience Scale (RS) developed by Wagnild and Young (1987), and a demographic questionnaire to describe the sample.

A significant positive correlation was found between SDLRS and RS mean scores ($r = .61$; $p < .001$). Other findings include positive correlation's with self-directed learning readiness and the resilience factors: personal competence and acceptance of self and life. Another positive correlation was found between self-directed learning readiness and age, that is, as age increases, SDLRS scores tend to increase. Significant regressions were found using the total RS scores and age. Total RS scores and age tend to explain 39.2% of the variability in the SDLRS. However, the personal competence factor of the RS explained 43.4% of the variability in the SDLRS.

Recommendations for future research include replicating this study with diverse populations of graduate students in terms of racial identity. Research is also needed in self-directed learning readiness and resilience with other adult populations from community groups. Research is needed with different instruments that measure self-directed learning readiness and resilience because most research on resilience has focused on children and there is a need to develop more research on resilience among adults.

Finally, qualitative research is needed to provide a different perspective from the population through interviews.

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CHAPTER I

INTRODUCTION TO THE STUDY

People accept or strive to reconcile the many crises and transitions in adult life. A crisis is viewed as a time of decision and judgment and a turning point during which a change will be for the better or worse. In the journey of adulthood, the period from age 18 to death (Bee, 1999), the normal passages or transitions we go through can lead to crises. These crises can include such events as getting married, having a child, a vocational change, the “empty nest”, caring for aging parents, identity change, mid-life transitions, retirement, and specific birthdays such as 40, 50, and 65 (Wright, 1997). Therefore, “the upsets of life are all around us” (p. 10). Some people handle these crises and transitions by bouncing back from adverse situations with resilience during the adult life span. Education, which may include self-directed learning, can play an important role in times of crisis or transition.

According to Brockett and Hiemstra (1991), many adult education scholars trace learning projects, andragogy, and self-directed learning to Houle’s (1961/1993) typology of goal, activity, and learning orientations among adult learners. Houle (1961/1993) stated that the goal-oriented people use education as a means of accomplishing clear-cut objectives. Activity-oriented individuals participate in learning for a social purpose that involves meeting people and making friends. The learning-oriented people seek education for the sake of learning that allows them to grow as individuals. Here the fundamental purpose of learning is “the desire to know” (Houle, 1993, p. 25).

Knowles (1975) provided several reasons for supporting the development of “self-directed” skill whereby individuals take initiative and responsibility in the learning process that cuts across various cultural boundaries and applies to a wide variety of educational situations. In other words, the “ability to learn on one’s own” (p. 17) is an aspect of human competence. Furthermore, Tough (1971/1979), in his work on adults’ learning projects, found that “learners prefer to assume considerable responsibility for planning and directing their learning activities if given the choice” (Brockett & Hiemstra, 1991, p. 9). In addition, Tough (1971/1979) stated:

About 70% of all learning projects are planned by the learner himself, who seeks help and subject matter from a variety of acquaintances, experts, and printed resources. Other learning projects rely on a group or instructor, on private lessons, or some other nonhuman resource. (Tough, 1979, p. 1)

In another study, Gibbons et al. (1980) studied the biographies of twenty acknowledged experts, including Amelia Earhart, Harry Truman, Malcolm X, and Walt Disney. Despite their lack of formal education beyond high school, self-direction was the foundation to their success. Furthermore, these individuals were “committed to achievement in the field of their choice, even when faced with difficulties” (p. 53).

From a constructivist approach, Candy (1991) concluded that self-direction refers to four distinct phenomena: “self-direction as a personal attribute (personal autonomy), willingness and capacity to conduct one’s own education (self-management), organizing instruction in formal settings (learner-control), and the pursuit of learning opportunities in the natural setting (autodidaxy)” (p. 23). A critical analysis of self-direction was made

through a review of the literature. Candy (1991) indicated that there is a difference between the learning process within and outside of the institutional setting.

Looking at the concept of self-directed learning from another perspective emphasizing humanism, Brockett and Hiemstra (1991), state that there “is an important distinction between the process of self-directed learning and the notion of self-direction as a personality construct” (p. 23). They noted that careful consideration should be used for the study and practice of this phenomenon.

Another personality construct, resilience, is defined as the “capacity to bounce back in the face of adversity and to go on to live functional lives with a sense of well-being” (Turner, 2001, p. 441). Resilience is related to Personal Competence along with the Acceptance of Self and Life. According to Flach (1997), the resilient personality is flexible, and the individual has the ability to call on particular strengths that are needed to meet particular challenges. Wright (1997) has noted that this ability to bounce back after adversity is something that varies from person to person.

Most research on resilience has focused on “short-term studies in middle childhood and adolescence” (Werner, 1990, p. 115). According to Wagnild and Young (1993), “most studies of resilience have focused on children with fewer studies of resilience among adults” (p.165). Pennewell (1995) and Werner and Smith (1982) also noted that most resilience studies focused on children. Existing research suggests patterns of adaptability vary widely across cultures; however, only a small portion of research documents resilience among families of color (Silliman, 1998). An examination of the possible link between self-directed learning and resilience has the potential to add to our understanding of how learning may be connected to how adults can overcome adversity.

Statement of the Problem

Self-directed learning has been one of the major research areas in adult education over the past three decades. Comparably, research on resilience emerged in the 1970s from the field of psychopathology and child development and theoretically is in its infancy. Both self-directed learning and resilience can be understood in terms of personality; yet, to date only one study (Chuprina, 2001) provides evidence that self-directed learning and resilience are related. In Chuprina's (2001) research on how people adapt to other cultures, she noted a significant relationship between self-directed learning and emotional resilience. There is a need for further evidence into the relationship of self-directed learning and resilience.

Brockett and Hiemstra (1991) indicated that there is substantial research support for the relationship between positive self-concept and self-direction; that is, individuals who take primary responsibility for planning, implementing, and evaluating their educational activities are self-directed learners. Similarly, the literature on resilience suggests that the ability to bounce back from adversity and to persevere through difficult times describe people with a strong self-concept. According to Siebert (1996), they regain emotional balance, adapt, cope, and expect for things to turn out well.

From the literature on self-directed learning and resilience, it may be possible to hypothesize a link between self-directed learning and resilience through self-concept. On the other hand, we do not know at this point if there is an actual link between self-directed learning and resilience. This problem serves as the focus for the study.

Purpose of the Study

The purpose of this study is to investigate the relationship between self-directed learning readiness, defined as the extent that people perceive themselves to have skills and attitudes associated with self-directedness in learning, and resilience. This relationship may provide a greater understanding of adult learning and how self-directed learning may relate to the ability to bounce back from adversity. An awareness of this relationship could enhance the educational practice of administrators, academicians, and practitioners and provide a greater understanding of the cognitive aspect of self-directed learning among adult learners.

Research Questions

To address the problem stated above, the following research questions will be addressed:

1. Is there a significant relationship between self-directed learning readiness and resilience?
2. Is there a significant relationship between self-directed learning readiness and the resilience factors: Personal Competence and Acceptance of Self and Life?
3. Is there a significant difference in self-directed learning readiness by gender?
4. Is there a significant difference in resilience by gender?
5. Is there significant difference in scores on the resilience factors, Personal Competence and Acceptance of Self and Life, by gender?

6. Is there a significant relationship between self-directed learning readiness and educational level, family income, and age?
7. Is there a significant relationship between resilience and educational level, family income, and age?
8. To what extent can the combination of selected demographic variables (educational level, family income, age, gender) and resilience scores predict self-directed learning readiness?

Significance of the Study

This study will contribute to the knowledge base of self-directed learning among graduate students. An additional piece will be added to the self-directed learning puzzle by providing further understanding of the link to resilience. Furthermore, this study will add to the body of correlational studies relating self-directedness to personological variables because it deals with an area of how people cope with situations. If there are linkages, hopefully there will be more interest in future research with these two variables.

As adult learners come to institutions with barriers, professionals can assist them to persevere by promoting resilience and self-directed learning. For example, adult educators can help with common educational concerns such as, a lack of confidence and academic preparation. Teaching resilience and connecting it with self-directed learning might help to achieve desired educational outcomes. Finally, the findings of this study may provide insight into the psychological aspect of self-directed learning readiness among students in higher education who have dealt with crises.

Assumptions

Two assumptions underlie this study. First, it is assumed that self-direction and resilience of graduate students can be identified and measured. Second, it is assumed that the two instruments used for this study, the Self-Directed Learning Readiness Scale (SDLRS) and the Resilience Scale (RS) are both valid.

Limitations

There are two main limitations in this study. First, the results are not generalizable to the total population since a convenience sample was used. Second, the instruments used, the SDLRS and the RS, are reliable, valid, self-reporting instruments; however, they are only accurate to “the degree that the person is willing to express them [responses] honestly” (Borg & Gall, 1983, p. 336).

Conceptual Framework

According to Brockett and Hiemstra (1991), “the concept of self-directed learning has undergone close scrutiny over the past several years” and the “distinction between the process of self-directed learning and the notion of self-direction as a personality construct” emerged as a result (p. 23). Guglielmino (1977) identified eight psychological qualities in self-directed learning readiness:

initiative, independence, and persistence in learning; acceptance of responsibility for one's own learning; self-discipline; a high degree of curiosity; a strong ability to learn independently; enjoyment in learning; a tendency to be goal oriented; and a tendency to view problems as challenges rather than obstacles. (p. 73)

These eight factors emerged from the development of the SDLRS; however, Guglielmino subsequently argued that only the total SDLRS score should be used (L. M. Guglielmino, personal communication with R. G. Brockett, February 4, 2000). As reflected in the PRO model, the psychological view of self-direction is explored. Resilience will also be explored to provide further insight into the self-directed learner.

To date, one study has examined self-directed learning and resilience. Chuprina (2001) provided evidence of a link in her dissertation study of 56 U.S. expatriate managers employed with Motorola. From her findings, there is a significant relationship between self-directed learning readiness and cross-cultural adaptability. Of the four factors of the Cross-Cultural Adaptability Inventory (CCAI), one factor is emotional resilience. Chuprina (2001) noted that resilience involves the ability to adapt to another culture during cross-cultural assignments. As the SDLRS score increased, emotional resilience increased. She concluded, that "there are significant relationships between SDLR and Emotional Resilience ($r = .69$; $p = .000$)" (p. 105).

In developing a possible link between self-directed learning and resilience, it is possible that four common ideas underlie both self-direction and resilience.

They are self-concept, control, responsibility, and persistence. These ideas are addressed below.

Self-concept

Self-concept is defined as “the mental image one has of oneself” (Merriam-Webster’s Collegiate Dictionary, 2000, p. 1057). Some of the studies on self-directed learning and resilience support this definition of self-concept. Brockett and Hiemstra (1991) noted that a key aspect of their PRO model of self-direction in learning centers on the personality characteristic. The authors stated that self-concept refers to how one perceives oneself. They indicated that much of the research shows a strong link between self-concept and self-direction.

Sabbaghian’s (1979) dissertation was designed to “investigate relationships between the self-directedness and self-concepts of adult learners” (p. 39). She found that these students scored lower on the SDLRS than comparison groups at other universities; however, there was a “highly significant positive relationship between adults’ self-directedness in learning and their self-concept” (p. 65). From the results, adult college seniors “are more self-directed in learning, more eager to learn, have higher self-concepts as effective and independent learners,” and they also show greater “initiative in learning, and have higher self-understanding than freshmen, sophomores, and juniors” (p. 90).

Writers in the area of resilience have also discussed self-concept. Siebert (1996), in his research on the survivor personality, indicated that people who recover from misfortune are flexible and adaptable. In addition, he noted that “self-concept refers to your idea about who and what you are” (p. 146). Segal’s (1986) research as a

psychologist has taught him that the most resilient people in rough situations are those with a positive self-concept who demonstrate the “healing power of compassion” (p. 99). Werner (1990), a scholar in the area of resilience, also looked at self-concept and made comparisons of studies that involved the establishment of a close bond with at least one person, such as a grandparent. She stated that elementary-age children coped well despite the stresses of parental divorce in a 1980 study by Wallerstein and Kelly. That is, these children were resilient and “had a positive self-concept” in spite of their adverse situation (Werner, 1990, p. 122).

Control

The second link, **control**, refers to “an act or instance of controlling” and the “power or authority to guide or manage” (Merriam-Webster’s Collegiate Dictionary, 2000, p. 252). According to Brookfield (1993), one of the political dimensions of self-direction in learning involves the issue of control. The issue of control includes what is conceived as acceptable and appropriate learning activities as well as the processes. Brookfield stated that “one consistent element in the majority of definitions of self-direction is the importance of the learner’s exercising control over all educational decisions” (p. 233).

Caffarella noted that three themes emerged from the literature based on self-directed learning in the area of control (Brockett et al., 1994). The themes are (1) how adult learners take primary responsibility for their own learning, (2) the characteristics and preferences of adult learners in terms of growth in self-direction and autonomy, and (3) initiative and learner control in formal institutional settings with organized learning

activities. These three theoretical perspectives describe a need among adult students to assume control of their learning situation in non-educational settings and in educational institutions.

Other authors in the area of self-directed learning have discussed control in terms of the adult learner. For instance, Grow (1993) noted that the Staged Self-Directed Learning (SSDL) Model could be implemented in seven ways to encourage self-directed learning. One of the strategies, learning contracts, “provide an opportunity for the learners to be in control of their learning” (Grow, 1993, p. 24). Therefore, these learners are motivated to achieve.

Blowers (1993) conducted a case study involving interviews of adult undergraduates at two private institutions to examine self-directed learning in the collegiate classroom. A key finding was that “these adult learners initially exercised control over their learning by the decision to participate in a formal educational program” (Blowers, 1993, p. 14). The selection of a program was usually related to life goals. Autonomy was an essential aspect of self-direction expressed in the learner’s control of elements of the learning transaction.

In terms of resilience, Werner (1990) noted that a common strength, control and influence of the environment, existed among the 10 year-olds in the Kauai Longitudinal Study. The cohort of 698 children on the island of Kauai, Hawaii were originally studied in 1955 and then tracked for over 30 years. This common strength was also noted in other studies (Werner, 1989; Werner & Smith, 1982; Werner & Smith, 1992). That is, approximately one-third of this cohort was designated “high risk” because the children had four or more risk factors that included poverty, prenatal stress, family discord, and

low parental education. However, 10% of the high-risk group was identified as resilient because group members had adapted well in childhood and adolescence. As adolescents, these resilient youth were more responsible, mature, achievement motivated and socially connected due to caregivers. They welcomed attention from others, had less family conflict and stress, and exhibited better physical health than the others in the high-risk portion of the cohort. These resilient children demonstrated control and used flexible coping strategies in overcoming adversity.

Other authors in the area of resilience, such as McMillan and Reed (1994), stated that the resilient student has both control and healthy internal attributions. Psychologist Julian Rotter “found that some people believe that the primary point of control in their lives is inside themselves,” and that these people who “thrive in difficult situations reflect ‘internal’ attitudes and beliefs” (Siebert, 1996, p. 95). After being knocked off track by disruptive change, these individuals follow similar patterns of actions: “they regain emotional balance; cope during the transition; adapt to the new reality; recover to a stable condition; and thrive by learning to be better and stronger than before” (Siebert, 1996, p. 91). That is, they expect things to turn out well.

Responsibility

Responsibility, the third link, implies “reliability, trustworthiness” and “moral, legal, or mental accountability” (Merriam-Webster’s Collegiate Dictionary, 2000, p. 995). Learner self-direction, the personality construct of the Personal Responsibility Orientation (PRO) model, is the “learner’s desire or preference for assuming responsibility for learning” and refers to both internal

and external characteristics (Brockett & Hiemstra, 1991, p. 24). According to Brockett and Hiemstra (1991), “self-direction is a way of life for most adults that involves forces both within and outside the individual that stress the learner accepting ever-increasing responsibility for decisions associated with the learning process” (p. 9).

Tough’s (1979) seminal work on the adults’ learning projects noted that learners most often prefer to assume responsibility for planning and directing their learning activities. Furthermore, Garrison’s (1997) comprehensive theoretical model of self-directed learning integrates contextual control, cognitive responsibility, and motivational dimensions. He stated that self-directed learners are “motivated to assume personal responsibility” and to have “worthwhile learning outcomes” (p. 18). These scholars have demonstrated that, on the whole, adult learners prefer to assume responsibility for learning.

From the resilience literature, David Viscott (1996), a psychiatrist recognized for his work on the subject of emotional fulfillment, spent three decades constructing therapeutic breakthroughs for his patients. In his pragmatic handbook for self-healing, Viscott stated that “there are two basic feelings: pleasure and pain” (p.70) and the “purpose of hurt is to limit the extent of damage done to you” (p. 78). He suggests that people should take responsibility for everything in their lives including:

- 1) tolerating being treated the way you are;
- 2) accepting a life that doesn’t make you happy;
- 3) living with an addict or alcoholic;
- 4) failing in your career or relationship;

- 5) your mistakes, especially the ones that you repeat;
- 6) remaining silent in the face of injustice;
- 7) not speaking out;
- 8) holding on to your pain;
- 9) not forgiving and choosing to suffer;
- 10) being the way you are, where you are.

Even though it may seem difficult and unfair, if people “take responsibility for everything” in their lives, they “claim the power to change it” (p. 36). On the other hand, taking responsibility for nothing assures that you will remain a victim. Coping involves breaking through the unresolved feelings of hurt and anger to have a peace of mind that comes with self-acceptance. Since life is a continual process of reconciling the past with the present, the notion is to resolve pain at the moment it arises.

Flach (1997) described resilience as having the strength to reassemble our lives after personal disruptions and to take the responsibility for weathering change within. Therefore, “we should have learned something from what we have been through” and we should “emerge better put together, and more qualified to deal with life’s challenges because of our experience” (p. 5). In other words, responsibility is an attribute of resilience.

McMillan and Reed (1994) noted that resilient students strive to achieve and become successful. This involves taking personal responsibility for their actions; not only taking responsibility for their successes and failures but also showing a strong sense of self-efficacy because they have chosen to be so and give much credit to themselves.

Albert Bandura referred to self-efficacy as “the conviction that you can do something” (Bee, 1996, p. 43). Therefore, the resilient students’ performance is not blamed on their adverse situation.

Persistence

Finally, persistence is defined as the ability “to continue firmly and steadfastly despite obstacles” (Webster’s II New Riverside Desk Dictionary, 1988, p. 314). In the Gibbons et al. (1980) study described earlier, the authors analyzed the biographies of twenty acknowledged experts without formal education beyond high school, except for one individual who attended college for one year. The individuals were classified in four groups. Persistence, related to drive, was denoted as one of the main categories in the characteristics of self-directed learners. This study is discussed in Chapter II.

Garrison (1997), in his comprehensive theoretical model of self-directed learning, distinguished between deciding to participate and the “effort required to stay on task and persist,” whereby the expectancy is the “belief that a desired outcome can be achieved” (p. 27). This model integrates four dimensions, of which one is motivational. According to Garrison (1997), the tendency of task motivation is to focus and persist in learning activities and goals. The challenge is to define the variables that influence the decision-making process, which lead to goal attainment. As self-directed learners persevere to reach their goals, their “needs and values reflect the reasons for persisting in a learning task” (p. 27). Hence, there appears to be a connection between self-directed learning and persistence.

Similarly, persistence tends to have ties with resilience. For instance, Segal (1986) describes how to cope with crises and trauma, which are facts of life. *Winning Life's Toughest Battles: Roots of Human Resilience* was based on his work with Iran hostages, Vietnam POWs, and other triumphant survivors. This work serves as a roadmap and suggests how to draw on inner strengths to provide strategies for living. "Self-absorption and self-pity—natural responses in times of crisis and loss—have never increased anyone's psychological endurance" (p. 98). Having compassion for others was demonstrated to have a remarkable therapeutic effect during these difficult times. For instance, in the Vietnam prison camps simple acts of charity toward one another helped to raise the captives' power of endurance. One prisoner from the Nazi death camps of the Second World War stated, "We are all brothers, and we are all suffering the same fate. The same smoke floats over all our heads. Help one another. It is the only way to survive" (p. 103). The prisoners were resilient and they persisted in spite of the adverse situation.

Lifton (1993), in his writings on the human self and our changing world, stated that over time people are becoming fluid and many-sided without realizing it. He argues that this period of rapid change puts pressure on the self, but the proteanism, the human response to this pressure as an attempt to function in a world of uncertainty and ambiguity, makes an individual capable of flexibility and buoyancy. The "protean self", named after Proteus, the Greek sea god of many forms, emerges from confusion, becomes resilient, and "somehow keeps going" (Lifton, 1993, p. 1). Regardless of the adverse situations, individuals under pressure tend to evolve and persist in terms of flexibility and buoyancy.

Summary of the Conceptual Framework

Self-directed learning has been one of the major research areas in adult education over the last thirty years. During this same time, the literature of resilience has also emerged from the field of psychopathology and child development. Scholars in both areas have conducted numerous research studies, and the two variables appear to share a link with self-concept, control, responsibility, and persistence (see Table 1.1).

Self-concept is viewed as how people perceive themselves. For instance, Brockett and Hiemstra (1991), Sabbaghian (1979), and Guglielmino (1977) all described the link between self-directedness and self-concept in adult learners. Similarly, resilience writers Siebert (1996) and Werner (1990) demonstrated that individuals who bounce back from adverse situations tend to have a positive self-concept. The work of these scholars appears to provide one conceptual link between self-directed learning and resilience with self-concept.

