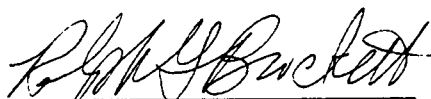


To the Graduate Council:

I am submitting herewith a dissertation written by T. Ross Owen entitled "The Relationship Between Wellness and Self-Directed Learning Among Graduate Students." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Leadership Studies in Education.



Ralph G. Brockett, Ph.D., Major Professor

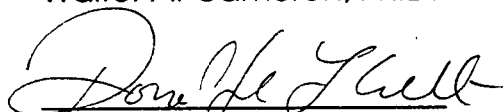
We have read this dissertation and
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THE RELATIONSHIP BETWEEN WELLNESS AND SELF-DIRECTED
LEARNING AMONG GRADUATE STUDENTS

A Dissertation

Presented for the

Doctor of Education

Degree

The University of Tennessee, Knoxville

T. Ross Owen

August 1996

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DEDICATION

In memory of my father, Thomas I. Owen.

For my mother, Florence M. Owen.

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Thankfulness must be expressed to those who have contributed to the successful completion of this dissertation. I wish to express my gratitude to professors, employers, committee members, and family.

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ABSTRACT

Lifestyles characterized by wellness and self-direction have the potential to positively influence student performance and student satisfaction. The purpose of this study was to identify the nature of the relationship between wellness and self-directed learning readiness. A random sample of 365 graduate students at the University of Tennessee, Knoxville (UTK) was electronically generated by UTK's Office of Student Data Analysis. Members of the sample were asked to complete TestWell (TW), the Self-Directed Learning Readiness Scale (SDLRS), and a demographic information questionnaire. There were 185 respondents for a 52% response rate. A significant positive relationship ($r = .45$; $p < .001$) was found between wellness and self-directed learning readiness.

Seven of eight SDLRS factors correlated with total TW score at the .001 alpha level. Seven of ten TW dimensions correlated with total SDLRS score at the .001 alpha level and one correlated at the .01 level. Statistically significant positive correlations were found between fifty-eight (73%) of 80 correlations between TW subscale scores and SDLRS subscale scores.

Correlations between TW's ten subscales and total TW score were statistically significant at the .001 alpha level. The split-half reliability of TW was .87. The reliability of TW, determined by computing Cronbach coefficient alpha, was .92. It was concluded that TestWell is a reliable and valid instrument for use among graduate students.

Correlations between the SDLRS's eight subscales and total SDLRS score were statistically significant at the .001 alpha level. The split-half reliability of the SDLRS was .87. The reliability of the SDLRS, determined by computing Cronbach coefficient alpha, was .92. It was concluded that the SDLRS is a reliable and valid instrument for use among graduate students.

The concepts of wellness and self-direction are reviewed in terms of definitions, theoretical perspectives, and research approaches. Implications for practice include suggestions for promoting wellness and self-direction among adult learners, the use of self-directed learning contracts that include short- and long-range wellness goals, handling ethical issues in adult education, and the provision of student services for adults. Recommendations for research include experimental studies, the consideration of stress as an ingredient in the adult learning process, further validation of wellness instruments, qualitative assessments, and follow-up studies.

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CHAPTER I

INTRODUCTION

According to Anspaugh, Hamrick, and Rosato, "(p)eople in the United States have become victims of high-fat, high-salt, high-sugar, and low-fiber diets" (1994, p. 5). This situation is further complicated by drug abuse, lack of exercise, accidents, unprotected sex, and stress. These and other lifestyle influences prompted the Trends Research Institute in Rhinebeck, New York to predict that in 1996, "(h)olistic fitness training that builds the mind, spirit, and body will hit the nation" (Manning, 1995, p. 1D).

The number one killer of American men and women is cardiovascular disease. More than 69 million Americans have some form of cardiovascular disease and 1.5 million will eventually experience a heart attack (American Heart Association, 1992). Nearly one half of all heart attacks are fatal. The second leading cause of death in the United States is cancer. In 1992 more than 91,130,000 people were diagnosed as having cancer, and approximately 520,000 died of the disease (American Cancer Society, 1992). This is a rate of about 1,400 deaths per day from cancer. Cardiovascular disease, cancer, accidents, cerebrovascular disease, and chronic obstructive pulmonary disease account for more than 75% of all deaths in the United States and are lifestyle-related (U.S. Department of Health and Human Services, 1990). These statistics illustrate the dangers of negative lifestyle choices.

Enhancing the quality of life for Americans became the highest priority of the U.S. Public Health Service in 1987 (U.S. Department of Health and Human Services, 1990). The Public Health Service has since formulated and begun facilitation of national disease-prevention and health-promotion objectives. These objectives include suggestions that, when fully implemented, can reduce the incidence of lifestyle-related diseases and accidents by half. Preliminary results of efforts made by the Public Health Service showed that more than 80% of persons surveyed believed that because of exercising they had reduced the likelihood of being diagnosed with cardiovascular disease. Because of healthy eating habits, not smoking, and getting regular checkups, almost 75% believed they had increased their chances of preventing cancer.

Health was once defined as the absence of disease. The notion of health changed in 1947 when the World Health Organization defined health as "a state of physical, mental, and social well-being and not merely the absence of disease or infirmity" (p. 29). Further expansion of the definition of health has lead to today's use of the term wellness. Wellness is the process by which one responsibly identifies areas of life in need of improvement and subsequently makes choices conducive to a more satisfying human existence. This definition does not imply that total wellness is achievable. Instead, the satisfactory attainment of wholeness is the goal of wellness. An individual who has learned how cope in such a manner as to be increasingly satisfied with his or her quality of life is said to be a "whole human being" (Hayes, Brightwell, & Antozzi, 1984). Once attained,

satisfaction may endure forever or last only a moment. Upon dissatisfaction, the responsible person chooses one or more areas of life in need of improvement and resumes his or her wellness journey.

According to the U.S. Department of Health and Human Services (1990), the annual cost of health care in the United States will increase to an estimated \$500 billion by the year 2000 from \$50 billion in 1975. The cost of employee health care is reflected in the cost of doing business and is ultimately paid for by the consumer. Lost productivity has prompted some businesses to adopt strict nonsmoking policies. Some businesses have established the policy of only hiring nonsmokers. To curb health care costs, larger companies are offering employees and their families access to such wellness programs as nutrition education, smoking cessation, aerobic exercise, and stress reduction.

Perhaps the first employer sponsored wellness program was initiated in 1894 by John H. Patterson, president of the National Cash Register Company (Maryk, 1982). Knowing the value of health and wellness, Patterson introduced morning and afternoon exercise breaks to his employees. The Patterson version of wellness was reinforced in 1976 by passage of the National Information and Health Act (Warner, 1984).

Employment officials in the U.S. are becoming increasingly accustomed to dealing with the growing problem of job stress. Employer sponsored wellness programming appears to be a partial remedy. By participating in employer sponsored wellness programs, employees can reduce their overall stress level by as much as 50% (Forouzesh & Ratzker,

1985). In addition to lowering stress, employers aspire to decrease institutional health care costs and improve individual work performances (Minter, 1986). Financial losses due to stress, unsafe working conditions, coronary risk, hypertension, obesity, substance abuse, injury, cigarette smoking, and high cholesterol levels cost U.S. business and industry billions of dollars annually. Similarly, the cost of hiring, training, retraining, and eventually retiring a single employee can run into the millions of dollars. According to Griffin and Zeigler (1986), approximately 50% of these costs can be contained by offering employees opportunities to practice wellness conducive lifestyles. And according to Williams, "(h)ospitals which provide wellness programs to employees have also found that the cost of sponsorship is more than offset" (1990, p. 26).

Cost containment measures have been calculated. New York Telephone saved \$663,000 from its hypertension control program, \$1,565,000 from its alcohol control program, and \$268,000 from its stress management program (Aberth, 1986). For every dollar that Pillsbury spent on employee wellness, \$3.63 was saved in medical care costs (Rothman, 1989). Adolph Coors realized a return of \$6.15 for every dollar it spent (Caudron, 1990). For every dollar that Campbell Soup invested, a \$5.52 return was realized (Walker & Evans, 1987). An insurance company's combined savings per participant was \$353.88 (Browne, Russell, Morgan, Optenberg, & Clark, 1984). After implementing a year-long wellness program, Northern Telecom saved more than \$3,700 in medical care costs per participating employee (Harris, 1986).

