ATHABASCA UNIVERSITY

PERSISTENCE OF ADULT LEARNERS IN DISTANCE EDUCATION

BY

WENDY KEMP

A thesis submitted to the

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The undersigned certify that they have read and recommend to the Athabasca University Governing Council for acceptance a thesis PERSISTENCE OF ADULT LEARNERS IN DISTANCE EDUCATION submitted by WENDY KEMP in partial fulfillment of the requirements for the degree of MASTER OF DISTANCE EDUCATION.

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ABSTRACT

The purpose of this thesis was to examine the relationship between persistence in distance education and resilience, life events, and external commitments. Previous studies in persistence in distance education have largely examined withdrawal and identified family, job and life circumstances as major reasons why students dropout or fail to complete courses. Recent literature has described resilience as a quality that characterizes individuals who, though exposed to significant stress and adversity in their lives, do not succumb to the educational and life failures predicted for them. Although resilience has not, to date, been extensively examined in distance education, it was believed to be a major factor affecting persistence and dropout behavior in distance education.

The sample consisted of 121 randomly selected undergraduate students, between the age of 30 to 45, who were registered in their first undergraduate course at Athabasca University and who returned the previously mailed questionnaire packets. Data relating to gender and course completion was obtained from student records. Scores from the Resiliency Attitudes Scale (RAS), the Life Events Inventory (LEI), and one questionnaire relating to external commitments completed the data set.

Analyses of variance and discriminant analysis revealed that four of the resiliency skills (relationships, general resilience, initiative, insight), and five of the resiliency sub-skills (attaching, persistence, valuing, recruiting, generating) were significantly correlated with persistence. No significant correlation was found for life events, gender, or previous experience with distance courses. Of the six external commitments included in the discriminant analysis, only work commitments was significantly correlated with persistence

(p = 0.0247). This study correctly classified 66% of the students as persisters or non-persisters in their Athabasca University distance course.

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CHAPTER I

INTRODUCTION

Tinto (1993) stated that adult learner "departure [or drop out] is a highly idiosyncratic event, one that can be fully understood only by referring to the understandings and experiences of each and every person who departs" (p.37). From a life span development perspective, adult learners have to contend with competing family, job, community, and school responsibilities (Chickering & Resissner, 1993). However, Reichmann-Hruska (1989) asserted that adult learners compensate for these competing responsibilities as people learn to be more resilient.

The literature on resilience explores individual variables of people who have successfully dealt with major stress or who have adapted to change. Researchers have divided these characteristics into four patterns—dispositional, relational, situational, and philosophical (Polk, 1997). Individuals who show high levels of "resilient" characteristics may behave in such a way that they adjust more easily than others to life events and external commitments.

This study investigated the relationship between persistence in distance education and life events, external commitments, and resiliency in a diverse population of undergraduate students. The following questions were explored: (a) How do life events and external commitments influence undergraduate student persistence in distance courses? and (b) How does resilience affect undergraduate student persistence in distance courses?

The significance of this study to the field of adult and distance education is that it included the life events, external commitments, and strategies for succeeding from the adult

'clients' of undergraduate distance courses. This study was an opportunity to increase our understanding of the skills of those who have found a way to succeed, and is a contribution to the field of distance education as it attempted to identify personal characteristics and coping skills, operationally defined as resilience, which are required of distance learners to persist in higher education. Sustained and continued research efforts in resilience are necessary to understand the complexity of the phenomenon of educational success "despite the odds." Research grounded in adult developmental theory will help to shed light upon this phenomenon.

Problem Context

A major emphasis of many adult and distance education program research efforts has been on failure, involving studies of why people fail or drop out of adult learning experiences (Tinto, 1993). In any educational program, adults are largely voluntary participants, but the student role is just one of many roles and responsibilities competing for their time and attention. In fact, personal reasons such as family problems, lack of child-care, and job demands are often cited as the cause of withdrawal. For example, in a study of 100 female adult students, Hagedorn (1993) found that life events such as family issues and being married increased the probability of drop out by 83 percent. Life events such as changes in occupation, conflicts in relationships with family and peers, health problems, financial difficulties, and lack of support are common occurrences in the lives of adult learners, and are factors that often interfere with their educational success (Kerka, 1999).

The adult distance learner may be affected by a variety of internal and external factors that account for the continuance/discontinuance in their studies. Kennedy and Powell (1976) and Brindley (1987) stated that life circumstances combine with other factors (e.g.,

independence, organizational abilities, and social support) as predictors of persistence or withdrawal. Powell, Conway, and Ross (1994) reported that life circumstances interact with predisposing characteristics (e.g., educational preparation, socioeconomic and demographic status, and motivational and perseverance attributes) to influence persistence. According to the literature from a human development, life-stage perspective, personal characteristics such as motivation, self-efficacy, personality, attitude, and maturation combine with life circumstances and transitions as predictors of dropout in distance education (Tennant & Pogson, 1995).

Transitions occur throughout life, from school entry, to adolescence and detachment from parents, to significant life events such as childbearing (Merriam & Yang, 1996). Transitions also include unexpected or externally controlled events such as natural disaster, unemployment, relocation, family disruption, or poverty. These events require increased ability to cope in order to maintain positive adjustment. Resiliency may be particularly important during times of transition, when stresses tend to accumulate (Werner & Smith, 1992). Resiliency has its roots in psychological and human development theory. The term has been used traditionally to describe the individual's ability to manage or cope with significant adversity or stress in ways that are not only effective, but may result in increased ability to respond to future adversity. Numerous studies have examined resiliency among populations exposed to stresses such as war, poverty, chronic illness, and parental mental illness (e.g., Rutter, 1966, 1977, 1986, 1987; Wagnild & Young, 1990; Werner, 1989). Through these and other studies (e.g., Werner & Smith, 1982, 1992; Wolin & Wolin, 1993), the characteristics of resilient individuals have been identified (Polk, 1997).

Resiliency is viewed by some to consist of a balance between stress and adversity on the one hand, and the ability to cope and availability of support on the other (Werner & Smith, 1992). Two fundamental concepts are associated with resiliency: risk and protective factors. Risk involves experiencing a number of stressful life events (e.g., moving to a new location, experiencing a transition such as retirement, death of a loved one, divorce) or a single traumatic event (e.g., sexual assault, witnessing a parent's death) (Werner & Smith, 1992). Protective factors might be defined as the skills, personality factors, and environmental supports that contribute to resiliency. These protective factors provide a buffer as well as a reservoir of resources to deal effectively with stress. Resiliency appears to be not only a characteristic or state, but also a process of coping, becoming evident only when it is in use (Flach, 1988). Resiliency is also dynamic, in that successful coping in one situation strengthens the individual's competency to deal with adversity in the future.

The development of coping skills is a valued asset in distance learners. Beliefs in self-efficacy and personal competence help determine how much effort people will expend on an activity, how long they will persevere when confronting obstacles, and how resilient they will prove in the face of adverse situations—the higher the sense of efficacy, the greater the effort, persistence, and resilience (Pajares & Miller, 1994). People with high levels of resilience heighten their efforts in the face of adversity, and more easily recover their confidence after failure or setbacks. Resilience skills that foster and support individual learner strengths and abilities include, but are not limited to, internal locus of control, positive self-regard, and a sense of humor (Benard, 1991). Cross (1981) suggested that innate abilities and coping mechanisms originate from within the individual and attributed these skills to individual life circumstances and dispositional variables within the person such as

attitude, values, beliefs, opinions, and personality. These skills and competencies develop in adult learners over time and are a product of the educational resilient person (Walberg, 1997).

Walberg (1997) elaborated on the concept of educational resilience noting that the attributes of social competence, good problem-solving and communication skills, independence, and a sense of purpose are essential indicators of the resilient learner. These attributes result in a learner with high self-efficacy and educational aspirations, and a feeling of being internally controlled. While much has been written about distance learner persistence, the role that resilience plays in persistence has not been investigated. What needs to be explored is the degree to which resilience in learners enables them to survive disruptions in their lives allowing them to persist in their distance education studies. Thus the study of resilience in adult learners may provide distance educators with a profile of individual learner strengths, and assist in developing strategies to help learners transform their adversities into accomplishments.

Purpose of the Study

An adult student's decision to interrupt or discontinue enrollment is most often based on demands related to family or work (Bean, 1989). Such demands are central to an adult learner's life as evidenced by Pappas and Loring (1987) who noted, "Even when extensively engaged in education, adults see themselves first in occupational and/or family roles" (p. 142). Tenant and Pogson (1995) asserted that the ability to persist in adult education is predicated upon the learner's capacity to move positively through life span events. Flach (1988) suggested that adults employ personal resilient coping skills during life transitions to discover a new strength at times of stress. Although institutions of higher education support

an array of continuous enrollment encouragement and institutional efforts, little evidence exists as to the resilience capacities that adults employ in negotiating life roles while persisting in their education. The purpose of this study was to investigate how resilience, life events, and external commitments influence, or fail to influence, persistence.

Sheets (1992) suggested that future descriptive studies of persistence should focus on personal and situational factors that go beyond the traditional questions of gender, age, and educational background as predictors of success. While acknowledging gender, age, and educational background as contributing factors for predicting success, Kember (1995) recognized the integration between students and their environment representing work, home, and social obligations. Psychological and social factors also influence persistence. Kember, Murphy, Siaw, and Yuen (1991) found that student self-confidence, self-efficacy, and coping skills combine with social factors to influence persistence. Students who elicited support from friends, family, and employers were more successful in integrating academic and environmental responsibilities and were more likely to persist than those who did not receive such support.

Tinto (1993) proposed that two dimensions of commitment, namely institutional and goal commitment, directly influence persistence or departure behavior. Institutional commitment represents the degree to which an individual is motivated to graduate from a specific college or university. Goal commitment, or educational goal commitment, represents the degree to which the individual is committed or motivated to earn a university degree in general. Tinto (1993) suggested that further research into persistence "empirically document the scope and varying character of the persistence process" (p. 241), particularly studies that examine the influence of personal factors on adult persistence including commitments to

family, work, and community, especially as they affect older students who have dependent families.

Research Questions

This study, which focused particularly on the situational experiences of adult students in a large university enrolled in their first distance delivered undergraduate course, was intended to respond to calls in the literature for a new understanding about the nature of the distance education experience. In addition to examining the influence of personal resiliency on persistence in distance education courses, situational (e.g., life events, external commitments) aspects of resiliency and persistence in undergraduate education were also explored.

Theoretically, if students with higher levels of resiliency adapt better to life events and external commitments, it was expected that a relationship existed between personal resiliency and persistence. Students with more characteristics of resiliency or higher levels of resiliency were expected to persist in distance education courses than their less resilient counterparts.

The following research questions were posed for this study:

1. How do life events and external commitments influence undergraduate student persistence in distance courses?
2. How does resilience affect undergraduate student persistence in distance courses?

Definitions

Wolin and Wolin (1993) defined resilience as the capacity to rise above adversity by developing internal and external coping skills which expand and ripen into lasting strengths. Resilience is operationized as scores on the Resiliency Attitudes Scale (RAS) which

measures the degree of protective mechanisms in the process of negotiating risk situations (Rutter, 1990).

Protective mechanisms are described as the ability to use internal and external resources successfully in resolving stage-salient developmental issues. Protective factors are mechanisms that moderate a person's reaction to stressful situations or chronic adversity in order to produce a more successful outcome than would normally be present (Werner, 1995). These mechanisms are defined as the presence of one or more of the seven resiliency skills: insight, independence, relationship, initiative, creativity and humor, morality, and general resiliency (Biscoe & Harris, 1994).

?? Insight is the mental habit of asking searching questions and giving honest answers. Insight is conceptualized as reading signals from other people, identifying the source of the problem and trying to figure out how things work for self and others. It is operationalized as scores on the insight subscale of the RAS. The insight subscale is a measure of the following sub-skills: sensing, knowing, understanding.

?? Independence is the right to safe boundaries between oneself and significant others. Independence is conceptualized as the ability for emotional distancing and knowing when to separate from bad relationships. It is operationalized as scores on the independence subscale of the RAS. The independence subscale is a measure of the following subs-skills: separating, distancing.

?? Relationships are the ability to develop and maintain intimate and fulfilling ties to other people. Relationships are conceptualized as the perceived ability to select healthy partners, to start new relationships, and to maintain health relationships. It is

operationalized as scores on the relationships subscale of the RAS. The relationships subscale is a measure of the following sub-skills: recruiting, attaching.

?? Initiative is the determination to master oneself and one's environment. Initiative is conceptualized as the ability for creative problem solving, enjoyment of figuring out how things work, and generating constructive activities. It is operationalized as scores on the initiative subscale of the RAS. The initiative subscale is a measure of the following sub-skills: problem solving, generating.

?? Creativity and humor include safe harbors of the imagination where one can take refuge and rearrange the details of one's life to one's own pleasing. Creativity and humor are conceptualized as the capacity for creativity and divergent thinking, being able to use creativity to forget pain, using creativity to express emotions, using humor to reduce tension or to make a bad situation better. It is operationalized as scores on the creativity and humor subscale of the RAS. The creativity and humor subscale is a measure of the following sub-skills: creative thinking, creating to express feelings, humor.

?? Morality is the ability to know what is right and wrong and being willing to stand up for those beliefs. Morality is conceptualized as knowing what is right and wrong, and being willing to take risks for those beliefs, and finding joy in helping other people. It is operationalized as scores on the morality subscale of the RAS. The morality subscale is a measure of the following sub-skills: valuing, helping others.

?? General resiliency is the ability to persist at working through difficulties and is conceptualized as the belief that one can make the most of bad situation and the belief that one can make things better. It is operationalized as scores on the general resiliency

subscale of the RAS. The general resiliency subscale is a measure of the following sub-skills: persistence, ability to get by.

Risk situations in the adult are defined as stage-salient events that increase the likelihood of a negative developmental outcome (Werner & Smith, 1992) and involve the presence of one or more the following risk factors: (a) interpersonal separations; (b) bereavement; (c) childbirth; (d) social stress, arguments and discord; (e) loss of self-esteem or blows to the self-esteem and failures; (f) job changes, unemployment, or other financial problems; (g) retirement; and (h) change in marital status.

Life-events are defined as noteworthy occurrences whose advent is either indicative of or requiring a significant change in the on-going life pattern of the individual (Hultsch & Deutsch, 1981). These events can cause periods of disruption that occur at transition points in normal growth and development, and can result in changed relationships, responsibilities, and roles. Life events are operationalized as scores on the Life Events Inventory (LEI).

External commitments are defined as external [to the university experience] life demands that limit the person's ability to meet the demands of university life (Napoli & Wortman, 1995), and include the following: family (nuclear and extended), personal relationships, work, home, community, and finances. Influencing factors that may affect student performance relate mainly to constraints set by student activities with regard to the pressures of work and family life as well as to the way that students organize their studies and integrate course requirements with other competing and continuing commitments (Tinto, 1987).

Persistence is a synonym for student progress and refers to behavior whereby students continue to make progress through a course or degree program by remaining continuously

enrolled (Kember, 1995). In this study persistence was defined as successful course completion (Gibson, 1990) in an undergraduate distance course at Athabasca University. It is operationalized as course completion/non-completion according to individual course contract dates. Completers were operationally defined as students who completed their course and received an academic passing grade. Non-completers were operationally defined as those students who a) were non-starters—that is they did not commence work on their course; b) withdrew from their course; or c) received an academic failing grade (Bajtelsmit, 1988).

Assumptions of the Study

The decision to persist or drop out of a program of study is highly complex and often involves the interplay of institutional and student factors. These factors are also apparently enduring in nature (Tinto, 1987, 1993). It was assumed that the subjects elected to participate in an undergraduate course at Athabasca University for a variety of reasons (e.g., employment, personal fulfillment, financial, accessibility, and/or prior learning experience in a distance education program) (Willis, 1993).

It was assumed that the subjects of this study had experienced and successfully negotiated risk situations relating to life transitions, such as birth of a child, death of a loved one, marriage difficulties, divorce, unemployment, or career changes. Rutter (1984) stated that "we have all experienced risks and stressful life events, and we all require protective mechanisms at some times and in some situations more than others throughout our life span" (p.32). Given the dynamic nature of resiliency, adults move in and out of resiliency. This is the nature of human development (Rutter, 1984). If, as Werner and Smith (1992) and Rutter (1984) assert, the development of resiliency is a long-term developmental process and the

human organism is a self-righting mechanism, protective processes are clearly those that promote successful, healthy development throughout the life span.

An assumption was made that the students who responded in this study accurately reported perceptions regarding life events, external commitments, and resiliency skills.

Limitations of the Study

The study has several limitations. As with all correlational studies, causality is inferred, but cannot be demonstrated. In addition, selection bias (Cook & Campbell, 1979) may have influenced the results. In this correlational study, participation was voluntary and it is possible that the sample differed from the Athabasca University undergraduate population in its intent to persist or graduate, resulting in selection bias. The generalizability of the findings to other institutions is also questionable. Because this study relied upon subject self-report, the complexity of human nature and accuracy of self-report leads to measurement problems, and therefore may not be generalizable to another sample of undergraduate distance education students. This study looked only at students registered in their first undergraduate distance course at a large university, and was a sample of convenience. Therefore results may not be generalizable to other distance education institutions.

Research on resilience has been limited to health prevention and promotion, employee assistance programs, and fostering resilience in grade school (kindergarten to grade twelve). Generalizability to adult learners in distance education must be viewed with caution.

Summary

Participation and persistence in education and those factors that contribute to their occurrence continue to interest practitioners and researchers alike. As Powell, Conway, and Ross (1990) so aptly note, "The question of why some students successfully study through

distance education and others do not is becoming increasingly important as distance education moves from a marginal to an integral role in the provision of post-secondary education" (p. 5).

A major emphasis of much research in adult and distance education has been on failure, involving studies that explore why people fail or drop out of courses or programs (Tinto, 1993). Therefore a look at "what works" is clearly needed. This study, which focused particularly on the situational experiences of adult undergraduate students in a large distance education university, was intended to respond to calls in the literature for a new understanding about the nature of undergraduate persistence. To increase understanding of the variables associated with persistence and non-persistence, this study investigated the relationship between persistence in undergraduate distance education and resilience, life events, and external commitments. In addition to examining the influence of personal resiliency on persistence in undergraduate distance courses, situational (e.g., life events, external commitments) aspects of resiliency and persistence in undergraduate education were investigated. It is expected that the results of this study of persistence in adult learners will provide distance educators with a profile of individual learner strengths and assistance in developing strategies to help distance learners transform their adversities into accomplishments.