Control was described, in the areas of self-directed learning and resilience, as having a positive influence over the individual's learning environment. Writings on self-directed learning by Brockett et al. (1994), Brookfield (1993), Blowers (1993), and Grow (1993) demonstrated the preference to have control over decisions about their learning experience. Likewise, resilience research studies by Siebert (1996), McMillan and Reed (1994), Werner (1989, 1990), and Werner and Smith (1982/1992) noted that the individual value control in the learning process. Thus, there appears to be a connection between self-directed learning and resilience with control.

Table 1.1.**Sources Supporting the Conceptual Framework**

Factors	Self-Directed Learning	Resilience
Self-concept	Brockett & Hiemstra (1991) Sabbaghian (1979) Guglielmino (1977)	Siebert (1996) Werner (1990)
Control	Brockett et al. (1994) Brookfield (1993) Blowers (1993) Grow (1993)	Siebert (1996) McMillan & Reed (1994) Werner (1989,1990) Werner & Smith (1982,1992)
Responsibility	Garrison (1997) Brockett & Hiemstra (1991) Tough (1971/1979)	Viscott (1996) McMillan & Reed (1994)
Persistence	Garrison (1997) Gibbons et al. (1980)	Flach (1997) Lifton (1993) Segal (1986)

Self-directed learners and resilient people tend to assume responsibility for their own learning actions. That is, Garrison (1997), Brockett and Hiemstra (1991), and Tough (1971/1979) noted that learners prefer to assume responsibility for learning in terms of self-direction. Likewise, with resilience, Viscott (1996) and McMillan and Reed (1994) suggested taking responsibility for actions whether they involve successes or failures. Hence, there appears to be a third connection between self-directed learning and resilience with responsibility.

Finally, self-directed learners and resilient individuals tend to be persistent. In terms of self-directed learning, Garrison (1997) and Gibbons et al. (1980) demonstrated perseverance as a drive to achieve a desired outcome. Similarly, resilience writers Flach (1997), Lifton (1993), and Segal (1986), described persistence as strength to somehow keep going despite life's disruptions. There appears to be a link between self-directed learning and resilience with persistence. Therefore, these two variables, self-directed learning and resilience, involve personality characteristics and are connected with the four factors, self-concept, control, responsibility, and persistence.

Definition of Terms

Adult student refers to an individual at least 18 years old enrolled part-time or full-time as an undergraduate or graduate student at a university.

Learner self-direction “refers to both the external characteristics of an instructional process and the internal characteristics of the learner, where the individual assumes primary responsibility for a learning experience” (Brockett & Hiemstra, 1991, p. 24).

Resilience implies emotional stamina and is used to describe persons who display courage and adaptability in the face of life's misfortunes (Wagnild & Young, 1993). Resilience refers to the capacity to bounce back from adversity and to go on to live a functional life with a sense of well being (Turner, 2001). The term resilience is used similarly with related terms such as adaptation, hardiness, coping, and invulnerability (Pennewell, 1995).

Resiliency refers to a personality trait that involves the interaction between individuals and the environment as well as the ability to spring back from adversity, cope, and successfully adapt (Richardson, Neiger, Jensen, & Kumpfer, 1990). In this study, this term is used interchangeably with resilience (Murphy, 1999; McMillan & Reed, 1994; Silliman, 1998).

Resilience Scale (RS) was designed in 1987 and revised in 1990 by two nursing researchers, Wagnild and Young, to measure resilience. Originally, it was a 25-item self-reporting instrument with a seven-point Likert response format designed for use with adults. Now, the instrument has 26-items and it was used for this study.

Self-direction in learning involves two dimensions, process and learner self-direction. The process is defined as when "a learner assumes primary responsibility for planning, implementing, and evaluating the learning process" (Brockett & Hiemstra, 1991, p. 24). Learner self-direction pertains to "a learner's desire or preference for assuming responsibility for learning," that is, "the personality aspect" (p.24).

Self-directed learning involves the learner "taking primary responsibility for planning, implementing, and evaluating learning, and internal factors or personality characteristics

that predispose one toward accepting responsibility for one's thoughts and actions as a learner" (Brockett & Hiemstra, 1991, p. 29).

Self-directed learning readiness refers to "the extent to which individuals perceive themselves to possess skills and attitudes frequently associated with self-directedness in learning" (Brockett & Hiemstra, 1991, p. 56).

Self-Directed Learning Readiness Scale (SDLRS) was designed to assess the extent of learning preferences and attitudes toward self-directed learning readiness. This instrument moved the research of self-directed learning from descriptive to understanding relationships between self-direction and variables. The SDLRS is a 58-item, five-point Likert scale, developed in 1977 by Lucy Guglielmino.

Summary

This study consists of five chapters. Chapter I included the introduction, statement of the problem, purpose of the study, research questions, conceptual framework, significance of the study, assumptions, limitations, and definitions. Chapter II is a review of the literature. Chapter III is a description of the population and sample, research design, instrumentation, procedure, and data analysis. Chapter IV presents an analysis of the data and addresses the research questions. Chapter V includes the summary, conclusions, discussion, implications, and recommendations for future research.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this study is to explore the relationship between self-directed learning readiness and resilience among university graduate students. Chapter I included the introduction, statement of the problem, purpose of the study, research questions, significance of the study, assumptions, limitations, conceptual framework, and the outline of the study.

Chapter II is a review of the relevant literature pertaining to self-directed learning and resilience. The review includes three sections. First, the literature of self-directed learning is reviewed. Second, the literature of resilience is examined. The chapter concludes with a brief discussion of the link between self-directed learning and resilience.

Self-Directed Learning

Merriam and Brockett (1997) noted that although self-directed learning “emerged as a major topic in the 1970s and 1980s, the idea of self-directed learning—that is, adults assuming control of their learning—is as old as history” (p. 137). From the literature, the term self-directed learning has been defined in various ways as different concepts have been studied in the field of adult education. Related terms used to describe self-directed learning include self-

education, self-planned learning, self-teaching, and independent study (Knowles, 1975; Hiemstra, 1994).

According to Merriam and Brockett (1997), Malcolm Knowles is “probably the most prominent writer in the field” of adult education from a “humanist perspective” (p. 41). Knowles (1975), in one of the earliest definitions, described the term self-directed learning as follows:

In its broadest meaning, “self-directed learning” describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (p. 18)

According to Hiemstra (1994), Knowles provided foundational definitions and assumptions for self-directed learning that have guided research.

Caffarella (1993) has stated that three principal ideas describe the concept of the term self-directed learning. She defines self-directed learning as:

A self-initiated process of learning that stresses the ability of individuals to plan and manage their own learning, an attribute or characteristic of learners with personal autonomy as its hallmark, and a way of organizing instruction in formal settings that allows for greater learner control.

(p. 25-26)

Even though the definitions by Merriam and Brockett (1997), Knowles (1975), and Caffarella (1993) vary, they are similar in their description of the learner

assuming control of their learning situation. This core idea is foundational to an understanding of self-directed learning.

Self-Directed Learning: A Brief Background

Self-directed learning has been prevalent throughout history and it has been evident in the lives of Greek philosophers - Socrates, Plato, and Aristotle (Kulich, 1970). Brockett and Hiemstra (1991) described the lives of historical figures in terms of self-directed learning in their book *Self-Direction in Adult Learning: Perspectives on Theory, Research, and Practice*. Socrates indicated he learned from people around him. Plato noted the ultimate goal of education for the young should be self-education in adulthood. Aristotle emphasized the importance of self-realization that can be developed with the assistance of a teacher or through self-education. In addition, Alexander the Great was described as carrying the works of Homer with him when he traveled, and Caesar wrote and studied daily. In the 17th century, Rene Descartes abandoned formal education when he was quite young and observed the world around him in his *Discourse on Method* to improve himself.

Long (1976) noted that the social conditions in Colonial America along with a lack of formal educational institutions forced many people to learn on their own. Brockett (1982) indicated that in the United States self-directed learners who historically made significant contributions to society include Benjamin Franklin, Henry David Thoreau, and Thomas Alva Edison. Franklin's autobiography indicated self-direction through reading and discussion. Thoreau emphasized the right of the individual to self-culture and freedom. Edison received only three months of public school; however, he

was engaged in discovery throughout his life as a self-directed learner. Other examples of self-directed learners included individuals from diverse backgrounds who became experts in their field including Harry Truman, Walt Disney, Malcolm X, Amelia Earhart, and Muhammad Ali (Gibbons et al., 1980).

Over the last three decades, self-directed learning has become a major research area. Houle (1961/1993), as previously mentioned in Chapter I, laid the groundwork when he interviewed 22 adult learners and classified them into three categories - goal-oriented, activity-oriented, and learning-oriented - based on their reasons for participating in learning. Tough (1971/1979), in *The Adult's Learning Projects*, analyzed self-directed learning teaching activities that have been replicated by other researchers. Knowles popularized the term andragogy, that is, “the art and science of helping adults learn” (1970, p. 38), which included self-direction as one of its major assumptions. In 1975, his publication, *Self-Directed Learning*, provided foundational definitions and assumptions that stimulated similar research studies in various populations and locations. Knowles stated that the significance of self-education as survival for an individual was due to “the ability to learn on one’s own” (p. 17).

Other important research efforts include Guglielmino’s (1977) dissertation that consisted of the development of the Self-Directed Learning Readiness Scale (SDLRS). The instrument was designed to measure the degree to which learners perceive themselves as possessing skills and attitudes related to self-directed learning. In addition, Long and his colleagues in 1987 established the annual International Self-Directed Learning Symposium. According to Hiemstra (1994), “the Symposia have spawned many

publications, research projects, and theory building efforts by researchers throughout the world” (p. 2). This symposium continues today.

Merriam and Caffarella (1999) noted self-directed learning is grounded in many different perspectives including the humanistic influence. The emphasis here is on human nature, potential, and emotions along with the function of motivation that involves making choices and taking responsibility for one’s actions. Since self-directed learning is grounded in humanistic philosophy, it “is viewed by many educators as the approach to learning that will facilitate the greatest level of personal growth among the majority of learners” (Brockett, 1982, p. 22). Self-directed learning emphasizes the potential of the individual to strive toward the highest level of personal growth that is self-actualization. According to Caffarella (1993), self-directed learning has made a significant impact on our understanding of adult learning since:

We have a better picture of how adults learn, which key factors influence whether or not learners assume primary responsibility for their own learning, why the concept of autonomy appears to be a key descriptor of adult learners, and how adult educators can help learners take more control of their own learning within formal settings. (p. 32)

The ability to be a self-directed individual means to be primarily responsible for and in control of what, where, and how to learn.

Frameworks for Self-Directed Learning

Four theoretical models by Grow (1991), Candy (1991), Brockett and Hiemstra (1991), and Garrison (1997) are examined to provide different perspectives on self-

direction. Grow's (1991) model is based on an instructional view. Candy's (1991) model is grounded in a constructivist perspective and integrates three dimensions. Brockett and Hiemstra's (1991) model consists of instruction and personality. Finally, Garrison's (1997) model is grounded in a collaborative constructivist perspective.

Grow's Staged Self-Directed Learning (SSDL) Model. Grow (1991) developed the Staged Self-Directed Learning (SSDL) Model, which identifies the teaching-learning process and strategies for promoting self-directed learning at each phase. He suggests that "teachers can actively equip students to become more self-directed in their learning" (p. 126). That is, as learners advance through stages of self-direction, teachers can match the learner's stage of self-direction and prepare them for advancement to higher stages.

The four stages of the model include Stage 1 as the lowest level, where dependent students are not self-directed learners and need an authority-figure to provide explicit directions on what, how, and when to do. Stage 2 learners are of moderate self-direction and prefer motivation and guidance to come from the teacher. In Stage 3, the learners are of intermediate self-direction and need the teacher as a facilitator. The highest level, Stage 4, implies that the learners are of high self-direction with the need of consulting or delegating from the teacher to monitor their progress. Therefore, Grow (1991, 1994) suggests that learners can progress toward self-directed learning based on the situation and the learning task. According to Smeby (1993), Grow's model "assumes teaching is situational in nature and instruction should be matched to the "readiness" of the learner" (p.23). This model can be implemented with the use of learning contracts, by providing support, establishing high expectations, creating a climate of acceptance, taking risks, celebrating successes, and sharing experiences with colleagues.

Tennant (1992) criticized the SSDL Model and stated that it “lacks explanatory power” and it “is not capable of handling a wide range of observations” (p.113). He also noted that important questions were neglected such as, “Should the teacher follow or lead the readiness of students?” (p.110). In response, Grow (1994) defended a variety of teaching styles and also noted that teachers need to change their styles; however, he did not address when to change the teaching style. Thus, Grow defended his model by stating that many educators have found the SSDL model helpful in developing self-direction in students. Despite Tennant’s criticism, Grow’s model appears to have a degree of practical value since it “identifies major phases and components of the teaching-learning process and presents practical strategies for promoting self-direction at each phase” (Merriam & Brockett, 1997, p. 140).

Candy’s Self-Direction in Learning Model. A second view of self-direction in learning, Candy’s (1991) model for enhancing self-direction in learning involves three major domains: competence, resources, and rights. In the competence domain, the following competency skills included are literacy, numeracy, information location and retrieval, goal setting, time management, curiosity, critical thinking, monitoring, and self-evaluation. According to Candy (1991), “developing the competencies for self-directed learning is a lifelong endeavor” (p. 418) and educators can make a contribution to the development of self-directed learning competence.

The resources domain describes how educators can provide learners with access to learning resources. These resources include libraries, resource centers, laboratories, computer-based instruction materials, internships and job placements. The desire to

promote self-direction in learning involves the availability of resources regional, national, and international for the learners.

The rights domain emphasizes personal rights, the “most difficult and delicate aspect in the area of self-directed learning” (p. 420). Candy refers to rights as what is permitted and what the individual believes is permitted. That is, the learner’s ability in self-direction is limited by their confidence in themselves. Furthermore, Candy (1991) explained that the invisible barrier or the “glass tunnel” works to inhibit self-direction. The glass tunnel is described by peer pressure, closed ranks, and the criteria used to distinguish an expert in the field. Hence, the glass tunnel can hinder an individual from reaching a higher level of self-direction.

The essence of this model is the types of learner situations. Candy (1991, p. 411) described self-direction as follows:

- 1) Self-direction as the independent pursuit of learning without formal institutional structures (referred to here as autodidaxy)
- 2) Self-direction as a way of organizing instruction (learner-control)
- 3) Self-direction as a personal quality or attribute (personal autonomy)
- 4) Self-direction as the manifestation of a certain independence of mind and purpose in learning situations (self-management in learning)

He noted that the first two types refer to activities while the latter two relate to personal attributes.

Candy (1991) stated that the constructivist perspective of learning is an “active process of *constructing* a system of meanings and then using these to *construe* or interpret events, ideas, or circumstances” along with the “combined characteristics of

active inquiry, independence, and individuality in a learning task” (p. 278). Merriam and Caffarella (1999) stated that Candy’s constructivist perspective “is congruent with much of adult learning theory” (p. 262). Candy’s model emphasizes the characteristics of self-directed learning. According to Merriam and Brockett (1997), the strength of the model is that it “emphasizes the social context in which learning takes place—something that is often downplayed in other views of self-directed learning” (p. 139). Therefore, this model has added to the literature base of self-direction.

Brockett and Hiemstra’s Personal Responsibility Orientation (PRO) Model.

A third view, Brockett and Hiemstra’s (1991) Personal Responsibility Orientation (PRO) model of self-direction in adult learning is “designed to recognize both the differences and similarities between self-directed learning as an instructional method and learner self-direction as a personality characteristic” (p. 26). Personal responsibility occurs when individuals assume ownership for their own thoughts and actions. In addition, it is the ability or willingness of individuals to take control of their own learning. This model draws largely on the assumptions of humanistic philosophy and emphasizes personal responsibility in two ways. First, the authors embrace the view that human nature is basically good and that individuals possess virtually unlimited potential for growth. Second, they believe that by accepting responsibility for one’s own learning it is possible to take a proactive approach to the learning process.

According to Brockett and Hiemstra (1991), Oddi’s (1987) “distinction between process and personality perspectives lies at the heart of the model” (p. 23). The model holds that self-direction is comprised of two dimensions: the instructional method (self-directed learning) and the personality characteristics of the individual (learner self-

direction). “Thus, Brockett and Hiemstra recommend that self-direction in learning be used as an umbrella definition recognizing those external factors facilitating adults taking primary responsibility for learning and those internal factors or personality characteristics that incline one toward accepting such responsibility” (Hiemstra, 1994, p. 5). That is, learners have choices about the directions that they pursue and these choices can lead to taking primary responsibility for their learning situation.

Flannery (1993) criticized Brockett and Hiemstra for their inadequate discussion of the social milieu in which self-directed learning takes place. A weakness in the model is that Brockett and Hiemstra ignored the cultural context of the adult population and therefore the values and beliefs of adult learners were not considered. The preferred method of communicating and learning was ignored. Regardless of the weakness in the model, she believes that the PRO model is a contribution to the literature of adult education.

Garrison (1997) pointed out that the “psychological dimension appears limited by the fact that it represents only a personality factor or disposition to be self-directed” (p. 20). In fact, he suggested that the personality factors be considered as motivational dispositions. He argued that it was unclear how the critical reflection of the model is considered a personality characteristic. Hence, Garrison (1997) stated that the “challenge is to take a more comprehensive perspective and integrate cognitive and metacognitive processes in self-directed learning” (p. 20).

Merriam and Caffarella (1999) stated that the model is interactive and two or more factors interact to create self-directed learning. Furthermore, Merriam and Caffarella (1999) noted that although Brockett and Hiemstra agree that “individual

learners are central to the idea of self-direction, they also regard the context, social milieu, in which that learning activity transpires as important” (p. 299). In this way, the PRO model provides a better understanding of self-direction in learning.

Most recently, the Personal Responsibility Orientation to Self-Direction in Learning Scale (PRO-SDLS) was developed by Stockdale (2003) as an effort to measure self-directedness in learning among college students. The PRO-SDLS is a 35-item instrument that uses the framework of the teaching-learning and learner characteristic components of the PRO model. According to Stockdale (2003), 31 of the 35 items of the PRO-SDLS are representative of the PRO model.

Garrison’s Comprehensive Model. A fourth view, Garrison’s (1997) model is grounded in a collaborative constructivist perspective that integrates three overlapping dimensions to describe an approach to self-directed learning. The dimensions are “self-management (contextual control), self-monitoring (cognitive responsibility), and motivational (entering and task)” (Merriam & Caffarella, 1999, p. 300). Self-management involves the learner taking control or responsibility of the learning. Self-monitoring and motivation represent the cognitive dimensions of self-directed learning. Self-monitoring is the ability of learners to monitor the cognitive processes whereby the degree of self-direction will depend on the learner’s proficiency, abilities, and strategies, along with the contextual demands. The dimension of motivation involves what influences individuals to participate in self-direction activities. Garrison’s multidimensional and interactive model is another approach to the understanding of self-directed learning.

Garrison’s (1997) model builds on the work of Brockett and Hiemstra (1991) and Oddi (1987). As was previously mentioned above, Brockett and Hiemstra’s (1991)

framework evolved from the work of Oddi (1987) and includes a personality disposition along with two dimensions, instructional process and learner personality characteristics. Since Garrison (1997) regarded Brockett and Hiemstra's (1991) model as limited, he explored a comprehensive perspective. That is, Garrison (1997) stated that the PRO model was limited to a personality factor; however, he integrated cognitive and metacognitive processes into this comprehensive model.

Research on Self-Directed Learning

Over the last three decades, much research has been generated to enhance our understanding of self-directed learning. As previously stated, Houle (1961/1993) laid the groundwork in his typology of adult learners. Brockett and Hiemstra (1991) identified three streams of research on self-directed learning. They are learning projects, qualitative research, and the measurement of self-directed learning. The first two of these streams will be discussed below, while the third will be discussed more fully in the next section.

Learning Projects. In the first stream of research, Tough (1971/1979) sought to describe the frequency and nature of learning projects undertaken by adults. Tough described a learning project as a deliberate effort to gain new knowledge, insight, or understanding to possibly change one's performance or attitude.

Tough's (1971/1979) study was based on interviews with 66 people from seven different groups:

- (1) politicians;
- (2) professors;
- (3) men in lower-white-collar jobs;

- (4) women in lower-white-collar jobs;
- (5) blue collar factory workers;
- (6) teachers; and
- (7) upper-middle-class mothers

Tough's criteria for learning projects included a minimum of seven hours over a six-month period. These learning projects may be related to one's job, the home, family, hobby, or a degree. He also found that learning projects could range from 100 hours to 2000 hours. Almost everyone participates in at least one or two learning projects a year. He stated that "the median is eight learning projects a year, involving eight distinct areas of knowledge and skill" (p. 1). Perhaps the most important result of this study is that Tough (1971/1979) found that approximately 68% of all learning projects were self-planned.

Tough's original research spawned a host of replication studies in a wide range of settings. These included studies of mothers with preschool children (Coolican, 1973), rural and urban adults (Peters & Gordon, 1974), older adults (Hiemstra, 1975), and a U.S. national sample (Penland, 1977). Brockett and Hiemstra (1991) provide a summary of this line of inquiry. While there are some variations in the actual percentages, for the most part these studies support the notion that about 70% of adults' learning projects are self-planned.