A 1982 study found that "employees at the University of Toronto who participated in a fitness and lifestyle project demonstrated a savings of \$233 per year per employee" (Williams, 1990, p. 25). Compared to a control group, absenteeism at the University of Toronto decreased 60% in exercising men and 38% in exercising women. Southern Methodist University has saved more than \$27,000 in health care costs (McMillen, 1986). Wellness program participants at Southern Methodist used 28% fewer hours of sick leave and filed one-third fewer medical claims than a control group. Southern Methodist now offers cash incentives and extra vacation days to participating employees. Cost savings from health promotion programs have also been reported by the University of Missouri (Stephenson, 1984).

Stress is one of the most destructive elements in people's lives, though it appears that the way in which one reacts to stress is more important than stress itself (Siegal, 1988). For instance, a positive reaction to stress can motivate one toward an improved quality of life (Anspaugh et al., 1994). But negative reactions to stress can be destructive to the development of one's health and well-being (Davis, Eshelman, & McKay, 1988).

Greenberg (1993) contends that the college years are among the most stressful of people's lives. Moreover, "(c)ollege is stressful both for students of 'traditional' college age and for those returning to college at some later time" (Byer & Shainberg, 1995, p. 84). College students of all ages are faced with challenging developmental tasks and demanding life

roles. Younger, or traditional college students are concerned with identity issues, establishing relationships, and parental expectations. Older, or nontraditional college students struggle with managing school, work, and family priorities. College students are also faced with the changes that accompany developmental tasks and life roles.

According to Byer and Shainberg, "change is one of the biggest stressors and entering college is one of the biggest possible changes in a person's life" (1995, p. 84). Change involves learning. For instance, one student might feel the need to reshape old study habits. Another might feel the need to consider viewpoints other than one's own. Altering one's learning mechanisms can be disruptive and uncomfortable at first (Stouch, 1993). It requires both time and effort to add new patterns to one's learning repertoire. Each increment of change strategy increases a student's ability to learn.

Along with the challenge of the academic curriculum, adult students are confronted with their own frustrations, conflicts, pressures, and events associated with developmental tasks and life roles (McClary, 1990). One sample of part-time nontraditional students performed more poorly academically than full-time traditional students due to the inherent stress of multiple role responsibilities (Cruthirds & Strong, 1984). Life roles can include student, spouse, parent, and employee. Nontraditional students differ from traditional students in ability to direct their own learning activities (Sabbaghian, 1980). According to Sabbaghian, as self-direction increases among nontraditional students, so does self-concept. Developmental

tasks can include self-direction and wellness. Wellness and self-direction are critical considerations in the relationship between teacher, learner, job, family, and environment.

Self-direction is a concept that has helped establish the identity of adult education as a distinct field of practice and inquiry (Tennant, 1991). Like most core concepts, self-direction is open to a range of interpretations. At one end of the spectrum, self-direction is characterized by the skills, techniques, and procedures by which individuals determine goals and objectives, locate resources, plan learning strategies, and evaluate outcomes (Knowles, 1990; Moore, 1980; Tough, 1967, 1968). At the other end of the spectrum, self-direction incorporates the notion of critical awareness (Brookfield, 1985a; Mezirow, 1981; Tennant, 1991). According to Tennant, "(c)ritically aware learners have the capacity to identify and challenge assumptions governing their lives that they previously took for granted" (1991, p. 194).

Explicit throughout the self-direction spectrum are the influences of growth, change, responsibility, and experiential learning. The idea of growth is "readily identifiable in the adult education literature on self-direction" (Tennant, 1991, p. 195). For example, virtually all adult developmental models assume that people change throughout adulthood and that change is positive in the sense that change promotes growth and responsibility (Tennant, 1991). Such was the emphasis of Marshall and Rowland's (1983) account of adult learning in Great Britain. Marshall and Rowland said that it is the work of every adult to exercise his or her own

responsibility for learning. In order to understand how adults attribute meaning to their experiences, adult educators must first understand an individual's internal, or psychological change dynamic (Tennant, 1991). Tough (1982) employed purposeful learning experiences as a means by which to facilitate intentional change in people's lives. Gross (1977) encouraged positive change by emphasizing experiential learning throughout the lifespan. Communities can provide both individuals and groups of adults with the longitudinal resources to learn self-directedly (Brookfield, 1984a). The influences of self-direction can be found in such community resources as health education, adult education, and universities (Brookfield, 1985a).

Self-direction as a topic of interest to adult educators can be explained by considering four additional influences (Long, 1991). First, the concept of self-direction is philosophically attractive to adult educators because it focuses on the humanistic efforts of learners. Second, proponents of self-direction subscribe to the idea that the role of an adult educator is to develop self-directed learners characterized by reduced dependence on teachers. Third, the concept of self-direction accounts for adult learning beyond traditional schooling years and outside formal learning environments. And fourth, there is seemingly a plethora of theory and research on self-direction in the adult education literature.

Educators are continuously faced with the challenge of being responsive to the changes that accompany adult students' developmental tasks and life roles. By designing educational strategies

"that have stress management as their focus, adult education programs demonstrate the attitudes of creativity and common sense, the very combination applauded by adult students" (McClary, 1990, p. 70). Adult educators must continuously assess their curricula and application strategies in an attempt to positively influence student performance and student satisfaction.

The developmental tasks of wellness and self-direction and the multiple roles of student, spouse, parent, and employee can be considered within the context of stress management. The development of a student's ability to learn self-directedly can alleviate stress and positively affect student outcomes. Similarly, a satisfying lifestyle can be an effective coping mechanism and academic enhancer. Lifestyles characterized by wellness and self-direction have the potential to positively influence student performance and student satisfaction.

Purpose of the Study

The characteristics of wellness and self-direction exist to some extent among all students. The purpose of this study is to measure the degree to which wellness and self-directed learning readiness are related among graduate students. The need to measure these characteristics is important because they have the potential to affect student performance and student satisfaction. In addition, wellness and self-direction can affect one's overall quality of life.

Problem Statement

A problem exists in that currently existing theory and research are inadequate for relating the concepts of wellness and self-direction. An investigative report into the relationship between wellness and self-directed learning readiness would partially alleviate this problem. Such a study would yield answers to research questions concerning the extent to which wellness and self-directed learning readiness are related among graduate students.

Research Questions

This study seeks to identify the relationship between wellness and self-directed learning readiness by asking research questions. The following six research questions will be addressed.

1. Is there a relationship between wellness and self-directed learning readiness among graduate students?
2. Is there a relationship between wellness and the factors that comprise self-directed learning readiness?
3. Is there a relationship between self-directed learning readiness and the dimensions that comprise wellness?
4. Are there relationships between the dimensions comprising wellness and the factors comprising self-directed learning readiness?
5. Is TestWell (Appendix C) a reliable and valid instrument for the sample under investigation?

6. Is the Self-Directed Learning Readiness Scale (Appendix E) a reliable and valid instrument for the sample under investigation?

Theoretical Framework

The consideration of stress as an ingredient in the adult learning and development process is both timely and necessary (McClary, 1990). Negative stress can keep students from succeeding academically. Conversely, positive stress can motivate exceptional academic performances. Each student has his or her own unique learning needs. According to Byer & Shainberg, "healthy people develop effective and appropriate ways of dealing with the frustrations of their needs" (1995, p. 66).

Health issues span all ages and significantly contribute to one's quality of life (Hentges, 1983). Characteristics of a healthy person include levels of both wellness and self-direction. Wellness involves identifying and understanding one's own basic needs and the kinds of learning habits and lifestyle needed to meet those needs. Healthy, less stressful lifestyles integrate self-directed learning and wellness. If we can understand the relationship between wellness and self-direction, then "our counseling and human services will be more holistic for growth and learning over the life span" (Witmer & Sweeney, 1992, p. 141).