CHAPTER II

REVIEW OF THE LITERATURE

The focus of this chapter is a review of the literature on (a) resilience, with its related constructs of risk and protective factors; (b) risk and resilience in education; (c) adult learning; and (d) the contribution made by the self-efficacy component of Bandura's (1986) social cognitive theory to the study of resilience as a determinant for persistence in distance education.

A significant amount of research has occurred in the area of risk, protective factors, and resilience as it relates to children from "at risk" environments. Low socioeconomic status, being a member of a minority status, chronic illness, affective disorders in parents, and poor school achievement are among the many risk factors associated with negative outcomes in children. However, the unexpected positive outcomes of some children in the face of adversity led researchers to investigate the phenomenon of "protective factors" and "resilience" (Masten & O'Connor, 1989: Rutter, 1987; Werner & Smith, 1992). Much research has focused on the personal characteristics of identified "resilient" children, most of it dealing with "at risk" children who failed to develop psychopathologies as would be predicted by the presence of multiple risk factors. In addition, there are a few longitudinal studies involving adults. Most notably, Felsman and Valliant (1987), Long and Valliant (1987), and Valliant (1993) found inner-city junior high school males were at risk to reproduce their underclass status; Moen, Dempster-Mclain, and Williams (1989) found that social support contributed to resilience in a cohort of senior women; and Beardslee (1989) reported the value of relationships as central to resilience in civil rights workers.

Resilience

Resilience is the ability to absorb high levels of disruptive change while displaying minimal dysfunctional behavior (Werner, 1995). Although resilient people face no less of a challenge than others when they confront change, they tend to regain their equilibrium faster, maintain a higher level of productivity, to be physically and emotionally healthier, and generally rebound from the demands of change even stronger than before (Rutter, 1990). Flach (1988) suggested that human beings experience disruptions and the need for reintegration throughout the life span and this cycle is repeated and activated, not only by extraordinary stresses, but also by moving from one stage to the next in the natural course of the human life cycle. Coping with stress and disruptive changes is part of living, but how one meets those experiences and gets on with his or her life is the basis of the resilience framework (Flach, 1988).

Although it is difficult to identify the roots of interest in resilience, three fields of research have played crucial roles in identifying resilient characteristics. First, the consistency of the findings of marked variations in outcomes in the quantitative research with high-risk populations (Rutter, 1966, 1987) forced investigators to appreciate how many children seemed to escape relatively unscathed from adversity. Second, research into temperament following the pioneering lead of Thomas, Birch, Chess, Hertzig, and Korn (1963) provided empirical evidence that children's qualities did indeed influence their variable responses to a variety of stress situations (Rutter, 1977). Third, Adolf Meyer (1957) had long argued for the developmental importance of the ways in which people met key life changes and transitions. His psychobiological approach placed emphasis on the importance of person-environment interactions at these key turning points in people's lives (Rutter,

1986). Similarly, Murphy's studies of coping and mastery (Murphy, 1962; Murphy & Moriarity, 1976) drew attention to the importance of variations in the ways people deal with threat and challenge. According to these studies, resilience was not just a matter of constitutional strength or weakness; it was also a reflection of an ability to negotiate risk situations.

In the context of negotiating risk, it was found that some individuals utilize a set of protective mechanisms (Garmezy, 1985; Masten & Garmezy, 1985) to manage and maintain high self-esteem and self-efficacy in spite of facing the same adversities that lead other people to give up and lose hope. More specifically, personality features such as high self-esteem and an internal locus of control, as well as environmental resources such as secure, stable, affectionate relationships, and the perception of social support have been found to ameliorate the effects of stress (Garmezy, 1993; Rutter, 1987; Werner, 1989, 1993). The greater the number of stressful life events, the more protective factors needed to counter balance the total exposure to risk to ensure a positive outcome (Rutter, 1985; Werner, 1989). Accordingly, a protective mechanism is one in which protective factors attenuate the effects of risk on outcomes (Rutter, 1990).

The terms protective factors, risk factors, and competence were used by Garmezy (1993), Rutter, (1987), and Werner and Smith (1992) to describe the characteristics of children as they responded positively or negatively to stressors in their lives. This pivotal work in risk and protective factors focused on the phenomenon of perceived "invulnerability" in children despite risk factors. The stressors or "risk factors" most likely to cause vulnerability include the following: low socioeconomic status; large family size; single parent head of household; minority race status; mental illness of mother; foster home

placement; paternal criminality; and chronic illness, with poverty cited as the leading stressor (Fine, 1991; Flach, 1989; Garmezy, 1991; Garmezy, 1993; Masten, 1994; Rutter, 1985; and Rutter, 1987).

The very same life circumstances that are identified as a cause of failure for one person may be used to explain the success for another when resilience is taken into account. Cohler (1987) explained this phenomenon below.

> Little is known of the manner in which persons create a narrative that renders adversity coherent in terms of experienced life events, or of the manner in which presently constructed meanings of life changes may be altered in order to maintain a sense of personal integration. For some persons, at particular points in the life course, the fact of such misfortunes as poverty or the untimely death of a parent during early childhood is used as an explanation for the failure to realize personal goals; for other persons, this misfortune becomes the impetus for increased effort in order to attain these goals (Cohler, 1987, p. 365).

Clinical studies of resilience in adults have involved populations of mostly men. A longitudinal study of 456 Boston inner-city junior high school students (Felsman & Valliant, 1987; Long & Valliant, 1987; Valliant, 1993) involved male students who were considered at high risk to reproduce their underclass status. The youth in the study were followed from early adolescence to late middle age when it was determined that "the chaos, unemployment, and extreme poverty of the most disadvantaged subjects had not affected the capacity of the majority of them to obtain jobs, maintain them and be promoted. Indeed, equal ratings for social class and psychological well-being . . . suggest unexpected resilience" (Long & Valliant, 1989, p. 210).

Studies of resilience in adult women include a qualitative study of older women who had experienced a major loss such as the death of a spouse (Moen, Dempster-McClain, & Williams, 1989). The study identified underlying themes of self-reliance, equanimity, existential aloneness, perseverance and meaningfulness as characteristics of resilience. All respondents were Caucasian and successful adjustment was determined by social involvement in a senior center. In another extensive investigation, a 30-year panel study of 427 wives and mothers from upstate New York used event history techniques to investigate the effect of multiple roles on the longevity of the women (Moen, Dempster-McClain, & Williams, 1989). Longevity was found to be promoted by the social integration of the women as measured by the number of roles occupied, with membership in voluntary organizations being the most conducive to long life. This study assumed definitions associated with competence and psychological wellness that are rooted in middle class cultural expectations of women.

In yet another study, an in-depth life-history approach was used with male and female civil rights workers, childhood cancer survivors, and adolescents whose parents suffered from affective disorders explored the role of self-understanding in resilient individuals (Beardslee, 1989). Respondents from all three groups stressed the value of relationships as central to being able to overcome the adversity in their lives. Among the civil rights workers, shared commitment to the movement and a political or religious belief system was also reported to be an important part of their resilience.

Patterns of Resilience

In a literature review, Polk (1997) identified four patterns of resilience, specifically, (a) the dispositional pattern, (b) the relational pattern, (c) the situational pattern, and (d) the

philosophical pattern. These four constructs manifest a larger underlying pattern of resilience, each contributing both individually and synergistically to a personal web of support for each individual that ameliorate or buffer that person's response to risk factors or stressful events.

The dispositional pattern refers to the pattern of physical and ego-related psychosocial attributes that contribute to the manifestation of resilience. Psychosocial attributes are characteristics reflective of personal competence and a sense of self, while physical attributes are the constitutional and genetic factors that enter into the development of resilience. These physical factors include intelligence, health, and temperament.

Resilient individuals are characteristically intelligent, scoring higher on scholastic aptitude and educational achievement tests than non-resilient persons (Brown & Rhodes, 1991; Werner, 1986). Additionally, resilient people generally have a history of good health, attractive physical appearance, and athletic competence (Brown & Rhodes, 1991; Heinzer, 1995; Wagnild & Young, 1990; Werner & Smith, 1982). Finally, characteristics of temperament that elicit positive attention from primary caretakers are also indicative of resilience (Werner, 1986, 1990). The ego-related psychosocial factors indicative of resilience include a sense of mastery (Wagnild & Young, 1993), an awareness of global self-worth (Heinzer, 1995), and positive self-esteem (Beardslee & Podorefsky, 1988; Brown & Rhodes, 1991; Heinzer, 1995; Losel & Bliesener, 1990; Wagnild & Young, 1993; Werner, 1986, 1990). In addition, a sense of self-confidence (Robson, 1991; Wagnild & Young, 1990), belief in self-efficacy (Fine & Schwebel, 1991; Losel & Bliesener, 1990), and autonomy and self-reliance (Gjerde, Block, & Block, 1986; Poulson, 1993; Werner, 1982) characterize

resilience. An individual's dispositional pattern contributes to an overall pattern of resilience when it reflects these physical and psychosocial characteristics.

The relational pattern refers to the characteristics of roles and relationships that influence resilience. This pattern includes both intrinsic and extrinsic aspects defined as the placement of value on both close confiding relationships as well as on a broader social network. Intrinsic aspects include turning to another person to have sense made of an experience or to derive comfort (Beardslee & Podorefsky, 1988), having skill in identifying and relating to positive role models (Werner, 1982), and having a willingness to seek out a confidante (Beardslee, 1989; Rabkin, Remien, & Katoff, 1993). In addition, the intrinsic nature of relationships is reflected in a deep commitment to relationships and the development of personal intimacy (Beardslee, 1981, 1983).

The relational pattern also reflects extrinsic social interests. Resilience is manifested in having multiple interests and hobbies (Beardslee & Podorefsky, 1988; Werner, 1982) as well as a commitment to education, employment, and social activities (Beardslee & Podorefsky, 1988; Heinzer, 1995; Rabikin, Remien, & Katoff, 1993; Werner, 1990). Resilience is also evident in a willingness to seek community support (Higgins, 1994) and positive social interactions with family, friends, and others (Heinzer, 1995). This characteristic pattern of an individual's roles and relationships contributes to an overall composite pattern of resilience.

The third contributing pattern is labeled situational. This pattern discloses resilience as a characteristic approach to situations or stressors and is manifested in cognitive appraisal skills, problem-solving ability, and attributes that indicate a capacity for action in facing a situation. The situational pattern includes the ability to make a realistic assessment of one's

capacity to act and of the expectations or consequences of that action (Beardslee & Podorefsky, 1988). It also includes the ability to be aware of what can and cannot be accomplished and the capacity to specify more limited goals (Beardslee, 1989; Werner, 1982), to perceive changes in the world (Beardslee, 1983), to use active problem-oriented coping (Losel & Bliesener, 1990), and to reflect on new situations (Garmezy, 1991). Flexibility, perseverance, and resourcefulness all contribute to this aspect of the pattern of resilience (Kadner, 1989; Rabkin, Remien, & Katoff, 1993; Wagnild & Young, 1990), as does having an internal locus of control (Beardslee & Podorefsky, 1988; Wagnild & Young, 1990; Werner, 1990). Finally, the situational pattern also is manifested by novelty seeking (Block & Block, 1980), curiosity (Wagnild & Young, 1990), an exploring nature (Gjerde, Block, & Block, 1986), and creativity (Higgins, 1994).

The fourth construct synthesized from the literature as characteristic of resilience is the philosophical pattern (Polk, 1997). This pattern is manifested by personal beliefs. The belief that self-knowledge is valuable and that reflection about oneself and events is beneficial contribute to this pattern (Beardslee, 1989; Higgins, 1994). There is also a conviction that good times lie ahead (Rabkin, Remien, & Katoff, 1993), and a belief in finding positive meanings in experiences (Higgins, 1994). Additionally, a belief that lives are worthwhile and meaningful and a conviction in the value of one's contributions are inherent in the manifestation of this pattern (Heinzer, 1995; Rabkin, Remien, & Katoff, 1993; Wagnild & Young, 1990). There is a realization that life has a purpose, that each person's life path is unique, and that it is important to maintain a balanced perspective of one's life (Wagnild & Young, 1990).

Adversity (Risk) and Protective Mechanisms

Rutter (1987) viewed resilience not as a fixed attribute, but as vulnerabilities or protective mechanisms that modify the individual's response to risk situations and operate at turning points during his or her life (Garmezy, 1991; Rutter, 1987). Rutter illustrated this point clearly:

> Protection does not reside in the psychological chemistry of the moment but in the ways in which people deal with life changes and in what they do about their stressful or disadvantageous circumstances. Particular attention needs to be paid to the mechanisms operating at key turning points in people's lives when a risk trajectory may be redirected onto a more adaptive path (Rutter, 1987, p. 329).

Resilience arises out of a belief in one's own self-efficacy, the ability to deal with change, and a repertoire of social problem-solving skills (Rutter, 1987). Michael Rutter investigated the children of people diagnosed as mentally ill on the Isle of Wight and in inner city London. Following 125 children over a 10-year span, he discovered that many of the children of people with mental illness failed to develop psychopathologies. Rutter began to study the quality that he believed protected these children from their parent's disease. He determined that resilience was not just a matter of personal strength or weakness; it included taking action to address a stressful situation. Rutter stated that protective factors "inoculate" or "steel" children against negative outcomes. Even more important, resilience may transform or make stronger the lives of those who are resilient (Kaufman, Cook, Arny, Jones, & Pittinsky, 1994).

The presence of resilient behavior may be in response to adversity in the form of maintenance or normal development despite the adversity, or a promoter of growth beyond

the present level of functioning. Further, resilience may be promoted not necessarily because of adversity, but, indeed, may be developed in anticipation of inevitable adversities (Kaufman et al., 1994). Adversity is not limited to man-made disasters (e.g., war, famine, poverty), or to natural disasters such as earthquakes, hurricanes, floods, or droughts. Adversity may occur in everyday life in the form of divorce, abandonment, physical abuse, substance abuse, illness, death, or significant change in home, job, or education. The presence of protective mechanisms moderates a person's reaction to stressful situations to produce resilient traits for successful adaptation (Werner & Smith, 1992).

The traits necessary for resilient adaptation to change or adversity are listed in Tables 1 and 2 (Richardson, Neiger, Jensen, & Kumpfer, 1990). The learning that occurs from the life experience generally draws upon the individual's creative or systematic problem solving abilities. Life events, which force an addition or deletion of a component of the worldview, stimulate coping and reintegrating responses, and leave a person more skilled (Werner, 1989). Resiliency skills build upon the foundation of protective factors and these learned skills may be used for subsequent life events of a similar nature.

Bond and Wagner (1988) found that the individual protective factors (Table 1) could offset risk factors and enhance other protective factors (Table 2). In a more general sense, research on resilient individuals has found social competence (Carter & McGoldrick, 1988; Reiss, 1981; Werner & Smith, 1992), problem-solving skills (Anthony & Cohler, 1987; Rutter, 1990), an internal locus of control (Garmezy, 1991; Werner & Smith, 1992), and a sense of purpose and future (Bernard, 1991) to be particularly important protective attributes. Bernard (1991) has further identified caring and support, high expectations, and participation and involvement as important protective factors within the school and learning domains.

Table 1.

Individual Protective Processes

1. Pursuit of a cause or purpose in life
2. Positive self-esteem
3. Good decision making skills
4. Belief in a higher force
5. Internal locus of control
6. Self-confidence
7. Good sense of humor
8. Personal strengths and skills
9. Value/behavioral congruence (behaving in accordance with one's belief)
10. Self mastery
11. Independence of spirit
12. Psychological hardiness (control, commitment, and challenge)
13. Empowerment
14. Ability to be a friend
15. Positive futuristic vision
16. Independence of spirit/autonomous

Note. From "The resiliency model," by G.E. Richardson, B.L. Neiger, S. Jensen, and K.L. Kumpfer, 1990, *Health Education, 21*(6), 33-39.

Table 2.

Adaptive Protective Mechanisms

1. Build upon protective skills listed in Table 1 but reflecting reintegrating functions
2. Good social problem solving skills
3. Ability to delay gratification
4. Resilient self-efficacy
5. Creative problem solving skills
6. Task oriented
7. Flexibility
8. Good reintegrating capacity (ability to bounce back from adversity)
9. Ability to do personal introspection and determine personal resources for coping
10. Self-motivation
11. Strong capacity for learning

Note. From "The resiliency model," by G.E. Richardson, B.L. Neiger, S. Jensen, and K.L. Kumpfer, 1990, *Health Education, 21*(6), 33-39.

Resilience and Self-Efficacy

Measures for resilience, locus of control, hardiness (Funk, 1992; Kobasa, 1982), and self-efficacy (Bandura, 1989) have been used in research to predict success, achievement, and competence of people in organizations and businesses. These measures would fit within

the category of adult resilience as they place the responsibility for success within the individual. The mark of an efficacious person is to persevere in spite of obstacles and setbacks—the "efficacy" and perseverance despite the odds comes from a belief that one is capable of successfully completing tasks or executing courses of action to deal with the situation (Bandura, 1989). Efficacy beliefs help determine how much effort people will expend on an activity, how long they will persevere when confronting obstacles, and how resilient they will prove to be in the face of adverse situations—the higher the sense of efficacy, the greater the effort, persistence, and resilience (Pajares & Miller, 1994).

In *Social Foundations of Thought and Action*, Albert Bandura (1986) wrote that individuals possess a self-system that enables them to exercise a measure of control over their thoughts, feelings, and actions. This self-system houses one's cognitive and affective structures and includes the abilities to symbolize, learn from others, plan alternative strategies, regulate one's own behavior, and engage in self-reflection. Self-referent thought mediates between knowledge and action, and through self-reflection individuals evaluate their own experiences and thought processes. Bandura (1986) considered self-reflection the most unique human capability, for through this form of self-referent thought, people evaluate and alter their own thinking and behavior. These self-evaluations include perceptions of self-efficacy, that is, "beliefs in one's capabilities to organize and execute the courses of action required to manage prospective situations" (Bandura, 1997, p. 2).

Self-Efficacy and Academic Settings

In academic settings, self-efficacy research has focused primarily on two major areas. One area has explored the link between efficacy beliefs and college major and career choices, particularly in the areas of science and mathematics. Hackett (1985), Hackett and Betz

(1989), and Pajares and Miller (1994, 1995b) have reported that the mathematics self-efficacy of college undergraduates is more predictive of their mathematics interest and choice of math-related courses and majors than either their prior math achievement or math outcome expectations, and that male undergraduates report higher mathematics self-efficacy than do female undergraduates. This line of inquiry has important implications for vocational counseling given that findings have provided insights into the career development of young men and women and can be used to develop career intervention strategies.