Qualitative Research. A second stream of investigation involves qualitative research on the study of self-directed learning. Cavaliere stated that qualitative methodology "allows the researcher to explore behaviors manifested by self-directed learners, the contextual forces utilized during the learning projects" (Brockett et al., 1994,

p. 425). This process has been revealed through content analyses of biographies, diaries, and historical data to demonstrate how adults engage in self-directed learning. Gibbons et al. (1980) conducted a qualitative study of self-direction in the lives of people who became expert in their field without formal training. Gibbons and his colleagues analyzed the biographies of twenty individuals and classified them according to four categories:

- (1) entertainers;
- (2) inventors, explorers, and creators;
- (3) people of letters, science, and philosophy; and
- (4) administrators, organizers, and builders.

Muhammed Ali, Amelia Earhart, Wilbur Wright, Harry Houdini, Pablo Picasso, and Henry Ford were among those considered experts in their field. The most prominent characteristics identified were perseverance, self-disciplined study, self-confidence, assertiveness, and ambition. The authors concluded that of the 20 self-educated subjects, most focused their attention on a particular field of expertise during their youth and launched a pursuit of excellence through self-disciplined study.

Spear and Mocker (1984) conducted interviews with 78 self-directed learners who were at least 16 years old and were currently engaged in a learning project. The focus of the analysis was on why and how learners made decisions and chose resources for learning projects. Previous research on learning projects identified evidence of preplanning; however, the researchers stated that “evidence of preplanning did not occur except in rare instances and then in only vague fashion” (p. 3). In addition, they noted that “self-directed learners, rather than preplanning their learning projects, tend to select a course from limited

alternatives which occur fortuitously within their environment, and which structures their learning projects” (p. 4). Spear and Mocker (1984) suggested that:

Because self-directed learning occurs in a natural environment dominated by chance elements and is in contrast to the artificial and controlled elements which characterize formal instructional environments, it seems useful to investigate the possibly differing effects of the natural environments on the learning process. This is opposed to seeking to understand self-directed learning by imposing what is known about formal learning upon it. (p. 9)

They concluded that learners choose the direction of learning projects from the resources that are available.

In another qualitative analysis, Brockett (1991) conducted a content analysis of John Steinbeck’s journal and other materials to “gain insights into self-direction in learning by examining the process through which Steinbeck created The Grapes of Wrath” (p. 21). Evidence was provided that refuted three misconceptions about self-direction:

- (1) such learning activities take place in isolation;
- (2) the process of self-direction is always a joyous and stress-free experience; and
- (3) because self-direction is so focused on the individual, it tends to ignore values of social commitment and responsibility. (Brockett, 1991)

Steinbeck’s journal revealed that the writing of this book was the culmination of a wide range of activities over a two-year period that included touring migrant

squatter camps and noting the poverty and filth, meeting Tom Collins who later became a mentor, and engaging in other writing projects. After being moved and disturbed by what he saw in the migrant camps, his writing was the best way that he “knew to help create greater awareness of the problem” (p. 25). It took an enormous amount of self-discipline to write in the midst of many distractions in his life such as his wife’s illness and selling the rights of a previous book to a film producer. This exploratory study may be useful for adult learning research.

Blowers’ (1993) case study employed qualitative interviews to investigate self-directed learning within the collegiate classroom. The purpose was to explore the experiences of adult undergraduates at two private liberal arts institutions who had assumed adult roles and had voluntarily chosen an academic program for specific learning objectives. The findings indicated that the adult learners “initially exercised control over their educational program” and the selection of the formal program was often related to “life goals such as professional advancement, entry into an employment area that required specific knowledge or enhancement of self-esteem” (p. 14).

Other qualitative research studies have dealt with the area of self-directed learning. These included studies of interviews with acknowledged experts in their field (Brookfield, 1981b), Wilbur and Orville Wright and the process of creating the airplane (Cavaliere, 1992), college students (Kasworm, 1988a, 1988b), rural adults in Vermont (Leean & Sisco, 1981), and public librarians (Smith, 1990). Qualitative research studies provide insight into the context in which self-directed learning takes place.

Measurement of Self-Directed Learning

The third stream of research explores the degree of self-direction that individuals possess and the relationships that exist among self-directed learning and variables such as self-concept, creativity, age, education, wellness, and life satisfaction. Over the years, several scales have been developed to measure self-directedness. The three instruments that will be discussed here include the Oddi Continuing Learning Inventory, the Self-Directed Learning Perception Scale, and the Self-Directed Learning Readiness Scale. A fourth instrument that shows promise, the Personal Responsibility Orientation to Self-Direction in Learning Scale (PRO-SDLS), was recently introduced (Stockdale, 2003). However, because the use of this scale to date has been limited to one study, it will not be addressed in this review. Of the three instruments, the SDLRS has been the most widely used and was utilized in this study.

Oddi Continuing Learning Inventory (OCLI). Oddi (1986) designed this self-report instrument that contains 24 items using a seven-point Likert scale. The OCLI describes the personality characteristics of self-directed learners with the ability to initiate and persist in learning without immediate reinforcement. Oddi used a sample that consisted of 271 graduate students to estimate external validity for the instrument. Twenty-four items yielded an internal consistency of .87 and a reliability of .89. The three factors--working independently, self-regulating, and the avidity for reading--are used as a total score. However, the OCLI did not correlate with scores on the locus-of-control measure or the Shipley adult intelligence measure. From her findings, Oddi concluded that the research of the scale demonstrated a satisfactory level of reliability and validity when used in its entirety.

Shaw (1987) investigated the relationship between intellectual development and self-directedness and found that as self-directed readiness increased, intellectual development stage also increased. Blackwood (1989) explored the relationship between hemisphericity, “the notion that through the developmental process we learn to store specific information in different parts of our brain thereby forming a unique thinking process framework” (p.43), and self-directedness. Blackwood found a strong positive relationship between self-directedness and left-brain hemisphericity.

Other studies using the OCLI reported findings that differed from earlier investigations. Six (1987) administered the OCLI to 328 students at a two-year business college and concluded that the OCLI was not an effective predictor of self-directed learning in the classroom setting. In a follow-up study, Six (1989) looked closer at the three factors of the OCLI and suggested further research to determine what is being measured. Here, he found that the factors—the ability to work independently and to learn with others, the ability to be self-regulating, and the avidity of reading—remained stable across the studies, which demonstrated their generality. Six (1989) described the underlying dimensions as robust; however, he referred to the total variance as modest and a lack of confidence to what is being measured by the OCLI.

Landers (1990) conducted a comparison study between the OCLI and the SDLRS at Syracuse University. He administered both instruments and a demographic questionnaire to 98 graduate students. Landers found that the eight factors of the SDLRS correlated significantly with the total score; however, only two of the three factors of the OCLI correlated significantly with its total OCLI score. Furthermore, the internal reliability of the OCLI was weak. Of the two instruments, Landers concluded that the

SDLRS was preferred over the OCLI for measuring self-directedness. The OCLI has been utilized in fewer research studies than the SDLRS; however, Brockett and Hiemstra (1991) noted that “Oddi has made an important contribution to the knowledge base” (p. 80) even though there are concerns with the scale. That is, Brockett and Hiemstra are unwilling to dismiss the OCLI but recommend that further research will confirm, refute, or modify the legitimacy concerns of the instrument.

Self-Directed Learning Perception Scale (SDLPS). Pilling-Cormick (1996) reported that only a few instruments appeared to assess students’ perceptions of their experience and feeling during the self-directed learning process. In response to this need, she developed the Self-Directed Learning Perception Scale (SDLPS), a 57-item Likert-type questionnaire. Pilling-Cormick (1996, 1998) noted that the SDLPS was designed to investigate environmental characteristics to help learners with the SDL process. The SDLP model was used as the basis for the SDLPS.

According to Pilling-Cormick (1996), “the SDLP model depicts the process of SDL as the interaction between student and educator taking place within the varying context of control” (Pilling-Cormick, 1996, p. 28). That is, the interaction between both the student and educator in the learning and facilitating process are limited by the control that the student strives for over their learning experience. Four dimensions of control are included in the model: 1) social constraints, 2) environmental characteristics, 3) student characteristics, and 4) educator characteristics (Pilling-Cormick, 1996). These dimensions vary from one learning situation to another and influence the learning and facilitating process of the student and educator.

The focus of the student characteristics in this model is on the “personal characteristics of students which are purported to make them better self-directed learners” (Pilling-Cormick, 1996, p. 35). Included are six reasons why students may respond negatively to taking control of their learning are the:

- (1) level of comfort;
- (2) skills;
- (3) preference for directed instruction;
- (4) learned helplessness;
- (5) development of personal learning myths; and
- (6) adapting to instructional situations.

Students adapt to their learning situations through the use of negotiation.

In addition, Pilling-Cormick (1996) stated that “these dimensions vary from one learning situation to another and they affect each other” (p. 30). For example, the personal beliefs of the educators may vary and the comfort level of the students may differ. Concluding from that, she suggested that the five environmental characteristics from the model are as follows:

- (1) physical aspects of the institution;
- (2) physical aspects of the classroom;
- (3) supportive climate for building relationships;
- (4) how the course functions; and
- (5) how the institution functions.

She also suggested that the instrument would be a useful tool for instructors, trainers, counselors, and other individuals.

According to Pilling-Cormick (2000), the focus of the SDLPS is on “the learning situation and not the learner” (p. 193). In addition, this instrument is population-based and context specific. The SDLPS is applicable only to a situation such as with students in the classroom or within workplace learning. Therefore, this instrument is not intended to gather aggregate data and is not generalizable to a larger population. As such, its use as a research tool is limited.

Self-Directed Learning Readiness Scale (SDLRS). Guglielmino (1977)

developed the Self-Directed Learning Readiness Scale (SDLRS), a self-report instrument that contains 58 items using a five-point Likert scale. The SDLRS is a measure of the degree to which individuals “perceive themselves to possess skills and attitudes associated with self-directed learning” (Brockett & Hiemstra, 1991, p. 59). The SDLRS “was designed through a three-round Delphi survey process involving 14 individuals considered to be experts on self-directed learning” and a “reliability coefficient of 0.87 was estimated” (Brockett & Hiemstra, 1991, p. 56).

Guglielmino (1977) identified the following eight factors of the instrument to measure readiness in self-directed learning readiness. They are as follows: (1) love of learning; (2) self-concept as the learner; (3) tolerance for risk, ambiguity, and complexity; (4) creativity; (5) view of learning as lifelong process; (6) learner initiative; (7) self-understanding; and (8) acceptance of responsibility for one’s own learning. However, while these factors were used in many studies, Guglielmino subsequently stated that she believes it is most appropriate to use the total score instead of sub-scores in the analysis of self-directed learning (L. M. Guglielmino, personal communication with R. G. Brockett, February 4, 2000). She indicated that the subscores taken from the factors

would have a reduced reliability due to the items loading on some of the factors. In addition, the subscores tend to vary by sample and therefore may not be an adequate representation for another sample.

In one of the earliest studies to utilize the SDLRS, Sabbaghian (1980) investigated the importance of self-concept and self-directed learning with 77 adult undergraduate students. The findings showed that individuals with more years of formal education tended to exhibit higher self-directed readiness. In addition, Sabbaghian concluded that “adult students with higher self-concepts appear to be ... more likely to be able to plan and direct the majority of their learning projects themselves than adult students with lower self-concepts” (Brockett & Hiemstra, 1991, p. 59).

Long and Agyekum’s (1983) study used a multitrait-multimethod procedure to determine the validity of the SDLRS with a sample of 136 college students of which 63 were African American. From the findings, the African Americans scored significantly higher on the SDLRS than the white students; yet, the instructors rated the white students significantly higher. The authors attributed this to psychological differences, questions pertaining to dogmatism, and agreement response set. This suggests that a closer look be taken at the potential for self-directed learning among groups traditionally perceived as being less involved in formal adult education since self-directed learning is generally perceived to be a white, middle-class phenomenon. In 1984, Long and Agyekum replicated the first study with another teacher-rating instrument and found no significant relationship between self-directed learning and dogmatism. Increasing age was related to a higher SDLRS score and significant associations exist between the SDLRS scores and variables such as age and educational level. However, faculty ratings of black and white

students were not significantly related to scores on the SDLRS. The authors concluded that there is validation support for the SDLRS.

Reynolds (1986) conducted a study of 95 part-time community college students to identify a link between self-direction and motivation. He administered the SDLRS and the Education Participation Scale (Boshier, 1971) to the sample and found a significant positive correlation between the SDLRS score and the motivational orientation factor “Cognitive Interest” and a negative correlation with “External Expectations.” Reynolds found support for a link between learner self-directedness and the desire to learn for pure enjoyment.

Recent studies that have utilized the SDLRS include Wood (1994), Long and Morris (1996), Kreber, Cranton, and Allen (2000), Nelson (2000), Beitler (2000), and Canipe (2001). Wood’s (1994) study consisted of 103 adults who inquired about undergraduate evening classes at a private liberal arts college. Individuals who had been absent from formal education over 20 years perceived a lack of confidence as a deterrent to participation. Consequently, those adults “who had not previously attended college indicated higher mean scores for the factors of “lack of confidence” and “cost” indicating that those persons perceive these factors as greater deterrents to participation than those who have attended college previously” (Wood, 1994, p. 154). The results of the study note that a negative relationship exists between self-directed learning readiness and adults’ perceptions of deterrents to participate in college-level course work. That is, higher SDLRS scores indicate fewer deterrents to participation. Thus, an effort to enhance participation must include increased confidence in adults’ ability for higher education programs and self-directed learning readiness.

Long and Morris (1996) noted that self-directed learning readiness was positively associated with academic achievement among adults in a nontraditional higher education program. Kreber, Cranton, and Allen (2000) indicated that a strong positive correlation existed between extroverted intuition from a “psychological type indicator (the PET Type Check)” (p. 100) and scores on the SDLRS.

Nelson (2000) focused his attention on exploring the relationship between self-directed learning readiness and coping strategies among people with asthma. The results showed a positive correlation between total SDLRS score and three subscales of the Ways of Coping Questionnaire. The significant coping factors were Seeking Social Support, Planful Problem Solving, and Positive Appraisal. This indicates that as the three subscales increased, the SDLRS also increased. From his findings, he concluded that coping is the central theme of the study and that self-directed learning would be a “component for coping with asthma” (p. 130) since learning is a component of coping. Therefore, he recommended learning about asthma and providing education based on principles of self-direction and coping.

Canipe’s (2001) dissertation, *The Relationship between Self-Directed Learning and Learning Styles*, examined the relationship between self-directed learning readiness and Kolb’s model of learning style. A sample of 260 graduate students was utilized in this study. Canipe concluded that there were no significant differences between self-directed learning and learning styles. A suggestion was that “perhaps self-directed learning readiness may be more closely related to all the learning modes and all the learning styles, rather than any particular mode or style” (Canipe, 2001, p. 95). In addition, Canipe (2001) concluded that “there was no significant correlation between

self-directed learning readiness and two modes of learning and very weak correlations between self-directed learning readiness and the other two modes of learning” (p.96). He recommended replicating this study in future research with a more diverse college student population.

Over 150 research studies have utilized the SDLRS (L. M. Guglielmino, personal communication, January 2003). Some of the studies looked at the connection between self-directed learning readiness and the following factors: locus of control (Adams, 1992), demographic and personal factors (Adenuga, 1991), students in nursing programs (Box, 1982; Wiley, 1982a, 1982b), life satisfaction (Brockett, 1982, 1985a; East, 1987; Diaz, 1988), distance education (Bryan & Schulz, 1995), learning contracts (Caffarella 1982, 1983b; Caffarella & Caffarella, 1986; Guglielmino & Guglielmino, 2000), learning styles (Canipe, 2001), cross-cultural adaptability (Chuprina, 2001), child and parent relationship (Cloud, 1992), seminary populations (Cunningham, 1989), occupational categories (Durr, Guglielmino, & Guglielmino, 1996), medical students (Frisby, 1992), business and industry (Guglielmino & Guglielmino, 1988), top female executives (Guglielmino, 1996), learning projects (Hassan, 1981; Leean & Sisco, 1981), graduate students (Kasworm, 1982, 1983), health and wellness (Leeb, 1983; Owen, 1996; Nelson, 2000), educational achievement (Long, 1991), nursing education (Long & Barnes, 1995), attitude toward mathematics (McCarthy, 1986), managers (Roberts, 1986), motivational orientation (Reynolds, 1984), self-concept (Sabbaghian, 1979; Rutland, 1988), nurses (Savoie, 1980), creativity (Torrance & Mourad, 1978; Cox, 2002), self-efficacy (Wall, Sersland, & Hoban, 1996), and deterrents to participation (Wood, 1994, 1996). From the

above research studies, there is evidence that self-directed learning readiness is related to a wide range of variables.

Potential Limitations of the SDLRS. A criticism of the SDLRS was made by Brockett (1982) in his dissertation study designed to investigate the relationship between older adults' perception of self-directedness and the degree of satisfaction that they attributed to their lives. The instruments were administered in oral and written format. Educational levels ranged from no formal schooling to 16 years of schooling. A significant correlation ($r=.24$, $p<.05$) was found between the two variables and a reliability coefficient of .87 was found. However, Brockett raised concerns about using the SDLRS in samples with little formal education. Brockett (1985b) noted that 12 of the 58 items on the SDLRS were not significantly correlated with the total score. In the findings, he concluded that a link with self-concept existed "between the two variables", self-directed readiness and life satisfaction (p. 188). Brockett (1985a) noted that "previous education was found to be a slightly stronger predictor of self-directed readiness than life satisfaction" (p. 216). Due to less formal schooling, scores on the SDLRS between self-directed learning readiness and life satisfaction tended to be lower than those from previous studies (Brockett, 1982).

In another study, Leeb (1985) also raised concerns about certain items on the SDLRS in her study of health promoting behavior comprised mostly of college graduates. She found that 11 items of the SDLRS did not correlate significantly with the total score. Bonham (1991) was concerned with the construct validity of the SDLRS, that is, whether the instrument measured readiness for self-directed learning. She suggested that more research was needed to investigate the validity of the SDLRS.

The most direct criticism against the SDLRS came from Field (1989). In his study, Field administered the SDLRS to 244 adult students in Australia and examined the structure, validity, and reliability of the SDLRS. A reliability coefficient of .89 was found. However, from item-to-item correlations, twelve of the items were below a .30 correlation coefficient with the total SDLRS. Four areas of concern relative to the SDLRS were: (1) the use of the Delphi technique as a basis for generating items; (2) Guglielmino's lack of definitions for key terms "self-directed learner" and "readiness"; (3) the use of negatively phrased items; and (4) the developmental process of the instrument used by Guglielmino which led to a 41 item version, 9 of the 41 items was eliminated and 26 new items were added, without separate validation efforts to form the 58-item version of the SDLRS. He concluded that the use of the SDLRS was not justified for measuring self-directed learning readiness and it is seriously flawed. Therefore, Field suggested that researchers should not continue to use the instrument.

In response to Field's criticism, Guglielmino (1989), Long (1989), and McCune (1989) each addressed errors in Field's findings. Guglielmino (1989) stated the Delphi procedure was not used for selecting items; rather, it was used for arriving at a consensus about the characteristics of the self-directed learner. Next, she noted that the Delphi panel defined the term "self-directed learner" and that "readiness" implies that self-directed learning exists along a continuum and is present in each person to some degree. Finally, she concluded that the use of reverse items was a way of minimizing response set, where subjects respond similarly to several items and assume that the remaining items will be similar.

Long (1989) offered further reactions to Field's perception of the SDLRS. He noted that Field's review of the literature omitted several important references and included references to other studies that were misleading. Long supported Guglielmino's comments and the SDLRS. Finally, McCune (1989) pointed out problems with Field's statistical analysis and noted that he used a modified version of the SDLRS rather than the standard version of the scale.

Despite concerns that have been raised with the SDLRS, it has been the most widely used instrument for investigating self-direction in learning and there is evidence that readiness can be measured (Merriam & Brockett, 1997; Brockett et al., 1994; Brockett & Hiemstra, 1991). The SDLRS has made a major contribution to the knowledge base of self-direction in learning.

In summary, a considerable amount of research has been conducted on self-directed learning. The body of literature has moved from being descriptive to measuring an individual's self-directedness. According to Brockett and Hiemstra (1991), the SDLRS has made an important contribution to understanding the self-directed learning phenomenon by generating considerable research, controversy, and dialogue. According to Brockett and Hiemstra (1991), "the SDLRS has made it possible to advance the knowledge base of self-direction in ways that otherwise probably would not have been possible" (p.75). The authors recommend that the SDLRS be used with the same discretion as other standardized instruments. Therefore, the SDLRS was used for this study.

Resilience

During the 1970's, a group of pioneering psychologists and psychiatrists began to draw attention to children at risk for psychopathology and development problems due to genetic or experimental circumstances. According to Masten (1998) the increased probability of maladaptive development was due to adverse factors such as poverty, family violence, or mental illness in a parent. Pioneering investigators realized that there were children flourishing in the midst of adversity (Garmezy, 1974; Rutter, 1979; Werner & Smith, 1982; Masten, 1998). Hence, the study of resilience initially centered on how children overcame adversity and arose to achieve good developmental outcomes.