Having a sense of being in control is beneficial to one's level of wellness (Goleman & Gurin, 1993). Yet it is impractical to expect even the most healthy individual to have complete control over his or her life. The

concept of total wellness is associated with the irrational sense of always being in complete control of one's life and its circumstances. Always striving for complete control heightens stress and lessens wellness (Byer & Shainberg, 1995). Stress exists within an individual's mind, body, and/or spirit when his or her customary responses are challenged.

Wellness refers to the process of learning how to satisfactorily manage one's quality of life. There are many tasks, roles, dimensions, and factors that integrate to form one's whole life. The view that an integrated whole is greater than the sum of its parts is called holism. Whole human beings manage their emotions effectively and create for themselves satisfying lifestyles. Emotional management is a dimension of wellness (National Wellness Institute, 1992) and creativity is a factor of self-direction (Sabbaghian, 1980). Satisfaction is not static, however. Instead, satisfaction is subject to change.

People have enormous capacities for change in their lives (Dossey & Keegan, 1988). Satisfying lifestyles result when we choose to cope responsibly with life's changes. Not by chance but by choice are students responsible for learning how to reduce the stress exerted upon them by changing lifestyles. A holistic approach to education can reduce stress among students, yet invoke additional demands upon educators and their institutions (Sample & Kaufman, 1986a; 1986b). Sample and Kaufman suggested that program planners take a more holistic view of the role of educational institutions. By holistic they mean that the synergistic efforts of institutions be directed toward societally relevant outcomes. The result

would be a positive societal impact. Social awareness is a dimension of wellness (National Wellness Institute, 1992). Holism, according to Sample and Kaufman, assumes that educators are not only responsible for serving themselves and their institutions but are more importantly responsible for encouraging students' diverse ideas and actions. Tolerance of risk, ambiguity, and complexity is associated with self-direction (Sabbaghian, 1980).

To facilitate responsibility among students, Kasworm suggests "an environment of ideas and actions supporting full adult learning and reflection" (1990, p. 27). Kasworm's learning sanctuary mirrors a belief in the holistic involvement of the learner. To Kasworm, learning involves both active and passive interactions of the mind, body, spirit, and environment. She suggested that program planners concern themselves with facilitating active forms of physical fitness and passive opportunities for reflection, renewal of energy, and self-understanding. Self-understanding is a factor of self-direction (Sabbaghian, 1980) and physical fitness is associated with wellness (National Wellness Institute, 1992).

Both active and passive activities help students learn about themselves in relation to their community. According to Witmer and Sweeney (1992),

(e)ducation has unlimited potential for creating a community in which the characteristics of the healthy person can be nurtured. Growth is both incidental and intentional. When implementing a holistic approach to education, the most effective method is

modeling a lifestyle of holistic health and wellness. With an educational climate that is encouraging, striving for wellness becomes a process that is likely to extend over the lifespan. (p. 146).

Another factor of self-direction is the view that learning is a lifelong process (Sabbaghian, 1980).

According to Byer and Shainberg (1995), choosing healthy behaviors often requires a high level of initiative or motivation. Initiative in learning is a factor of self-direction (Sabbaghian, 1980). Communities that motivate its members to engage in self-directed learning activities do so "by providing a rich menu of advocacy, opportunities, models, and resources for participants' personal learning needs" (Kasworm, 1990, pp. 36-37). Rich menus include opportunities for community members to investigate their ethical, moral, and value-laden needs. The concept of wellness includes the dimension of spirituality and values (National Wellness Institute, 1992).

Personal responsibility is the point of departure for understanding self-direction in learning (Brockett and Hiemstra, 1991). Personal responsibility means that "one assumes the primary decision-making role for one's life. It also means accepting responsibility for those decisions" (Brockett & Hiemstra, 1991, p. 138). Self-direction in learning refers to "both the external characteristics of an instructional process and the internal characteristics of the learner" (Brockett & Hiemstra, 1991, p. 24). Thus in assuming responsibility for one's own learning activities, an individual discriminates intellectually among alternatives, makes a decision,

implements the decision, and then learns from the consequences. To be "self-directing means that one chooses--and then learns from the consequences" (Rogers, 1961, p. 171). The factor of acceptance of responsibility for one's own learning (Sabbaghian, 1980) and the dimension of intellectual wellness (National Wellness Institute, 1992) may be related.

Responsibility is a choice by itself. Behavioral theories suggest that we tend to choose behaviors that are rewarded and avoid behaviors that are punishable. Unfortunately, according to Byer and Shainberg (1995),

the effects of healthful and unhealthful behavior often seem unrelated to the actual behavior. The rewards of healthful behavior are usually not immediately apparent and neither are the harmful effects of unhealthful behavior. In fact, unhealthful behaviors (e.g., promiscuous sexual activity) are often quite pleasurable in the short term. (p. 21)

The pleasures and risks of sexual activity are associated with the concept of wellness (National Wellness Institute, 1992). We cannot always control the stimuli around us. However, in choosing to control our responses to stimuli, we can control our lives (Brockett & Hiemstra, 1991). Control is the perception of oneself "as having a definite influence through the exercise of imagination, knowledge, skill, and choice" (Witmer & Sweeny, 1992, p. 142).

Wellness and self-direction in learning can be approached from a holistic perspective. Holism emphasizes interdependence between mind, body, spirit, and environment. Each entity is dependent upon the others for

its functionality. For example, the function of one's physical self cannot be understood or improved upon apart from understanding and improving upon one's mind. Similarly, improvement upon the mind-body-spirit must always be considered in light of contextual information and environmental demands.

Holistic theory has as its purpose to educate persons in the broadest sense. The most successful self-directed learners approach their learning activities from a holistic perspective (Brookfield, 1986). That is, they explicitly choose to place their learning activities within specific contexts, systems, and situations. Educating the whole person has been advocated on the grounds that it allows people to be more responsive to rapidly changing environmental demands (Candy, 1991).

The idea of balance is a key component of holistic theory. To a holistic educator, balance is the effective integration of internal choice and external circumstance. In practice, "optimal conditions for learning result when there is a balance, or congruence, between the learner's level of self-direction (internal to the individual) and the extent to which opportunity for self-directed learning (external to the individual) is possible in a given situation" (Brockett & Hiemstra, 1991, p. 30). Leean and Sisco (1981) were successful in examining self-directedness from a holistic perspective in their qualitative case studies of 93 adults in rural Vermont.

The holistic approach to wellness and self-directed learning emphasizes personal responsibility and individual choice. This responsibility includes caring about oneself enough to learn healthy habits. Self-care is a

dimension of wellness (National Wellness Institute, 1992) and love of learning is a factor of self-direction (Sabbaghian, 1980). To a large extent, one's degree of wellness is self-determined. The best efforts of physicians and educators cannot guarantee quality of life or life satisfaction.

Holistic lifestyles characterized by wellness and self-directed learning are likely to be influenced by the variables of personal responsibility and individual choice. An assumption in lifestyle planning is that people are in control of their lives (Hayes et al., 1984). Furthermore, "(t)he primary goal of lifestyle planning is improvement of the whole human being" (Hayes et al., 1984, p. 45). Wellness and self-direction are synonymous with learning how to take care of the whole self. Personal responsibility and individual choice are among the chief ingredients of a holistic lifestyle characterized by wellness and self-direction.

Significance of the Study

At least four authors have examined the theoretical relationship between wellness and self-direction. For instance, Channing published a book called Self-Culture in 1839. According to Houle (1992), Channing identifies the areas of knowledge that adults should have in mind as they seek to improve themselves through formal education and in other ways. (Channing) treats successively the moral, the religious, the intellectual, the social, and the practical realms of content. He then sets forth a number of specific rules on the establishment of self-culture as a fundamental aim of life. (p. 301-302)

Hirschberg (1966) likened learning to all aspects of life by considering the advantages of reacting creatively to both tangible objects and abstract thoughts. Gross's (1977) design of personal wellness activities provided a practical approach to lifelong learning. And Houle (1984) has written a collection of essays verifying the use of holistic learning systems by such famous self-directed learners as Thoreau and William Osler.