Studies in the second area have investigated the relationships among efficacy beliefs, related psychological constructs, and academic motivation and achievement. Self-efficacy has been prominent in studies that have explored its relationship with attributions (Bandura, 1991; Bandura & Jourden, 1991; Larson, Piersel, Imao, & Allen, 1990), goal setting, modeling problem solving, reward contingencies, self-regulation, social comparisons, strategy training, teaching and teacher education (Ashton & Webb, 1986), anxiety and self-concept (Pajares & Miller, 1994, 1995a), and varied academic performances. Researchers have reported that self-efficacy beliefs are correlated with other self-beliefs, motivation constructs, and academic choices, changes, and achievement, although effect sizes and relationships greatly depend on the manner in which self-efficacy and criterial tasks are operationalized and assessed.

Findings also support Bandura's (1986) assertion that efficacy beliefs mediate the effect of skills or other self-beliefs on subsequent performance by influencing effort, persistence, and perseverance. Collins (1982) identified children of low, middle, and high mathematics ability who had, within each ability level, either high or low mathematics self-efficacy. After instruction, the children were given new problems to solve and an opportunity

to rework those they missed. Collins reported that ability was related to performance but, that, regardless of ability level, children with high self-efficacy completed more problems correctly and reworked more of the ones they missed. Bouffard-Bouchard, Parent, and Larivee (1991) found that students with high self-efficacy engaged in more effective self-regulatory strategies at each level of ability. Self-efficacy also enhances students' memory performance by enhancing persistence (Berry, 1987). In studies of college students who pursue science and engineering courses, high self-efficacy has been demonstrated to influence the academic persistence necessary to maintain high academic achievement (Lent et al., 1984, 1986).

Zimmerman and his associates have been instrumental in tracing the relationships among self-efficacy perceptions, self-efficacy for self-regulation, academic self-regulatory processes, and academic achievement (Risemberg & Zimmerman, 1992; Zimmerman & Bandura, 1994). Zimmerman, Bandura, and Martinez-Pons (1992) used path analysis to demonstrate that academic self-efficacy mediated the influence of self-efficacy for self-regulated learning on academic achievement. Academic self-efficacy influenced achievement directly (beta = .21) as well as indirectly by raising students' grade goals (beta = .36).

Other research has found that self-efficacy is related to self-regulated learning variables. Findings in this area suggest that students who believe they are capable of performing academic tasks use more cognitive and metacognitive strategies and persist longer than those who do not (Pintrich & Garcia, 1991). Pintrich and De Groot (1990) reported a strong positive correlation between global academic self-efficacy and both cognitive strategy use and self-regulation through use of metacognitive strategies. In addition, academic self-efficacy was highly correlated with academic performances such as

semester and final year grades, in-class seatwork and homework, exams and quizzes, and essays and reports. Perceived importance of academic achievement was associated with the outcome variables, but was not a significant predictor. Pintrich and De Groot concluded that self-efficacy played a mediational or "facilitative" role in relation to cognitive engagement, that improving self-efficacy might lead to increased use of cognitive strategies and thereby higher performance, and that "students need to have both the 'will' and the 'skill' to be successful in classrooms" (p. 38).

Resilience and Education

The concepts of risk factors, protective factors, and resilience have surfaced in the literature of education and schools in the last decade. The educational literature follows a similar pattern as the clinical work by focusing on identifying and describing "at risk" students (McMillan & Reed, 1993; Peng, 1994), then identifying "protective factors" and interventions (Donmoyer & Kos, 1993; Freiberg, 1993; Lugg & Boyd, 1993), and finally using the concept of resilience to explain success (Gross et al., 1992; Renchler, 1993; Taylor, 1994; Wang & Gordon, 1994). The work on risk and resilience in education has focused on children and youth. In addition to the protective factor of a relationship with a caring competent adult, other protective factors for children and adolescents include sex education programs, involvement in extra-curricular activities such as creative arts and sports, as well as affiliations and church activities (Baxley, 1993; Braddock, 1991; Farrell, 1994; Garibaldi, 1991; Scott-Jones, 1991).

While the studies of at-risk, low-income adolescents and children offer a starting point for understanding the experience of adults in higher education, studies on resilience in

learning environments for adults are rare. Therefore, a review of the literature on adult learning is helpful in order to understand the theories that guide this new field of thought.

Adult Learning

The literature on adult learning attempts to differentiate between teaching and learning environments and strategies for children and adults. Malcolm Knowles who gave us the term "andragogy," which he defined as "the art and science of helping adults learn" (Knowles, 1980, p. 43) made a significant contribution in the description of educative environments which were humane and respectful of adults and grounded in democratic philosophy (Knowles, 1980, 1984). Another prominent theory of adult learning is Cross' (1991) Chain of Response model which is based on the understanding of the characteristics of adult learners, and the developmental stages of adulthood. Mezirow (1980) and Friere (1970) offer a focus on inner meaning and the transformative aspects of learning. The ability for critical reflection and perspective transformation are seen to be especially suited to adult learning. Merriam and Caffarella (1991), in their review of adult learning theories, suggest that there are at least four components of adult learning which can be extracted from the current theories:

1. self-direction or autonomy as a characteristic or goal of adult learning;
2. breadth and depth of life experiences as content or triggers to learning;
3. reflection or self-conscious monitoring of changes taking place; and
4. action or some other expression that learning has taken place.

Adult education is conceived as a reciprocal, lifelong process wherein learners continually acquire, use, and reshape theoretical knowledge and coping skills in order to survive and thrive in changing environments (Kerka, 1999). A touchstone of effective

learning is that students are in charge of their own learning; essentially, they direct their own learning processes. In a discussion of indicators of engaged, effective learning, Jones, Valdez, Nowakowski, and Rasmussen (1995) described the characteristics of students who are responsible for their own learning. One characteristic is a student's ability to shape and manage change, in other words, to be self-directed. Covey (1989) recognized the importance of self-directedness, which he called "proactivity," by including it as one of the habits characterizing highly-effective individuals: "It means more than merely taking initiative. It means that as human beings, we are responsible for our own lives. Our behavior is a function of our decisions, not our conditions. We can subordinate feelings to values. We have the initiative and the responsibility to make things happen" (p. 71).

Self-directed learning focuses on the process by which adults take control of their own learning, in particular, how they set their own learning goals, locate appropriate resources, decide on which learning methods to use, and evaluate their progress (Brookfield, 1995). Pressley (1987) emphasized that self-confidence and a feeling of being in control are important roles in learning. Students perform at higher levels if they have confidence in themselves and that personal efficacy is a matter of internal locus of control. Students with more internal locus of control attribute their success to their own abilities and not to luck or chance, as do persons with an external locus of control (Thomas, 1980). When students realize that their thoughts control their actions (i.e., their locus of control is internal), they can positively affect their own beliefs, motivations, and academic performance (McCombs, 1991).

Locus of control is a personality construct referring to an individual's perception of the locus of events as determined internally by his/her own behavior versus fate, luck, or

external circumstances. McCombs (1991) suggested that what underlies the internal locus of control is the concept of "self as agent." This means that our thoughts control our actions, and that when we realize this executive function of thinking we can positively affect our beliefs, motivation, and academic performance. "The self as agent can consciously or unconsciously direct, select, and regulate the use of all knowledge structures and intellectual processes in support of personal goals, intentions, and choices" (p. 6). McCombs asserted that "the degree to which one chooses to be self-determining is a function of one's realization of the source of agency and personal control" (p. 7).

Distance Education and Self-Efficacy

Distance education literature abounds with terms such as self-efficacy, locus of control, self-directedness, striving, persistence, and motivation (Bergevin, 1967; Caffarella & Barnett, 1994; Holt, 1976; Garrison, 1992; Janne, 1972; Knowles, 1975; Lindeman, 1984; and Tough, 1971) to describe the attributes of the adult learner. Garrison (1992) suggested that distance education learners clearly need efficacy beliefs in their abilities to control their level of educational attainment, to set high yet realistic goals, and to persevere in the face of difficulty. However, resilience in learning is based on life's meaning which resides in the things people strive for, the goals they set for themselves, and their wants, needs, desires, and wishes (Wang & Gordon, 1994).

Bandura (1995) suggested that adult learners require cognitive and self-regulatory competencies to fulfill complex occupational roles and to manage the demands of contemporary life, placing a premium on self-directed learning to equip students to educate themselves throughout their lifetime. In distance education, learners must adapt to self-directed learning by practicing wise time management, reaching out for peer support, and

interaction with the instructor (Naidu, 1994). All this must be managed to benefit from increased learner control with perhaps the most important part being reducing anxiety while managing self-regulation (Wagner, 1994).

According to Bandura (1997), self-efficacy is mediated by a person's beliefs or expectations about his/her capacity to accomplish certain tasks successfully or demonstrate certain behaviors (Betz & Hackett, 1997). Bandura (1997) postulated that these expectations determine whether or not a certain behavior or performance will be attempted, the amount of effort the individual will contribute to the behavior, and how long the behavior will be sustained when obstacles are encountered. Bandura (1995) stated that the willingness to tackle the challenges or stressors in distance education requires some degree of resilient self-efficacy, and suggested that some setbacks and difficulties in human pursuits serve a useful purpose in teaching that success usually requires sustained effort. After people become convinced that they have what it takes to succeed, they persevere in the face of adversity and quickly rebound from setbacks.

Persistence

Studies investigating retention and attrition of students in community colleges have typically examined student demographics in order to discover the typology of students who are likely to remain in school and those at risk of dropping out. Many studies in this area attempted to discover and pinpoint the characteristics of persisters and non-persisters. Older students were found to have higher course completion rates (Rekkedal, 1983) as well as higher degree completion rates in undergraduate programs (Langenbach & Korhonen, 1988). While both gender and marital status have been found to be insignificant in persistence studies (Langenbach & Korhonen, 1988; Langenbach & Korhonen, 1986, as cited in

Coggins, 1988; Coggins, 1988), other researchers found that students who had prior experience with nontraditional education were more likely to persist than those with exclusively conventional experience (Rekkedal, 1983; Langenbach Korhonen, 1988; Coldeway & Spencer, 1980, as cited in Coldeway, 1986).

In any program of studies, adults are largely voluntary participants, but the student role is just one of many roles and responsibilities competing for their time and attention. Personal reasons such as family problems, lack of childcare, and job demands are often cited as the cause of withdrawal (Tracy-Mumford et al., 1994). Eagle (1981) surveyed 282 dropout students from a community college to determine the reasons for withdrawal. One-third of all responses related to the cost of college, the need for money, or a job; 26.9 % of the students cited personal, family, health, marriage, and maternity reasons. Maples and Owings (1982) surveyed 210 students who withdrew from on-campus programs at a community college. They reported that 26.5% of the respondents chose "other" as their reason for withdrawing (e.g., moving, transferring to another school, and medical reasons), while 2l.6% indicated "personal/family problems," and 14.8% cited "change in work hours." Conklin (1991) surveyed 350 non-returning students from a community college. Reasons cited for leaving the college included work schedule conflicts (34.6%), desired coursework completed (18.7%), lifestyle changes or personal problems (25%), and financial difficulties (18%).

One of the major reasons identified for adult students who dropout of courses has been conflict between their studies and other commitments in their working or family lives (Cullen, 1994). In more recent studies, Thompson (1997) surveyed 258 adult learners enrolled in an external four-year Bachelor of Education Program. Seventy-five percent of students who withdrew from their courses indicated that work had an adverse affect on

academic progress, while 45% of this group reported family obligations as a reason for course withdrawal. Similarly, Chan (1999) surveyed 712 adult students studying part time at an open university in Hong Kong. Non-completers (defined as low achievers) rated work commitments as having a significant impact upon their studies. In semi-structured interviews following this survey, Chan reported six instances where non-completers rated the impact of these commitments higher than did completers: working overtime, doing shift work, traveling outside Hong Kong, engaging in social activities, having a significant change of responsibility at work, and changing job or working conditions. While students cited family and life events as reasons for course non-completion, there were no significant differences between groups (Chan, 1999).

One cause of early withdrawal is a gap between learner expectations and reality. Adult learners may get frustrated early by lack of progress, or if they are not given enough information before enrollment to know when to expect change and what they must do to achieve it (Dirkx & Jha, 1994). Non-completers are motivated enough to enroll in educational programs and many clearly value education (Quigley, 1995), but negative past experiences of school may be too strong. Malicky and Norman (1994) also concluded that dropout is related to past school and home experiences, but they stressed that participation is multifaceted. Often, educational and practical concerns work together to effect the decision to stay or to leave (Perin & Greenberg 1994). Tinto's (1975) model, most often applied to higher education, proposed that retention is related to how well students are socially and academically integrated into the institution.

Tinto (1975, 1987, 1993) proposed a multivariate model of student retention in post secondary institutions to explain student departure from college prior to graduation. His

model included a comprehensive set of demographic, cognitive, psychosocial, and institutional factors. The model proposed that both student characteristics and interactions with the social and academic environments of the institution were the principal determinants of educational goals and institutional commitment. These characteristics and interactions account for the decision to persist or withdraw from college. Working backwards, Tinto (1993) proposed that two dimensions of commitment, namely institutional commitment and goal commitment, directly influenced persistence or departure behavior. Institutional commitment represents the degree to which an individual is motivated to graduate from a specific college or university. Goal commitment, or educational goal commitment, represents the degree to which the individual is committed, or motivated, to earn a college or university degree. In turn, institutional and goal commitments are directly influenced by external commitments or demands and psychosocial characteristics.

Psychosocial factors, rather than directly impacting performance outcomes such as persistence, mediate the antecedents to these outcomes. For example, self-esteem, although not directly related to persistence, had a direct impact on three key constructs within Tinto's model, namely academic integration, social integration, and institutional commitment (Munro, 1981). Also, need for affiliation had a direct impact on social integration, and achievement need, a measure of the degree of effort and quality of effort an individual expends to surmount obstacles, was directly to academic integration, social integration, and goal commitment (Pascarella & Chapman, 1983a, 1983b). This model, however, does not include psychological variables such as self-esteem and behavioral consequences of dropout behavior. Rather, the emphasis is put on the ability of students to integrate the academic environment into their other commitments.

Psychological factors may affect adjustment to university-level studies. In their review of the literature, Baker and Siryk (1989) reported that several measures of psychological maladjustment (e.g., anxiety, depression, loneliness, social avoidance, and psychological distress) interfered with adjustment and attachment to college. Conversely, measures of positive psychological health (e.g., self-esteem, psychological independence, psychological well-being, positive affect, and positive self-concept) have been positively related to adjustment and attachment to college (Baker & Siryk, 1989).

Since the earlier work by Sarason, Johnson, and Seigel (1978), it has been recognized that life demands/life stress is negatively related to grade point average. Carter (1982) reported that family responsibilities were among the five most prevalent of 60 reasons for the attrition of older and part-time students. Berkove (1976) observed, for older female students who were married and had at least one child living at home, a significantly higher attrition rate in comparison to students with no family responsibility. Brainard (1973), Martin (1974), and Hunter and Sheldon (1984) reported family pressure and obligations as major reasons for withdrawal among community college students. In a study of non-college external experiences, Metzner (1984) found that a global measure of [outside] stress was significantly related to attrition for students attending an urban commuter university.

It is unlikely that life stress has a direct impact on grade point average. That is, having high life demands does not mean that a student has low academic aptitude. Rather, it is more likely that life demands influence a third factor or set of factors (e.g., a student's ability to allocate sufficient time to study) that directly impacts upon academic performance (Napoli & Wortman, 1995). Indeed, life demands and events inventories such as the Life Events Inventories (Sarason et al., 1989), the Social Readjustment Rating Scale (Holmes & Rahe,

1967), and the Hassles Scale (Lazarus, Cohen, Folkman, Kanner, & Schaefer, 1980) have been found to be negatively related to adjustment and commitment measures (Baker & Siryk, 1989). These findings support the view that external life demands interfere with the ability to integrate and commit to college.

Environmental factors have also been shown to enhance integration and persistence. Recently, Tinto (1993) incorporated social-support theory into his model by describing the positive effects of social support on adjustment to college. Tinto's (1993) acknowledgement of this additional factor is based on the work of House (1981), McCarthy, Pretty, and Catano (1990), Pearson (1990), and Jacobi (1991), who reported that individual, supportive relationships prevent and reduce the harmful effects of stress, and enhance individuals' ability to cope effectively with stress in specific social settings. Just as obtaining social support from an individual can enhance persistence, so too can obtaining support from social networks. Bean and Metzner (1985) reported positive relationships between parental support and peer relationships on persistence decisions for a national sample of traditional age (18 to 24 years) full-time students, traditional age part-time students, and older part-time students. Hays and Oxley (1986) examined social support by assessing the network density and frequency of network interactions on adapting to college. They observed a positive impact for establishing new acquaintances on adapting to college. In addition, there is evidence that the establishment of supportive personal relationships with faculty, peers, and other significant persons helps students cope better with the demands of college (Flemming, 1985; Ostrow, Paul, Dark, & Berhman, 1986).

Pugliese (1994) investigated the constructs of loneliness, communication apprehension, communication competence, and locus of control as psychological predictors

of persistence. In a telephone survey of 306 students in a community college, Pugliese found that while none of the variables were significant predictors of withdrawal, the concept of external attribution was a promising variable to be examined in further research. Expanding Tinto's model of disengagement, Bean and Metzner (1988) identified environmental variables (e.g., family responsibilities, work) to explain dropout in older, non-traditional college students. Bean and Metzner (1988) found non-persisters had greater work demands (e.g., the number of hours/week in off-campus employment) than persisters. Mulligan and Hennessy (1990) reported greater external demands (e.g., outside employment, family responsibility, and financial demands) among non-persisting older college students. Environmental variables may push students out of school by putting too much pressure on their time and resources.

Kennedy and Powell (1976, as cited in Cookson, 1990) analyzed detailed case-study information on 684 students who had withdrawn entirely, 291 who had partially withdrawn, and 236 students who were "at risk" to withdraw. Applying a human development, life-stage perspective, Kennedy and Powell conceptualized personal characteristics and life circumstances that led to dropout as follows:

> Personal characteristics that tend to change slowly include motivation, stage of adult development, educational background, personality, aptitude and educational self-concept. Life circumstances that may change rapidly include changes in occupation, relationship with family and peer group, health, finance, and support from the distance education institution (Kennedy & Powell, 1976, as cited in Cookson, 1990, p.24).

They went on to discuss how life circumstances and personal characteristics interact to explain dropout:

> The individual part-time student has a difficult time in maintaining an equilibrium within his life, pressures arising from his job, from his domestic situation, from his academic work and also from possible variations in his own personality. If one or more pressures increase unduly, the equilibrium is upset and the student may become "at risk" (p.62), … and the stronger the [personal] characteristics of a student the more unlikely an increase in pressure will upset his equilibrium (p. 70).