Many researchers in the field prefer the term “resilience” over “invulnerable.” Resilience implies that the level of this attribute is “affected by both genetic and environmental factors” (Mrazek & Mrazek, 1987, p. 358). Instead of suffering with emotional problems, some people are able to recover from adverse situations. In other words, resilience is distinguished by good outcomes in spite of serious threats to adaptation or development (Masten, 2001).

As was previously stated in Chapter I, Wright (1997) noted that some people have the ability to bounce back from adversity because they have a degree of resilience. Resilient people are proactive and their plans might be altered. They have learned not to let their negative surroundings and responses from others affect their basic attitude toward life. For instance, they carry their own weather around, that is, they are positive in the midst of adversity.

According to Pennewell (1995), the term “resilience is used interchangeably with related terms such as adaptation, hardiness, coping, and invulnerability” (p. 2). Adaptation or adjustment is an essential survival tool for individuals (Siebert, 1996). Hardiness refers to the personality resource that buffers the negative effects of stress. The hardy person perseveres through unfavorable conditions that are stressful and chaotic and seeks opportunities for growth and personal mastery (Mahaffey, 2002). In addition, Maddi (1997) noted that hardiness is conceptualized as a “personal stance that facilitates coping effectively with stressful circumstances, be they acute or chronic, by accepting them as a natural part of living and working actively to transform them so that they become less stressful” (p. 294). As a concept, hardiness emphasizes how people construct meaning in their lives through the decisions they make and the importance of accepting responsibility for what they become.

Coping, the ability to deal with problems and difficulties and attempt to overcome them, may depend on “flexibility, adaptability, and an adequate range of strategies and tactics” (Kadner, 1989, p. 21). The terms invulnerability and invincibility are used interchangeably in the literature (Dyer & McGuinness, 1996). However, the concepts of invulnerability and invincibility lost favor because of the “fixed and static quality” (Dyer & McGuinness, 1996, p. 277). As a result, Rutter (1985, 1987) proposed that resilience is a fluid quality that acts to modify responses to psychosocial risk. Therefore, no one is invulnerable, despite the use of the term in years past.

Werner and Smith’s (1982) longitudinal study with the 1955 birth cohort of 698 children on the island of Kauai, Hawaii, found that invulnerable youth received a great deal of attention from others, were seen as active and socially responsive infants, and

lived in families that had consistently enforced rules. According to Werner (1990), the children were exposed to problems such as “parental psychopathology, family instability, and chronic poverty” (p. 117); however, they “developed instead into competent, confident, and caring adults” (p. 120). Protective factors such as caring grandparents, neighbors, teachers, and peer friends served as a source of support that contributed to resilience in the development of the individuals. Therefore, resilience refers to constructive rather than debilitating reactions to disadvantage.

Background and Definitions

Resilience is defined as emotional stamina in individuals who exhibit courage and adaptability in the wake of life’s misfortunes (Wagnild & Young, 1990). The strained body recovers from stress and adjusts to misfortune or change. Jacelon (1997) defined resilience as the “ability of people to ‘spring back’ in the face of adversity” (p. 123). Therefore, resilient people are able to restore balance in their lives and continue to have a purpose in life.

The concept of resilience emerged from the field of psychopathology and child development to explain how individuals maintain healthy lifestyles while facing adversities, stressors, or life changes. These authors defined resiliency as a “process of the interaction between individuals and environmental circumstances that promote resiliency” in individuals (p. 33). As was previously stated in Chapter I, the term resiliency is used interchangeably with resilience. Resiliency involves coping with disruptive, stressful, or challenging life events that provides people with additional

protective coping skills after the disruption of the event. Therefore, resiliency is viewed as a trait or characteristic within the individual.

According to Mrazek and Mrazek (1987), the goal of resilience is “human wound healing” (p. 358). Resilient people are referred to as individuals whom possess the “spirit of survival” (p. 358). That is, optimism and hope can help people get through difficult situations. Two key characteristics of resilience are 1) the ability to bounce back and 2) to adapt and cope. These characteristics are discussed in detail.

Bounce Back. Kadner (1989) stated that “resilience describes an individual’s capacity to make a psychosocial comeback in adversity.” After a temporary period of distress, the resilient individual regains psychosocial equilibrium and takes control. According to Kadner (1989), resilience involves the ability to recover or adjust to misfortune or change.

Similarly, resiliency refers to a personality trait that involves the interaction between people and the environment along with the ability to spring back from adversity, cope, and successfully adapt (Richardson, Neiger, Jensen, & Kumpfer, 1990). The term resiliency is used interchangeably with resilience and is viewed as a characteristic of resilience (Murphy, 1999; McMillan & Reed, 1994; Silliman, 1998).

Furthermore, in their review of research and clinical experience, Wolin and Wolin (1993) emphasized that resilient individuals tend to seek healing from pain versus holding bitterness. They tend to draw lessons from experience rather than repeat mistakes. In other words, resilience is the ability to bounce back from adversity in terms of stress, crises, and trauma and thrive in the midst of these circumstances, as they are able to draw upon biological, psychological, and environmental resources.

Dyer and McGuinness (1996) described resilience as having an elastic quality. They stated that resilience is a process where individuals bounce back from adversity and proceed with their lives and that a resilient individual possesses the quality of “stick-to-it-iveness” (p. 277). This person perseveres until the task is completed or the goal is achieved. Obstacles are viewed as just another of life’s hurdles to be jumped. Resilience evokes the “promise of something good resulting from misfortune, hope, embedded in adversity” (Dyer & McGuinness, 1996, p. 276). In other words, there is an acknowledgment that the difficulties in life are to be expected and dealt with. Therefore, Dyer and McGuinness (1996) noted that this is a challenge that every person faces; no one escapes unscathed.

Murphy (1999) defined resiliency as the ability “to function at a relatively high level despite stressful circumstances in one’s life” (p. 3). In addition, three definitions of resilience from three books were examined in his research study. They are as follows:

- (1) those who, because of stressful life events, are at risk of developing later psychological dysfunctions, but do not (Rhodes & Brown, 1991, p. 1);
- (2) resilience is the ability to bounce back from a bad or difficult situation (Joseph, 1994, p. 25); and
- (3) resiliency provides a dramatic new perspective on how children and adults bounce back from stress, trauma, and risks in their lives (Henderson & Milstein, 1996, p. 1-2).

This suggests that resilience is an aspect of a healthy personality.

In addition, Robinson (2000) noted that in terms of resiliency, “when hardship and adversity arise, it is as if the person has an elasticized rope around them that helps

them to rebound when things get low and to maintain their sense of who they are as a person” (p. 2). This elasticity allows people to bounce back from their adverse situation and to persevere.

Turner (2001) defined resilience as “the capacity to bounce back in the face adversity and go on to live functional lives with a sense of well-being” (p. 441). She also stated that people could become resilient even though they may have lived in stressful environments. That is, “resilient people have the “capacity to be bent without breaking and the capacity, once bent, to spring back” (p. 441). Some of the characteristics of a resilient person are a sense of direction or mission, intellectual capacity, the ability to achieve independence, and initiative.

Three psychologists have commented on how people bounce back from adversity. Hill (2002) noted that according to the laws of physics, “resilience is the ability to demonstrate the quality of elasticity” as well as “those who bounce back from adversity, persevere through difficult times, and return to a healthy state of being” (p. 12).

Borenstein (2002) stated that “resilience is closely related to our personal sense of security or how comfortable we feel about ourselves” (p. 13). The more stable people are psychologically, the more they can tolerate the stresses of outside events. For example, a flexible container impinged upon by an outside force will change shape temporarily, but it will spring back to its previous configuration shortly thereafter since it is resilient.

Goodman (2002) suggested that “resilient people don’t avoid life’s hard knocks; they bounce back, survive, and flourish” (p. 14). In addition, resilient people seem to externalize blame and internalize success and it seems to be related to confidence, self-

efficacy, flexibility, and optimism. These psychologists agree that “resiliency is in demand in today’s stressful, rapidly changing world, perhaps more than ever before” (p. 14). Therefore, resilience is viewed as a personality trait since there is interaction between people and the environment along with the ability to spring back from adversity and adapt.

Adapt and Cope. As was previously stated in Chapter I, Segal (1986) described his work on resilience that was based on Iran hostages, Vietnam POWs, and other successful survivors. He stated that “perhaps it is the resilient captives that I have studied—men and women unscarred by seemingly endless terror and deprivation—who show most dramatically the healing power of compassion” (p. 99). Instead of self-absorption and self-pity that is a natural response in times of crisis, Segal (1986) indicated that having compassion for others was a remarkable therapeutic effect during these difficult times. His book serves as a road map that includes where and how we can draw on our inner strengths and persist in this stress-filled world.

Resilience has had varied meanings, “but it generally refers to manifested competence in the context of significant challenges to adaptation or development” (Masten, 1998, p. 206). To identify resilience, two judgments are required:

first, that there has been a significant threat to the individual, typically indexed by high-risk status (e.g., born in poverty to a single parent who has not finished high school) or exposure to severe adversity or trauma (e.g., family violence, war, death of a parent); and second, that the quality of adaptation or development is good. (Masten, 1998, p. 206)

In addition, Masten (1994) also noted that resilience has been used to describe three major categories in the psychological literature. The three categories are as follows:

- (1) people from high-risk groups who have better-than-expected outcomes (i.e., those who “overcome the odds, against good development);
- (2) good adaptation despite stressful experiences; and
- (3) studies of individual differences in recovery from trauma.

Furthermore, she noted that traumatic experiences are expected to reduce the quality of functioning. Even though stressors may be extreme or life-threatening, resilience refers to patterns of recovery.

In adulthood, achievements related to “earning a living, establishing a family, and performing community service become important” (Masten, 1994, p. 4). Resilience refers to a pattern that is characterized by good adaptation despite developmental risks, intense stressors, or chronic adversities. Psychological adversities are psychological stressors. A stressor is an:

... event or experience that can be expected to cause stress in many people, with the potential for interfering with normal functioning. Psychological stress is the experience of an imbalance between the demands impinging on a person and actual or perceived resources available to meet the challenges, an imbalance that at some level disrupts the quality of functioning in the person. (Masten, 1994, p. 5)

According to Masten (1994) “adversities vary along a number of dimensions” ranging from “severe to less severe” (Masten, 1994, p. 6). Protective factors or resiliency factors are used as generic terms for mediators of adversity that enhance good outcomes,

regardless of whether they lie in the individual, the environment, or in some interaction between the two.

McMillan & Reed (1994) stated resilient people view themselves as being successful because they have chosen to be so. In their desire to achieve, resilient people have “a strong sense of self-efficacy”, set “clear, realistic goals”, and are “optimistic about the future” (p. 138). The profile of resilient people includes a set of personality characteristics, dispositions, and beliefs that promote success. These individuals have a sense of control about their lives and take personal responsibility for their actions.

Resilient individuals regain emotional balance quickly, adapt, and cope well. This group of individuals thrive by gaining strength from adversity and often convert “misfortune into a gift” (Siebert, 1996, p. 1). Siebert (1996) noted that in 1926 Walt Disney, a young illustrator, was involved in a stressful situation with a film distributor, Charles Mintz. Mintz took over Disney’s production of Oswald the Lucky Rabbit cartoons by offering Disney a lower fee to renew the contract. Disney turned the disaster into a gift with the creation of Mickey Mouse, whereby he took advantage of a new technology that added sound to motion pictures. In 1928, Disney studios held the premiere showing of an animated cartoon starring Mickey Mouse. In other words, “our attitudes determine our well-being more than our circumstances” (Siebert, 1996, p. 8). Adaptation is a key to survival.

Resilience is described as the psychological and biological strengths necessary to successfully master change (Flach, 1997). Being resilient means that our bodies’ psychological processes function effectively even when activated by stress. Furthermore, falling apart as far as depression was concerned was considered as a prelude to personal

renewal, following stressful events, and putting the pieces of our lives together again.

Resilience also means having control or the strength to contain against personal disruption and to continue with one's life. We have to take the responsibility for change, learn something from what we have been through, and we should emerge better put together and more qualified to persist with life's challenges because of our experiences.

According to Giordano (1997), the word resilience implies emotional stamina:

Resilient people are usually described as resourceful, flexible, and having large repertoires of problem-solving strategies. Resilient people remain organized when they experience change or stress, and they recover after traumatic experiences. They are self-confident, curious, and self-disciplined, and adaptable. (p. 1033)

Possibly the most significant qualities that characterize resilient people are their expectations and acceptance of life's difficulties and their equanimity or poise under stress. Taylor and Wang (2000) noted that the concept of resilience has indicated that some families survive serious life-threatening adversities without lasting damage. The families tend to be motivated, independent, resourceful, and self-determined. Therefore, resiliency refers to "successful adaptation despite challenging and threatening circumstances" (p. 248).

Rew, Taylor-Seehafer, Thomas, and Yockey (2001) stated that resilience is defined as the capacity of individuals to cope successfully with significant change, adversity, or risk. The authors noted that "resilience includes a 'bouncing back' or recovery of an organism of baseline after added pressure or strain" as long as people are able to adapt and cope (pp. 34-35).

Resilience has been described as how individuals bounce back from adversity and adapt and cope. “Most studies of resilience have focused on children with fewer studies of resilience among adults” (Wagnild & Young, 1993, p. 165; Rutter, 1985; Werner & Smith, 1982). Still, little research documents resiliency among families of color (Silliman, 1998); however, existing research suggests that patterns of adaptation vary widely cross-culturally (McCubbin, McCubbin, and Thompson, 1995).

Frameworks for Resilience

Three theoretical models by Polk (1997), Wolin and Wolin (1993) and Flach (1989, 1997) are examined to distinguish the different perspectives of the concept of resilience. Polk’s model is based on a four-dimensional construct from the literature. Wolin and Wolin’s model consists of using skills to rise above adversity. Finally, Flach’s model involves the state of equilibrium from the psychological and biological strengths needed to master change in the life of individuals.

Nursing Model of Resilience. Polk (1997) defined the concepts of resilience as the “ability to transform disaster into a growth experience and move forward” (p. 1). Through the literature of resilience, this model theorizes resilience as a four-dimensional construct consistent with the paradigm of nursing science. The four dimensions or patterns of resilience are classified as (1) the dispositional pattern, (2) the relational pattern, (3) the situational pattern, and (4) the philosophical pattern. First, the dispositional pattern refers to “physical and ego-related psychosocial attributes that contribute to the manifestation of resilience” (Polk, 1997, p. 5). These physical factors include health, good physical appearance, athletic competence, intelligence, and

temperament. Ego-related psychosocial factors that are indicative of resilience include a sense of mastery, a positive self-confidence, and autonomy.

Second, the relational pattern is described as the “characteristics of roles and relationships that affect resilience” (Polk, 1997, p. 5). Value is placed on close confiding relationships and a broader social network. Included is the skill to identify positive role models, to seek out a confidant, and a deep commitment to relationships. Resilience is manifested in a commitment to education, jobs, and social activities as well as positive social interactions with family, friends, others, and community support.

Third, the situational pattern “discloses resilience as a characteristic approach to situations or stressors and the “problem-solving ability” (Polk, 1997, p. 6) when faced with a situation. These individuals make an assessment and perceive changes in the world as they reflect on new situations. The contributions to the pattern are flexibility, perseverance, resourcefulness, and control.

Fourth, the philosophical pattern is manifested by personal beliefs in terms of self-knowledge and finding meanings in experiences. The belief is that life is worthwhile and meaningful. Therefore, life has a purpose, each person’s path is unique, and it is important to have a balanced perspective of one’s life.

The four patterns—dispositional, relational, situational, and philosophical—view individuals as changing with the environment. That is, people perceive life as a multi-dimensional experience with meaning associated to the situation. The intermingling of the person and the environment is incorporated into a diverse pattern of resilience.

The Challenge Model. Wolin and Wolin (1993) described the resilience of individuals as “skills you’ve used to rise above adversity” (p. 20). The Challenge Model

involves family interactions and responsibility. The framework of the model is a concept of balance between stress and resilience in life as well as being optimistic. There are seven resiliencies that form a protective ring around the self. Three of the resiliencies are insight, independence, and initiative. Insight is the mental habit of asking questions and giving honest answers. In adulthood, resilient individuals have an understanding of themselves and others. Independent adults usually strive to balance conflicts and look for opportunities to create a sense of balance in life. Initiative involves exploring and working as the adult participates in community projects for positive change, having a meaningful career, and achieving a balance with personal needs.

Walsh (1998) agreed with the challenge model that “stressors can become potential enhancers of competence” and a “crisis can challenge us to sharpen our skills and develop new assets” (p. 19). By taking responsibility, individuals can learn to adapt, cope, and continue in life. Hence, the concept of resilience is to enable individuals to rebound from crisis, take charge of their lives, and to live life fully.

Model of Homeostasis. Flach’s (1989, 1997) model of homeostasis, or the state of equilibrium, defined resilience as the psychological and biological strengths necessary to successfully master change. His law of disruption and reintegration was characterized by moments of change and was borrowed from the field of physics as the theme in the resiliency model. The disruption-reintegration cycle begins with major shifts in life called “bifurcation points,” representing moments of extreme change. Individuals in the disruption phase are subjected to severe stress, which leads to chaos. During periods of chaos, people usually cannot determine in advance what direction their future will take. Yet, this period of disruption is necessary to prepare people to meet the stresses that lie

ahead. The next period, reintegration involves “putting the pieces of ourselves and our worlds together again into new homeostates” (Flach, 1997, p. 15). People can begin to learn about or demonstrate resilience, an endurance of hope.

Flach (1989) proposes that falling apart is a necessary prelude to personal renewal following significant stressful events. Thus, he suggests that the temporary state of confusion and anguish is an opportunity to resolve old wounds, discover new ways to deal with life, and effectively reorganize perspectives. This model was discussed in Chapter I in the Conceptual Framework, which includes taking responsibility for the disruptions and changes in life and persistence in the midst of adverse situations.

Of the three models, all are similar in defining resilience as possessing the skills to adapt, recover, and rise above adversity. Polk’s (1997) model and Flach’s (1989, 1997) model focus on the individual and Wolin and Wolin’s (1993) model involves the family. In addition, Flach’s (1989, 1997) model emphasizes falling apart along with personal renewal from stressful events.

Research on Resilience

Resilience has been studied in many different ways. According to Masten (1998), “resilience has been studied in a wide variety of situations throughout the world, including war, living with parents who have a severe mental illness, family violence, poverty, natural disasters, and in situations with many other risk factors and stressors” (p. 212). Most studies have focused on children and adolescents with fewer studies on the adult population. Many of these studies are discussed below.

Correlational Studies. The first type of research to be discussed includes correlational research in the study of resilience. For instance, the landmark study conducted by Werner and Smith involved a cohort of children born on the island of Kauai, Hawaii in 1955 who were tracked from birth to 40 years, 1955 to 1995 (Werner, 1989, 1990; Werner & Smith, 2001). In this longitudinal study, one-third of the cohort was designated as high risk and was predicted to have maladaptive outcomes at ages 10 and 18. The risk factors included poverty, prenatal stress, family discord, and low parental education. Instead, approximately one-third of this high-risk group or 10% of the cohort was identified as resilient. That is, the group members had adapted well in childhood and adolescence in terms of being responsible, mature, achievement motivated, and socially connected as compared to the other high-risk contemporaries.

During 1985-86, approximately 80% of the survivors of the 1955 cohort were located and interviewed. Some members of the cohort were deceased and others could not be traced. The majority of the members still lived on Kauai; however, many of the resilient individuals had moved away. The findings suggest that the protective factors that foster resilience may have a more generalized effect on adaptation than stressful life events such as poverty. Protective factors enhanced resilience.

Masten et al. (1988) examined the associations of stress exposure to various aspects of school-based competence in a sample of 205 children aged 8-13. The results suggested that the relations of stress exposure to competence vary as a function of individual differences and competence criterion. Students with lower IQ, lower socioeconomic status, and less positive family qualities were generally less competent and more likely to be disruptive at high stress levels. On the other hand, the resilient

children were viewed as more competent, had less stress, and were not likely to be disruptive. Thus, the results from the study suggest that the relation of stress exposure to competence in middle childhood may vary as a function of the characteristics of the child and family background and the competence of the child.

In Cooley's (1989) study on the impact of exercise and hardiness on the relationship of stress-illness, she examined the "effects of physical activity, stress, sleep, diet, and hardiness" (p. 16) on 43 female graduate students. From this correlational study, the findings showed that as perceived stress scores decreased, resilience or hardiness scores increased. She suggested that resilience or hardiness and exercise are key factors in the stress-illness relationship. The term hardiness was used interchangeably with resilience and implies "a personality trait which has a health preservation characteristic" (p. 46) to bounce back from stress and illness.

Klaas (1989) conducted a study of 58 female graduate students and explored the effect of hardiness and sleep along with the perceptions of stress and health. Hardiness, a personality characteristic, involves the individual drawing upon strength and resourcefulness to overcome trying situations (Klaas, 1989). That is, the resilient personality allows people to cope and bounce back from the adverse effects of stress. The term hardiness was again used as the equivalent to resilience. Results indicated that the correlation between sleep and stress, and sleep and health, were not significant; however, sleep was found to affect a person's perception of stress and health. The individuals who scored high on the resilience or hardiness instrument also "scored low on the perceived stress scale" (Klaas, 1989, p. 99). Poorer sleep characteristics led to a perception of higher stress levels; individuals with less disturbed sleep perceived lower stress levels.