Two applied research studies have seemingly related the concepts of wellness and self-direction (Leeb 1984; Martin 1993). Leeb sought to describe a population that showed success in the ability to achieve positive wellness behaviors as measured by the Personal Wellness Scale (Dull & Haun, 1981). A random sample of 56 adults exhibiting positive wellness behaviors were interviewed, wrote essays, and completed the Self-Directed Learning Readiness Scale (Guglielmino, 1977). Leeb's sample of healthy adults possessed high levels of both self-directed learning readiness and cognitive maturity.

Leeb used the Personal Wellness Scale (PWS) as a method by which to identify potential participants. That is, only high scorers on the PSW were included in her sample. Thus her conclusive relationships did not derive from participants' responses to the PSW. Instead, her conclusive relationships derived from participants' responses to interview questions, essay questions, and the Self-Directed Learning Readiness Scale (SDLRS). Problems arise when one interprets Leeb's work as statistically relating the concepts of wellness and self-directed learning readiness.

Martin (1993) investigated the extent to which adults possess the

capacity to direct their own learning in regard to health promoting behaviors. A convenience sample of 575 university staff, church attendees, and senior citizens completed the Oddi Continuing Learning Inventory (Oddi, 1984) and the Health Promoting Lifestyle Profile (Walker, Sechrist, & Pender, 1987). The Oddi Continuing Learning Inventory (OCLI) measures self-directed continuing learning, a personality trait believed to be fundamental to success in continuing professional education. The Health Promoting Lifestyle Profile (HPLP) assesses the frequency with which respondents engage in health promoting behaviors. A significant positive correlation was found between self-directed continuing learning and health promotion behavior.

Although the terms health and wellness have been used interchangeably (Eddy, Bibeau, Glover, Hunt, & Westerfield, 1989; Hamrick, Frankle, & Crase, 1990; Pender, 1987; Petosa, 1984), problems arise when differences are not interpreted. For example, health promotion models are born from medically-allied disciplines, whereas wellness has roots in the humanities. Additional problems arise when the OCLI is interpreted as the most useful tool for assessing participation in self-directed learning activities. According to West and Bentley, it is "very difficult to determine if the SDLRS or the OCLI is a better predictor of self-directed learning behavior" (1991, p. 98).

In an effort to alleviate interpretation problems, this study relates wellness as measured by TestWell, a Wellness Inventory (National Wellness Institute, 1992), and self-directed learning readiness as measured by the

SDLRS. With the exception of a study conducted by Jones and Frazier in 1994, data concerning the reliability and validity of TestWell (TW) is sparse. This is one of the first studies to generate data concerning the reliability and validity of TW. Reliability and validity of the SDLRS has been reported upon by many researchers, and several studies have addressed self-directed learning readiness among adult undergraduates. Few, however, have specifically addressed the nature of self-directed learning readiness among graduate students.

This study adds to the adult education knowledge base in five distinct ways. One, this study distinguishes wellness from health, and self-directed learning readiness from self-directed continuing learning, thus updating and clarifying the works of Leeb (1884) and Martin (1993). Two, data concerning the extent to which TW is reliable and valid is generated. Three, the notion of personal responsibility among adult learners is furthered. Four, this study aids in the development of future studies concerning wellness and self-direction among adults. And five, by illustrating adults' tendencies toward wellness and self-direction, this study can partially enable educators and administrators to provide student services that more accurately meet adult students' multidimensional needs.

Assumptions and Limitations

There are assumptions concerning participants' understanding of and responses to items on TestWell and the Self-Directed Learning Readiness Scale. Because of the influences exerted upon the

development of TestWell by Hettler (1980) and the National Wellness Institute (1992), it is assumed that participants' responses to items on TW are according to their understanding of and adherence to the wellness philosophies of Hettler and the National Wellness Institute. Similarly, because of the influences exerted upon the development of the SDLRS by Guglielmino (1977), it is assumed that participants' responses to items on the SDLRS are according to their understanding of and adherence to Guglielmino's philosophy of self-direction.

It is assumed that wellness-related behaviors are learned via change and experience and that experiential change is the process by which one chooses to accept responsibility for his or her lifestyle. It is also assumed that the ideas of personal responsibility and individual choice are central to the concepts of wellness and self-direction. It is further assumed that the role of graduate student is an inherently stressful experience and that such an experience is worthy of an investigative report.

Participants are not assumed to encounter any risks either before, during, or after participation. Another assumption is that the correlational statistical tests chosen for this study are the most appropriate to use with standard, or interval measurement units like the kind of measures that comprise both TestWell and the Self-Directed Learning Readiness Scale. It is further assumed that TW and the SDLRS are reliable and valid measuring instruments to use among graduate students.

Research has its limitations. Limitations are the inherent tradeoffs that exist in all research endeavors. A limitation of survey research concerns

the accuracy by which respondents portray themselves. Self-reported data derived from TW and the SDLRS will be accurate only to the degree to which respondents conscientiously portray themselves. For example, respondents may portray themselves according to: (a) what they think ought to be true, (b) what is actually true, or (c) how they think the researcher would prefer them to respond. Therefore, a distinction should be made between respondents' perceived values and actual values. That is, data derived from this study should be considered in light of the potential for self-reported inaccuracies by respondents.

Definitions

Many words have multiple meanings. The following terms and definitions will be used for the purposes of this study.

Graduate student. One who is enrolled during Spring Term, 1996 at the University of Tennessee, Knoxville, and randomly selected by UTK's Office of Student Data Analysis.

Holism. The view that an integrated whole has a reality that is greater than the sum of its parts.

Learner self-direction. The internal personality characteristics that influence the acceptance of responsibility for one's learning activities.

Self-direction in learning. The interactive influences of self-directed learning and learner self-direction.

Self-directed learning. Refers to the external facilitation techniques that encourage learners to accept responsibility for planning,

implementing, and evaluating their learning activities.

Self-directed learning readiness. The extent to which individuals perceive themselves to possess the skills, abilities, and attitudes associated with assuming responsibility for learning. Operationally defined by the Self-Directed Learning Readiness Scale.

Stress. That which exists within an individual's body, mind and/or spirit when his or her customary responses to life's circumstances are challenged.

Total wellness. Associated with the irrational sense of always being in complete control of one's life and its circumstances.

Wellness. Refers to the process by which one responsibly identifies areas of life in need of improvement and subsequently makes choices conducive to a more satisfying human existence. Operationally defined by TestWell.

Whole human being. One who has learned how to both actively and passively cope with quality of life issues in such a manner as to be satisfied with one's current state of human existence.

Summary

The holistic management of life's tasks and roles can enhance academic performances, thereby positively affecting student outcomes and student satisfaction. Students "possess different degrees of willingness to accept responsibility for themselves as learners" (Brockett & Hiemstra, 1991, p. 27). The degree to which graduate students accept responsibility

for themselves as learners can be exemplified in responses to items on both TestWell and the Self-Directed Learning Readiness Scale. Personal responsibility and individual choice are among the chief ingredients of a self-directed lifestyle characterized by wellness. The primary purpose of this study is to identify the nature of the relationship between wellness and self-directed learning readiness among graduate students.

Chapter Two will review the literature related to wellness and self-direction. Both concepts will be reviewed in terms of definitions, theoretical perspectives, and research approaches. In Chapter Three, information concerning population, sample, research design, variables, instrumentation, research questions, procedure, and statistical analysis will be presented. Data will be presented and analyzed in Chapter Four as they relate to the Demographic Information Questionnaire, TestWell, and Self-Directed Learning Readiness Scale. In addition, six research questions will be addressed. Purpose, procedure, findings, and conclusions will be discussed in Chapter Five. In addition, implications for practice and recommendations for further research will be made.

CHAPTER II

REVIEW OF LITERATURE

Chapter One stated that the purpose of this study is to measure the degree to which wellness and self-directed learning readiness are related among graduate students. Chapter One also included a problem statement, research questions, theoretical framework, significance of the study, assumptions, limitations, and definitions. Chapter Two reviews the literature related to wellness and self-direction. Both concepts are reviewed in terms of definitions, theoretical perspectives, and research approaches.