Relevance of Resilience to Persistence for Distance Educators

Distance educators must be prepared to address the wide range of needs unique to distance learners. Distance learners must demonstrate the following: (a) assume responsibility for their own learning; (b) become active in asking questions and obtaining help; (c) be respectful of the flexibility required by other students; (d) be able to clarify their own learning goals; (e) manage multiple roles in life; (f) develop a system of support in learning for others where to learn more; and (g) be prepared to deal with technical difficulties in the two-way flow of information (Jonassen, Davidson, Collins, Campbell, & Haag, 1995; Kerka, 1999). Laube (1992) suggested that distance educators must support student motivation, and promote learning pleasure and effectiveness by understanding the nature of the adult learner.

Knowledge of the resilient nature of the adult learner assists educators in promoting the development of appropriate protective mechanisms that enhance the learner's capacity to negotiate effectively with the learning experience (Wang, Haertel, & Walberg, 1990). These factors are presented in Table 3. Knowing the factors that help students persist in distance

education courses is most valuable to the educator, who then can approach at-risk students directly and offer specific information and encouragement that can help them succeed. Kahl and Cropley (1986) suggested that educators need to develop teaching and learning approaches which help students to master their difficulties, rather than accepting the difficulties as a limiting factor in distance learning settings. Caffarella and Barnett (1994) suggested that educators employ learning techniques that capture the positive feelings that adults have about themselves as learners, as well as acknowledge and work with their negative perceptions.

Table 3

Characteristics of Instructional Practices Promoting Protective Mechanisms

Instructor Participation In:	Student Participation In:
1. Maximized learning time	1. Setting goals
2. High expectations of student achievement	2. Making learning decisions
3. Opportunity to respond	3. Engaging in cooperative learning
4. High degree of course engagement	

Note. From "Toward a knowledge base for school learning," by M.C. Wang, G.D. Haertel, and H.J. Walberg, 1993, *Review of Educational Research, 63*(3), 249-294.

Summary

A number of theoretical models of persistence and dropout have emerged to provide explanation and prediction of those phenomena. The one point of agreement is the

multivariate nature of persistence. Variables posited include those related to the individual student (such as background or predisposing characteristics), the student's individual circumstances (for example, life changes), and organizational or institutional commitment. The prime concern, the criterion variable, is the persistence behavior of the student learning at a distance, defined as course completion or degree completion. While much research exists in the area of dropout and persistence, studies have generally focused on a single variable or a limited combination of variables. Persistence in distance education is a complex phenomenon influenced by a multitude of variables. As students move through their life span, they encounter a number of life events or stressors, and assume a variety of roles, one of which is that of the learner. There are individual variations in people's responses to stress and adversity; some individuals cope successfully, while others react negatively. Those who cope are able to overcome their vulnerability, or their risk, because of protective mechanisms operating at key turning points in their lives that help them be resilient.

Recently, the concept of resilience has appeared in the literature to explain factors or circumstances that provide support and protection for adults who overcome adversity, survive stress, and rise above disadvantaged situations. These studies identify four distinct patterns of resilient characteristics required of individuals to succeed despite the odds. The concept of resilience can be applied to help re-define research on persistence to address positive, rather than negative factors. A life-span developmental perspective provides a mechanism to assess a student's potential for persistence. By examining the interaction among three main elements, (a) life events, (b) external commitments, and (c) resilience, the life-span developmental perspective offers a unique understanding of persistent students in

distance education. As shown in Figure 1, risk factors and protective mechanisms interact to influence persistence.

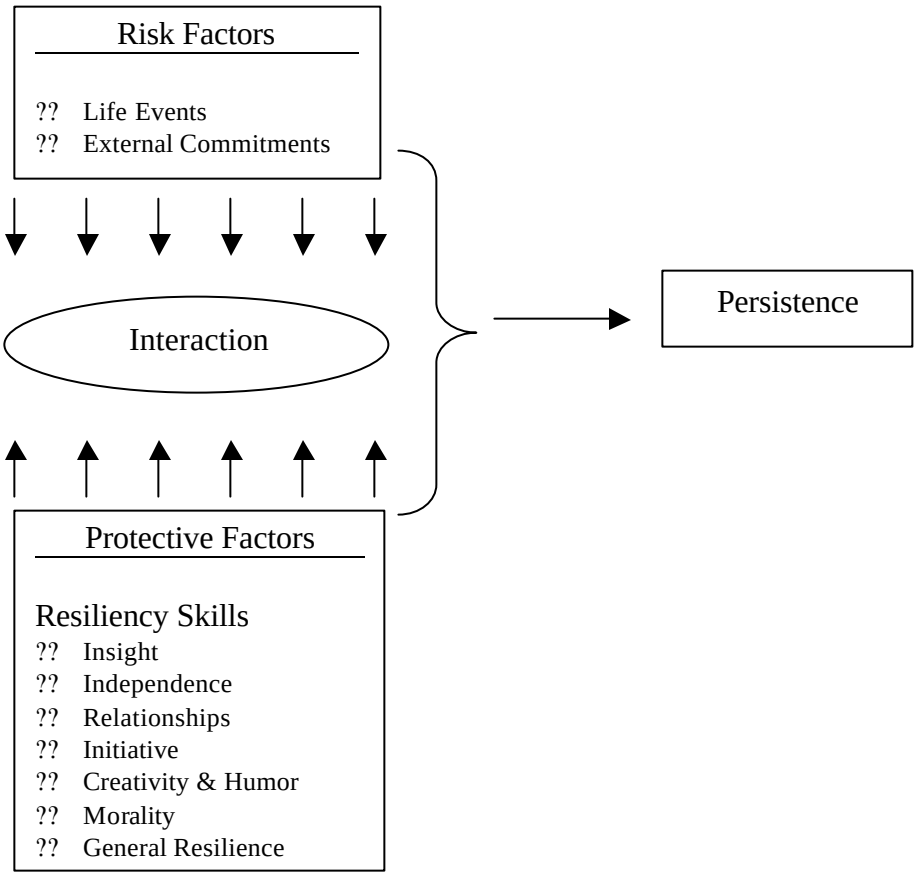

Figure 1. Factors affecting persistence in distance education.

While much has been written about risk factors and predictors of dropout, little is known about the protective processes and mechanisms in distance education that reduce risk for dropout and foster persistence. Knowing the resilient characteristics of distance learners may help to predict which students will persist in their studies. Knowledge of the factors that

help students persist in distance education courses is valuable to educators, who can then approach at-risk students directly and offer specific information, encouragement, and interventions to help them succeed.

CHAPTER III

METHODOLOGY

This chapter begins with a description of the design of the study, and then provides a description of the subjects involved in this study, an overview of the instruments used to collect data, and a detailed description of the procedure utilized in collecting the data.

Research Design

A correlational design was used in this study with data collected from two psychometric tests and one questionnaire. Correlational research refers to studies in which the purpose is to discover relationships between variables. The correlational method permits the researcher to analyze the relationships among a large number of variables in a single study. Self-report measures were obtained from two psychometric tests and one questionnaire administered to students registered in their first undergraduate course at Athabasca University as of April 1, 2000. In this study, a survey method was used to assess three predictors of persistence: resilience, life events, and external commitments.

This study used the survey method of data collection for a number of reasons. Surveys are easy to administer, are simple to score and code, and are less expensive than telephone or face-to-face interviews (Lockhart 1984). Mail surveys are a powerful, effective, and efficient alternative to their more expensive relatives—the telephone survey and the personal interview. Also, studies have shown that people provide more honest answers to mail surveys than they do to other interviewing methods—due to anonymity and confidentiality of responses—and mail surveys may increase the credibility of the answers (Baumgartner & Heberlein, 1984). However, because surveys are just a 'snapshot' of

behavior at one time and place, one must be careful about assuming they are valid in different contexts.

One of the problems with surveys is uncertainty about the response rate. Saltzman (1993) reports a wide variation in response rates for mail surveys. The range is from under 1% for randomly selected samples of consumers to over 50% when incentives are used with a qualified sample. Administering the survey using a familiar means of communication usually produce higher response rates (Dillman, 1978). As students at Athabasca University communicate with their instructors and the University using a variety of communication technologies including postal mail, a mail survey was considered appropriate. Response rates of 25% to 30% are common in undergraduate populations at Athabasca University (R. Powell, personal communication, March 15, 2000).

To investigate the relationship between the dependent and independent variables, scores from the Resiliency Attitudes Scale (RAS), the Life Events Inventory (LEI), and a questionnaire on external commitments were used to form the independent variables. The questionnaire was composed of six items relating to external commitments measured using a five-point Likert scale. Data from student records relating to course completion/non-completion were used to form the dependent variable, persistence.

Independent Variables

1. Life-events are defined as noteworthy occurrences whose advent is either indicative of, or requires a significant change in, the on-going life pattern of the individual (Hultsch & Deutsch, 1981). As Hultsch and Deutsch (1981) noted, the stress or crisis of the life events does not reside within the event or within the individual, but arises from an interaction between the individual and the situation. In this study, life events were

operationalized as scores on the Life Events Inventory, as measured by the number of life events experienced in adulthood (since the age of 18 years). Subjects were asked to total the number of life events they had experienced from a list provided and enter the total in a space on the questionnaire.

2. External commitments are factors that define the resources that facilitate, and the deficits that interfere with, the individual's adaptation to the demands of an event. These resources and deficits set the limits of the adaptation process—they are the tools with which the individual has to work. Many variables function as mediators of life events including home, finances, work, family, personal relationships, and community (Palmore et al., 1979). In this study, external commitment was operationalized as scores on a 6-item questionnaire using a five-point Likert scale. Subjects were asked to assess the effects of the following six types of external commitments on their time and energy: family (nuclear and extended); work; home; personal relationships; community; finances. For each question, students identified a response ranging from one to five, which reflected the level of commitment in these areas. Scores were totaled for each of the six questions, yielding a total score for external commitments.

3. Resilience includes psychosocial adaptation processes that are defined as those behaviors in which people engage when they are confronted with a life event or external commitment, and includes coping strategies, strategies for managing academic demands, and protective processes for negotiating risk and adversity. In this study, resilience was operationalized as scores on the Resiliency Attitudes Scale.

Dependent Variable

Persistence is a synonym for student progress and refers to behavior whereby students continue to make progress through a course or degree program by remaining continuously enrolled (Kember, 1995). In this study, persistence was defined as successful course completion (Gibson, 1990) of the student's first undergraduate course at Athabasca University. It was operationalized as course completion/non-completion according to individual course contract dates. Completers were operationally defined as students who completed their course and received an academic passing grade. Non-completers were operationally defined as those students who a) were non-starters—that is they did not commence work on their course; b) withdrew from their course; or c) received an academic failing grade (Bajtelsmit, 1988).

Participants

In January 2000, there were approximately 10,000 registrations in an undergraduate distance course at Athabasca University. Students were considered to be first-time distance students if they met the following criteria: (a) they were registered in one undergraduate distance course as of April 1, 2000; and (b) this was the first undergraduate distance course in which they had been enrolled at Athabasca University. To control for the intrinsic variable of age, only students who were between the ages of 30 to 45 were included in this study. Following approval by the Ethics Review Sub-Committee, a random sample of 460 students was obtained from Athabasca University student records.

Instruments

The Resiliency Attitudes Scale. The Resiliency Attitudes Scale (RAS) (Appendix B) was developed by Biscoe and Harris (1994) to assess resilience as defined by Wolin and

Wolin (1993). The RAS is a 72-item psychometric test designed to tap attitudes that would reflect each of the seven components of resilience identified by Wolin and Wolin (1993): insight, independence, relationships, initiative, creativity, humor, and morality. An additional subscale was added to assess general resiliency, which Biscoe and Harris (1994) defined as persistence at working through difficulties and the belief that one can survive and make things better. As illustrated in Figure 2, these resiliency subscales were further divided into "Skill Subscales" made up of questions that tap the basic resiliency skills within each resiliency. To reduce response bias, approximately half of the questions were written so that high resiliency would be indicated if the person agreed with the question and half the questions were reverse coded so that if the person disagreed with the question it would indicate high resiliency. The Resiliency Attitudes Scale (RAS) is designed to be administered in a self-report format and requires approximately 15 minutes to complete. Students were asked to rate each of the 72 statements using a five-point Likert scale that best described how they felt about each statement.

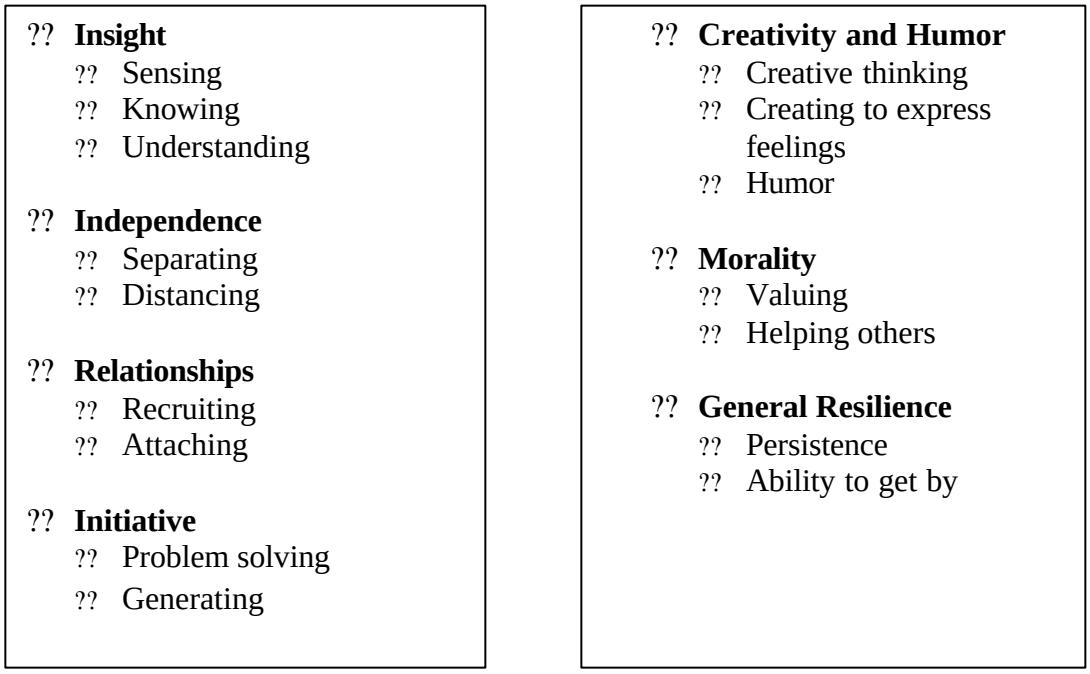

Figure 2. Resiliency attitudes subscales and skills subscales.

The RAS has demonstrated reliability and internal consistency in repeated clinical treatment settings (Biscoe & Harris, 1994). According to Wolin and Wolin (1993), seven of the eight of the resiliency scales were significantly correlated with the Beck Depression Inventory (BDI), ($r = –0.48$, $p < .05$,) and with the Rosenberg Self-Esteem (SE) Scale ($r = 0.50$, $p < .001$); 10 of the 16 resiliency subscales were negatively correlated with The Adult Damage Scale ($r = –0.49$, $p < .01$); and six of the resiliency scales were negatively correlated with the Childhood Damage Scale ($r = –0.32$, $p < .01$).

Life Events Inventory. The Life Events Inventory (Sarason, Johnson, & Seigel, 1978) is a 62-item inventory measuring the presence of life changes, and requires approximately five minutes to complete. The Life Events Inventory (LEI) is a self-report measure that

allows respondents to indicate events that they have experienced during their adult lives (age 18 years and older). Designed for all respondents, the LEI contains a list of specific events that subjects have experienced in their adult lives and a list of life changes that are common to individuals in a wide variety of situations. The LEI items were chosen to represent life changes frequently experienced by individuals in the general population and that potentially might exert a significant impact on the lives of persons experiencing them. The LEI is suitable for an adult population. Text readability is quantified as follows: Flesch Reading Ease = 76.5; Flesch-Kincaid Grade Level = 5.2. Internal consistency is reported. Split-half reliability using Spearman Brown formula is 0.83. Cronbach's Coefficient Alpha = 0.81 (Sarason et al., 1978).

Checklists of life events usually separate the events themselves from the individual's perception of that event. In addition, checklists have been criticized because they do not ensure that all study participants share a common standard for interpreting the judgement words within the scales (e.g., serious illness) nor can it be assumed that events on the list are independent (e.g., divorce may be associated with financial difficulties) (Monroe & Roberts, 1990).

Questionnaire. The Questionnaire (Appendix D), which was developed by the researcher, is designed to be administered in a self-report format, and requires approximately five minutes to complete. The questionnaire has three parts. Part 1 asked students to indicate if this was their first experience with distance education. The second part asked students to list the number of life events from the Life Events Inventory. The third part of the questionnaire asked students to estimate how often they need to spend time and energy on the following commitments: family (including nuclear and extended family), home, work,

personal relationships, community, and financial. Students were asked to assess each of the six external commitments using a five-point Likert scale.

Procedure

Following approval by the Human Subjects Sub-Committee, a random sample of 460 undergraduate students, who were between the ages of 30 to 45 and registered in their first undergraduate course at Athabasca University, was obtained from Athabasca University student records. Students who participated were asked to complete the Resiliency Attitudes Scale (Appendix B), the Life Events Inventory (Appendix C), and a questionnaire (Appendix D) all included in a questionnaire packet. Questionnaire packets were individually coded, and these codes were matched to student mailing labels to track individual course completion dates.

Students were mailed the questionnaire packet, which also included the Letter of Introduction and a postage-paid return envelope. Upon receiving the questionnaire packet, subjects were asked to first read the Letter of Introduction (Appendix A). The Letter of Introduction discussed the confidentiality of subjects and their unprejudiced right to participation/non-participation. The completed packet was returned to the University via postal mail in a postage-paid, return envelope. If the packet had not been received within four weeks of the mail-out, a post-card was sent.

Informed consent. Subjects were sent a questionnaire packet which included a Letter of Introduction (Appendix A) describing the confidentiality of the research and the students' right to participate/non-participate. Included in the Letter of Introduction was a description of the nature of the research, an overview of the questions in the packet, instructions for completing the questionnaire packet, and instruments/questionnaire (Appendices B, C, D).

Students were asked to first read the Letter of Introduction before proceeding to complete the questionnaire. The Letter of Introduction advised students that participation or lack of participation was voluntary, and that their agreement to participate would in no way influence their progress in their program. Students were asked to mail the completed form via the postage-paid return envelope to the University.