Neill and Dias (2001) conducted an experimental study of 49 young adults to investigate resilience in a challenging adventure education program. The authors described resilience as a “psychological quality that allows a person to cope with, and respond effectively to, life stressors” (Neill & Dias, 2001, p. 39). A supportive social network tended to enhance a person’s capacity to deal with life’s challenges. Forty-nine participants in the “experimental group were involved in 22-day multi-element Outward Bound programs in Australia” where the “primary focus was on personal development” (Neill & Dias, 2001, p.37). The fourteen participants who did not complete the adventure education program for medical or personal reasons had significantly lower resilience scores. Neill and Dias (2001) suggests that “resilience may be a useful screening tool for identifying participants who are at risk of dropping out of adventure education programs due to the high level of challenge” (p. 5). They also suggested the “need for leaders is to be wary of negative group members who may retard the potential growth of other group members” (Neill & Dias, 2001, p. 39). That is, the leader must have a caring attitude toward all and understand how the individual affects the group. In these research studies, people adjusted and recovered from their adverse situation.

Qualitative Research. The second type of research involves qualitative research in the study of resilience. Huerta and Horton (1978) studied the effects of the Teton Dam Disaster of 1976 on the elderly. These authors tested the belief that the elderly were more likely to be adversely affected by disaster situations than younger individuals. Their findings showed that contrary to what is assumed, the “elderly persons cope quite well with disaster situations and tend to report fewer adverse emotional effects and feelings of

relative deprivation than younger victims” (Heurta & Horton, 1978, p. 541). That is, the elderly coped better on an emotional level than younger persons.

Furstenberg, Brooks-Gunn, and Morgan (1987) conducted the Baltimore study of long-range outcomes in disadvantaged African American adolescent mothers. The participants were recruited from the Sinai Hospital clinic that offered prenatal care to obstetric patients. This cohort of approximately 300 mothers at risk for early childbirth was traced from their first pregnancy through adulthood to document their outcomes in terms of education, family, and economic careers.

The participants were contacted and interviewed after five years and again after 17 years. Phase one, “carried out over a 5-year period, primarily documented the consequences of early childbearing on the transition to adulthood” (Furstenberg, Brooks-Gunn, and Morgan, 1987, p. 11). In the second phase, the follow-up in 17 years looked like the original sample of pregnant teenagers in terms of the economic status. From the findings, women whose families were on welfare during their childhood and women from large families had less success in achieving economic stability after their early motherhood. Furthermore, women whose parents failed to complete the 10th grade were more likely to be on welfare than those with better-educated parents. In spite of their adverse situations, the resilient young mothers who had not been on welfare the previous five years restricted further childbearing and obtained a high school education. Therefore, the authors indicated that family size and parent education were markers in their study of resource and motivational differences. Masten et al. (1990) stated that recovery documents the remarkable human capacity for resilience. In adulthood, many of the young mothers recovered, that is, they returned to high school after dropping out, found

employment, and had fewer children. Some of the women completed college. In general, the young mothers improved over time.

Druss and Douglas (1988) studied cases of three resilient individuals who showed courage in the face of illness and disability. In the first case report, a description of a female with terminal breast cancer approached death with bravery. Case report two consisted of the autobiographical writings of a male with heart disease; yet, he displayed an optimistic attitude. Finally, case report three was about a woman without arms who cared for herself and her family. From the findings, the authors noted that these individuals shared common characteristics as they were (1) realistic about their prognosis and viewed the situation in a positive manner, and (2) embraced creative endeavors in the midst of illness. These individuals did not “regard themselves as defective or damaged and seemed to retain an abiding faith in the integrity of their bodies” (p. 165). Druss and Douglas (1988) concluded that these common characteristics enabled them to function and maintain a high degree of optimism in the face of adversity.

Wagnild and Young (1990) conducted a qualitative study that was designed to identify and describe characteristics of successfully adjusted older women from major losses in life in the last five years. The participants that were interviewed consisted of 24 Caucasian women whose ages ranged from 67 to 92 years. Five underlying themes were identified: equanimity, self-reliance, existential aloneness, perseverance and meaningfulness. These women embraced life with enthusiasm and faced new challenges with strength and determination. From the findings, Wagnild and Young (1990) noted that “resilience is important in late life as a component of successful psychosocial

adjustment” (p. 252). That is, the women were resilient since they were ready to make a difference in the ups and downs of life.

Rabkin et al. (1993) examined the psychological outlook of 53 urban gay men with AIDS who survived longer than expected. These intravenous drug users had survived at least three years after their infection. The participants were resilient and they were intelligent, educated, and had the ability to adapt to change. “Nearly all maintained the conviction that good times lay ahead and that their lives were worthwhile” (Rabkin et al., 1993, p. 166). Their outlook on life was positive and most displayed an extraordinary psychological resiliency.

Siebert (1996) “read autobiographies and interviewed hundreds of people— survivors of the World War II Baton Death March; Jewish survivors of the Nazi Holocaust; ex-POWs and Vietnam veterans; survivors of cancer, polio, head injury, and other physically challenging conditions; survivors of rape, abuse, alcoholism, co-dependency, and addictions; parents of murdered children; survivors of bankruptcy, job loss, and other major life-disrupting events” (p. 6). Siebert concluded that a “few people are inborn survivors” such as “natural athletes, musicians or artists” who “have a natural talent for coping well” (Siebert, 1996, p. 7). Some of life’s best survivors grew up in horrible family situations and learned how to cope with life’s difficulties. On the other hand, some came from what was perceived as “ideal homes where they have been abused, lied to, deceived, robbed, raped, mistreated, and hit by the worst that life can throw at them” (Seibert, 1996, p. 7), that is, they included problems. Thus, the reaction of these resilient individuals was to pick themselves up, learn lessons from their experiences, set positive goals, and rebuild their lives.

Qualitative research studies provide insight from the human perspective of resilience. The identified qualitative research studies have contributed to the knowledge base of resilience. Although research on adults is limited, the next section will focus on the measurement of resilience.

Measurement of Resilience

As was previously stated, most resilience studies focused on children as opposed to adults (Wagnild & Young, 1993). This research investigated the degree of resilience that individuals seem to possess. Of the many resilience scales that have been developed, three instruments were selected as relevant to discuss in this section. The three instruments are Jew's (1991) resiliency scale, the Hall Resiliency Scale (1998), and Wagnild and Young's (1993) Resilience Scale. Jew's scale focuses on adolescents and Hall's and Wagnild and Young's instruments focus on the adult population to measure resilience.

Jew's Resilience Scale. Jew's (1991) dissertation consisted of the development and validation of a scale to measure resilience. Resiliency referred to "psychological endurance skills and abilities" (Jew, 1991, p. 11). The intent was to determine if the group's functioning level differed on the measure with optimism, skill acquisition, and risk-taking.

This scale was developed and validated through three studies. First, 408 ninth grade students were selected from a metropolitan school district. Data collected consisted of resiliency scores, grade point averages and scores on the Iowa Test of Basic Skills,

school-related accidents, nurse visits, and discipline referrals. The purpose was to develop and validate an instrument to measure resiliency.

Second, 50 students were randomly selected from the 408 in order to determine if resiliency scores correlated with adaptive behavior, locus of control, and self-esteem.

Third, 30 students from a psychiatric adolescent treatment facility were selected. Students were administered the resiliency measure and their clinician provided information about the student's level of academic, emotional, and social functioning. The purpose was to determine if the resiliency scale could discriminate between subgroups.

From the findings, four factors or subscales were identified: optimistic orientation, independence, future orientation, and other-person awareness. Internal consistency was at least .65 for the four subscales. A reliability of .72 was found with test-retest. Therefore, the results indicated that groups that differed in functioning did not differ on the resiliency measure.

Bennett, Novotny, Green, and Kluever (1998) used three samples to confirm the factor analysis of Jew's (1991) resiliency scale. Participants used in this study were 408 ninth-grade students, 392 students in grades 7-12, and 304 college students. From the results, the authors suggested that items vary with the developmental stage. Therefore, the age should be a concern since the scale "may fail to retain its definition across stages of development" (p. 11). In addition, gender should also be a concern since "shifts may occur at different ages for males than for females" (p. 11). Bennett, Novotny, Green, and Kluever (1998) suggested future work be done on Jew's instrument, which has not been widely used.

The Hall Resiliency Scale (HRS). Hall's (1998) instrument was used to assess motivational and attitudinal factors of college students. The HRS is a 15-item self-report scale based on autonomy, initiative, and trust (Hall, 1998a). Development of this instrument was based on the theoretical framework of Edith Grotberg (1995), who held a key role in the International Resilience Project with Children. That is, this scale was originally developed with children and later used with adults. Hall, Spruill, and Webster (2002) referred to resilient individuals as "those who experience successful outcomes despite adverse experiences" (p. 4). This study explored emotional resiliency, stress levels, locus of control, and the need for achievement by comparing 17 college students with learning disabilities to 17 without disabilities. Results indicated that students in college with learning disabilities obtained higher resiliency scores than their peers, which indicated greater initiative and the need for achievement. From the findings, the authors suggested that college students with learning disabilities used the goal-directed approach, the problem-solving initiative, and had less stress associated with college. Reliability for the three factors yielded autonomy .89, initiative .69, and trust .87 and .80. While the HRS is a relatively new instrument and has not been widely used to date, further research should be undertaken.

Resilience Scale (RS). Two nurses, Wagnild and Young, developed a 25-item resilience scale with a Likert response format comprised of two factors that are related to (1) Personal Competence and (2) Acceptance of Self and Life (Wagnild & Young, 1993; Giordano, 1997). The purpose of the scale was to "identify the degree of individual resilience, considered a positive personality characteristic that enhances individual

adaptation” (Wagnild & Young, 1993, p. 167). Scores range from 25-175 with higher scores indicating more resilience. In 1988, the scale was initially available and pretested.

The Resilience Scale was developed through qualitative interviews with 24 older women who had adapted successfully following a major life event (Wagnild & Young, 1990). Each participant was asked to describe how she managed a major loss (Wagnild & Young, 1993). From that, Wagnild and Young identified five components that constitute resilience from the narratives. They are as follows:

- (1) Equanimity - a balanced perspective of one’s life and experiences, moderates extreme responses to adversity.
- (2) Perseverance - the act of persistence despite adversity or discouragement, suggests a willingness to continue the struggle to reconstruct one’s life.
- (3) Self-reliance - a belief in one’s capabilities, is the ability to recognize personal strengths and limitations.
- (4) Meaningfulness - the realization that life has a purpose, one’s contributions are valued, and the sense of having something to live for is conveyed.
- (5) Existential aloneness - the realization that each person’s life path is unique and while some experiences are shared, there remain others that must be faced alone; existential aloneness confers a feeling of freedom and sense of uniqueness.

(Wagnild & Young, 1993, p. 167-168)

Wagnild and Young (1993) defined resilience as social and psychological competence characterized by equanimity, perseverance, self-reliance, meaningfulness, and existential aloneness.

According to Wagnild and Young (1993), resilience is defined as a personality characteristic that moderates the negative effects of stress and promotes adaptation. Resilience is “attributed to individuals who, in the face of overwhelming adversity, are able to adapt and restore equilibrium to their lives and avoid the potentially deleterious effects of stress” (p.165). Wagnild and Young (1993) noted that resilience implies stamina and has been used to describe persons who “display courage and adaptability in the wake of life’s misfortunes (p.166).

The RS has been used in other studies, which include graduate students (Cooley, 1989; Klaas, 1989), first-time mothers returning to work (Killen & Jarrett, 1993), adventure education (Neill & Dias, 2001), caregivers of spouses with Alzheimer’s disease (Wagnild & Young, 1988), residents in public housing (Wagnild & Young, 1991), and pregnant and postpartum women (Wagnild & Young, 1993). Evidence of construct validity was reported through factor analysis (Wagnild & Young, 1993). Coefficient alpha for the total scale was .91 when used with adults (Wagnild & Young, 1993) and .72 in a study of inner-city, vocational high school, minority adolescents. There is evidence from the above research studies that resilience is related to a range of variables.

According to Wagnild and Young (1993), other instruments that have been used with the RS in correlational studies include measures of life satisfaction, morale, depression, and physical health, with a mean score for RS of 147.91 and SD=16.85. The

factor analysis of RS used the oblimin rotation factor structure that represented two factors, “Personal Competence and Acceptance of Self and Life” (Wagnild & Young, 1993, p.165). Since the scale was initially developed within a sample of older women, “additional work needs to be done to analyze the differences between women and men on resilience” (Wagnild & Young, 1993, p. 175). The RS has made an important contribution to the research on resilience. This instrument has been used in correlational studies with adults and there is evidence that it is valid. Originally the RS was 25-items, now it has 26-items. Therefore, the 26-item RS was used for this study.

The Link: Self-Directed Learning and Resilience

As was previously stated in Chapter I, self-directed learners and resilient individuals tend to have a positive self-concept. This point was demonstrated from the literature of various research studies that included Brockett and Hiemstra’s (1991) PRO model and Sabbaghian’s (1979) study that noted a link between self-concept and self-direction; that is, how one perceives oneself. Similarly, writers in the field of resilience, Siebert (1996) and Segal (1986) stated that self-concept is about how individuals perceive themselves.

Next, self-directed learners and resilient people prefer to have control. Brockett et al. (1994) and Blowers (1993) noted that the preference of adult learners was the learner’s control of the learning transaction. Candy (1991) stated that self-directed learning includes organizing instruction, learner-control, in formal settings. In addition, Grow (1993) noted that self-directed learners are motivated to achieve with learning

contracts when they are in control of their learning. At the same time writers on resilience, such as Werner (1990), McMillan and Reed (1994), and Siebert (1996) noted that resilient students preferred control in the environment.

Furthermore, self-directed learners and resilient people prefer to assume responsibility for their actions. For instance, Brockett and Hiemstra (1991) stated that learner self-direction, a personality construct, involves the learners' preference to assume responsibility for learning. Tough (1971/1979), Garrison (1997), and Caffarella (1993) noted that the learners' preference was to assume responsibility for their learning situation. Likewise with resilience, Viscott (1996) and McMillan and Reed (1994) noted that people should take responsibility for their actions whether they involve successes or failures.

Finally, self-directed learners and resilient individuals tend to be persistent. For instance, Gibbons et al. (1980) noted perseverance was a drive for self-directed learners and Garrison (1997) stated that persistence was necessary to achieve a desired outcome. Similarly, the resilience literature noted writers such as Segal (1986) who suggests how to draw on your inner strengths for endurance and Lifton (1993) and Flach (1997) stated that in spite of life's pressures or personal disruptions, resilient people reassemble their lives and somehow persist. Therefore, self-directed learning and resilience involve personality characteristics and appear to be connected with the four factors, self-concept, control, responsibility, and persistence.

Summary

In conclusion, Chapter II defined self-directed learning and resilience along with a broad overview of the literature. Over the last thirty years we know more about the nature and frequency of self-directed learning and how it is linked to several variables. For instance, Chuprina (2001), in her research study that focused on how people adapt to other cultures, demonstrated a link with emotional resilience, one of the four factors of the Cross-Cultural Adaptability Inventory (CCAI). However, research on self-directed learning has slowed down in recent years; but, a body of scholars are writing in this area including Brockett and Hiemstra, Merriam, Caffarella, and Brookfield along with the 1987 establishment of the annual International Self-Directed Learning Symposium by Long and his colleagues.

Chapter III will present the population and sample, instrumentation, procedure, and research design and data analysis for this study.

CHAPTER III

METHOD

As was previously stated in Chapter I, this study is an investigation of the relationship between self-directed learning readiness and resilience. In this chapter, the population and sample, instrumentation, procedure, and research design and data analysis are discussed.

Population and Sample

The population for this study consists of graduate students enrolled at the University of Tennessee, Knoxville (UTK) during the spring semester of 2003. According to the online UTK 2000-01 Fact Book, the total student population is 25,474. From this population, 20,009 are undergraduate students, 5,465 are graduate students, and of these, 1,026 are graduate students in the College of Education, Health, and Human Sciences (<http://web.utk.edu/~oira/facts/fb/fb00/students/fbp1.html>). The sample was selected from three departments in the College of Education, Health, and Human Sciences at UTK: Educational Psychology and Counseling, Theory and Practice of Teacher Education, and Instructional Technology and Educational Studies. Together these three departments consist of 568 graduate students enrolled in classes.

A convenience sample of graduate students was used for this study. Convenience sampling assumes nonrandom sampling within groups or individuals. The sample size

was comprised of 150 graduate students from classes that meet at least once weekly during the semester. According to Gay and Airasian (2000), with the use of nonrandom samples, “it is not possible to specify what probability each member of a population has of being selected for the sample” (p. 137). Despite the sampling bias, convenience sampling is used most often in educational research studies since it involves the use of volunteers and existing groups (Gay & Airasian, 2003).

Instrumentation

Three instruments were utilized in this study: the Self-Directed Learning Readiness Scale (SDLRS) (Guglielmino, 1977), the Resilience Scale (RS) (Wagnild & Young, 1993), and a demographic questionnaire that was designed to describe the sample. These instruments are described below.

Self-Directed Learning Readiness Scale (SDLRS)

The Self-Directed Learning Readiness Scale (SDLRS) was developed by Lucy Guglielmino in 1977 to measure the extent to which learners perceive themselves as possessing skills and attitudes associated with self-directed learning. The SDLRS is a 58-item, five-point Likert scale and was discussed in Chapter II. However, the subscores from the factors yielded a low reliability (Guglielmino, 1977). In personal communication, Guglielmino noted that the total score of the SDLRS should be used instead of factor scores in the analysis of self-directed learning (L. M. Guglielmino, personal communication with R. G. Brockett, February 4, 2000). Since factor analysis

results tend to vary by sample (Gorsuch, 1983), the factor scores of the SDLRS also tend to vary by the sample and they are not representative of other samples. Guglielmino estimated .87 as the reliability coefficient of the total scale by using Cronbach's alpha. Therefore, in this study only the total SDLRS score will be used.

Other studies have found high reliabilities with the SDLRS include those by Brockett (1985a), Reynolds (1986), Wood (1994), and Cox (2002). In the first of these studies, Brockett (1982, 1985a) noted a link between self-directed learning readiness and life satisfaction among adults age 60 and over and used item analysis of the SDLRS to determine internal consistency, which was a reliability of .87. The coefficient was .42 for self-directed learning readiness and .95 for life satisfaction.

Reynolds (1986) found a significant positive correlation between the SDLRS score and the cognitive interest motivational factor from the Education Participation Scale (Boshier, 1971) and a negative correlation with external expectations. He also found a .74 test-retest reliability for the SDLRS. This study was discussed in Chapter II.

Wood (1994) noted a link between self-directed learning readiness and adults' perceptions of deterrents to participate in college-level course work among 103 adults who inquired about undergraduate evening classes at a private liberal arts college. Item analysis of the SDLRS was used to determine internal consistency. The reliability was .96 with Cronbach's Coefficient Alpha.

Cox (2002) found a moderate positive correlation between creativity and self-directed learning readiness among 114 adult community college students. Reliability in his study was .94 using Cronbach's alpha coefficient. Long and Agykeum (1983)

supported the validity of the SDLRS with their study that used a multitrait-multimethod procedure, and analysis of variance statistics.

SDLRS scores were compared with other studies of graduate students that used Cronbach's alpha as the reliability. This study consisted of 148 graduate students and the reliability was .93. Canipe's (2001) dissertation utilized 240 graduate students and .92 was the reliability. Owen (1996) reported 185 graduate students and .92 was the reliability. Guglielmino (1977) examined 91 graduate students and .87 was the reliability. The reliability was high for these studies except for Guglielmino (1977).

In more recent studies, research has provided evidence that self-directed learning readiness is related to variables such as Japanese managers at a General Motors plant in Japan (Beitler, 2000), learning styles (Canipe, 2001), cross-cultural adaptability (Chuprina, 2001), creativity (Cox, 2002), logical reasoning, creative thinking, and psychological preferences (Kreber, Cranton, & Allen, 2000), academic achievement (Long & Morris, 1996), wellness (Owen, 1996), coping with asthma (Nelson, 2000), and deterrents to participation (Wood, 1994).

Despite the wide use of the SDLRS, scholars in the field have criticized the instrument. Brockett (1985b) expressed concern about the appropriateness of the SDLRS for adults with little formal education or low levels of literacy. In his study, 12 of the 58 items did not correlate significantly with the total score of the SDLRS. Thus, Brockett suggested that the SDLRS may not be valid for adults with low levels of literacy.

Candy (1991) stated that the SDLRS "may prove to be dangerously leaky"; with the unclear definition of terms there appears to be "some confusion as to precisely what is being measured" (p. 153). In addition, Bonham (1991) was concerned with the construct

validity, that is, whether the SDLRS measured readiness for self-directed learning. She suggested that more research was needed to explore the validity of the SDLRS.

Perhaps the strongest criticism of the scale was offered by Field (1989), who examined the instrument's structure, validity, and reliability. His concerns of the SDLRS revolved around the Delphi technique as a basis for generating items, the lack of definitions for key terms such as the "self-directed learner" and "readiness", and the use of negatively phrased items. Field indicated that the SDLRS was not justified for measuring self-directed learning readiness and concluded that researchers should not continue to use the instrument. In response, Guglielmino (1989), Long (1989), and McCune (1989) dismissed Field's findings because of errors and omissions in his research. That is, Field was criticized for incorrectly interpreting sources, omitting sources, for the statistical analysis he used that included a modified version of the SDLRS. The criticism and the response were discussed in Chapter II.