Wellness

Health has historically meant the absence of disease. But our expectations of a reasonable quality of life have surpassed that of merely existing disease free. Today we aspire to a higher level of health, often referred to as wellness (Byer & Shainberg, 1995). Wellness generally entails engaging in attitudes and behaviors that improve one's quality of life.

Defining Wellness

The World Health Organization defined health as "a state of complete physical, mental, and social well-being, and not merely the absence of disease" (1947, p. 1). According to Edlin and Golanty (1992), this definition is so broad and covers so much that it is said by some

to be meaningless. But its universality is exactly right. People's lives, and therefore their health, are affected by everything they interact with—environmental influences such as climate; the availability of nutritious food, comfortable shelter, clean air to breathe, and pure water to drink; and other people, including family, lovers, employers, coworkers, friends, and associates of various kinds. (p. 5)

In this section, the definitions of wellness espoused by the following people will be reviewed: Halbert Dunn, Donald B. Ardell, William H. Hettler, Barbara Montgomery Dossey and Lynn Keegan, John W. Travis and Regina Sara Ryan, and J.J. Pilch.

Halbert Dunn. Dunn's (1961) definition of wellness is credited with inspiring others to think of wellness in terms of an integrated method of functioning. That is, to think of the total individual—the body, mind, and spirit—as a functioning reality. According to Dunn, "the integration of the self, which is so essential to the state of high-level wellness, can best be achieved when the body is in balance—when the energy forces of the body are free to flow where they will, to reach equilibrium" (p. 135). It is the self which gives us "the seat of choice, the reason for choosing" (p. 125). Tenants of Dunn's thinking can be traced to ancient Greek and Chinese philosophy.

Donald B. Ardell. Lifestyles characterized by high-level wellness are the alternative to doctors, drugs and disease (Ardell, 1977). In addition, people expect too much from traditional medicine and too little from themselves. According to Ardell,

(w)ellness has five dimensions: self-responsibility, nutritional awareness, stress management, physical fitness, and environmental sensitivity. Within each of these areas, there exists a wealth of information that you can evaluate and apply to your life--as appropriate. Take what fits--and pass on the rest. Avoid getting trapped in the 'swallow-it-whole' syndrome. (p. 1)

Furthermore, according to Ardell,

(a)ll dimensions of high level wellness are equally important, but self-responsibility seems more equal than all the rest. It is the philosopher's stone, the mariner's compass, and the ring of power to a high level wellness lifestyle. Without an active sense of accountability for your own well-being, you won't have the necessary motivation to lead a health-enhancing lifestyle. (p. 102)

William H. Hettler. Hettler (1980) encouraged a holistic approach to wellness that emphasized change and effective daily decision making. His holistic framework included the following six dimensions: intellectual, emotional, physical, social, occupational, and spiritual. According to Hettler, successful choices are influenced by an individual's self-concept and the parameters of his or her culture and environment. Wellness is "an active process through which the individual becomes aware of and makes choices toward a more successful existence . . . a positive approach to living--an approach that emphasizes the whole person." (Hettler, 1980, p. 77).

Barbara Montgomery Dossey and Lynn Keegan. Wellness is a

continual process of evolution by which an individual increases his or her awareness, purpose, quality of life, and uniqueness in six areas of human potential (Dossey & Keegan, 1988). These areas include the physical self, the mental self, emotions, spirituality, relationships, and choices. Together "they comprise the bodymind, the single integrated entity of one's total psychophysiologic experience" (p. 12). One area is no more important than another. However, "(i)f one area of our human potential is left undeveloped, one has the feeling that things are not as good as they could be" (p. 20). When one is striving to develop in all areas, a sense of wholeness emerges. Life becomes more exciting, rewarding, and fulfilling. The whole person is able to recognize choices even when frustrations arise. According to Dossey and Keegan, "(a)s we take responsibility for making effective choices, then the necessary changes occur in our lives. This then places us in the position to clarify our life patterns, purposes, and processes" (p. 3). To Dossey and Keegan, wellness not only means behaving healthfully but also entails a fundamental shift in thinking.

John W. Travis and Regina Sara Ryan. Travis and Ryan (1988) are credited with depicting health as a continuum from premature death to total wellness. In the middle of their two extremes is a middle, or neutral point. Moving from the midpoint to the left depicts a progressively poorer state of health. Moving from the midpoint to the right depicts an increasing level of wellness. Practitioners of traditional medicine target the area of the continuum ranging from neutral to premature death. Whereas wellness education can range from any point on the continuum to total wellness. To

Travis and Ryan, wellness includes the dimensions of self-responsibility and love, breathing, sensing, eating, moving, feeling, thinking, playing/working, communicating, sexuality, finding meaning, and transcending. Travis and Ryan essentially believe that wellness is achieved by getting to know oneself and perceiving oneself as growing, learning, and changing.

J.J. Pilch. Pilch's definition is almost entirely spiritually-based.

According to Pilch (1989), wellness is

a lifestyle that is based on an experience of God and shaped in response to that experience. This lifestyle views and lives life as purposeful and pleasurable, seeks out life-sustaining and life-enriching options that are freely and personally chosen at every opportunity. It enhances self-esteem and continually challenges one's values, striving always to sink ever-deeper roots into spiritual values and religious beliefs. (p. 5)

Major themes among definitions of wellness. The general idea of wellness lends itself to being interpreted differently by different people. For instance, Dunn (1961) stressed the integration, balance, and ultimate equilibrium of the total individual. Ardell (1977) emphasized stress management, medical self-care, and self-responsibility. Hettler (1980), Dossey, and Keegan (1988) were interested in human potential from a holistic perspective. Dunn, Dossey, and Keegan recognized choice as having power in people's lives. Travis and Ryan (1988) are responsible for illustrating health and wellness as dichotomous. And Pilch (1989) emphasized responsiveness to God's influence. Yet there are basic

tenants that occur throughout all the afore mentioned definitions of wellness. Recurring themes include self-awareness and personal responsibility, an ultimate goal of self-actualization, an emphasis on process and growth, and the integration of mind, body, and spirit (Light, 1993).

Theorizing Wellness

Today's conception of wellness has been fostered by disillusion with traditional medicine and a growing self-care movement (Clark, 1986). Practitioners of traditional medicine treat the symptoms of disease. Self-care entails the prevention of disease. In 1990 the U.S. Department of Health and Human Services published Healthy People 2000: National Health Promotion and Disease Prevention Objectives. It gave credit to lifestyle factors for having the greatest influence upon disease and accidents. Healthy People 2000 is evidence of an increasing awareness of issues concerning health and wellness, holism, wellness readiness, and social support.

Health and wellness. The terms health and wellness have been used interchangeably (Eddy et al., 1989; Hamrick et al., 1990; Pender, 1987; Petosa, 1984). However, there are distinguishable differences between health and wellness. Health literature develops from medically-allied disciplines and is the basis for many government-supported social policies. The disciplines associated with health include health education, health promotion, nursing, behavioral science, public health, nutrition, physical education, and occupational health (Light, 1993). Some wellness literature has strong spiritual and psychological foundations that emphasize

humanistic efforts to change the self. Wellness also has ties to psychology, sociology, the humanities, and religion (Light, 1993).

The writings of Rogers (1961), Bandura (1977), and Maslow (1968) have influenced the concept of wellness. Psychologists and sociologists believe that the potential for growth is greatest in nurturing environments. Humanists believe that "the will to grow, to self-actualize, is an innate drive. The drive pushes humans to find meaning in life, to find unity in experiences, and to actualize their potential" (Light, 1993, pp. 28-29). Persons who believe that spirituality provides meaning and direction in life enable themselves to grow in their quest for meaning and a higher quality of life (Anspaugh et al., 1994).

Carlyon (1984) said that health professionals are not qualified to facilitate wellness activities because of their inability to distinguish between wellness promotion and health promotion. According to Carlyon, "wellness promotion tasks are primarily social, philosophical, and spiritual--they are not medical or public health tasks. Health professionals are almost totally unprepared to understand or carry out such tasks" (1984, p. 28). Carlyon furthermore suggested that health professionals consider wellness promotion activities to be unconventional and thus off limits.