Privacy and confidentiality. Students were advised that their identities would be removed from the questionnaire packets (by the researcher) prior to data analysis. The remaining packet would be assigned a code number to protect the students' privacy. Furthermore, students were advised that no information, which might reveal an individual student's identity, would be used in the research results. Students were also advised that their responses would be kept strictly confidential and would not be shared with the instructors or with any administrator of Athabasca University. Following scoring and data analysis, the researcher shredded all copies of the packets.

Duration of the Study

A student at Athabasca University has six months to complete a three- or four-credit course, and 12 months to complete a six-credit course. Students can work at their own pace and complete courses as quickly as they like. The questionnaire packets were mailed on April 25, 2000 to students who had enrolled in their first undergraduate course as of April 1, 2000. On February 5, 2001, data were gathered from student records to determine whether or not students had completed the course in which they were enrolled.

CHAPTER 1V

RESULTS AND DISCUSSION

This chapter begins with a review of the purpose of the study and a description and examination of the participants involved in the study. Course completion data are then presented. Next, the chapter presents the findings of the discriminant analysis used to determine the influence of gender and previous distance education experience as well as life commitments, life events, and resiliency skills on student persistence. The chapter concludes with a discussion of the results of the data analysis, and tables and figures are presented.

Purpose of the Study

The purpose of this study was to investigate the relationship between persistence in undergraduate-level distance courses and resilience, life events, and external commitments. The following research questions were explored:

1. How do life events and external commitments influence undergraduate student persistence in distance courses?
2. How does resilience affect undergraduate student persistence in distance courses?

Study Participants

A total of 121 first-time Athabasca University students were involved in this study. Students were considered to be first-time distance students if they met the following criteria: (1) they were registered in an undergraduate distance course as of April 1, 2000; and (2) this was the first undergraduate distance course in which they had enrolled at Athabasca University. To control for the intrinsic variable of age, only students between the ages of 30 to 45 were included in this study.

Based on these criteria, a random sample of 460 students was drawn from student records. A questionnaire packet was mailed to these students on April 25, 2000.

Of the 460 students, 124 completed and returned the questionnaire packet. One spoiled packet and two incomplete packets were discarded. The resulting 121 completed packets yielded a response rate of 26.9%. This response rate is considered acceptable for mailed surveys (Fox, Crask, & Kim, 1988), and therefore no follow-up notification via post-card was employed.

Gender. Of the 121 students responding to the questionnaire, 30 (24.8 %) were from male respondents, and 91 (75.2 %) were from female respondents. There were somewhat more female respondents, proportionally, in the sample in comparison to the general undergraduate student population. Reported student demographics at Athabasca University indicate that 62.9% of undergraduate students are female (Athabasca University, 2000).

Previous experience in distance courses. Approximately half of the respondents (n = 61) had previously taken a distance course at a university or college other than Athabasca University. Of this group, 55 students (91.7 %) had completed that course (see Table 4).

Table 4

Number of Subjects Who Had Taken and Completed Previous Distance Courses

Gender	Previous Distance Course	Completed Previous Distance Course
Male (n=30)	(n=14)	(n=13)
Female (n=91)	(n=47)	(n=42)
Total (n=121)	Total (n=61)	Total (n=55)

Analysis of Course Completion Data

All respondents were registered in a 3- or 4-credit course, with the exception of four students who were registered in a six-credit course. A student at Athabasca University has six months to complete a three- or four-credit course, and 12 months to complete a six-credit course.

As of February 2, 2001, 57 students (47%) had successfully completed the Athabasca University course in which they were enrolled, and 64 students had not. Of this latter group of non-completers,

(a) 38 did not commence work on their course,

(b) 19 withdrew from their course, and

(c) 7 received an academic failing grade.

None of the students enrolled in a six-credit course completed their course; three did not commence work on their course and one withdrew from the course.

Of the 64 students in the non-completer group, 14 (22%) were male and 50 (78%) were female. More than half of the students in the non-completer group (53%) had previously taken a distance course.

Of the 57 students who successfully completed their Athabasca University course, 16 were male and 41 were female (28% and 72%, respectively). Of the students completing their course, 26 (45%) had previously taken a distance course (see Table 5).

Table 5

Previous Distance Course Completion by Course Completion/Non-completion

	Completers		Non-completers	
	Male	Female	Male	Female
No Previous Distance Course	9	22	8	22
Previous Distance Course (incomplete)	7 (6)	19 (17)	6 (6)	28 (25)
Total	16	41	14	50

Note. Numbers in parentheses represent the number of students who completed a previous distance course.

Discriminant Analysis

Data were analyzed using the multivariate technique, discriminant analysis, to determine which variable or combinations of variables could be considered predictors of persistence in undergraduate distance courses. Discriminant analysis is a technique used to build a predictive model of group membership based on observed characteristics of each case. Discriminant analysis is a classification method which measures the importance of factors determining membership within a category. Unlike other acceptable techniques (e.g., multiple regression), discriminant analysis analyzes the interactions among a number of "predictor" variables to arrive at a single composite score that allows prediction of outcomes on a case-by-case basis. The technique is similar to regression analysis; however, discriminant analysis helps to differentiate between or to predict group membership, while regression analysis predicts a certain level of a result. Finally, the information provided by the discriminant functions can be used to classify future samples of individuals. Discriminant

analysis also permits both continuous and dichotomous variables to be used as discriminating variables (Gilbert, 1968).

A stepwise discriminant analysis was performed to assess prediction of membership in Group 1 (completers) and Group 2 (non-completers). A stepwise analysis, as opposed to the simultaneous entry of all discriminating variables, was used because of the large number of variables selected for analysis.

Stepwise discriminant analysis was performed by the Statistical Package for the Social Sciences (SPSS ©, Version 4). In the first step, this procedure selects the variable with the highest predictive value and then calculates p-values which describe the additional predictive power for each of the remaining variables. The variable that provides the highest amount of additional information for the model is added to the list of predictors. The procedure is continued until none of the remaining variables adds significantly to the model as defined by the list of selected predictors. Subsequently, a discriminant function was computed using the selected predictors.

Stepwise selection of variables to enter into the equation was made on the basis of minimizing the overall Wilke's Lambda (U statistic). While other stepwise procedures are available, Tabachnick and Fidell (1983) recommend that in the absence of contrary reasons, Wilke's Lambda is the procedure of choice.

Since no *a priori* prediction concerning the relative importance of the 34 variables to be included in the analysis was made, the stepwise procedure was used not only to reduce the number of discriminating variables, but also to provide the best linear combination of variables that were included in the analysis. Only those variables that made a significant

contribution to the discriminant function were permitted entry, based on a simple F-to-enter criteria. Variables with the highest F-ratios were entered first.

The analysis began with the calculation of means and frequencies for 34 variables, and analyses of variance were conducted to determine if significant differences existed between the completion and non-completion groups in terms of these variables. The variables studied are listed below:

?? Gender (1 variable);

?? Taken a previous distance education course (1 variable);

?? Completed a previous distance education course (1 variable);

?? External Commitments (6 variables);

?? Life Events Inventory (1 variable);

?? Resiliency Attitudes Scale (24 variables);

The results of the initial analysis are presented and discussed below.

Gender and previous distance education experience. Analysis of variance (ANOVA) revealed no significant difference between groups for students who had previously taken a distance course ($p = 0.41$), or for students who had previously completed a distance course ($p = 0.73$). These results are contrary to previous research (e.g., Coldeway & Spencer, 1980; Langenbach & Korhonen, 1988; Rekkedal, 1983), which suggests that previous distance education experience may be associated with persistence and reduced likelihood of dropout. No significant difference was found between groups for gender ($p=0.43$), a finding that is consistent with previous research findings.

External commitments. Analysis of variance for the six external commitment variables was conducted to determine if differences existed between the completion and non-

completion groups. As depicted in Table 6, no significant difference between groups was found for five of the six external commitments, the exception being work commitments.

Table 6

Analysis of Variance for External Commitments

Source	Means	SD	dF	F
Family	4.42	1.2733	1	0.6073
Personal	3.76	1.2716	1	0.3655
Home	4.46	0.8567	1	0.4489
Work	4.38	1.2998	1	0.0247*
Community	1.88	1.2462	1	0.6342
Financial	2.64	1.1892	1	0.5821

* $p = 0.05—0.01$.

These findings are in large part inconsistent with other research (e.g., Conklin, 1991; Eagle, 1981; Maples & Owings, 1982; Powell et al., 1990) which suggests that external commitments are negatively related to persistence. However, there was a significant difference between groups for work commitments ($p = 0.0247$). This result supports previous research that work commitments are highly significant as a negative predictor of persistence.

Life events. Life events did not appear to play a role in determining whether or not students completed their courses. Analysis of variance (ANOVA) for life events revealed no significant difference between groups (mean = 24.4463, SD =10.6367, dF = 1, F = 0.1610; p = 0.6889). This finding is in contrast to other research (e.g., Cookson, 1989; Kennedy & Powell, 1976) which suggests that life events are highly correlated with dropout. However,

this finding is consistent with more recent research which suggests that life events themselves are not strong predictors of persistence (Chan, 1999; Thompson, 1997).

Resiliency attitudes scale. Analysis of variance (ANOVA) revealed significant differences between groups for four of the resiliency skills (relationships, general resilience, initiative, insight), and five of the resiliency sub skills (attaching, persistence, valuing, recruiting, generating) (see Table 7).

Table 7

Analysis of Variance for Resiliency Attitudes Scale

Source	Means	SD	dF	F
Insight	36.2727	3.8951	1	3.0669*
Sensing	15.1074	2.314	1	1.1927
Knowing	9.719	2.4248	1	0.8146
Understanding	11.5207	1.7355	1	0.5904
Independence	37.5868	4.9907	1	0.939
Separating	15.3306	2.9718	1	2.0139
Distancing	22.3223	3.303	1	0.0171
Relationships	34.8843	4.7313	1	8.6932***
Recruiting	20.124	3.1667	1	3.3731*
Attaching	14.7603	2.6881	1	9.1558***
Initiative	40.2893	4.8179	1	3.646*
Problem solving	20.3306	2.6944	1	2.0451
Generating	19.9587	3.0517	1	3.0692*
Creativity and Humor	38.4959	5.8349	1	0.2577
Creative thinking	16.5455	2.6181	1	0.0462
Creating to express feelings	10.3719	2.6671	1	0.8123
Humor	11.6116	2.5082	1	0.0182

Morality	45.7769	4.62	1	2.5766
Valuing	29.9669	3.7663	1	4.9229**
Helping others	15.8099	1.7144	1	0.3011
General Resiliency	40.1074	4.8898	1	4.0266**
Persistence	20.7025	2.6592	1	6.7584***
Ability to get by	19.2479	3.2844	1	1.7517
Total Resiliency	273.7107	26.4287	1	2.2256

*p 0.1—0.05

**p 0.05—0.01

***p < 0.01

These findings are not surprising in light of the research on self-efficacy and academic motivation (Bandura, 1988, 1991,1995; Bandura & Jourden, 1991; Betz & Hacket, 1997; Pajares & Miller, 1994, 1995b; Pappas & Loring, 1985). As Pajares and Miller (1994) so aptly noted, beliefs in self-efficacy and personal competence help determine how much effort people will expend on an activity, how long they will persevere when confronting obstacles, and how resilient they will prove in the face of adverse situations. The higher the sense of efficacy, the greater the effort, persistence, and resilience.

Final Discriminant Function

As noted earlier, stepwise discriminant analysis selects the variable with the highest predictive value and then calculates p-values which describe the additional predictive power for each of the remaining variables. The variable that provides the highest amount of additional information for the model is added to the list of predictors until none of the remaining variables adds significantly to the model.

Only those variables that made a significant contribution to the discriminant function were permitted entry, based on a simple F-to-enter criteria. Variables with the highest F-ratios were entered first.

Based on these criteria, the following variables were found to make no significant contribution to the discriminant function: gender; previous distance education experience; life events; family, personal, home, community, and financial commitments, and three of the resiliency skills and 11 of the resiliency sub skills.

Ten variables were included in the final discriminant function (Chi square=20.814; dF=9; p=0.0135). The pooled within-groups correlations between discriminating variables and canonical discriminant functions are shown in Table 8. One variable, relationships, failed the tolerance test for within groups and thus was discarded.

Table 8

Pooled Within-groups Correlations Between Discriminating Variables and Cononical Discriminant Functions

Variable	Function 1
Attachment	0.62125
Persistence	0.53376
Work Commitments	–0.46692
Valuing	0.45555
Resilience	0.41199
Initiative	0.39204
Recruiting	0.37708
Generating	0.35970
Insight	0.35956

The canonical discriminant function coefficients, shown in Table 8, suggest that the primary variables responsible for discriminating between students who completed their courses and those who did not complete were attaching, persistence, work commitments, valuing, general resilience, initiative, recruiting, generating, and insight.

Overall, based on the discriminant function, 66.12% of the students were classified correctly. Table 9 provides a summary of the classification results.

Table 9

Number of Predicted Group Membership

	Cases				
	Actual Group	Group 1		Group 2	
	(n)	(n)		(n)	
Completers	57	38	(66.70%)	19	(33.30%)
Non-completers	64	22	(34.40%)	42	(65.60%)

Percent of "Grouped" Cases correctly classified: 66.12%

Discussion

The variables included in the discriminant model can be used to construct a profile of potentially successful and "at risk" Athabasca University (AU) students. There appear to be five major criteria differentiating successful and unsuccessful AU students (see Figure 3).

Students with high levels on nine measures of resilience were more likely to succeed in their undergraduate studies. Successful course completers tended to score higher in the following areas:

- ?? in the ability to recruit and select healthy partners and in the ability to develop and maintain healthy relationships;
- ?? in the ability for knowing what is right and wrong and being willing to take risks for those beliefs, and for asking searching questions and giving honest answers;
- ?? on three skills relating to persistence; that is, the ability to make things better, persistence at working through difficulties, the confidence to make the most of bad situations and a belief that one can make things rights; and the ability to generate constructive activities.

Also, as mentioned earlier, students who scored lower on their work commitments were more likely to complete their first course. Interestingly, previous distance education experience and success in previous distance education were not significant predictive factors. This finding suggests that previous distance education experience may not be as accurate a measure of preparedness for distance education study as many would argue. Certainly previous experience with distance education and success in courses are related, but other measures, not associated with previous educational background, were found to be better predictors.

Similarly, external commitments (i.e., family, personal, home, community, and financial) did not enter the model as significant predictive factors. While other research supports these external commitments as negative predictors of persistence, this study found that work commitments were more predictive than other external commitments. This result is consistent with more recent research findings (Chan, 1999; Thompson, 1997). Further study is required to substantiate these findings. Drawing on the research of Kohn (1969, as cited in Cookson, 1986) certain conditions of people's work (e.g., type of supervision, the degree of

routine tasks, and complexity of required skills) influence the pattern of participation in learning activities. Further research may help to elucidate whether or not job conditions influence work commitments as a predictor of persistence.

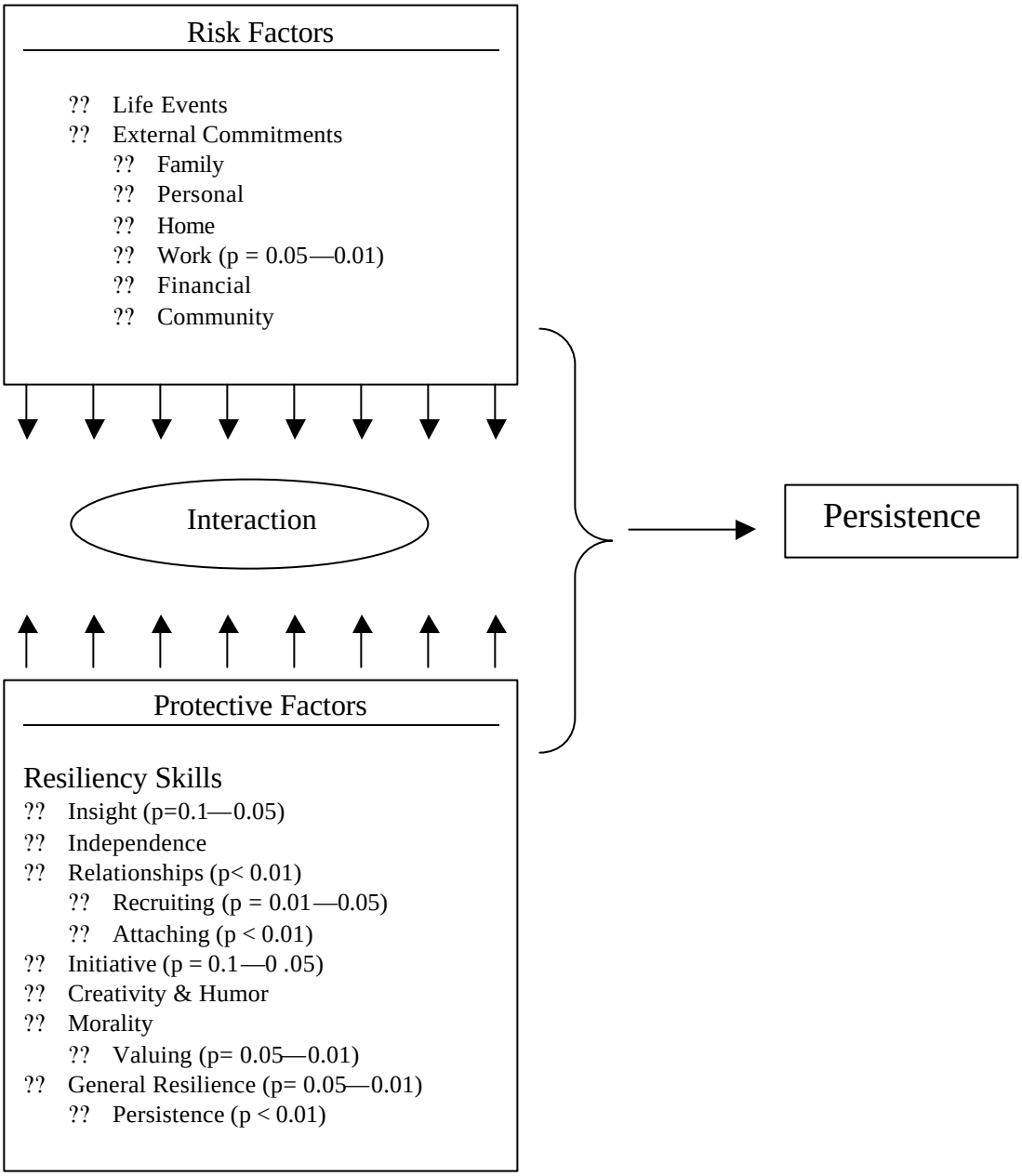

Figure 3. Factors predicting persistence in distance education.