Merriam and Brockett (1997) noted that the SDLRS is the most widely used instrument to measure self-directed learning. According to Guglielmino (1989) there is, "a large body of research supports the validity and reliability of the SDLRS" (p. 238). Despite the limitations of the SDLRS, Brockett and Hiemstra (1991) "recommend that the SDLRS be used with the same discretion as any other standardized instrument" (p. 75). In other words, the SDLRS can be used successfully with a degree of caution. Brockett and Hiemstra (1991) stated that "the SDLRS is appropriate for adults in general" and those adults with more formal education are inclined to have positive attitudes toward learning. The SDLRS was used for this study since the participants involved were from college backgrounds.

Resilience Scale (RS)

Gail M. Wagnild and Heather M. Young developed the Resilience Scale (RS) in 1987 to “identify the degree of individual resilience, considered a positive personality characteristic that enhances individual adaptation” (1993, p. 167). The word resilience connotes “emotional stamina and has been used to describe persons who display courage and adaptability in the wake of life’s misfortunes” (Wagnild & Young, 1993, p. 166). The RS is a 25-item, Likert-type scale with two factors, Personal Competence and Acceptance of Self and Life. The items in the RS represent “adaptability, balance, flexibility, and a balanced perspective of life” (Giordano, 1997, p. 1033). Wagnild and Young (1993) only used 24 subjects for the development of the RS and noted that the instrument is valid and estimated an internal consistency reliability coefficient of .89. The reliabilities for the RS factors are .88 for Personal Competence and .72 for Acceptance of Self and Life. On the other hand, RS scores were compared with other studies that used Cronbach’s alpha as the reliability. This study utilized 148 graduate students, the largest number of subjects to date, and the reliability was .89. Klass (1989) examined female graduate students in her research study of 58 subjects and had a reliability of .86. Cooley (1989) also utilized graduate students, 43, and the reliability was .89.

As was previously mentioned in Chapter I, the term resilience is used in the literature as the equivalent of the related terms adaptation, hardiness, coping, and invulnerability (Pennewell, 1995). Cooley (1989) and Klaas (1989) conducted studies of resilience on graduate students. Neill and Dias (2001) investigated resilience and adventure education. These studies were described in Chapter II and they have supported the use of the Resilience Scale.

The authors of the scale, Wagnild and Young (1993), noted limitations and potential weaknesses of the instrument. A major limitation of the RS is that the response format of the scale warrants further refinement since the “empirical range has not approached the theoretical range in the negative direction” (Wagnild & Young, 1993, p. 175) in studies that have used the RS to date. In addition, the negatively worded items need to be piloted. Since the items of the scale were generated by interviews with women, additional work is needed to determine if there are differences in resilience between women and men, which, of course, can be determined in this study. The RS appears to be mostly used with adults and it is easy to administer.

The RS is an instrument that measures the perception of resilience and focuses on the adult population. Some of the studies that used this instrument were designed to explore relationships with resilience and other variables, which was the focus of this study.

Demographic Questionnaire

The researcher designed a demographic questionnaire. Educational level, family income, age, gender, race, and socioeconomic status variables were identified in this questionnaire. The information provided a better description of the sample and some of the variables were used in research questions number three through eight.

Procedure

The researcher obtained permission from the Human Subjects Institutional Review Board at the University of Tennessee, Knoxville prior to administering the SDLRS, RS, and the Demographics Questionnaire. The researcher identified professors in three departments from the College of Education, Health, and Human Sciences who were contacted by letter and a personal visit or telephone call. This contact resulted in asking professors to administer the three instruments in their classes or by allowing the researcher to administer the instruments. If the professors agreed to administer the instruments to their classes, the researcher requested that the instruments be returned immediately. Approximately 30 to 45 minutes of class time was necessary for participants to complete the three instruments.

The researcher counterbalanced the SDLRS and RS instruments for each class and asked participants to sign an informed consent sheet. Participants were referred to the instructions at the top of each instrument. Confidentiality was maintained since no names were identified on the instruments. After the participants completed the instruments, the SDLRS and the RS were scored to determine which research questions are statistically significant. The demographic questionnaire was recorded to provide information about the sample and was used in addressing the research questions. The data were stored in a locked file cabinet within the home office of the researcher.

Research Design and Data Analysis

The design used for this study is correlational. Correlational research describes the relationship among two or more variables (Gay and Airasian, 2003). The data in this study were analyzed using the Statistical Package for the Social Science (SPSS). Various statistical procedures were used to test the research questions. They are as follows: Pearson product moment correlation coefficient, independent samples t-test, multivariate analysis of variance (MANOVA), analysis of variance (ANOVA), and step-wise multiple regression analyses.

Question #1-*Is there a significant relationship between self-directed learning readiness and resilience?* This question was answered by using a Pearson product moment correlation coefficient derived from the total scores of the SDLRS and RS.

Question #2-*Is there a significant relationship between self-directed learning readiness and the resilience factors: Personal Competence and Acceptance of Self and Life?* This question will be answered by using two Pearson product moment correlation coefficients derived from the SDLRS and the sub-scales of the RS.

Question #3-*Is there a significant difference in self-directed learning readiness by gender?* This question was answered by using an independent samples t-test.

Question #4-*Is there a significant difference in resilience by gender?* This question was answered by using an independent samples t-test.

Question #5-*Is there a significant difference in scores on the resilience factors, Personal Competence and Acceptance of Self and Life, by gender?* This question was answered by using a MANOVA.

Question #6- *Is there a significant relationship between self-directed learning readiness and educational level, family income, and age?* This question was answered by using a 2 X 3 X 5 ANOVA, follow-up tests of significance as necessary, and correlational analyses.

Question #7- *Is there a significant relationship between resilience and educational level, family income, and age?* This question was answered by using a 2 X 3 X 5 ANOVA, follow-up tests of significance as necessary, and correlational analyses.

Question #8- *To what extent can the combination of selected demographic variables (educational level, family income, age, gender) and resilience scores predict self-directed learning readiness?* This question was answered by using two stepwise regression analyses.

Summary

A convenience sample of 150 graduate students enrolled in three departments in the College of Education, Health, and Human Sciences at the University of Tennessee, Knoxville (UTK): Educational Psychology and Counseling, Theory and Practice of Teacher Education, and Instructional Technology and Educational Studies were utilized in this study. Three questionnaires were administered to the graduate students: the Self-Directed Learning Readiness Scale (SDLRS), the Resilience Scale (RS), and the Demographic Questionnaire. Various statistical procedures, Pearson product moment correlation coefficient, independent samples t-test, multivariate analysis of variance

(MANOVA), analysis of variance (ANOVA), and step-wise multiple regression analyses, were used to address the research questions.

Chapter IV will present an analysis of the data and a discussion on the SDLRS, RS, and Demographic Questionnaire. Finally, the research questions will be addressed.

CHAPTER IV

ANALYSIS OF DATA

The purpose of this study was to investigate the relationship between self-directed learning readiness and resilience among graduate students. In this chapter, the results of the data analysis are provided. First, a profile of the sample is presented. Second, the instruments - the Self-Directed Learning Readiness Scale (SDLRS), the Resilience Scale (RS), and the Demographic Questionnaire - are discussed. Finally, the research questions are addressed.

Profile of the Sample

The population consisted of 568 graduate students from three departments in the College of Education, Health, and Human Sciences at the University of Tennessee, Knoxville (UTK): Educational Psychology and Counseling, Theory and Practice of Teacher Education, and Instructional Technology and Educational Studies. This study utilized a convenience sample composed of 150 students in graduate level classes that met at least once weekly during the spring 2003 semester. Of the 150 participants, two were identified as outliers since their resilience scores were extremely low. The researcher had reason to believe that these two individuals probably reversed the scores on the Resilience Scale. Therefore, these two respondents were discarded from the analysis, and all data analysis was based on a sample of 148 respondents.

Participants completed the SDLRS and RS, which were counterbalanced for each class, and the Demographic Questionnaire, which provided information about the educational level, family income, age, race, and gender. Due to the lack of diversity with only eight African American participants in the sample of 148, the researcher was unable to examine race differences. Most of the participants were white females between the ages of 25-29 with an average family income of \$50,000 or greater. The following sections provide specific information about the sample.

Educational Level

The sample for this study consisted of graduate students enrolled during the spring semester of 2003. Respondents were asked to report their current educational level. The breakdown is as follows: 55 (37.2%) had a Bachelor's degree, 77 (52%) held a Master's Degree or Specialist Degree, and 16 (10.8%) possessed a Doctoral Degree (see Table 4.1). This means that the majority of the participants held either a Master's Degree or Specialist Degree.

Table 4.1.
Frequency and Percentages for Educational Level

	Frequency	Percent
Bachelor's degree	55	37.20
Master's degree or Specialist degree	77	52.00
Doctoral degree	16	10.80
Total	148	100.00

Family Income

Three categories of family income were as follows: less than \$30,000, from \$30,000-\$50,000, and greater than \$50,000. The largest group, 51 respondents (34.5%), had a family income of \$50,000 or greater. Another group, 48 respondents (32.4%), had a family income between \$30,000-\$50,000. Finally, the group with a family income of less than \$30,000 also had 48 respondents (32.4%). The distribution was nearly equal across categories. Table 4.2 contains the data for family income.

Age

Data were collected for the actual age, but five age categories were created for the analysis. According to the data in Table 4.3, the respondents ranged in age from 22 to 58 in this study. Two of the respondents omitted their ages. The mean age was 33.8 and the standard deviation was 10.67. In Table 4.4, the age category 25-29 (n=43) was the largest group, which consisted of 29.1% of the sample. The smallest age group was 50 and over (n=18), which included 12.2% of the sample.

Table 4.2.

Frequency and Percentages for Family Income

	Frequency	Percent	Cumulative Percent
<\$30,000	48	32.40	32.70
\$30,000-\$50,000	48	32.40	65.30
>\$50,000	51	34.50	100.00
Missing	1	.70	
Total	148	100.00	

Table 4.3.**Frequency and Percentages for Actual Age**

	Frequency	Percent	Cumulative Percent
22	10	6.80	6.80
23	10	6.80	13.70
24	10	6.80	20.50
25	15	10.10	30.80
26	6	4.10	34.90
27	8	5.40	40.40
28	6	4.10	44.50
29	8	5.40	50.00
30	3	2.00	52.10
31	5	3.40	55.50
32	1	.70	56.20
33	4	2.70	58.90
34	3	2.00	61.00
35	2	1.40	62.30
36	6	4.10	66.40
37	1	.70	67.10
38	2	1.40	68.50
39	1	.70	69.20
40	3	2.00	71.20
41	3	2.00	73.30
42	1	.70	74.00
43	4	2.70	76.70
44	1	.70	77.40
45	4	2.70	80.10
46	3	2.00	82.20
47	2	1.40	83.60
48	3	2.00	85.60
49	3	2.00	87.70
50	4	2.70	90.40
51	1	.70	91.10
52	1	.70	91.80
53	3	2.00	93.80
55	3	2.00	95.90
56	5	3.40	99.30
58	1	.70	100.00
Total	146	98.60	
Missing	2	1.40	
	148	100.00	

M age = 33.8, SD = 10.67

Table 4.4.**Frequency and Percentages for Age Categories**

	Frequency	Percent	Cumulative Percent
24 and younger	30	20.30	20.50
25-29	43	29.10	50.00
30-39	28	18.90	69.20
40-49	27	18.20	87.70
50 and older	18	12.20	100.00
Missing	2	1.40	
Total	148	100.00	

Gender

Females comprised 74% of the sample (n=109) and males 26% (n=39). The ratio of females to males was almost exactly three to one.

Race

The University of Tennessee, Knoxville has a low minority population and it is reflected in this sample. The percentage of White/Caucasian participants was 87.2% (n=129), Black/African Americans was 5.4% (n=8), and other was 7.4% (n=11) for this study (Table 4.5). As was previously stated, the researcher was unable to examine race differences due to the lack of diversity with only eight African American participants.

Table 4.5.
Frequency and Percentages for Race

	Frequency	Percent
Race		
White/Caucasian	129	87.2%
Black/African American	8	5.4%
Other	11	7.4%
Total	148	

Instrumentation

In this section, data from the Self-Directed Learning Readiness Scale (SDLRS) and the Resilience Scale (RS) are presented. This data were analyzed using SPSS. The results of the data analyses are presented below.

Self-Directed Learning Readiness Scale (SDLRS)

Guglielmino (1977) developed the Self-Directed Learning Readiness Scale (SDLRS) to measure readiness for self-directed learning. This instrument contains 58 items and is a measure of the degree to which respondents perceive themselves to possess skills and attitudes relevant to self-directed learning. The SDLRS is a self-report instrument that utilizes a five-point Likert scale.

From the SDLRS data, the scores of the 148 participants ranged from 171 to 284. A mean score of 235.87 with a standard deviation of 22.45 was found. Using Cronbach's Standardized Scale Alpha, the reliability of the SDLRS was .93. That is, the reliability of the scale was high.

This study was compared to other studies of graduate students where the SDLRS was administered. Canipe (2001) found a mean of 230.90 and a Cronbach's alpha of .92. Owen (1996) reported a mean of 228.40 and a Cronbach's alpha of .92. Adengua (1991) noted a mean score of 230.80; however, no reliability estimate was reported. Guglielmino (1977) found a mean of 257.50, which is higher than the above studies, and a Cronbach's reliability of .87 for her dissertation. Her sample size was 91 graduate students. Table 4.6 presents the comparison of the SDLRS scores with graduate students. It can be seen that the data from this study are similar to each of the others, except Guglielmino (1977).

Resilience Scale (RS)

The Resilience Scale (RS) was developed by Wagnild and Young in 1987 and revised in 1990 to measure the extent to which respondents perceive themselves to possess skills that are applicable to resilience. Originally, the RS was a 25-item self-reporting instrument with a seven-point Likert response format designed for use with adults. Now, the instrument has 26-items and this was the version of the instrument used for this study. It consists of a total score and two subscale scores: Personal Competence and Acceptance of Self and Life.

Table 4.6.

**Comparison of Self-Directed Learning Readiness Scale (SDLRS) Scores
with Studies of Graduate Students**

Author and Year	Subjects	N	Mean	Standard Deviation	Reliability/ Cronbach's Alpha
Robinson (2003)	Graduate Students	148	235.87	22.45	.93
Canipe (2001)	Graduate Students	240	230.90	22.80	.92
Owen (1996)	Graduate Students	185	238.70	21.60	.92
Adenuga (1991)	Graduate Students	178	230.80	22.30	---
Guglielmino (1977)	Graduate Students	91	257.50	20.00	.87

--- No reliability estimate reported

For the 148 participants in this sample, RS scores ranged from 116 to 182. The mean score was 149.84 with a standard deviation of 14.73. The reliability of the RS was .89 according to the Cronbach's Standardized Scale Alpha. For the subscales, reliability for Personal Competence was .88 and Acceptance of Self and Life was .72. Overall, the scale was reliable; however, the Acceptance of Self and Life portion of the scale should be interpreted carefully due to the relatively low reliability.

This study was compared to other studies that used the RS. Neill and Dias (2001) calculated the change in RS scores for their study. They did not provide the pre-test or

post-test information; however, Cronbach's alpha was .91. Wagnild and Young (1993) reported a mean of 147.91 and Cronbach's alpha was .91. Klaas (1989) noted a mean score of 139.1 and .86 for Cronbach's alpha. The mean for Cooley's (1989) study was 138.8 and Cronbach's alpha was .89. Data in this current study were similar to the other studies, except for the number of subjects in this sample. Below, Table 4.7 presents the comparison of the RS scores with other studies and Table 4.8 presents the mean scores for the SDLRS and RS.

Table 4.7.

Comparison of Resilience Scale (RS) Scores with Other Studies

Author & Year	Subjects	N	Mean	Standard Deviation	Reliability/ Cronbach's Alpha
Robinson (2003)	Graduate Students	148	149.84	14.73	.89
Wagnild & Young (1993)	Elderly Women	24	147.91	16.85	.91
Klass (1989)	Female Graduate Students	58	139.10	14.50	.86
Cooley (1989)	Female Graduate Students	43	138.80	14.10	.89

Table 4.8.

Descriptive Statistics for Self-Directed Learning Readiness Scale (SDLRS) and Resilience Scale (RS)

	Mean	Standard Deviation	Minimum Range	Maximum Range
SDLRS	235.87	22.45	171.00	284.00
Resilience	149.84	14.73	116.00	182.00
Personal Competence	100.39	9.90	71.00	119.00
Acceptance of Self and Life	43.37	6.01	23.00	56.00

Analysis of the Research Questions

Eight research questions were examined in order to explore the relationship between self-directed learning and resilience among graduate students. The data utilized in this process allowed the researcher to answer the research questions. Analyses of the research questions are addressed below.

Question #1-*Is there a significant relationship between self-directed learning readiness and resilience?*

A Pearson product moment correlation coefficient of .61 ($p < .001$) was derived from the total scores of the SDLRS and RS. This correlation is significant at the .05 level. The coefficient of determination, r^2 , is .37; therefore, 37% of the variance in the SDLRS can be explained by the RS. Figure 4.1 presents a scattergram illustrating the significant positive correlation between SDLRS and RS scores, and shows that as SDLRS scores

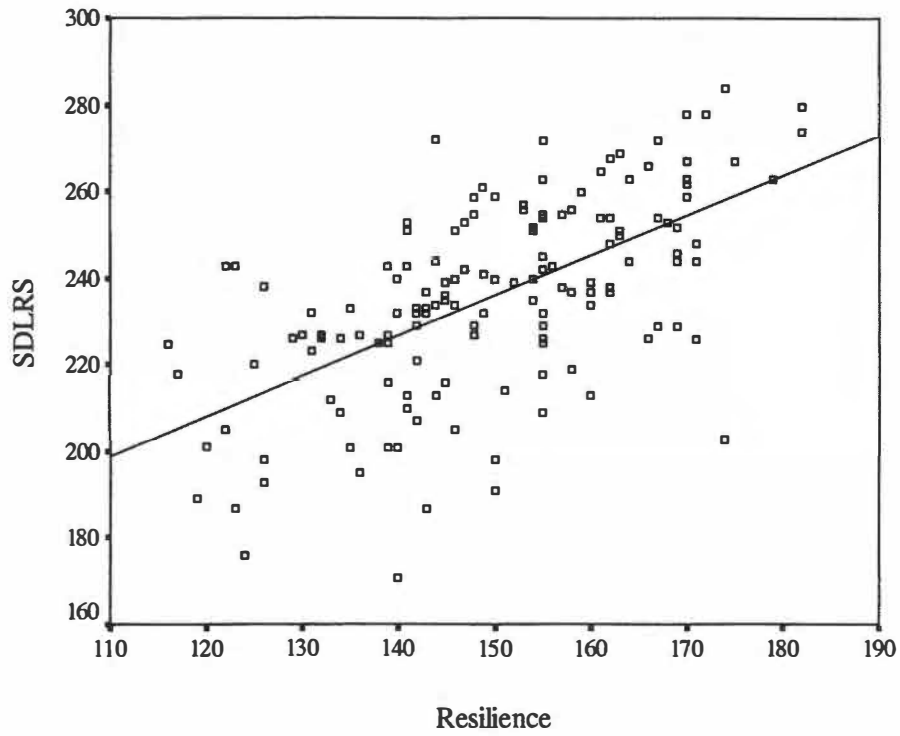


Figure 4.1. Scattergram Showing the Relationship Between Self-Directed Learning Readiness and Resilience

increase, RS scores increase. The statistically significant positive relationship between self-directed learning readiness and resilience among graduate students in this sample means that as self-directed learning increases so does resilience.

Question #2-Is there a significant relationship between self-directed learning readiness and the resilience factors: Personal Competence and Acceptance of Self and Life?

This question was answered using two Pearson product moment correlation coefficients. SDLRS score correlates significantly with both Personal Competence ($r = .64$, $p < .001$) and Acceptance of Self and Life ($r = .37$, $p < .001$). These correlations are shown in Table 4.9. The coefficient of determination, or r^2 , is an index of shared variance and for Personal Competence is .41 and for Acceptance of Self and Life is .14. The significant positive relationships between self-directed learning readiness and the resilience factors: Personal Competence and Acceptance of Self and Life means that as self-directed learning increases so do the resilience factors: Personal Competence and

Table 4.9.
Percentage of Variability Explained by the Correlations
with Subscale Scores of Resilience Scale (RS)

SDLRS Score	r	r ²	p-value
Personal Competence	.64	.41	<.001
Acceptance of Self and Life	.37	.14	<.001

Acceptance of Self and Life. The relationship appears stronger for the relationship between self-directed learning readiness and Personal Competence than between self-directed learning readiness and Acceptance of Self and Life.

Question #3-Is there a significant difference in self-directed learning readiness by gender?

This question was answered using an independent samples t-test to examine differences by gender. The mean score for females (n=109) was 235.68 and 236.41 for males (n=39). The result of the t-test was $t = -.17$, $df = 146$, $p = .86$ (Table 4.10). Therefore, there was no significant difference between males and females with regard to SDLRS scores.

Table 4.10.