To Carlyon, the goals of wellness include self-actualization, personal fulfillment, wholeness, and high-quality living. Achieving the goals of wellness requires "accepting the truth. . . (and) making fundamental changes in society and in ourselves and these changes cannot be effected through diet and exercise" (1985, p. 29). Carlyon encouraged

readers to look inward instead of outward in search of humankind's noblest possibilities. According to Greenburg, "(t)he learner is the one who knows the totality and essence of the learner best" (1985, p. 405). Greenburg also recognized that "health educators not employing the learners themselves as partners in the learning process will have great difficulty in accomplishing any holistic--wellness--goal" (1985, p. 405).

Holism. Before the mid 1900s, viruses, bacteria, and parasites were the leading causes of death in the United States. It was virtually impossible to prevent many diseases because the appropriate immunizations and vaccines had not been discovered. It has been predicted that by the year 2000, most illnesses will be caused by day-to-day living habits (Edlin & Golanty, 1992, p. 12). In many instances, we will make ourselves sick by the way we live.

In increasing numbers, physicians are reporting that patients are not only feeling sick but are also showing no symptoms of any underlying physical problem. That is, "the sick feelings and the symptoms are the result of an emotionally upsetting life situation" (Edlin & Golanty, 1992, p. 12). It appears that tension, worry, frustration, and anger are predisposing people to stress-related illnesses classified as chronic and degenerative. Few physicians are trained to deal with emotional problems, and very little can be done medically to help someone with a chronic degenerative disease. According to Edlin & Golanty (1992),

the only effective way to deal with these diseases is to prevent them, which in many instances involves improving living habits Personal

responsibility for health involves establishing attitudes and behaviors that promote positive wellness If individuals accept this responsibility, they will be free from illness much more of the time. (p. 13)

The belief that life should be viewed in its totality has become a key inspirational principle among survivors of chronic and degenerative diseases (McDowell, 1989). This belief is intended to affect all aspects of life including health, politics, education, economics, spirituality, work, leisure, family, environment, science, technology, and the arts. Life is not meant to be measured by the functioning of its parts as independent entities. Instead, "life is like some large system operating as a function of the interdependent relationship of subsystems" (McDowell, 1989, p. 17). Holism is "a philosophy that views everything in terms of patterns of organization, relationships, interactions, and processes that combine to form a whole" (Dossey & Keegan, 1988, p. 5). According to Dossey and Keegan,

(w)holeness can be present when one has high levels of wellness and also when one has known disease/disability or is in the process of dying. Wholeness is a process and is present when we view ourselves as an open living system in a tapestry of relationships and events. Our actions have an effect on our body-mind-spirit. (p. 5)

The way to perceive life is not to analyze its separate components. The consequence of such an analysis is a fragmented understanding of how life's components synergistically function as a whole.

Helping professionals often overlook the value of interdependent life forces and their collective impact on individuals and society. Accurate perceptions of life in its totality await those who understand what holism entails. McDowell said that holism "entails a great deal of personal responsibility for our actions, and a great deal of respect toward the whole individual by professional helpers" (1989, p. 17). Vocational specialists, health specialists, spiritual specialists, education specialists, guidance specialists, leisure specialists, and family specialists are considered by McDowell to be professional helpers.

The role of holism in the teaching-learning process has been debated by professional education specialists. Poplin (1988), Heshusius (1989), and Iano (1990) advocated the application of holistic principles to research, assessment, and intervention in teaching and learning. They furthermore argued that the positive approach to teaching and learning reduces homo sapiens to purely reactionary mammals, thus disregarding humankind's ability to consciously adapt. Warner (1993) added to the discussion by offering Bhasker's (1989) concept of "critical realism," e.g., the theoretical identification of cause-effect relationships, as an alternative to holism and positivism. Isaacson (1993) then responded to Warner's comments on positivism, critical realism, and holism by suggesting that relationships, predictions, and causes in the natural and social sciences be studied from a systematic approach.

Holists Poplin (1988), Heshusius (1989), and Iano (1990) argued against the positivism paradigm and on behalf of subjective holism.

Advocates of subjective holism believe: (a) that individuals are not passive, reactive organisms, (b) that the actions of individuals and societies cannot be controlled or predicted, and (c) that educational experiences can be characterized as individually and socially meaningful. Pure positivists believe that knowledge can only be gained through empirical, or scientific research.

Warner advocated critical realism as an alternative research approach to holism or positivism. Critical realism refers to the unity of method that exists between the natural and social sciences (Bhaskar, 1989). The natural and social sciences are similar with respect to their logic, but at the same time have objects of inquiry that are ontologically different. To the critical realist, "the goal of science is the theoretical identification of things and their causal powers" (Warner, 1993, p. 312). Critical realism is different from positivism in that critical realism recognizes both the subjective and the social aspects of scientific inquiry. Compared to critical realism's nonpositivist appreciation for scientific inquiry, "(holism) can degenerate into a full-blown idealism that undervalues or ignores the important role that science can play in solving the problems we face" (Warner, 1993, p. 311).

Supporters of the critical reality paradigm consider the use of inferential statistics as an ineffective substitute for critical thought. For the purpose of this scientific inquiry however, statistical analyses are viewed as constructive contributions to a critical framework based on the holistic principles of personal responsibility and individual choice. It is not believed

that holism, as an underlying theoretical principle, has degenerated the value of this study as proposed by Warner (1993). Contrarily, it is believed that a careful blend of statistics and holistic theory is an appropriate means by which to study the relationship between wellness and self-direction.

Isaacson (1993) narrowed the philosophic gaps between holism, critical realism, and positivism by further lessening the distinction between the natural and social sciences. According to Isaacson, "education provides many examples of natural phenomena explained in terms of social or behavioral outcomes" (1993, p. 326). Human behavior is intentional and complex. Any systematic approach to studying human behavior has the potential to identify causal mechanisms and predictable regularities that can help researchers better understand whole participants. The relationship between researcher and participant has roots in both the natural and social realms. By perceiving wholeness in participants' lives, researchers as practitioners are thus able to facilitate wellness readiness.

Wellness readiness. According to Barton, "wellness is an individual self directed process the foundation of which is composed of routine day to day behaviors. The cumulative effect of these behaviors is either positive or negative These day to day behaviors are the responsibility of the individual" (1990, p. 23). Thus, wellness readiness refers to one's general predisposition toward daily incorporation of wellness behaviors into one's lifestyle (Barton, 1990). Individuals are ready to voluntarily change their wellness behaviors when four conditions are met. First, one must

believe that a particular positive outcome will result from a particular change in behavior. Second, an individual must feel that a current behavior is negative enough to warrant change, and that a potential outcome of changed behavior is of positive value. Third, "the individual must perceive themselves as being capable of changing their behaviors" (Barton, 1990, p. 44). Lastly, one must actually intend to change. That is, intentions are the antecedent to actual behavior. A deficiency in any one of these areas can prevent wellness behaviors from occurring. The occurrence of wellness readiness may be influenced by degree of social support.

Social support. Social support theory, a variation of systems theory, involves one key principle. That is, social support systems are sets of interrelated units or persons sharing a common function or united to achieve a common purpose (Denton, 1989). People generally receive their social stimulation and motivation from a multidimensional support system that includes immediate family, extended family, friends, teachers, colleagues, organizations, and health professionals.

According to Hayes et al., "(a) good support system involves caring" (1984, p. 46). People are naturally drawn toward caring relationships, empowered communities, economic security, and liberating education. Support theory prescribes the development and maintenance of social networks to satisfy multiple needs. We care for ourselves and others when we provide multiple opportunities for growth and development. Hayes et al. identified active listening, self-disclosure, and feedback as elements of

relationships that are caring, mutual, and rewarding. These personality characteristics also foster the growth and development of new socially supportive relationships. Hayes et al. recommended that students be intentional about lessening personal stress by expanding and improving their social support system. Stress is compounded by changes in students' social networks (Bogat, Caldwell, Rogosch, & Kriegler, 1985).