Generalizability of the Results

The set of factors that predict student success and persistence among Athabasca University students may not necessarily apply to other populations of distance learning students in other institutions. The conceptual framework of factors predicting persistence in distance education as presented in Figure 1 and Figure 3 would lead one to expect the relative predictive power of resilient skills to vary according to institutional factors and life changes unique to other populations. For example, student populations with different socio-demographic characteristics may be differentially subject to such disruptive changes in life circumstances (e.g., divorce and unemployment). The research on resilience and its inclusion in the field of adult distance education is relatively new. Further research is needed to verify the above findings.

CHAPTER V

CONCLUSION AND RECOMMENDATIONS

Introduction

Researchers have long sought fruitful models or paradigms for explaining and predicting drop out and completions in distance education. Bernard & Amundsen (1989), in a study testing Tinto's (1975) model of drop out from higher education, concluded that different course related-factors in distance study may exert a relatively more potent influence relative to the major elements of academic and social integration in Tinto's model. Similarly, Bajtelsmit's (1988) discussion of the relevance of Tinto's model for explaining drop-out from distance study proposed another model that placed more emphasis on external factors, such as job and family commitments, and student support measures, which he argued was more relevant for distance education.

Numerous studies have produced theories and models that shed light on the best predictors of continued enrollment and/or drop out (Bean, 1989; Bean & Metzner, 1985; Brainard, 1973; Tinto, 1975). Other research has tested and/or extended these theories (Carter, 1982; Coggins, 1988; Conklin, 1991; Hagedorn, 1993; Kember al. 1991; Kennedy & Powell, 1976). Several reliable predictors of student persistence or attrition emanate from this body of research. Adult persistence involves a host of factors including demands of the workplace, family responsibilities, community involvement, financial constraints, and academic failures (Bean, 1989; Conklin, 1991; Eagle, 1981; Tinto, 1993). Little is known about how adult students' behavior is influenced by resiliency skills that promote continuous enrollment. This study explored this unknown and produced evidence about the influence of resiliency skills that promote persistence in adult distance learners. This study sought to

expand the understanding of adult distance learner persistence behaviors by examining how resiliency skills, external commitments, and life events influence adult persistence.

This study contributes to the field of inquiry relating to adult distant learner persistence by providing insight into the resiliency skills employed by persisting adult students at Athabasca University. The field is broadened to include better predictors of adult student persistence. Additionally, this study adds to the understanding of the application and limitations that prominent theories of persistence have in relationship to distant learner populations. Finally, the results provide practical utility by offering an assessment guide for distance education institutions to respond more effectively to the needs of adults. The study helps adult students, faculty, and administrators better understand persistence and dropout in undergraduate distance education.

Review of Research Results

Previous experience in a distance education course, successful or otherwise, was not found to be a predictor of persistence in an Athabasca University course. As noted earlier, these results are in contrast to other research (e.g., Coldeway & Spencer, 1980; Langenbach & Korhonen, 1988; Rekkedal, 1983), which suggests that previous experience with distance education may be associated with persistence and reduced likelihood of dropout. Gender was also found not to be a predictor of success, a finding which is consistent with previous research.

For the most part, external commitments—in the form of personal, family, home, financial, and community commitments—were not found to be significant predictors of persistence (or lack of persistence) in distance education. In other words, students with high levels of commitments in these areas were no more or less likely to complete their Athabasca

University course successfully, in comparison to students with lower levels of commitments in these areas. These findings are in large part inconsistent with other research (e.g., Conklin, 1991; Eagle, 1981; Maples & Owings, 1982; Powell et al., 1990) which suggests that external commitments are negatively correlated to persistence.

However, work commitment was found to be a highly significant predictor (p=0.05—0.01). This result supports previous research that work commitments are highly significant as a negative predictor of persistence.

Life events were not found to be a factor predicting persistence in distance education. While this finding is in contrast to other research (e.g., Cookson, 1989; Kennedy & Powell, 1976) which suggests that life events are highly correlated with dropout, this finding is consistent with more recent research which suggests that life events themselves are not strong predictors of persistence (Chan, 1999; Thompson, 1997).

The best predictors of persistence were four of the resiliency skills and five of the resiliency sub-skills: insight ($p = 0.1$—0.05), relationships ($p < 0.01$), recruiting ($p = 0.01$—0.05), attaching ($p < 0.01$), initiative ($p = 0.1$—0.05), valuing ($p = 0.05$—0.01), general resilience ($p = 0.05$—0.01), and persistence ($p < 0.01$). These findings are not surprising in light of the research on self-efficacy and academic motivation (e.g., Bandura, 1988, 1991,1995; Bandura & Jourden, 1991; Betz & Hacket, 1997; Pajares & Miller, 1994, 1995b; Pappas & Loring, 1985).

Based on these significant predictors, the final discriminant function classified two out of three students correctly in terms of the successful completion of their first Athabasca University course.

Implications and Recommendations for Distance Education Practice

This study contributes to the field of inquiry relating to persistence in adult distance learning by providing insight into the resilience skills employed by adult students who successfully completed their first course at Athabasca University. The field is broadened to include better predictors of adult student persistence. Additionally, this study adds to the understanding of the application and limitations that prominent theories of persistence have in relationship to distant learner populations. Finally, the results provide practical utility by offering an assessment guide for distance education institutions to respond more effectively to the needs of adults. The study may help adult students, faculty, and administrators better understand persistence and dropout in undergraduate distance education.

Identifying the levels of resiliency skills in undergraduate students represents an alternative way of approaching retention and attrition. Intervention strategies in which educators may engage include academic support services that can be offered to develop and build resiliency skills. Resiliency building experiences that focus on five themes set forth by Wang, Haertel, and Walberg (1995) include: competency, belonging, usefulness, potency, and optimism. These experiences build on Bandura's (1986) social cognitive theory. According to social cognitive theory, the events over which personal influence is exercised vary. Depending on what is being managed, it may entail regulation of one's own motivation, thought processes, affective states and actions, or changing environmental conditions. Self-efficacy beliefs are sensitive to these contextual factors. Effective communication is a key component in the five resiliency building experiences.

1. Competency—feeling successful. The principal component of academic motivation is grounded in the assumption that the beliefs that students create, develop, and hold to be

true about themselves are vital forces in their success or failure. In other words, people will exercise self-direction and control towards achieving goals and objectives to which they are committed. Educators can promote educational resilience by supporting and encouraging students' decision-making and by encouraging students to master new experiences, believe in their own efficacy, and take responsibility for their own learning. Proactive interventions involve the student in a shared responsibility for problem identification.

For example, a student may demonstrate difficulty with specific course content. The educator may determine that the student does not feel engaged with the material and is struggling with the decision to dropout. The educator might then suggest to the student to include some remedial course work to support the student's learning of the material. This 'just-in-time' remediation helps students understand why they need the skill (or content material) and they learn in small bites. Additionally the educator may suggest that the student take a different, more engaging course (without academic or monetary penalty). Encouraging students to register in courses that build on previous academic strengths or on other life accomplishments supports engagement and course success can be quickly realized.

2. Belonging—feeling valued. Sustained, open relationships between the educator and the student can reduce stress and provide positive supports. Educators not only provide institutional support for academic content and skills, but also serve as confidantes and positive role models for students. They can help students develop the values and attitudes needed to persevere in their studies and achieve a high level of academic performance. Communication that conveys dignity and respect sends a message that "educators trust that students are doing the best they can," and enable students to feel heard and to be more

receptive to other ideas. This develops a sense of shared responsibility for the learning experience.

For example, students look to their professors for something more than just provision of new knowledge. They not only ask the more generic questions like, "Why is my answer wrong on this test?," but how their professors feel about things in general and what advice they can offer to make students' dreams more attainable, decisions more solid, and lives more productive. When students feel that the instructor knows them personally and has an interest in their future success, students have a strong connection and affiliation with their educational institution.

3. Usefulness—feeling needed. Resiliency can be cultivated through a student's meaningful connection with another person. Fostering coordination and connections facilitates cooperative learning, peer helping, and cross-age mentoring. Networking with peers builds a sense of community among students. Providing students with meaningful opportunities to contribute to their educational community helps them feel responsible and significant. Educators can provide clear boundaries for supporting positive student role modeling while fostering a caring and encouraging learning environment.

For example, students might indicate that they feel disconnected from others in the course or that they need to have additional contact with other students or their instructor. Yet other students might state a need for small group discussions or group project work. Similarly, an instructor may have identified certain students who have expressed a wish to be part of a mentoring program. Connecting these students supports the needs of both groups where the instructor can then act as a facilitator in the shared responsibility for the learning experience.

4. Potency—feeling empowered. Resilience theorists (e.g., Bernard, 1996; Masten, 1994) describe potency as providing safe, intellectually challenging environments. Educators need to recognize that students have inborn drives for caring and connectedness; for respect, challenge, and structure; and for meaningful involvement, belonging, and power. When these needs are acknowledged, strength and capacity for transformation and change emerges more easily. Educators need to be aware of the significant contributions they make to provide a positive shield to help students withstand the multiple vicissitudes that they can expect of undergraduate education. Fostering student empowerment involves creative and energetic activities involving conflict resolution techniques that include honesty and responsibility, while ensuring that student integrity is upheld.

One of the ways that educators can support student empowerment is to assist the student to set attainable goals and encourage them to involve others (e.g., family, friends, co-workers, other students) in their academic or career choices. Educators can also encourage students to "challenge their best" by providing stimulating and rewarding course experiences, assignments, and projects. Helping students to "paint a bigger picture" by incorporating their learning experiences into career choices or academic aspirations also fosters empowerment.

5. Optimism—feeling encouraged and hopeful. High expectations of students convey a belief in their capabilities. Also, by demonstrating an understanding of how personal attitudes influence beliefs, moods, and behavior, students can learn how to step outside the influence of negative beliefs about their abilities or fear of failure. High expectations encourage student engagement, promote a greater understanding of the educational process, and communicate a working partnership that is based on mutual trust and respect. This conveys empathy for the pressures under which the student is currently working, a willingness to listen, and a

commitment to identifying approaches, resources, and evaluation techniques for building a supportive learning environment.

For example, when students are treated as stakeholders in their own education, they are more likely to be an active participant in the educational process. Providing opportunities for significant independent projects culminating in a research or academic paper, thesis, conference presentation, or even a publication demonstrates the educator's high expectations. Students work harder when they know that their work is noticed and when they learn how well they are doing. Another area of primary concern to students are grading systems as this is an area where students can be perceived as active builders of their own grades rather than passive recipients of the instructor's feedback.

Implications for Further Research

The final discriminant function correctly classified 66% of the students in terms of the successful completion of their first Athabasca University course. A substantial amount of the variance between students who successfully completed their course and those who did not was explained by resiliency skills and work commitments. However, the explanatory value of these predictors, though significant, does not account for all of the variance, thus indicating that resiliency skills and work commitments are not, in effect, predestination. Further refinement of tools to assess external commitments may yield more precise results.

Future researchers investigating resilience as a predictor of persistence may want to consider utilizing pre-survey contact prior to a postal mailed survey packet to increase student response rates. One might also wish to employ an e-mailed survey or an on-line survey to improve the response rate of participants.

While this study is a promising start for looking at persistence, further research could employ a longitudinal method where a cohort of students is followed over the duration of a program of study, and even through to career employment.

The encouraging predictive ability of this study opens the way for research at two levels. At the first level, knowledge of students' resiliency skills (and by extension their "risk quotient") allows distance educators to target interventions to those most in need. Understanding the conditions under which resiliency skills will generalize to differing activities in academic contexts offers valuable possibilities for intervention and instructional strategies that may help students build both competence and the necessary accompanying self-perceptions of competence.

At the second level, lack of resiliency, not lack of capability or skill, may in part be responsible for avoidance of certain courses and careers. If so, efforts to identify and alter these inaccurate judgments, in addition to continued skill improvement, should prove beneficial. Future studies should aim to discover the extent of this phenomenon across academic areas and levels. Research efforts should also be aimed at discovering prior determinants of academic attainment and sources of efficacy information other than those typically used—aptitude, ability, previous achievement—as well as how perceptions of efficacy and resiliency mediate the influence of these sources on subsequent performances. Quantitative investigations should be complemented by qualitative studies aimed at exploring how resiliency skills develop and how students perceive that these skills influence their academic attainment and the academic choices that they make.

REFERENCES

Anthony, E.J., & Cohler, B.J. (1987). *The invulnerable child*. New York, NY: Guilford.

Ashton, P.T., & Webb, R.B. (1986). *Making a difference: Teacher's sense of efficacy and student achievement*. New York: Longman.

Athabasca University (2000). *Annual report 1999-2000: Accessibility.* Athabasca, AB: Author.

Baker, R.W., & Siryk, B. (1989). *SACQ student adaptation to college questionnaire manual.* Los Angeles, CA: Western Psychological Services.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1989). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Process, 50*, 248-287.

Bandura, A. (1995). *Exercise of personal and collective efficacy in changing societies.* New York: Cambridge University Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Bandura, A., & Jourden, F.J. (1991). Self-regulatory mechanisms governing the motivational effects of goal systems. *Journal of Personality and Social Psychology, 60*, 941-951.

Baumgartner, R. B., & Heberlein, T. A. (1984). Recent research on mailed questionnaire response rates. *New Directions for Program Evaluation, 21*, 65-75.

Baxley, G.B. (1993). *Building resiliency in youth: Imagine the difference*. ERIC Clearinghouse on Elementary and Early Childhood Education, Irbania, ILL. (Eric Document Reproduction Service. No. ED 386 327).

Bajtelsmit, J. W. (1988). *Predicting distance learning dropouts: Testing a conceptual model of attrition in distance study*. Bryn Mawr, PA: The American College.

Bean, J. P. (1989). Student attrition, intentions, and confidence: Interaction effects in a path model. *Research in Higher Education, 17*(4), 291-320.

Bean, J.P., & Metzner, B.S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research, 55*(4), 485-540.

Beardslee, W.R. (1981). *Self understanding and coping with cancer.* New York, NY: MacGraw-Hill.

Beardslee, W.R. (1983). Commitment and endurance: A study of the civil rights workers who stayed. *American Journal of Orthopsychiatry, 53*, 34-42.

Beardslee, W.R. (1989). The role of self-understanding in resilient individuals: The development of a perspective. *American Journal of Orthopsychiatry, 59*, 266-278.

Beardslee, W.R. & Poderefsky, D. (1988). Resilient adolescents whose parents have serious affective and other psychiatric disorders: Importance of self-understanding and relationships. *American Journal of Psychiatry, 145*, 63-69.

Belenky, M.F., Clinchy, B.M., Goldberger, N.R., & Tarule, J.M. (1986). *Women's ways of knowing: The development of self, voice, and mind.* Boston: Basic Books.

Benard, B. (1991). *Fostering resiliency in kids: Protective factors in the family, school, and community.* Portland, OR: Northwest Regional Educational Laboratory.

Bernard, R. M. & Amundsen, C. L. (1989). Antecedents to drop out in distance education: Does one model fit all? *Journal of Distant Education, 4*(2), 22-46.

Bergevin, P.A. (1967). *A philosophy for adult education*. New York: Seabury.

Berkove, G. (1976). *Returning women students: A study of stress and success.* Paper presented at the annual convention of the Western Social Science Association, Tempe, AZ (ERIC Document Reproduction Service No. ED 156 971).

Berry, J.M. (1987, September). A self-efficacy model of memory performance. Paper presented at the meeting of the American Psychological Association, New York, NY.

Betz, N. E., & Hackett, G. (1997). Applications of self-efficacy theory to the career assessment of women. *Journal of Career Assessment*, *5*(4), 383-402.

Biscoe, B., & Harris, B. (1994). *Resiliency attitudes scale*. Oklahoma City, OK: Eagle Ridge Institute, Inc.

Block, J., & Block, J.H. (1980). *The role of ego control and ego resiliency in the organization of behavior.* Hillsdale, NJ: Erbaum.

Bond, L.A., & Wagner, B.M. (1988). *Families in transition*. Newbury Park, CA: Sage.

Bouffard-Bouchard, T., Parent, S., & Larivee, S. (1991). Influence of self-efficacy on self-regulation and performance among junior and senior high-school aged students. *International Journal of Behavioral Development, 14*, 53-164.

Braddock, J. H. (1991). Bouncing back: Sports and academic resilience among African-American males. *Education and Urban Society, 24*(1), 113-131.

Brainard, S.R. (1973). Student Attrition: The student personnel climate. In R.L. Alfred (Ed.), *Student attrition: Strategies for action* (pp. 72-79). Kansas City MO. Metropolitan Junior College District. (ERIC Document Reproduction Service No. ED 085 064).

Bridges, W. (1980). *Transitions: Making sense of life's changes.* Reading, MA: Addison-Wesley.

Brookfield, S. (1995). *Adult learning: An overview*. London: Oxford University Press.

Brown, G. W., & Harris, T.O. (1978). *Social origins of depression: A study of psychiatric disorders in women*. London: Tavistock Publications.

Brown, W.K., & Rhodes, W.A. (1991). *Factors that promote invulnerability and resilience in at-risk children*. New York, NY: Praeger.

Brindley, J. E. (1987). *Attrition and completion in distance education: The student's perspective.* Unpublished M.A. thesis, University of British Columbia, B.C.

Caffarella, R.S., & Barnett, B.G. (1994). Characteristics of adult learners and foundations of experiential learning. *New Directions for Adult and Continuing Education, 62,* 29-42.

Carter, B.L. (1982). *Exit interview summary, fall 1981.* Indianapolis, IN: Indiana University-Purdue University, Office of Student Services.

Carter, B., & McGoldrick, M. (1988). *The changing family life cycle: A framework for family therapy.* New York, NY: Gardner Press.

Chan, M.S.C. (1999). *A Comparison of the study habits and preferences of high achieving and low achieving Open University students.* Paper presented at the 13th Annual Conference of the Asian Association of Open Universities, Beijing, China.

Chickering, A. W., & Reisser, L. (1993). *Education and identity* (2nd ed.). San Francisco: Jossey-Bass.

Coggins, C.C. (1988). Preferred learning styles and their impact on completion of external degree programs. *American Journal of Distance Education, 2*(1), 25-37.

Coldeway, D.O. (1986). Learner characteristics and success. In I. Mugridge & D. Kaufman (Eds.), *Distance Education in Canada* (pp. 81-87). London: Croom Helm.

Cohler, B.J. (1987). *The invulnerable child*. New York: The Guilford Press.

Collins, J.L. (1982, March). *Self-efficacy and ability in achievement behavior*. Paper presented at the Annual Meeting of the American Educational Research Association, New York.