Self-Directed Learning Readiness Scale (SDLRS)

Mean Scores for Gender

SDLRS	M	SD	N	t	p
Female	235.68	22.38	109	-.17	.86
Male	236.41	22.81	39		

Question #4-Is there a significant difference in resilience by gender?

This question was answered using an independent samples t-test, which focused on differences by gender. The mean for females was 151.17 (n=109) and 146.13 for males (n=39). The result of the t-test was $t = 1.85$, $df = 146$, $p = .07$. As is shown in Table 4.11, no significant difference was found.

Question #5-Is there a significant difference in scores on the resilience factors, Personal Competence and Acceptance of Self and Life, by gender?

This question was answered using a MANOVA, $F(2, 145) = 2.19$, $p = .12$. There is no difference between the composite means from Personal Competence and Acceptance of Self and Life as a function of gender. These figures are presented in Table 4.12. There is no significant gender difference in the subscales.

Table 4.11.

Resilience Scale (RS) Mean Scores for Gender

RS	M	SD	N	t	p
Female	151.17	14.02	109	1.85	.07
Male	146.13	16.15	39		

Table 4.12.**Resilience Scale (RS) Mean Subscale Scores for Gender**

RS Subscales	Female		Male	
	M	SD	M	SD
Personal Competence	101.39	9.26	97.56	11.27
Acceptance of Self and Life	43.71	6.11	42.44	5.71

Question #6-*Is there a significant relationship between self-directed learning readiness and educational level, family income, and age?*

This question was answered by using a 2 X 3 X 5 ANOVA, follow-up tests of significance as necessary, and correlational analyses. The results of the ANOVA are presented in Table 4.13. Means from educational levels ($p = .98$) and family income levels ($p = .05$) were not significant. Mean age differences were significant ($p = .01$).

The means and standard deviations of SDLRS scores, broken down by age, appear in Table 4.14. The means show that as age increases, SDLRS scores tend to increase. A post hoc test, Tukey's Pairwise Comparisons was run. From this comparison, the age category of 24 and younger differed significantly from 40-49 and 50 and older. There were no other pairwise differences.

To further investigate relationships, a Spearman Correlation procedure was run between actual age, education, and income with SDLRS. Spearman was used since age, education, and incomes are not normally distributed. The results of the correlations are in

Table 4.13.

**Self-Directed Learning Readiness Scale (SDLRS) Tests of
Between-Subjects Effects**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Education	.25	1	.25	.00	.98
Income	2800.41	2	1400.20	3.06	.05
Age	6114.56	4	1528.64	3.35	.01
Error	62608.63	137	456.00		
Total	8144183.00	145			
Corrected Total	72510.44	144			

Table 4.14.

**Age Means Descriptive Statistics for the
Self-Directed Learning Readiness Scale (SDLRS)**

Age	Mean	Standard Deviation
24 and younger	225.80	18.97
25-29	232.49	23.05
30-39	237.25	26.93
40-49	243.22	16.01
50 and older	246.17	21.39

Table 4.15. Two of the correlations are significant, age and education. As age and education increase, SDLRS scores tend to increase. The means and standard deviations are presented in Tables 4.16 and 4.17.

Question #7-Is there a significant relationship between resilience and educational level, family income, and age?

This question was answered by using a 2 X 3 X 5 ANOVA, follow-up tests of significance as necessary, and correlational analyses. The results of the ANOVA are presented in Table 4.18. Means from different ages ($p = .20$), educational levels ($p = .52$), and family income levels ($p = .36$) were not significant. Therefore, resilience did not differ by educational levels, family incomes, or age.

Table 4.15.
Spearman Correlation for Self-Directed Learning
Readiness Scale (SDLRS) and Educational Level,
Family Income, and Age

SDLRS	rho	p
Educational Level	.24	.004
Family Income	.01	.945
Age	.32	<.001

Table 4.16.**Mean Scores on the Self-Directed Learning****Readiness Scale (SDLRS) by Educational Level**

Education	N	Mean	Standard Deviation
Bachelor's Degree	55	234.20	20.563
Master's, Specialist or Doctoral Degree	93	236.86	23.551

Table 4.17.**Mean Scores on the Self-Directed Learning****Readiness Scale (SDLRS) by Income Level**

Family Income	N	Mean	Standard Deviation
<\$30,000	48	231.21	22.84
\$30,000-\$50,000	48	234.13	21.25
>\$50,000	51	242.59	21.75

Table 4.18.**Resilience Scale (RS) Tests of Between-Subjects Effects**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Education	88.38	1	88.38	.41	.52
Income	442.40	2	221.20	1.03	.36
Age	1323.87	4	330.97	1.54	.20
Error	29492.20	137	215.27		
Total	3287030. 00	145			
Corrected Total	31726.03	144			

To further investigate possible relationships, Spearman correlation coefficients were run. The results are presented in Table 4.19. There are significant, though relatively small, positive relationships between resilience and income and resilience and age. Thus, as income and age increase, resilience tends to increase.

Question #8- *To what extent can the combination of selected demographic variables (educational level, family income, age, gender) and resilience scores predict self-directed learning readiness?*

Table 4.19.

**Spearman Correlation for Resilience Scale (RS), RS factors–
Personal Competence and Acceptance of Self and Life– and
Demographics (educational level, family income, and age)**

		Rho	p
RS	Educational Level	-.09	.28
	Family Income	.20*	.02
	Age	.22**	.01
Personal Competence	Educational Level	-.08	.31
	Family Income	.15	.08
	Age	.19*	.02
Acceptance of Self and Life	Educational Level	-.07	.41
	Family Income	.22**	.01
	Age	.17*	.04

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

This question was answered using two stepwise regressions; one used total RS scores and demographic measures as predictors and one used the two RS subscale scores plus demographic measures as predictors. The demographic variables were educational level, family income, and age.

The model shows that RS scores and age predict 39% of the variance in the SDLRS scores (Table 4.20). That is, RS scores and age can explain 39% of the variability in the SDLRS. RS scores alone predict 37% of the variance in SDLRS scores, with age adding an additional 2%. No other variable adds significantly to the predictive capability of RS and age.

Using the subscales of the RS plus demographic variables as predictors, the resulting model shows that Personal Competence and age predict SDLRS scores significantly and explain 43% of the variance (Table 4.21). No other variable contributed significantly beyond these two.

Comparing the two stepwise regressions shows similarities. Apparently, Acceptance of Self and Life predicts very little of the variance of the SDLRS.

Summary

Chapter IV presented the demographic data used to describe the sample, an analysis of the instruments, SDLRS and RS, and the answers to the eight research questions. This chapter presented analyses of the data that were obtained from a sample of 148 graduate students from three departments in the College of Education, Health, and Human Sciences at UTK during the spring semester of 2003. Of the 148

Table 4.20.

**Stepwise Regression Model Summary for Total Resilience
Scores and Resilience and Age Scores**

Model	r	r ²	r ² Change	F Change	Sig. F Change
Resilience	.61	.37	.37	83.34	<.001
Resilience, Age	.63	.39	.02	5.54	.020

Table 4.21.

**Stepwise Regression Model Summary for Resilience
Subscale Scores and Age Scores**

Model	R	r ²	r ² Change	F Change	Sig. F Change
Personal Competence	.64	.41	.40	96.73	<.001
Personal Competence, Age	.66	.43	.03	7.53	.007

sample size, only 5.4% were Black/African American (n=8) and the majority were White/Caucasian (n=129) 87.2%. Ages of the respondents ranged from 22-58. Females comprised 74% of the sample. The largest educational level identified was Master's or Specialist Degrees 52% (n=77). Finally, the largest group of respondents were those with a family income of \$50,000 or greater was 34.5% (n=51).

Scores on the SDLRS ranged from 171 to 284 with a mean score of 235.87. RS scores ranged from 116 to 182 with a mean score of 149.84. It can be concluded from the findings that there is a statistically significant positive relationship between self-directed learning readiness and resilience among graduate students. Also, there was a significant positive relationship found between self-directed learning readiness and both resilience factors: Personal Competence and Acceptance of Self and Life. Another positive correlation was found between self-directed learning readiness and age, that is, as age increases, SDLRS scores tend to increase. Also, there were significant predictive relationships between resilience (and age) and SDLRS scores. Total RS scores and age explained 39% of the variability in the SDLRS. However, the subscale of the RS (Personal Competence and age) explained 43% of the variability in the SDLRS. Apparently, Personal Competence is more powerful than Personal Competence plus Acceptance of Self and Life.

In the final chapter, a summary of the study will be presented. The findings presented in this chapter will be discussed in further detail. Finally, recommendations for further research and a conclusion will be presented.

CHAPTER V

SUMMARY AND CONCLUSIONS

The previous chapters provided an introduction to the study, a review of relevant literature on self-directed learning and resilience, the research method, and the findings. In this chapter, a brief summary of the previous chapters and the conclusions will be presented. Implications for practice and recommendations for future research are also provided.

Summary of the Study

This study was designed to investigate the relationship between self-directed learning readiness and resilience among graduate students. The relationship between the two variables may provide a greater understanding of how self-directed learning may have a connection to how people bounce back from adverse situations. A convenience sample of 148 graduate students was selected from three departments in the College of Education, Health, and Human Sciences at the University of Tennessee, Knoxville during the spring semester of 2003. Participants were administered the Self-Directed Learning Readiness Scale (SDLRS) developed by Guglielmino (1977), the Resilience Scale (RS) developed by Wagnild and Young in 1987, and a demographic questionnaire developed by the researcher to describe the sample.

In the profile of the sample, the majority of the participants held either a Master's Degree or Specialist Degree. Most of the participants were white females between the ages of 25-29 with an average family income of \$50,000 or greater. Of the 148 participants in the sample, the researcher was unable to examine race differences since there were only eight African Americans.

Major Findings

This study examined eight research questions to investigate the relationship between self-directed learning readiness and resilience among graduate students. Several major findings emerged from the analyses. First, a statistically significant positive correlation was found between SDLRS and RS mean scores ($r = .61, p < .001$). As SDLRS scores increase, RS scores increase. Therefore, it can be concluded that highly self-directed individuals possess a high degree of resilience in their personality.

Second, other findings include positive correlations with self-directed learning readiness and the resilience factors: personal competence ($r = .64, p < .001$) and acceptance of self and life ($r = .37, p < .001$). As SDLRS scores increase, both resilience factors: Personal Competence and Acceptance of Self and Life increase. Highly self-directed people have a high degree of resilience in their personality, which consists primarily of Personal Competence and suggests determination, resourcefulness, and perseverance.

Third, another positive correlation was found between self-directed learning readiness and age ($r = .32, p < .001$), that is, as age increases, SDLRS scores increase. In

other words, there is a link between SDLRS and age among graduate students. As people increase in age, self-directed learning readiness also increases.

Fourth, significant regressions were found using the total RS scores and age. Total RS scores and age explained 39% of the variance in the SDLRS. Personal competence, a factor of the RS, explained 43% of the variance in the SDLRS. Therefore, resilience does predict self-directed learning. Self-directed learning individuals apparently have a degree of resilience in their personality.

Educational levels, family income, and gender were not significant in the data analyses. Education was not significant because there was not enough of diversity. All of the participants in this study have college degrees and their educational pursuits were so close. However, people with higher educational levels are probably more self-directed and possess resilience. In other words, people who are highly self-directed have a degree of resilience in their personality and people who are resilient are likely to have characteristics of self-directedness.

Family income was not significant. The three categories were (1) less than \$30,000, (2) from \$30,000-\$50,000, and (3) greater than \$50,000 and the number of participants in each category was 48, 48, and 51 respectively. Across the categories, the distribution of family income was nearly equal. Gender was not significant and females comprised 74% of the sample. The mean scores were close for females and males in this study. This means that all of the graduate students in this study were moderately to highly self-directed people. Race also was not significant in this study. As was previously stated, UTK has a low minority population and it was reflected in this sample.

Discussion

Over the last thirty years, self-directed learning has been one of the major research areas in adult education. During this same time, the literature on resilience has also emerged from the field of psychopathology and child development. These two variables share a link with self-concept, control, responsibility, and persistence. This chapter presents a review of the four common ideas that were addressed in Chapter I.

First, writers on self-directed learning, Brockett and Hiemstra (1991), Sabbaghian (1979), and Guglielmino (1977) described the link between self-directedness and self-concept in adult learners. Brockett and Hiemstra (1991) noted the link between positive self-concept and self-direction; that is, individuals who take primary responsibility for planning, implementing, and evaluating their educational activities. Sabbaghian (1979) suggested that as adults' self-directedness grows, their self-concept grows. Guglielmino (1977) identified eight psychological factors in the development of an instrument to measure self-directed learning readiness, one of which is self-concept as the learner. However, the total score instead of sub-scores is used in the analysis of self-directed learning (L. M. Guglielmino, personal communication with R. G. Brockett, February 4, 2000). Similarly, resilience writers Siebert (1996) and Werner (1990) noted that individuals who bounce back from adverse situations and persevere through difficult times tend to have a positive self-concept. These scholars provided one conceptual link between self-directed learning and resilience with self-concept. For example, Siebert (1996) indicated that people who recover from misfortune are viewed as flexible and adaptable. He also stated that these people have a self-concept that refers to the idea

about who and what they are. Werner (1990) also looked at self-concept and the establishment of a close bond with at least one person, such as a grandparent. She stated that resilient children had a positive self-concept despite their adverse situation. Both instruments, SDLRS and RS, reflect the common element self-concept. For example, with the SDLRS an example of self-concept is item number 11, "I can learn things on my own better than most people" and item number 6 with the RS, "I feel proud that I have accomplished things in life" imply a positive self-concept, how people feel about themselves. Therefore, there is a link between self-directedness and resilience with self-concept.

Second, Brookfield (1993), Blowers (1993), and Grow (1993), writers on self-directed learning, described the link between self-directedness and control in adult learners. Brookfield (1993) stated that one of the political dimensions of self-direction in learning involves the issue of control. He stated that the majority of definitions of self-direction include the importance of the learner's exercising control over their educational decisions. Blowers (1993) investigated self-directed learning in the collegiate classroom and found that adult learners exercised control over their learning through the decision to participate in formal education. Grow (1993) noted that the Staged Self-Directed Learning (SSDL) Model could be implemented in seven ways to encourage self-directed learning. As one way to motivate learners to achieve, learning contracts can be used to provide an opportunity for learners to be in control of their learning situation. Similarly, resilience writers, Siebert (1996) and McMillan and Reed (1994) described the link between resilience and control in adult learners. McMillan and Reed (1994) noted that the resilient student has both control and healthy internal attributions. According to Siebert

(1996), after resilient people have being knocked off track by disruptive change, they regain emotional balance, cope, adapt, recover, and thrive by learning to be better and stronger than before. That is, they expect things to turn out well. The SDLRS and RS share another common element with control. In the SDLRS item number 13, “In a learning experience, I prefer to take part in deciding what will be learned and how” and item number 23 with the RS, “When I’m in a difficult situation, I can usually find my way out of it” refer to control of the situation. Again, there is a link between self-directedness and resilience with control.

Third, Garrison (1997), Brockett and Hiemstra (1991), and Tough (1979), writers on self-directed learning described the link between self-directedness and responsibility in adult learners. Garrison (1997) noted that his comprehensive theoretical model of self-directed learning integrates contextual control, cognitive responsibility, and motivational dimensions. He stated that self-directed learners are motivated to assume personal responsibility since they expect to have rewarding learning outcomes. On the whole, adult learners prefer to assume responsibility for learning. Brockett and Hiemstra’s (1991) Personal Responsibility Orientation (PRO) model of self-direction in adult learning involves self-direction as a personality characteristic. Personal responsibility occurs when individuals assume ownership for their own thoughts and actions. Brockett and Hiemstra (1991) believe that by accepting responsibility for one’s own learning, it is possible for individuals to take a proactive approach to the learning process. Tough (1979) also noted that adult learners most often prefer to assume responsibility planning and directing their learning activities from his seminal work on the adults’ learning projects. Likewise, from the resilience literature, Viscott (1996) and McMilland and Reed

(1994) indicated that there is a link between resilience and responsibility with adult learners. Viscott (1996) is recognized for his work on the subject of emotional fulfillment and he suggests that people should take responsibility for everything in their lives. That is, if people take responsibility for everything in their lives, they claim the power to make changes. McMillan and Reed (1994) noted that people should take personal responsibility for their actions, which includes successes and failures. The authors also noted that resilient people do not blame their performance on their adverse situation. Individuals should be responsible for their academic achievements and be optimistic about the future despite negative situations. The SDLRS and RS reflect the common element responsibility. Item number 50 of the SDLRS, “I am responsible for my learning—no one else is” and number 1 with the RS, “When I make plans, I follow through with them” imply responsibility. There is evidence that there is a link between self-directedness and resilience with responsibility.

Fourth, writers on self-directed learning, Garrison (1997) and Gibbons et al. (1980) described a link between self-directedness and persistence in adult learners. Garrison (1997), in his comprehensive theoretical model of self-directed learning, noted that to achieve a desired outcome, learners should be motivated to stay on task and persist. He also stated that the challenge is to define the variables that influence the decision-making process, which lead to goal attainment. Self-directed learners needs and values are reflected in the reasons for persisting in learning situations. Hence, there appears to be a connection between self-directed learning and persistence. Gibbons et al. (1980) analyzed the biographies of twenty acknowledged experts without formal education beyond high school, except for one individual who attended college for one

year, and classified them in four groups. Persistence, related to drive, was one of the main categories in the characteristics of self-directed learners. Similarly, writers on resilience, Lifton (1993) and Segal (1986) discussed the link between resilience and persistence in adult learners. For instance, Lifton (1993), in his writings on the human self and our changing world, argues that the period of rapid change puts pressure on the self.

However, the human response to this pressure as an attempt to function in a world of uncertainty makes an individual capable of flexibility and buoyancy. The “protean self” becomes resilient and somehow keeps going. Regardless of the adverse situations, individuals under pressure tend to evolve and persist in terms of flexibility and buoyancy. Segal (1986) describes how to cope with crises and trauma in his book *Winning Life's Toughest Battles: Roots of Human Resilience*, which was based on his work with Iran hostages, Vietnam POWs, and other triumphant survivors. He suggests how to draw on inner strengths to provide strategies for living. He noted that resilient people persist in spite of the adverse situation. From the literature, there is a link between self-directedness and resilience with persistence. People who are resilient are likely to respond to situations where self-directedness is expected. Bouncing back involves people who hang in there, continue to struggle, and expect for things to improve. The SDLRS and RS reflect the common element persistence. SDLRS question number 4, “If there is something I want to learn, I can figure out a way to learn it” and number 10 with the RS, “I am determined” imply persistence in the learning situation. From the SDLRS and RS, it is apparent that the items in both instruments share common items, which are in the conceptual framework—self-concept, control, responsibility, and persistence—for this study.

Therefore, there is a link between self-directedness and resilience with the four common elements—self-concept, control, responsibility, and persistence.

From the profile of the sample, the graduate students in this study scored moderate to high on the SDLRS and RS. In the first research question, a Pearson product moment correlation coefficient of .61 was derived from the total scores of the SDLRS and RS and shows a significant positive correlation between the two variables. This means that as SDLRS scores increase, RS scores increase. Therefore, the graduate students in this study have a positive self-concept, control, responsibility, and persistence as adult learners from the common items in the SDLRS and RS. Therefore, this study shows a link between the two variables because of the significant relationship between the two.

The statement of the problem in chapter I served as the focus of this study. Further support of the relationship between self-directed learning readiness and resilience was addressed from the data analyses. Both self-directed learning and resilience are understood in terms of personality. Chuprina (2001) provides evidence that self-directed learning and resilience are related in her research. She found a strong correlation, $r = .69$, with self-directed learning readiness and emotional resilience in her dissertation study about how people adapt to other cultures in an overseas experience. Chuprina (2001) stated that the high score on the Cross-Cultural Adaptability Inventory (CCAI) means that the “participant is able to maintain a positive attitude, self-esteem, and self-confidence as is able to tolerate strong emotions, and to cope with ambiguity and stress” (p. 70). This current study also found a strong correlation, $r = .61$, with self-directed learning readiness and resilience. That is, this study offers further support for the link

between self-directed learning readiness and resilience. The strong correlation implies that graduate students have a positive self-concept, adapt and cope in terms of adversity, and expect to achieve good outcomes.

Long and Agyekum's (1984) study with teacher-ratings found that increasing age was related to higher SDLRS scores. This study found a positive correlation between SDLRS and age and offers further support again for this link. That is, as age increases, SDLRS scores tend to increase. Sabbaghian (1979) investigated the relationship between self-directedness and self-concepts of adult learners. She found adult college seniors are more self-directed in learning than freshmen, sophomores, and juniors. In this study, all graduate students scored moderate to high in self-direction. This implies that graduate students possess a higher degree of self-direction than undergraduate students. Therefore, the literature on self-directed learning and resilience offers further support of a link between self-directed learning readiness and resilience.

Implications for Practice

This study has provided evidence of a relationship between self-directed learning readiness and resilience among graduate students. From the findings in this study, as age increases SDLRS score increases. In terms of descriptive statistics, the mean for age 24 and younger was 225.80. The age mean for age 50 and over was 246.17, which means that increasing age is related to higher SDLRS scores. This relationship may provide insight to future researchers.