Although a number of developmental theories are available, no single theory is always adequate for use with adult students. Wellness theoretically combines health, holism, readiness, and social support, "thus creating an eclectic theory that more adequately meets the needs of professionals in their work to develop the whole person (Warner, 1985, p. 33).

Researching Wellness

In 1980 Spencer wrote that in order for adults to learn effectively, it is essential that they maintain their well-being. Both qualitative and quantitative measures of wellness can be found in the literature, and both research approaches tend to focus on the wellness activities of employees and students.

Qualitative studies of wellness. Subjective well-being has been thought of as a global, multidimensional construct encompassing life satisfaction, happiness, and morale (Okun, Stock, & Covey, 1982). Light (1993) conducted a formative evaluation of instructors' and students' experiences of a required course on wellness. Formally enrolled undergraduates and associated faculty were interviewed, observed, and

their records reviewed. Outcomes for faculty included personal satisfaction, professional growth, creativity, and understanding of liberal education tenants. Outcomes for students included friendships, critical thinking, self-awareness, goal-setting, physical exercise, stress management, and communication.

McPortland (1988) examined the contributions of adult education principles to five worksite wellness programs. Data collected from interviews, observations, and surveys were themitized. Prominent themes included concern for the following areas of program development: learner characteristics, program philosophy and goals, program evaluation and linkages, organization and administration, and instruction and curriculum. Mellor (1993) studied how adults advance in their journey toward greater wellness. A series of interviews with five middle-age males and five middle-age females were tape-recorded and transcribed. Transcriptions were then ethnographically coded via computer. Computer analyses linked goal achievement to visionary thinking, change to self-concept and life satisfaction, and adult learning to wellness.

Eyring (1993) attempted to better understand the subjective essence of wellness among 12 traditional college students. Phenomenological analysis of participants' taped interviews identified students' experiences of well-being as emerging from a context of change, and characterized by self-control and self-confidence. Clark (1986) qualitatively identified barriers that prevented 55 nursing students from participating in wellness behaviors. Barriers included fear, guilt, and

lack of motivation. Wellness behaviors were reinforced by social support networks and self-responsibility.

It is not uncommon for educational programmers to propose that they can enhance employees' and/or students' well-being. Although this claim is easily made, it is difficult to substantiate subjectively. Qualitative research methodologies seek to understanding the essence of persons' attitudes, needs, interests, beliefs, goals, and experiences (Terenzini, 1974). Operational evaluations of wellness may be inappropriate in that they may be, according to Okun et al. (1982), insufficiently responsive to persons' attitudes, needs, interests, beliefs, goals, and experiences. Since "many educational programs contain objectives pertaining to subjective well-being, evaluations will have to include assessments of this domain" (Okun et al, 1982, p. 534).

Quantitative measures of wellness. Quantitative research on wellness, like qualitative studies of wellness, tends to focus on the experiences of employees and students. Thus the majority of quantitative assessments of wellness can be categorized according to efforts made by employees and students.

Of the 2,000 employees exposed to Johnson and Johnson's comprehensive wellness program over a two-year period, Wilbur (1983) found that vigorous physical activity increased by 104% and that physical activity was associated with reduction in coronary risk. After five years, the medical costs of participants were 200% lower than the medical costs of a nonparticipating control group, and both hospital admissions and number

of hospital stays for the control group were more than double those of participants (Bly, Jones, & Richardson, 1986). It was concluded in 1990 by the Association for the Advancement of Health Education that Johnson and Johnson's medical costs and absenteeism were reduced by 40% and 18%, respectively.

The University of Texas at Arlington sought to demonstrate concern for employee welfare by initiating an experimental wellness program that included components of both physical fitness and health education (Moxley, 1990). An experimental group of 50 student affairs employees was compared to a control group of 152 university employees. After ten months, the participating experimental group was significantly more satisfied than the nonparticipating control group in the areas of physical well-being, overall job, stress level, productivity, morale, and employee interaction.

At a small university in central Illinois, a survey was conducted to determine the wellness interests of 338 employees and 533 students (Williams, 1990). Both groups rank ordered managing stress, exercising, and proper nutrition as their three highest priorities for wellness programming.

Wellness was one of 16 human development outcomes for two-year college students identified as important and encouraged by 572 randomly selected chief academic and student affairs officers (May, 1993). All states, accreditation regions, and types of two-year colleges were represented in the Delphi process. Physical fitness, nutrition, drug usage, sexuality, relationships, stress, and safety were the dimensions of wellness in

need of improvement among college students reported by Heck and Pinch (1990).

Archer, Probert, and Gage (1987) conducted a comprehensive investigation into students' perceptions and practices of wellness. A nationwide survey of over 3,000 randomly sampled college students found that the physical dimension affected students' overall level of wellness the most and that the spiritual dimension affected students' wellness the least. Students felt they needed the most information about occupational wellness. Positive relationships and exercising were perceived to be the most beneficial dimensions of wellness. Detriments to wellness included worry, not enough sleep, procrastination, and depression. Participation in wellness activities was most influenced by the enjoyment experienced during the activity and the time required to complete the activity.

According to Newhall, "(n)ursing science has begun to produce its own plethora of conceptual ideas concerning wellness" (1991, p. 5). Newhall found a significantly positive correlation between wellness behaviors and perceptions of empowerment among baccalaureate nursing students. Among 120 community college students, Owens (1989) found that enrollment in a two-year nursing program increased health behavior awareness but was not an impetus for behavioral change. Advanced nursing students demonstrated more preventive health care practices than beginning nursing students (Camooso, Green, Hoffman, Leuner, Mattis, Ptaszynski, Reiley, Silver, Winfrey, & Winland, 1980). Richter, Malkiewicz, and Shaw (1987) witnessed a decline in wellness behaviors

among three groups of nursing students regardless of exposure to health promotion information. It was believed that stress was an intervening variable.

Residence hall departments are emphasizing living environments conducive to wellness lifestyles. Four hundred sixteen freshmen at a mid-sized midwestern state university were questioned concerning their experience as a resident living in one of six wellness oriented dormitories (Nicklaus, 1991). Significant differences existed between women and men. Women indicated that too much emphasis was placed on traditional social activities. Women also indicated that their wellness residence hall environments did not provide enough intellectual stimulation. It was found that a wellness program operating in a residence hall at the University of Northern Colorado had a positive effect on the self-concepts and self-esteem of 23 randomly selected residents (Isaacson, 1991). Lack of such a program was associated with lower self-concept and self-esteem.

Boog (1990) sought to determine how 971 randomly selected students regarded wellness at Oklahoma State University. Graduate students ate more nutritiously, practiced safety, and dealt with stress better than undergraduates. Males used tobacco products more frequently than females. Caucasians drank more alcohol than African Americans. Overall, students ranked fitness and exercise, stress management, and weight control as wellness program essentials. Rapp (1988) investigated the relationship between stress and illness. Her study of 111 conveniently sampled participants included 82 graduate students. Rapp's total sample

included 79 Caucasians and 23 African Americans. Illness was associated with greater stress among caucasians. Among blacks, illness was associated with less stress. Overall, greater stress was associated with illness. Rapp concluded that the variations in her findings resulted from participants' differing wellness levels.

National Wellness Institute. Wellness centers and associated facilities are becoming more plentiful on U.S. college and university campuses. The prototype for many campus wellness programs is at the University of Wisconsin at Stevens Point. The University of Wisconsin at Stevens Point is also home to the National Wellness Institute. Founded in 1977, the National Wellness Institute has estimated that about one-third of the nation's 3,400 academic institutions provide wellness programming and facilities for approximately 13.3 million employees and students (McMillen, 1986).

Donald B. Ardell is a member of the National Wellness Institute's board of trustees. William H. Hettler is the director of health services at the University of Wisconsin-Stevens Point and president of the National Wellness Institute's board of directors. Both Ardell and Hettler are pioneers of the wellness movement and their definitions of wellness are presented in the Defining Wellness section earlier in the Chapter. The theory and research of Hettler (1980) has inspired the development of three instruments that measure wellness, e.g., TestWell, a Wellness Inventory (National Wellness Institute, 1992), Lifestyle Assessment Questionnaire (National Wellness Institute, 1978), and Personal Wellness Scale (Dull & Haun, 1981).