Cook, T., & Campbell, D. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Chicago: Rand McNally.

Cookson, P.S. (1986). A framework for theory and research on adult education participation. *Adult Education Quarterly, 23*(3), 130-141.

Cookson, P.S. (1989). Research on learners and learning in distance education: A review. *The American Journal of Distance Education, 3*(2), 22-34.

Conklin, K. A. (1991). *Leaving the community college: attrition, completion, or something else? A short-term follow-up study of nonreturning JCCC students.* Overland Park, KS: Johnson County Community College, Office of Institutional Research. (ERIC Document Reproduction Service No. ED 336 166).

Covey, S. (1989). *The seven habits of highly effective people*. NY: Simon and Schuster.

Cross, K. P. (1981*). Adults as learners*. San Francisco: Jossey-Bass.

Cullen, M, (1994). Weighing it up: A Case study of discontinuing access students. *Occasional Papers Series: No. 2*. Edinburgh University, Centre for Continuing Education.

Dillman, D.A. (1978). *Mail and telephone surveys: The total design method*. New York: Wiley and Sons.

Dirkx, J. M., & Jha, L. R. (1994). Completion and attrition in adult basic education. *Adult Education Quarterly 45*(1), 269-285.

Donmoyer, R., & Kos, R. (1993). *At-risk students: Portraits, policies, programs and policies.* Albany: SUNY Press.

Eagle, N. (1981). *Survey of non-returning students, spring, 1981*. (ERIC Document Reproduction Service No. ED 225 422).

Eastmond, D.V. (1994). Adult distance study through computer conferencing*. Distance Education – An International Journal, 15*(1), 1-28.

Farrell, E. (1994). *Self and school success: Voices and lore of inner city students.* Albany, NY: SUNY Press.

Felsman, J.K., & Valliant, G.E. (1987). *Resilient children as adults.* New York: TheGuilford Press.

Fine, M.A. (1991). *Framing dropouts: Notes on the politics of an urban high school*. Albany, NY: SUNY Press.

Fine, M.A., & Schwebel, A.L. (1991). *Resiliency in black children from single parent families.* New York, NY: Praeger.

Flach, F, (1988). *Resilience: Discovering a new strength at times of stress*. New York: Ballantine Books.

Fleming, J. (1985). *Blacks in college*. San Francisco, CA: Jossey-Bass.

Fox R. J., Crask, M., & Kim, J. (1988). Mail survey response rate. *Public Opinion Quarterly, 52,* 467-491.

Frieberg, H.J. (1994). Understanding resilience*: Implications for inner-city schools and their near and far communities.* Hillsdale, NJ: Lawrence Erlbaum, Publishers.

Friere, P. (1970). *Pedagogy of the oppressed.* New York: Herter and Herter.

Funk, S.C. (1992). Hardiness: A review of theory and research. *Health Psychology, 11*(5), 335-345.

Garibaldi, A.M. (1991). The role of historically black colleges in facilitating resilience among African-American students. *Education and Urban Society, 24*(1), 103-112.

Garmezy, N. (1985). Stress resistant children: The search for protective factors. In J. Stevenson (Ed.), *Recent research in developmental psychopathology* (pp. 427-444). Oxford: Pergamon Press.

Garmezy, N. (1991). Resiliency and vulnerability to adverse developmental outcomes associated with poverty. *American Journal of Behavioral Science, 34,* 416-430.

Garmezy, N. (1993). Vulnerability and resilience. In D.C. Funder, R.D. Parke, C. Tomlison-Keesey, & K. Wildaman (Eds.), *Studying lives through time; Approaches to personality and development* (pp. 377-398). Washington, DC: American Psychological Association.

Garrison, D.R. (1992). Critical thinking and self-directed learning in adult education: An analysis of responsibility and control issues. *Adult Education Quarterly, 42*(3), 136-148.

Gjerde, P., Block, J., & Block, J.H. (1986). The role of ego control and ego resiliency: Personality characteristics associated with perspective taking from early childhood to adolescence. *Journal of Personality and Social Psychology, 51,* 423-434.

Gibson, S. (1990). Predicting school leavers and graduates. *Education Quarterly Review, 2*(2), 57-62.

Gilbert, E. S. (1968). On discrimination using qualitative variables. *Journal of the American Statistical Association, 63,* 1399–1412.

Grossman, F., Beinashowitz, K., Anderson, L., & Sakurai, M. (1992). Risk and resilience in young adolescents. *Journal of Youth and Adolescents, 21*(5), 529-550.

Hacket, G. (1985). The role of mathematics self-efficacy in the choice of math-related majors of college women and men: A path analysis. *Journal of Counseling Psychology, 32,* 47-56.

Hacket, G., & Betz, N.E. (1989). An exploration of the mathematics self-efficacy/mathematics performance correspondence. *Journal for Research in Mathematics Education, 20,* 261-273.

Hagedorn, L.S. (1993). Graduate student retention. *Journal of Counseling Psychology, 21*, 215-221.

Hardy D.W., & Boaz, M. H. (1997). Learner development: Beyond the technology. *Teaching and Learning at a Distance, 71,* 41-48.

Hays, R.B., & Oxley, D. (1986). Social network development and functioning during a life transition. *Journal of Personality and Social Psychology, 50,* 305-313.

Heinzer, M. (1995). Loss of a parent in childhood: Attachment and coping in a model of adolescent resilience. *Holistic Nursing Practice, 9,* 27-37.

Higgins, G.O. (1994). *Resilient adults: Overcoming a cruel past*. San Francisco: Jossey-Bass.

Holt, J. (1976). *Instead of education*. New York: Penguin.

Holmes, T.H., & Rahe, R.H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11,* 213-218.

House, J. S. (1981). *Work Stress and social support.* New York: Random House.

Hultsch, D., & Deutsch, F. (1981). *Adult development and aging: A life-span perspective.* New York: McGrawHill.

Hunter, R., & Sheldon, M.S. (1980). *Statewide longitudinal study, part 3*. Sacramento: California Community Colleges, Office of the Chancellor. (ERIC Document Reproduction Service No. ED 188 714).

Janne, H. (1977). *Organization, content, and methods of adult education*. New York: Seabury.

Jonassen, D., Davidson, M., Collins, M., Campbell, J., & Haag, B. (1995). Constructivism and computer-mediated communication in distance education. *The American Journal of Distance Education, 9*, 17-23.

Jones, B.F., Valdez, G., Nowakowski, J., & Rasmussen, C. (1995). *Plugging in: Choosing and using educational technology.* Washington, DC: Council for Educational Development and Research, and North Central Regional Educational Laboratory. Retrieved August 20, 1999, from the World Wide Web, August 20, 1999: http://www.ncrel.org/sdrs/edtalk/toc.hrm.

Kadner, K. (1989). Resilience, responding to adversity. *Journal of Psychosocial Nursing, 27*, 20-25.

Kahl, T.N., & Cropley, A.J. (1986). Face-to-face versus distance learning: Psychological consequences and practical implications. *Distance Education – An International Journal, 7*(1), 38-48.

Kaufman, J., Cook, A., Arny, L., Jones B., & Pittinsky, T. (1994). Problems defining resilience: Illustrations from the study of maltreated children. *Development and Psychopathology, 6*, 115 - 147.

Kegan, R. (1994). *In over our heads: The mental demands of modern life.* Cambridge, MA: Harvard University Press.

Kember, D. (1995). *Open learning courses for adults: A model of student progress*. Englewood Cliffs, NJ: Educational Technology Publications.

Kember, D., Murphy, D., Siaw, I., & Yuen, K.S. (1991). Towards a causal model of student progress in distance education: Research in Hong Kong. *The American Journal of Distance Education 5*(2), 3-14.

Kennedy D., & Powell, R. (1976). Student progress and withdrawal in the Open University. *Teaching at a Distance*, 7, 61–75.

Kerka, S. (1999). *Deterrents to participation in adult education. Overview*. ERIC Digest No. 59. Retrieved August 20, 1999, from the World Wide Web: http://www.penpages.psu.edu/penpages_reference/28507/285073025.HTML

Knowles, M.S. (1975). *Self-directed learning*. New York: Association Press.

Knowles, M.S. (1980). *The modern practice of adult education: From pedagogy to andragogy* (2nd ed.). New York: Cambridge Books.

Knowles, M.S. (1984). *The adult learner: A neglected species* (3rd ed.). Houston: Gulf Publishing.

Langenbach, M., & Korhonen, L. (1988). Persisters and nonpersisters in a graduate level, nontraditional, liberal education program. *Adult Education Quarterly, 38*, 136-148.

Larson, L., Piersel, W.C., Imao, A.K., & Allen, S.J. (1990). Significant predictors of problem-solving appraisal. *Journal of Counseling Psychology, 37*, 482-490.

Laube, M.K. (1992). Academic and social integration variables and secondary student persistence in distance education. *Research in Distance Education, 4*(1), 2-9.

Lazarus, R.S, Cohen, J.B., Folkman, S., Kanner, S., & Schaefer, C (1980). Psychological stress and adaptation: Some unresolved issues. In H. Selye (Ed.), *Selye's Guide to Stress Research.* New York: Van Nostrand, Reinhold.

Lent, R.W., Brown, S.D., & Larkin, K.C. (1984). Relation of self-efficacy expectations to academic achievement and persistence. *Journal of Counseling Psychology, 31,* 356-362.

Lent, R.W., Brown, S.D., & Larkin, K.C. (1986). Self-efficacy in the prediction of academic performance and perceived career options. *Journal of Counseling Psychology, 33,* 265-269.

Lindeman, E. (1984). *For those who need to be learners*. Montreal: Harvest House Ltd.

Lockhart, D. C. (1984). Making effective use of mailed questionnaires. *New Directions for Program Evaluation, 21,* 5-18.

Long, J.V.F., & Valliant, G.E. (1989). *The child in our times: Studies in the development of resilience.* New York: Brunner/Mazel, Inc.

Losel, F., & Bliesener, T. (1990). *Resilience in adolescence: A study on the generalizability of protective factors.* New York, NY: Walter de Gruyter.

Lugg, C.A., & Boyd, W.L. (1993). Leadership for collaboration: Reducing risk and fostering resilience. *Phi Delta Kappan, 75*(3), 253-256.

Malicky, G. V., & Norman, C. A. (1994). Participation patterns in adult literacy programs. *Adult Basic Education, 4*(3), 144-156.

MacKinnon-Slaney, F. (1994). The adult persistence in learning model. *Journal of Counselling and Development, 72*(3), 268-275.

Maples, C. C., & Owings, T. G. (1982, July). *A study of students withdrawing from on-campus programs at Calhoun Community College, 1981-82.* Paper presented at the Regional Meeting of the Southern Association of Community College Researchers (Nashville, TN. (ERIC Document Reproduction Service No. ED 229 069).

Marienau, C. (1995). In their own voices: Women learning about their own development. In K. Taylor & C. Marienau (Eds.), *Learning Environments for Women's Adult Development: Bridges Toward Change.* New Directions for Adult and Continuing Education, Number 65, Spring. San Francisco: Jossey-Bass.

Martin, F.H. (1974). *Student follow-up 1: Attrition study.* Harriman, TN: Roan State Community College. (ERIC Document Reproduction Service No. ED 099 087).

Masten, A.S. (1994). *Resilience in individual development: Successful adaptation despite risk and adversity.* Hillsdale: Lawrence Erlbaum Associates, Publishers.

Masten, A.S., Best, K.M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology, 2*, 425-444.

Masten, A.S., & Garmezy, N. (1985). Risk, vulnerability, and protective factors in developmental psychopathology. In B.B. Lahey & A.E Kazdin (Eds.), *Advances in clinical child psychology* (Vol. 8, pp. 1-52). New York: Plenum Press.

Masten, A.S., & O'Connor, M.J. (1989). Vulnerability, stress, and resilience in the early development of a high risk child. *Journal of the American Academy of Child and Adolescent Psychiatry, 28*(2), 271-278.

McCarthy, B., Pretty, D.L., & Catano, F.T. (1990). Social support in academic programs and family environments: Sex differences and role conflicts for graduate students. *Journal of Counseling and Development, 70*, 716-723.

McCombs, B. (1991). *Metacognition and motivation in higher level thinking*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

McMillan, J.H., & Reed, D.F. (1993). A qualitative study of resilient at-risk students. In *Annual Meeting of the American Educational Research Association*, (pp. 30). Atlanta: Virginia Commonwealth University.

Merriam, S.B. & Caffarella, R.S. (1991). *Learning adulthood: A comprehensive guide.* San Francisco: Jossey-Bass.

Merriam, S.B., & Yang, B. (1996). A longitudinal study of adult life experiences and developmental outcomes. *Adult Education Quarterly, 46*(2), 62-81.

Metzner, B.S. (1984) An application and evaluation of a model of student attrition using freshmen at a public urban commuter university. *Dissertation Abstracts International, (44),* 2387A. (University Microfilms No 83- 28,8080).

Meyer, A. (1957). *Psychobiology: A science of man*. Springfield, IL: Charles C. Thomas.

Mezirow, J. (1980). A critical theory of adult learning and education. *Adult Education, 13,* 1.

Moen, P., Dempster-McClain, D., & Williams, R.M. (1989). Social integration and longevity: An event history analysis of women's roles and resilience. *American Sociological Review, 54*(4), 635-647.

Moore, M.G. (1994). Self-directed learning and distance education. *American Journal of Distance Education, 8*(2), 3-24.

Monroe, S.C., & Roberts, J.E. (1990). Conceptualizing and measuring life stress: problems, principles, procedures, progress. *Stress Medicine, 6*, 209-16.

Munro, B. (1981). Dropouts from higher education: Path analysis of a national sample. *American Educational Research Journal, 81*, 133-41.

Murphy, L.B. (1962). *The widening work of childhood: Paths towards mastery*. New York: Basic Books.

Murphy, L.B., & Moriarty, A.E. (1976). *Vulnerability, coping and growth from infancy to adolescence.* New Haven, CT: Yale University Press.

Naidu, S. (1994). Applying learning and instructional strategies in open and distance learning. *Distance Education, 15*(1), 5-16.

Napoli, A.R., & Wortman, P.M. (1995). Psychosocial factors related to retention and departure of two-year community college students. *Journal of Applied Research* in *the Community College, 2*(2), 143-151.

Ostrow, E.S., Paul, S., Dark, V., & Berhman, J. (1986). Adjustment of women on campus. Effects of stressful life events, social support, and personal competencies. In S.E. Hobfoll (Ed.) *Stress, social support, and women*. Washington, D.C.: Hemisphere.

Pajares, F., & Miller, M.D. (1994). The role of self-efficacy and self-concept beliefs in mathematical problem-solving: A path analysis. *Journal of Educational Psychology, 86*, 193-203.

Pajares, F., & Miller, M.D. (1995a, August). *Mathematics self-efficacy and mathematical problem-solving: Implications of using varying forms of assessment.* Paper presented at the meeting of the American Psychological Association, New York.

Pajares, F., & Miller, M.D. (1995b). Mathematics self-efficacy and mathematics outcomes: The need for specificity. *Journal of Counseling Psychology, 42*, 190-198.

Palmore, E., Cleveland, W. P., Nowlin, J. G., Ramm, D., & Siegler, l. C. (1979). Stress and adaptation in late life. *Journal of Gerontology, 34*, 841-851.

Pappas, J. P., & Loring, R. K. (1987). Returning learners. In L. Noel, R. Levitz, & D. Saluri (Eds.), *Increasing student retention* (pp. 138-161). San Francisco: Jossey-Bass.

Pascarella, E.T., & Chapman, D. (1983a). A multi-institutional, path analytic validation of Tinto's model of college withdrawal. *American Educational Research Journal 20*(1), 87-102.

Pascarella, E.T., & Chapman, D. (1983b). Validation of a theoretical model of college withdrawal: Interactive effects in a multi-institutional sample. *Research in Higher Education 19*(1), 25-48.

Peng, S.S. (1994). *Understanding resilient students: The use of national longitudinal databases.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Pearson, L.L. & Jacobi, T.P. (1991). Mental health, social relations, and social selection: A longitudinal analysis. *Journal of Health and Social Behavior, 32*, 408-423.

Perin, D., & Greenberg, D. (1994). Understanding dropout in an urban worker education program. *Urban Education, 29*(2), 169-187.

Pintrich, P. R., & De Groot, E.V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*, 33-40.

Pintrich, P. R., & De Groot, E.V. (1991). Student goal orientation and self-regulation in the college classroom. In M. Maehr & P.R. Pintrich (Eds.), *Advances in motivation and*

achievement: Goals and self-regulatory processes (Vol. 7, pp. 371-402). Greenwich, CT: JAI press.

Polk, L. V. (1997). Toward a middle-range theory of resilience. *Advances in Nursing Science, 19,* 1-13.

Poulson, M.K. (1993). Strategies for building resilience in infants and young children at risk. *Infants and Young Children, 6,* 29-40.

Powell, R., Conway, C., & Ross, L. (1990). Effects of student predisposing characteristics on student success. *Journal of Distance Education, 5*(1), 5–19.

Pressley, M. (1987). *What is good strategy use and why is it hard to teach? An optimistic appraisal of the challenges associated with strategy instruction*. Paper presented at annual convention of American Educational Research Association, Washington, D.C.

Pugliese, R.R. (1994). Telecourse persistence and psychological variables. *The American Journal of Distance Education, 2*(3), 22-39.

Quigley, B. A. (1995*). Reasons for resistance to attending adult basic literacy*. Kent: OH Literacy Resource Center.

Rabkin, J., Remien, R., & Katoff, L. (1993). Resilience in adversity among long-term survivors of AIDS. *Hospice Community Psychiatry, 44,* 162-167.

Reichmann-Hruska, C. (1989). Learning styles and individual difference in learning. *Equity and Excellence 24*(3), 25-27.

Reiss, D. (1981). *The family's construction of reality.* Cambridge, MA: Harvard University Press.

Rekkedal, T. (1983). Enhancing student progress in Norway. *Teaching At A Distance, 23,* (Summer), 19-24.

Rekkedal, T. (1985). *Introducing the personal tutor/counselor in the system of distance education*. Project report 2: Final report. Oslo, Norway: NKI Fjernundervisningen.

Renchler, R. (1993). *Poverty and learning*. Office of Educational Research and Improvement, U.S. Department of Education. (Eric Document Reproduction Service No. ED 357 433).

Richardson, G.E., Neiger, B.L., Jensen, S. & Kumpfer, K.L. (1990). The resiliency model. *Health Education, 21*(6), 33-39.