As adult learners come to institutions with various barriers that can affect their participation and persistence, adult educators can assist them to persevere with common educational concerns such as, academic preparation and desired educational outcomes. Adult educators who work in areas such as teaching, advising, and student services can teach self-directed learning and resilience skills to adult learners. There are things that educators can do and there are new ways to look at practice. Both self-direction and resilience together might strengthen the link.

Counselors and advisors may use these data to assist adult learners. The data may help to provide tools and strategies to deal with people who have faced adversity. For example, problem-solving skills will assist these individuals to bounce back and to persevere with their academic goals. The confidence level of these individuals might be enhanced as they strive to meet new challenges.

Professors who work with students in the classroom might use these results to help understand this link and they might be able to help students persevere during this process. Resilience is important because people can bounce back from adverse situations. Obstacles are views as challenges since these people persevere until the goal is achieved. In other words, resilient people are survivors instead of victims. By helping people to become self-directed and resilient, they will learn lifelong skills to achieve educational goals. Knowledge of the relationship between self-directed learning readiness and resilience may improve the interactions between adult learners and administrators, academicians, and practitioners. This relationship may add to the knowledge base of self-directed learning and resilience.

Recommendations for Future Research

Future research is needed in the area of self-directed learning readiness and resilience. Included in the recommendations is the replication of this study. Gay and Airasian (2003) stated that “the researcher might select a different sample of participants for the replication in the hope of determining whether the results obtained are the same as those of the original study” such as “a different kind of community, a different kind of student, a different classroom climate, a different questionnaire, or a different method of data analysis” (p. 42). These recommendations are offered below.

- (1) The 148 sample-size for this study included eight African Americans. Research is needed in replicating this study with diverse populations of graduate students in terms of racial identity. This study focused on graduate students. Research is needed with diverse adult populations of undergraduate students or community groups.
- (2) Education was not significant in this study. All of the participants had college degrees. Research is needed to look at a larger segment of the population in terms of education.
- (3) The SDLRS is the most widely used instrument to measure self-directed learning readiness. Research is needed with different instruments that measure self-directed learning readiness and resilience and focus on the adult population.
- (4) A quantitative approach of correlational research was used to see if a relationship exists between the two variables, self-directed learning readiness and resilience.

Qualitative research is needed to provide a different perspective from the population through interviews.

(5) This study noted a significant relationship between age and SDLRS scores.

Perhaps, personality and cognitive factors can change with age. Future research is needed to see if this might be an intervening factor.

(6) While the RS is reliable, there are concerns about the second factor, Acceptance of Self and Life. Further refinement of RS properties and research is needed with larger populations.

(7) Most studies in the area of resilience have been conducted on children. Future research is needed in the area of resilience with the adult population.

Summary

This study provides evidence that there is a positive significant relationship between self-directed learning and resilience among graduate students. As was previously stated, self-directed learning readiness refers to “the extent to which individuals perceive themselves to possess skills and attitudes frequently associated with self-directedness in learning” (Brockett & Hiemstra, 1991, p. 56). From the data in this study, as age increases, self-directed learning readiness increases. Furthermore, a contribution to the literature from this study is that the sample size is larger than other studies that used the RS with adults.

In addition, resilience can predict self-directed learning. Resilience implies emotional stamina and is used to describe individuals who exhibit courage and

adaptability in the face of life's misfortunes (Wagnild & Young, 1993). Resilience refers to the capacity to bounce back from adverse situations and to go on to live a functional life with a sense of well being (Turner, 2001). However, research in the future is needed to further investigate the relationship between the two variables, self-directed learning and resilience. Therefore, there is a need for the development of more instruments to measure self-directed learning readiness since Guglielmino's (1977) SDLRS is the most widely used instrument to measure self-directed learning.

In a changing world, it is crucial for people to take charge of their learning and to deal with adversity. This study shows a link between the two variables, self-directed learning readiness and resilience. According to Reivich and Shatté (2000) a part of daily life includes people being confronted with problems and stress; therefore, people need resilience. Resilient people use inner resources to steer through and deal with life. The authors also stated that "research shows that the essential ingredient in *steering through* chronic stress is self-efficacy—the belief that you can master your environment and effectively solve problems as they arise" (p. 19). Resilience skills improve the ability to assess risk and plan for potential problems; that is, resilience fortifies people. If people succeed, they will be able to bounce back, for example in formal learning situations and other learning situations. The evidence from this study is worth looking at in the future.

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APPENDICES

APPENDIX A

Self-Directed Learning Readiness Scale (SDLRS)

Name _____ Sex _____ Birthdate _____
 Date of Testing _____ Location of Testing _____

QUESTIONNAIRE

INSTRUCTIONS: This is a questionnaire designed to gather data on learning preferences and attitudes towards learning. After reading each item, please indicate the degree to which you feel that statement is true of you. Please read each choice carefully and circle the number of the response which best expresses your feeling.

There is no time limit for the questionnaire. Try not to spend too much time on any one item, however. Your first reaction to the question will usually be the most accurate.

RESPONSES

ITEMS:

	Almost never true of me; I hardly ever feel this way.	Not often true of me; I feel this way less than half the time.	Sometimes true of me; I feel this way about half the time.	Usually true of me; I feel this way more than half the time.	Almost always true of me; there are very few times when I don't feel this way.
1. I'm looking forward to learning as long as I'm living.	1	2	3	4	5
2. I know what I want to learn.	1	2	3	4	5
3. When I see something that I don't understand, I stay away from it.	1	2	3	4	5
4. If there is something I want to learn, I can figure out a way to learn it.	1	2	3	4	5
5. I love to learn.	1	2	3	4	5
6. It takes me a while to get started on new projects.	1	2	3	4	5
7. In a classroom, I expect the teacher to tell all class members exactly what to do at all times.	1	2	3	4	5
8. I believe that thinking about who you are, where you are, and where you are going should be a major part of every person's education.	1	2	3	4	5
9. I don't work very well on my own.	1	2	3	4	5

	<i>Almost never true of me; I hardly ever feel this way.</i>	<i>Not often true of me; I feel this way less than half the time.</i>	<i>Sometimes true of me; I feel this way about half the time.</i>	<i>Usually true of me; I feel this way more than half the time.</i>	<i>Almost always true of me; there are very few times when I don't feel this way</i>
10. If I discover a need for information that I don't have, I know where to go to get it.	1	2	3	4	5
11. I can learn things on my own better than most people.	1	2	3	4	5
12. Even if I have a great idea, I can't seem to develop a plan for making it work.	1	2	3	4	5
13. In a learning experience, I prefer to take part in deciding what will be learned and how.	1	2	3	4	5
14. Difficult study doesn't bother me if I'm interested in something.	1	2	3	4	5
15. No one but me is truly responsible for what I learn.	1	2	3	4	5
16. I can tell whether I'm learning something well or not.	1	2	3	4	5
17. There are so many things I want to learn that I wish that there were more hours in a day.	1	2	3	4	5
18. If there is something I have decided to learn, I can find time for it, no matter how busy I am.	1	2	3	4	5
19. Understanding what I read is a problem for me.	1	2	3	4	5
20. If I don't learn, it's not my fault.	1	2	3	4	5
21. I know when I need to learn more about something.	1	2	3	4	5
22. If I can understand something well enough to get a good grade on a test, it doesn't bother me if I still have questions about it.	1	2	3	4	5
23. I think libraries are boring places.	1	2	3	4	5
24. The people I admire most are always learning new things.	1	2	3	4	5

	<i>Almost never true of me; I hardly ever feel this way.</i>	<i>Not often true of me; I feel this way less than half the time.</i>	<i>Sometimes true of me; I feel this way about half the time.</i>	<i>Usually true of me; I feel this way more than half the time.</i>	<i>Almost always true of me; there are very few times when I don't feel this way</i>
25. I can think of many different ways to learn about a new topic.	1	2	3	4	5
26. I try to relate what I am learning to my long-term goals.	1	2	3	4	5
27. I am capable of learning for myself almost anything I might need to know.	1	2	3	4	5
28. I really enjoy tracking down the answer to a question.	1	2	3	4	5
29. I don't like dealing with questions where there is not one right answer.	1	2	3	4	5
30. I have a lot of curiosity about things.	1	2	3	4	5
31. I'll be glad when I'm finished learning.	1	2	3	4	5
32. I'm not as interested in learning as some other people seem to be.	1	2	3	4	5
33. I don't have any problem with basic study skills.	1	2	3	4	5
34. I like to try new things, even if I'm not sure how they will turn out.	1	2	3	4	5
35. I don't like it when people who really know what they're doing point out mistakes that I am making.	1	2	3	4	5
36. I'm good at thinking of unusual ways to do things.	1	2	3	4	5
37. I like to think about the future.	1	2	3	4	5
38. I'm better than most people are at trying to find out the things I need to know.	1	2	3	4	5
39. I think of problems as challenges, not stopsigns.	1	2	3	4	5
40. I can make myself do what I think I should.	1	2	3	4	5

WebMail - RE: SDLRS

Date Sent: Sunday, June 29, 2003 03:35 PM

From: Lucy Guglielmino <lguglielmino@rockmail.com> [Add to Address Book](#)

To: mgrobin

Subject: RE: SDLRS

Status: Urgent New

Mary--

This email constitutes my permission for you to reprint the SDLRS in your dissertation, as long as the scoring key is not included in the text and you use a photoreproduction of the instrument (including the copyright).

Please be sure to send me a copy of your dissertation, and give my regards to Dr. Brockett.

img

— mgrobin <mgrobin@utk.edu> wrote:

- > Dr. Guglielmino,
- >
- > My dissertation defense is Monday. I am asking your permission to
- > print the
- > SDLRS in my dissertation. Looking forward to your response and how to
- > proceed.
- > Mary
- >
- >

	<i>Almost never true of me; I hardly ever feel this way.</i>	<i>Not often true of me; I feel this way less than half the time.</i>	<i>Sometimes true of me; I feel this way about half the time.</i>	<i>Usually true of me; I feel this way more than half the time.</i>	<i>Almost always true of me; there are very few times when I don't feel this way.</i>
41. I'm happy with the way I investigate problems.	1	2	3	4	5
42. I become a leader in group learning situations.	1	2	3	4	5
43. I enjoy discussing ideas.	1	2	3	4	5
44. I don't like challenging learning situations.	1	2	3	4	5
45. I have a strong desire to learn new things.	1	2	3	4	5
46. The more I learn, the more exciting the world becomes.	1	2	3	4	5
47. Learning is fun.	1	2	3	4	5
48. It's better to stick with the learning methods that we know will work instead of always trying new ones.	1	2	3	4	5
49. I want to learn more so that I can keep growing as a person.	1	2	3	4	5
50. I am responsible for my learning — no one else is.	1	2	3	4	5
51. Learning how to learn is important to me.	1	2	3	4	5
52. I will never be too old to learn new things.	1	2	3	4	5
53. Constant learning is a bore.	1	2	3	4	5
54. Learning is a tool for life.	1	2	3	4	5
55. I learn several new things on my own each year.	1	2	3	4	5
56. Learning doesn't make any difference in my life.	1	2	3	4	5
57. I am an effective learner in the classroom and on my own.	1	2	3	4	5
58. Learners are leaders.	1	2	3	4	5

APPENDIX B

Resilience Scale (RS)

Resilience Scale

Please read the following statements. To the right of each you will find seven numbers, ranging from "1" (Strongly Disagree) on the left to "7" (Strongly Agree) on the right. Circle the number which best indicates your feelings about that statement. For example, if you strongly disagree with a statement, circle "1". If you are neutral, circle "4", and if you strongly agree, circle "7", etc.

	Strongly Disagree							Strongly Agree
	1	2	3	4	5	6	7	
1. When I make plans, I follow through with them.	1	2	3	4	5	6	7	
2. I usually manage one way or another.	1	2	3	4	5	6	7	
3. I am able to depend on myself more than anyone else.	1	2	3	4	5	6	7	
4. Keeping interested in things is important to me.	1	2	3	4	5	6	7	
5. I can be on my own if I have to.	1	2	3	4	5	6	7	
6. I feel proud that I have accomplished things in life.	1	2	3	4	5	6	7	
7. I usually take things in stride.	1	2	3	4	5	6	7	
8. I am friends with myself.	1	2	3	4	5	6	7	
9. I feel that I can handle many things at a time.	1	2	3	4	5	6	7	
10. I am determined.	1	2	3	4	5	6	7	
11. I seldom wonder what the point of it all is.	1	2	3	4	5	6	7	
12. I take things one day at a time.	1	2	3	4	5	6	7	
13. I can get through difficult times because I've experienced difficulty before.	1	2	3	4	5	6	7	
14. I have self-discipline.	1	2	3	4	5	6	7	
15. I keep interested in things.	1	2	3	4	5	6	7	
16. I can usually find something to laugh about.	1	2	3	4	5	6	7	
17. My belief in myself gets me through hard times.	1	2	3	4	5	6	7	
18. In an emergency, I'm someone people can generally rely on.	1	2	3	4	5	6	7	

	Strongly Disagree						Strongly Agree
	1	2	3	4	5	6	7
19. I can usually look at a situation in a number of ways.							
20. Sometimes I make myself do things whether I want to or not.	1	2	3	4	5	6	7
21. My life has meaning.	1	2	3	4	5	6	7
22. I do not dwell on things that I can't do anything about.	1	2	3	4	5	6	7
23. When I'm in a difficult situation, I can usually find my way out of it.	1	2	3	4	5	6	7
24. I have enough energy to do what I have to do.	1	2	3	4	5	6	7
25. It's okay if there are people who don't like me.	1	2	3	4	5	6	7
26. I am resilient.	1	2	3	4	5	6	7

WebMail - RE: Resilience Scale

Cr Re Re Fo Ad Fi Pr Ne Op In De
 Ne to Bo Fi Pr Ne Op In De
 Lo He

Date Sent: Saturday, April 13, 2002 9:10 PM

From: Gail Wagnild <gwagnild@mcn.net> [Add to Address Book](#)

To: mgrobin

Subject: RE: Resilience Scale

Urgent New

Dear Mary,
 Thank you for your interest in the Resilience Scale. It was a pleasure talking with you this morning and I am so glad that you were able to 'track me down.'

I have attached information about the Resilience Scale that I hope you will find useful. Please write if there is any additional information I can provide you. I wish you the very best as you continue your studies.

Regards,
 Gail Wagnild

— Original Message —
 From: "mgrobin" <mgrobin@utk.edu>
 To: "gwagnild" <gwagnild@mcn.net>
 Sent: Friday, April 12, 2002 9:51 PM
 Subject: Resilience Scale

> Dr. Wagnild,
 >
 > I am a doctoral candidate at the University of Tennessee, Knoxville in
 > adult
 > education. I have read some of your work and I am interested in using
 > your
 > Resilience Scale for my study. Please grant me permission to use your
 > Resilience Scale and provide me with information on the cost of the
 > instrument, how obtain copies, and the instructions. I look forward to
 > hearing from you.
 >
 > Thank you.
 >
 > Mary Robinson
 > Doctoral Candidate

WebMail - RE: Resilience Scale

Date Sent: Thursday, June 06, 2002 7:21 PM

From: "Heather M. Young" <younghm@u.washington.edu>

To: mgrobin

Subject: RE: Resilience Scale

Urgent New

Dear Mary,
 I have just returned from a sabbatical and apologize for my delay in responding to you. Thank you for your interest in the Resilience Scale, developed by Wagnild and Young, copyrighted 1987. We are delighted to provide permission for you to use this scale in your work and wish you the best in your research.

Please let me know your population of study, and major variables. We will be most interested to hear of your results. I am attaching a copy of the tool.

If you need any assistance, please do not hesitate to contact me.

 Heather M. Young, PhD, ARNP, FAAN
 Research Associate Professor, BNHS, University of Washington

On Wed, 3 Apr 2002, mgrobin wrote:

> Dr. Young,
 >
 > I am a doctoral student at the University of Tennessee, Knoxville. I am
 > projecting a study between self-directed learning and resilience. I have been
 > reading some of your literature on the Resilience Scale.
 >
 > Can you provide me a copy of the instrument and the instructions? In
 > addition, please provide me with information on the cost of the instrument.
 >
 > Thank you for your assistance. I look forward to hearing from you.
 >
 > Mary G. Robinson
 > (865) 974-8194
 > (865) 980-9962

APPENDIX C
Demographic Questionnaire

DEMOGRAPHIC QUESTIONNAIRE

INSTRUCTIONS: Indicate your response with a check in the black space or fill in the blank.

1. What is your age? _____

2. What is your race?
 Black/African American
 White/Caucasian
 Other

3. What is your gender?
 Female
 Male

4. What is your current educational level?
 Bachelor's degree
 Master's degree & Specialist degree
 Doctoral degree
 Non-degree

5. What is your annual family income?
 <\$10,000
 \$10,000-\$20,000
 \$20,000-\$30,000
 \$30,000-\$40,000
 \$40,000-\$50,000
 >\$50,000

Appendix D
Informed Consent

**INFORMED CONSENT EXPLANATION FOR EDUC PSYCH 210 RESEARCH
PARTICIPATION (Spring Semester 2003)**

The purpose of this research is to examine factors that may affect performance in Educ Psych 210. This research has been ongoing for the past several semesters, yielding many important conclusions as to what factors contribute to student success in 210. Although most of the information used in this research has been obtained from regular course records, we also have requested that students provide information that may be relevant to their performance in the course. This semester we are requesting that you respond to four instruments that assess critical thinking, vocabulary development, evaluation of common notions about human development, and your principal sources of information about these notions. All of these instruments will be taken in class. To contribute to our research in the course, you will need to take each instrument at the beginning and end of the course.

To match your responses to the various research instruments with your performance records in the course, we ask you to identify yourself on all research forms by the last four digits of your social security number. The data will be entered in a computer file by these last four digits of your social security number. No names will ever be included in the data file. The data file will be retained in Claxton Complex 516, which is Dr. Robert Williams' locked office.

We invite you to participate in this research project, but you may decline without penalty. The total credit available for the research participation amounts to about 4% of the total course credit. You will receive 5 points toward your total credit in the course for each instrument that you take both at the beginning and end of the course. Consequently, you can earn 20 points credit if you take all four instruments both at the beginning and end of the course. If you elect not to participate, alternative credit-producing activities will be provided. If you have any questions about the research, either now or later, please contact Dr. Robert L. Williams, Claxton Complex 516, 974-6625, bobwilliams@utk.edu.

INFORMED CONSENT AGREEMENT

I have read and understood the Explanation of Educ Psych 210 Research Participation for the Spring Semester 2003 and agree to participate in the proposed research.

Name (print)

Date

Signature

Please detach this page and submit this signed copy of the Informed Consent Agreement to the instructor at the designated time. Retain the second page for your information.

Appendix E

Letter to Faculty Letter/Invite participation

E UNIVERSITY OF TENNESSEE



College of Education, Health and Human Sciences
Student Services
1122 Volunteer Blvd.
A332 Claxton Complex
Knoxville, TN 37996-3433
Phone: (VOL) 974-8194
FAX: (VOL) 974-5781

March 14, 2003

Mary G. Robinson
Student Services Center
A332 Claxton Complex
The University of Tennessee
Knoxville, TN 37996-3433

Subject: Letter to Faculty/Invite Participation

I am a doctoral student in the Educational Psychology and Counseling department with a concentration in Adult Education looking at a correlational study to determine if a relationship exists between self-directed learning and resilience among graduate students. The participants for this study will consist of approximately 150 graduate students enrolled at the University of Tennessee, Knoxville during the spring semester of 2003 in the College of Education, Health, and Human Sciences. Participation will be solicited from three departments, Educational Psychology and Counseling; Theory and Practice of Teacher Education; and Instructional Technology and Educational Studies. A convenience sample composed of students in graduate level classes that meet at least once weekly during the semester will be used in this study.

To gain access to the participants, this letter along with a personal visit or telephone call will serve in soliciting professors to administer the three instruments (Self-Directed Learning Readiness Scale, Resilience, Scale, and a demographic questionnaire) in their classes or to allow the principal investigator to administer the instruments. If the professors agree to administer the instruments to their classes, the principal investigator will request that the instruments will be returned immediately to the principal investigator. Approximately 30 to 45 minutes of class time will be necessary for participants to complete the three instruments. Confidentiality will be maintained since no names will be identified to the instruments. The data will be stored in a locked file cabinet within the home office of the principal investigator. Afterwards, the instruments will be scored to determine which research questions are statistically significant and the demographic questionnaire will be recorded to provide information about the sample. That is, the data will be analyzed with SPSS and the interpretation of the data will demonstrate if a relationship exists between self-directed learning and resilience among graduate students.

Your assistance is needed for my study. If you have questions or concerns, please contact me at A332 Claxton Complex, 974-0868 or mgrobin@utk.edu or Dr. Ralph Brockett, A527 Claxton Complex, 974-2227 or brockett@utk.edu.

Sincerely,

A handwritten signature in cursive script that reads "Mary G. Robinson".

Mary G. Robinson
Doctoral Candidate

VITA

Mary Glenette Robinson was born in Alcoa, Tennessee. She is the mother of Brandon Adaryl Anthony and the daughter of Norris Robinson (deceased) and Mary Ella George Robinson. Mary attended Kentucky State University in Franfort, Kentucky for two and one-half years before transferring to the University of Tennessee, Knoxville (UTK). She completed a Bachelor of Science degree in 1989, a Master of Science degree in 1998, and a Ph.D. in Education with a concentration in educational psychology in 2003 from UTK.