Risemberg, R., & Zimmerman, B.J. (1992). Self-regulated learning in gifted students. *Roeper Review, 15*, 98-101.

Robson, B.E. (1991). *Children of divorce: Some do cope*. New York, NY: Praeger.

Rutter, M. (1966). *Children of sick parents: An environmental and psychiatric study.* (Maudsley Monograph No. 16). London: Oxford University Press.

Rutter, M. (1977). Individual differences. In M. Rutter & L. Hersov (Eds.), *Child psychiatry: Modern approaches* (pp. 3-21). Oxford: Blackwell Scientific.

Rutter, M. (1984). Interview: Resilient children. *Psychology Today,* 6(4), 32-38.

Rutter, M. (1986). Meyerian psychobiology: Personality development and the role of life experiences. *American Journal of Psychiatry, 143*, 1077-1087.

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry, 57*, 316-331.

Rutter, M. (1990). Psychosocial resilience and protective mechanisms. In A. Rolf, A.S., Masten, D. Cicchetti, K.H. Nuechterien, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 181-214). New York: Cambridge University Press.

Saltzman, A. (1993). Improving response rates in disk-by-mail surveys. *Communication Education, 43*(2), 12-19.

Sarason, I.G., Johnson, J.H., & Siegel, J.M. (1978). Assessing the impact of life changes: Development of the life experience survey. *Journal of Consulting and Clinical Psychology, 46*(5), 932-946.

Scott-Jones, D. (1991). Adolescent childbearing: Risks and resilience. *Education and Urban Society, 24*(1), 53-64.

Sewart, D. (1978). *Continuity of concern for students in a system of learning at a distance*. Zentrales Institut für Fernstudienforschung (ZIFF). Hagen: FernUniversität. (ZIFF-Papiere 22).

Tabachnick, B. G., & Fidell, L. S. (1983). *Using multivariate statistics*. New York, NY: Harper & Row Publications.

Taylor, R.D. (1994). *Risk and resilience: Contextual influences on the development of African American adolescents.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Tennant, M. & Pogson, P. (1995). *Learning and change in the adult years. A developmental perspective.* San Francisco, CA: Jossey-Bass.

Thomas, A., Birch, H.G., Chess, S., Hertzig, M.E., & Korn, S. (1963). *Behavioral individuality in early childhood*. New York: New York University Press.

Thomas, J. (1980). Agency and achievement: Self-management and self-regard. *Review of Educational Research, 50*(2), 213-241.

Thompson, E. (1997). Distance education drop-out: What can we do? In R. Popisil & L. Willcoxson (Eds.), Learning through teaching (pp. 324-332). *Proceedings of the 6th*

Annual Teaching Learning Forum, Murdoch University. Perth, Australia: Murdoch University.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*, 89-125.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition.* Chicago: University of Chicago Press.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: The University of Chicago Press.

Tough, A. (1971). *The adult learning projects.* Toronto: Ontario Institute for Studies in Education.

Tracy-Mumford, F. (1994). *Student retention: Creating student success*. Washington, DC: National Adult Education Professional Development Consortium.

Valliant, G.E. (1993). Vulnerability and resilience in human development. *The American Journal of Psychiatry, 150,* 1122.

Wagner, E. (1994). In support of a functional definition of interaction. *American Journal of Distance Education, 8*(2), 6-29.

Wagnild, G., & Young, H. (1990). Resilience among older women. *Image Journal of Nursing, 22*, 252-255.

Wagnild, G., & Young, H. (1993). Development and psychometric testing of the resilience scale. *Journal of Nursing Measurement, 1*, 165-178.

Walberg, H.J. (1997). Families as partners in educational resilience. *Phi Delta Kappan, 65*, 397-400.

Wang, M.C., & Gordon, E.W. (Eds.) (1994). *Educational resilience in inner-city American*: *Challenges and Prospects.* Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Wang, M.C., Haertel, G.D., & Walberg, H.J. (1993). Toward a knowledge base for school learning. *Review of Educational Research, 63*(3), 249-294.

Werner, E.E. (1986). Resilient offspring of alcoholics: A longitudinal study from birth to age 18. *Journal of Addictions, 47*, 34-40.

Werner, E.E. (1989). High risk children in young adulthood: A longitudinal study from birth to 32 years. *American Journal of Orthopsychiatry, 59*, 71-81.

Werner, E.E. (1990). *Protective factors and individual resilience*. New York, NY: Cambridge University Press.

Werner, E.E. (1995). Resilience in development. *American Psychological Society, 4*, 81-85.

Werner, E. E., & Smith, R. (1982). *Vulnerable but invincible: A longitudinal study of resilient youth and children.* New York, NY: McGraw-Hill.

Werner, E.E., & Smith, R.S. (1992). *Overcoming the odds: High risk children from birth to adulthood.* Ithaca, NY: Cornell University Press.

Willis, B. (1993). Strategies for teaching at a distance. *Journal of the Learning Sciences, 3(*3), 265-283

Wolin, S.J., & Wolin, S., (1993). *The resilient self: How survivors of troubled families rise above adversity.* New York: Villard Books.

Zimmerman, B.J., & Bandura, A. (1994). Impact of self-regulatory influences on writing course attainment. *American Educational Research Journal, 31*, 845-862.

Zimmerman, B.J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American Education Research Journal, 29*, 663-676.

APPENDIX A

Letter of Introduction

Dear Athabasca University Student:

I am a fellow Athabasca University Student enrolled in the Master of Distance Education Program, and I am currently working on the thesis component of my degree.

You are being sent this questionnaire packet as part of a research project. You have been randomly selected from students registering in AU courses in April, 2000.

My purpose for the research is to examine the influence of resilience, life events, and external commitments on persistence in adult distance learners who have registered in their first distance education course at Athabasca University.

Your participation is entirely voluntary. Your participation or lack thereof will in no way affect your course grades. Furthermore, your responses will be kept strictly confidential and will not be shared with your instructors, or with any administrator of Athabasca University.

I would very much appreciate your help in completing three questionnaires.

1. The first questionnaire is called the Resiliency Attitude Scale. It asks you to respond to a set of statements that reflect your personal views about a variety of situations common in adult life. You will be asked to use a five-point scale in responding to the 72 statements. This questionnaire will take approximately 10-15 minutes to complete.
2. The second questionnaire asks you to total the number of life events (e.g., job changes, loss of a loved one) you have experienced in your adult life (since the age of

18 years). **Note: I am only interested the total number of life events, and NOT the events themselves.** This questionnaire will take approximately 5 minutes to complete

3. Finally, you will be asked to answer questions relating to: (1) your previous experience with distance education; and (2) the extent of external commitments (outside of university studies) in your life. You will be asked to use a five-point rating scale when responding to the questions about external commitments. It will take approximately 5 minutes to answer these questions.

The confidentiality of your participation is assured. Your name will never appear in any results. Only the researcher and the researcher's supervisor will see your responses. It is anticipated that the results of this research project will be published in Athabasca University's Library in the spring of 2001.

Thank you for your participation in this study.

Wendy Kemp

Athabasca University, Master of Distance Education Program

APPENDIX B

Resiliency Attitudes Scale

Note: From "RAS Resiliency attitudes scale," by B. Biscoe and B. Harris, 1994, Eagle Ridge Institute, Inc. Oklahoma City, Oklahoma. Copyright 1994 by Belinda Biscoe, and Betty Harris, Eagle Ridge Institute, Oklahoma City, Oklahoma. Adapted with permission.

Instructions

I am interested in how you view yourself. Please be as honest as possible when rating each of the statements below. There are no right or wrong answers. In the blank to the left of each statement below, write in the number that best describes how you feel about that statement. Please read each item carefully and rate how strongly you agree or disagree with it, using the following scale:

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

Resiliency Attitudes Scales

Your Answer	RAS Code	**1**=Strongly Disagree; **2**=Disagree; **3**=Undecided; **4**=Agree; **5**=Strongly Agree
	1	I usually can't predict what other people will do.
	4	I try to notice signals from other people that spell trouble.
	5	It doesn't do any good to try and figure out why things happen.
	8	I have a hard time telling what someone new is like until I get to know the person well.
	2	I avoid accepting responsibility for other people's problems.
	3	When others think badly of me, there's probably a good reason for it.
	6	Often I find myself taking responsibility for other people's Problems.
	7	I am willing to ask myself tough questions and answer them honestly.
	9	I can fix hurts from my past that could keep me from letting people get close to me.
	10	I try to figure out why people act the way they do.
	11	I will often stay with someone, even though I know that person is bad for me.
	13	If you care about someone, you should try to do what the person wants, even if it seems unreasonable.
	15	I am able to recognize when I'm in a bad relationship and end it.
	19	If I love someone, I can put up with that person hurting me.
	12	I am able to step back from troubled family members and see myself as OK.
	14	I can't help acting like a child around my parents.
	16	I can stay calm around troubled people because I understand why they act the way they do.
	17	I realize that I can't change other people; they have to change for Themselves.
	18	It's hard for me to stay calm when someone I care about is being Unreasonable.
	20	I often find myself around people who aren't well adjusted.

Resiliency Attitudes Scale (page 2)

Your Answer	RAS Code	**1**=Strongly Disagree; **2**=Disagree; **3**=Undecided; **4**=Agree; **5**=Strongly Agree
	22	I am good at sizing up people.
	23	I try to figure out why a relationship was not healthy and avoid Repeating it.
	24	I am good at starting relationships with other people.
	25	I can't do anything about whether people like me or not.
	27	I'm shy around people I don't know.
	28	I can't really tell if a relationship is going to be good until I try it.
	21	There are few people who I can really count on.
	26	It's hard for me to believe that I'll ever find a good relationship.
	29	I am good a keeping relationships going.
	30	I am able to love others and be loved by them.
	31	It's beyond me how most things work.
	32	I often talk myself through a problem.
	33	I can learn from the past and use that information to make the future better.
	35	I often get really frustrated when dealing with problems and can't figure out what to do.
	37	I don't like to try to find out how things work.
	34	I have hobbies or other activities that I take seriously.
	36	I am successful in taking care of my physical and emotional needs.
	38	There are few things that I am good at doing.
	39	I do enough to get by, but not much more.
	40	I enjoy getting involved in constructive activities.
	42	I don't think that I'm creative.
	43	I'm good at finding new ways to look at things.
	46	Using my imagination doesn't help to solve problems.
	50	Most problems have only one solution.
	41	Sometimes I forget my problems when I'm pursuing creative activities
	44	One way I express my feelings is through my art work, dance, music, or writing.

Resiliency Attitudes Scale (page 3)

Your Answer	RAS Code	**1**=Strongly Disagree; **2**=Disagree; **3**=Undecided; **4**=Agree; **5**=Strongly Agree
	45	The positive feelings I get from creating, help make up for the pain of my past.
	47	It's hard for me to see the humor in a bad situation.
	48	One has to take life seriously to get by.
	49	I am good at using humor to reduce tension between myself and others.
	51	I find it easy to choose between right and wrong.
	52	It's a dog eat dog world where one has to do what it takes to get by.
	53	I can't help repeating the mistakes that my parents made.
	56	I don't always do what I know is right.
	57	I stand up to people when I see them being dishonest, petty, or cruel.
	58	I am willing to take risks for the sake of doing what I think is right.
	59	Sometimes I feel like I'm just drifting along with no purpose in life.
	60	I almost always stand up for underdogs.
	54	I like to help other people.
	55	There's no way I could make a difference in other people's lives.
	61	I like to help others even if they are not willing to help themselves.
	62	I am involved in activities that will make people's lives better.
	63	No matter what happens, if I keep trying I'll get through it.
	64	There are things that I can do to make my life better.
	65	Sometimes it's hard, but I don't let things keep me down.
	66	Even if bad things, I can deal with them.
	68	No matter how hard I try, I can't make things right.
	67	It's not the hand you are dealt, but how you play it.
	69	I am willing to go with any approach that will work,
	70	I'm good at making the most of a bad situation.
	71	When life gives me lemons, I make lemonade.
	72	Failure is something you learn from rather than feel guilty about.

APPENDIX C

Life Events Inventory

The Life Events Inventory (LEI) is a 62-item, self-report psychometric test developed to assess the number of events frequently experienced by individuals in the general population. The events listed in LEI refer to life changes that are common to individuals in a wide variety of situations.

It is an established fact that certain life events can result in major changes in a person's life. Death of a family member or loved one, marriage, relationship issues, changes in circumstances and conditions of employment, illness or injury are examples of major life events.

Instructions

Listed below are a number of events that sometimes bring about change in the lives of those that experience them and which necessitate readjustment. Be sure to include all of the events that apply to you as you have experienced them.

1. **We are interested *only* in the Total number of life events that you have experienced.**

2. On a separate sheet of paper, please total those events that you have experienced in your adult life (since the age of 18 years).

3. Proceed to the questionnaire immediately following the Life Events Inventory.

4. Place the total number of life events from your adult life in the space provided and then **REMOVE** the Life Events Inventory from your questionnaire packet.

	Life Events Inventory
1	Death of a spouse, lover, etc.
2	Divorce or separation.
3	Change in closeness with spouse, lover, partner.
4	Reconciled with partner, lover.
5	Experienced regular conflict with present spouse, lover, etc.
6	Had in-law troubles.
7	Experienced infidelity.
8	Problems with former spouse, lover, partner.
9	Reconciled with former spouse, lover, partner.
10	Became engaged.
11	Gotten married or began live-in relationship.
12	Partner's or your work interfered with your family life.
13	You or partner fired at work.
14	Major change in conditions of work.
15	Self or partner retired from work.
16	Gained new, live-in, family member.
17	Pregnancy.
18	Had a child.
19	Miscarried, aborted, stillbirth.
20	Child or family member left home.
21	Changed residence.
22	Began menopause.
23	Other mid-life changes.
24	Long-term illness or injury.
25	Major change in health or behavior or family or friend.
26	Long-term illness, injury, or disability of household member.
27	Death of family member or close friend.
28	Change in marital status of your children or parents.
29	Major personal achievement.
30	Major decision regarding your immediate future.
31	Change in your personal habits, lifestyle, dress, hobbies.
32	Change in your political beliefs.
33	Change in your religious beliefs.

	Life Events Inventory
	Continued
34	Loss or damage to personal property.
36	Vacation.
37	Trip, not a vacation.
38	Christmas/Thanksgiving, or other major holiday.
39	Change in family get-togethers.
40	Made a new friend.
41	Broken up with a friend due to conflict.
42	Lost friend any other reason, death, moving.
43	Major change in finance.
44	New purchase, car, etc.
45	New mortgage, loan.
46	Mortgage or loan foreclosure.
47	Credit rating difficulties.
48	Violent crime victim.
49	Physical abuse by partner, etc.
50	Emotional abuse.
51	Injured in car accident.
52	Involved in injury claim or lawsuit.
53	Involved in natural disaster.
54	Jailed due to legal trouble.
55	Change in childcare.
56	Parenting conflicts.
57	Conflicts with children.
58	Single parenting.
59	Custody battles.
60	Child abuse issues.
61	Learning disabled child.
62	Emotionally fragile child.

Note: From "Assessing the impact of life changes: Development of the life events inventory," by I.G. Sarason, J.H. Johnson, and J.M. Siegel, (1978). *Journal of Consulting and Clinical Psychology, 46*(5), 932-946. Copyright 1978 American Psychological Association, Inc.

Note: The Life Events Inventory is provided ONLY for your reference. Please DO NOT return the Life Events Inventory with your package.

APPENDIX D

Questionnaire

There are 3 parts in this section.

?? Part #1 asks you to indicate if this is your first experience with a distance education course.

?? Part # 2 requires you to refer back to the Life Events Inventory. In the space provided, enter **only** the total number of life events that you have experienced in your adult life.

?? Part # 3 has six questions related to external commitments. For each question, you are asked to place an **X** in the space next to the response that best describes how often you need to spend time and energy to meet each commitment.

Part # 1. Distance Education Courses.

Have you ever taken another distance education course (other than your current course through Athabasca University) through another university or college?

Yes		No	

If you answered YES to the above question, do you complete that course?

Yes		No	

Part # 2. Life Events

1. Please indicate the **<u>total</u>** number out of 62 life events (from the *Life Events Inventory* above) that you have experienced in your adult life (age 18 years and older).

Number of Life Events	

*** Please remember to remove the Life Events Inventory from your packet before mailing the completed questionnaire.**

Part # 3. External Commitments

External commitments are those demands in a person's life that require time and energy. For example, it might be your commitment to coach the neighborhood baseball team, a promise to fix grandmother's water faucets, a new beau, or heavy debts on your credit cards.

There are 6 questions in this part of the questionnaire. For each of the questions below, please estimate how often you need to spend time and energy meeting the external commitments described in the question.

1. How often do you need to spend time and energy to fulfill family commitments? (These commitments relate to spouse (including common-law), partner, children (including adult children), in-laws (including common-law), parents, siblings, grandparents, grandchildren, nieces, nephews, aunts, uncles, and cousins).

1.	Monthly or more	
2.	Every two weeks	
3.	Weekly	
4.	Twice a week	
5.	Daily	

2. How often do you need to spend time and energy to fulfill personal relationship commitments? (These commitments relate to persons outside of your family with whom you have a special relationship, e.g., boyfriend/girlfriend, fiancée, roommates, neighbors, friends, co-workers, and associates).

1.	Monthly or more	
2.	Every two weeks	
3.	Weekly	
4.	Twice a week	
5.	Daily	

3. How often do you need to spend time and energy to fulfill home commitments? (These commitments relate to maintaining a home such as laundry, cleaning, groceries, general repairs and upkeep; snow shoveling, gardening, lawn mowing, painting, etc.).

1.	Monthly or more	
2.	Every two weeks	
3.	Weekly	
4.	Twice a week	
5.	Daily	

4. How often do you need to spend time and energy to fulfill work commitments? (These commitments relate to employment inside or outside of the home including full-time, part-time, casual, wage, contract or self-employment)

1.	Monthly or more	
2.	Every two weeks	
3.	Weekly	
4.	Twice a week	
5.	Daily	

5. How often do you need to spend time and energy to fulfill community commitments? (These commitments relate to neighborhood programs, boards, commissions, organizations, or associations).

1.	Monthly or more	
2.	Every two weeks	
3.	Weekly	
4.	Twice a week	
5.	Daily	

6. How often do you need to spend time and energy to fulfill financial commitments? (These commitments relate to income, bills, mortgage, rent, credit cards, loans, etc.).

1.	Monthly or more	
2.	Every two weeks	
3.	Weekly	
4.	Twice a week	
5.	Daily	

Thank you for participating in this research project. Please remember to **REMOVE** the Life Events Inventory from your packet before returning your completed questionnaire in the postage paid, return envelope provided for you.