Jones and Frazier (1994) tested the hypothesis that wellness

professionals possess high levels of wellness as measured by TestWell and self-esteem as measured by the Self-esteem Inventory (Coopersmith, 1990). Ninety wellness professionals attending the National Wellness Conference volunteered to participate. Total self-esteem scores correlated with total wellness scores ($r = .59$; $p < .05$). TestWell subscale means were highest on "safety" and "sexuality and emotional awareness." The lowest subscale scores were on "environmental wellness," "physical fitness and nutrition," and "emotional management." In addition, Jones and Frazier calculated a Cronbach coefficient alpha of .84 for TestWell.

Physical fitness as measured by levels of drinking and smoking was negatively correlated with wellness as measured by the Lifestyle Assessment Questionnaire among 10,023 male and 10,698 female college students (Jensen, Peterson & Murphy, 1992). DeStefano and Richardson (1992) found a positive relationship between LAQ scores and self-reported, or subjective perceptions of physical fitness among 214 college freshmen. However, DeStefano and Richardson found no significant relationships between scores on the Lifestyle Assessment Questionnaire and objective physiological indices (i.e., blood pressure, pulse, cholesterol level, body composition, and flexibility). A sample of Royal Canadian Mounted Police (RCMP) perceived themselves as in better health and eating more nutritiously than their Lifestyle Assessment Questionnaire scores indicated (Pealo, 1992). A positive relationship was found among RCMP between wellness as measured by the Lifestyle Assessment Questionnaire and physical fitness and nutrition.

Wellness as measured by the Lifestyle Assessment Questionnaire has been positively correlated with additional variables. Additional variables include age (Britzman, 1988; Edwards, 1994), level of education (Britzman, 1988), personality (Britzman, 1988), gender (Jenson, Peterson, & Murphy, 1992; Edwards, 1994; Freeman & Gintner, 1989; Cooper, 1990), learning environment (Agle, 1990), job satisfaction (Eickholt, 1995), use of tobacco and alcohol (Edwards, 1994), lifestyle (Honderd, 1986), self-concept (Honderd, 1986), mental health (Freeman & Gintner, 1989), behavior (Cooper, 1990), cognition (Cooper, 1990), and hostility (Leiker & Hailey, 1988).

Fedorovich (1992) hypothesized that students hired as resident assistants at Mississippi State University would have higher scores on the LAQ than students who applied but were not hired as resident assistants. Lifestyle Assessment Questionnaire scores were shown to be a differential factor in the selection of resident assistants at Mississippi State University. Lundquist (1989) hypothesized that student assistants in the dormitories at Colorado State University learned their health behaviors from immediate family members. However, it was concluded that the family health behaviors of smoking, alcohol use, and obesity were not related to the overall wellness of 112 student assistants as measured by the Lifestyle Assessment Inventory at the .05 alpha level. Lundquist further concluded that student assistants who overcame ill-fated family influences did so as a result of accepting personal responsibility.

Both qualitative and quantitative measures of wellness can be found

in the literature, and both research approaches tend to focus on the wellness activities of employees and students. Data collected from interviews and observations found employees to be concerned with professional growth, creativity, and program development. Students were interested in physical fitness, stress management, and relationships. Quantitatively, employees successfully modified their wellness behaviors by utilizing elements of physical fitness and health education. Productivity, diet, stress level, morale, medical costs, and absenteeism have been affected by employees' wellness levels. Drug usage, safety, occupational awareness, time management, social awareness, and sexuality are associated with wellness among students. Additional variables have been positively correlated with scores on the Lifestyle Assessment Questionnaire.

Self-Directed Learning

The meaning of self-direction in adult learning has been "skewed by those who choose to define it as they wish" (Brookfield, 1986, p. 18). The distortion surrounding self-direction in adult learning can be attributed to haphazard nomenclature. Self-direction in adult learning has been referred to as self-teaching, self-planned learning, independent adult learning, self-directed learning, and self-initiated learning.

Defining Self-Directed Learning

Despite how it is coined, self-direction in adult learning is more than just a misunderstood concept. It is "a way of life" (Brockett & Hiemstra, 1991, p. 18). The definitions of self-direction include those espoused by

Malcolm S. Knowles, Lucy M. Guglielmino, Stephen D. Brookfield, Ralph G. Brockett and Roger Hiemstra, and Philip C. Candy.

Malcolm S. Knowles. Knowles (1968, 1970, 1980) is credited with a comprehensive syntheses of adult teaching and adult learning principles. At the heart of Knowles' work is andragogy, the art and science of helping adults learn. A facilitator who adopts andragogical principles empowers learners to accept dual responsibility for teaching and learning. Knowles contrasts andragogy with pedagogy, the art and science of teaching children. Pedagogy reflects the traditional practice of teaching and learning. An instructor who follows pedagogical principles accepts responsibility for the entire teaching/learning transaction.

Knowles (1975) defined the self-directed learning process as one in which "individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (1975, p. 18). The art of andragogy includes self-direction as one of its key components (Knowles, 1989; 1990). According to Knowles, "adults are self-directing when they undertake to learn something on their own" (1989, p. 91).

Self-direction has contributed to the understanding of two andragogical principles (Pratt, 1993). First, self-direction is a fundamental characteristic of the adulthood experience in democratic societies. That is, "there is a tension between freedom and authority, especially regarding

the management and evaluation of learning. Andragogy leans heavily toward learner freedom (versus teacher authority) . . . , promoting self-direction, and personal autonomy" (Pratt, 1993, p. 22). And second, self-directing adults have the potential to live autonomous and fulfilled lives despite social, political, cultural, and historical constraints. Andragogy assumes that individuals are most ready for self-directed learning when faced with constraining variables. Regarding readiness to learn, "(a)ults become ready to learn those things they need to know or to be able to do in order to cope effectively with their real-life situations" (Knowles, 1989, p. 84).

Lucy M. Guglielmino. Guglielmino (1977) theorized regarding the occurrence of self-direction in learning. According to Guglielmino, "self-direction in learning can occur in a wide variety of situations, ranging from a teacher-directed classroom to self-planned and self-conducted learning projects" (1977, p. 34). Guglielmino thought that certain learning situations tend to promote self-directed learning better than others. But she charged that the personal characteristics of the learner (i.e., attitudes, values, beliefs, and abilities) "ultimately determine whether self-directed learning will take place in a given learning situation. The self-directed learner more often chooses or influences the learning objectives, activities, resources, priorities and levels of energy expenditure than does the other-directed learner" (Guglielmino, 1977, p. 34).

More recently, Guglielmino (1991) warned learners that self-direction is rarely neat, orderly, continuous, or sequential in nature. In any self-

directed learning project, according to Guglielmino, "problems may arise, such as lack of resources or lack of time" (1991, p. 10). Interruptions in learning occur as other areas of life intervene. A random incident may restart the learning process by providing renewed motivation or interest. Another random force may cause re-evaluation or redirection. Finally, "learning projects may not always be consciously planned and therefore not consciously carried through. More focused planning and reflection on the process, however, are likely to enhance significantly the value and effectiveness of any self-directed learning project" (Guglielmino, 1991, p. 10).

Stephen D. Brookfield. A change in behavior was once the most common definition of learning, and learning theory was once dominated by empiricism. According to Pratt, "if the learner was active in constructing meaning and interpreting experience, knowledge and truth were compromised" (1993, p. 16). Learning that was not observable was thus deemed insignificant. Brookfield (1986) considered the notion of self-directed learning from both cognitive and behavioral perspectives. To Brookfield, self-directed learning is a cognitive process grounded in reflection and action "whereby we learn how to change our perspectives, shift our paradigms, and replace one way of interpreting the world by another" (1986, p. 19).

Brookfield (1986) reported that the characteristics conducive to successful self-directed learning are associated with field dependence. Field dependent learners, according to Witkin (1949, 1950) are aware of

context, extrinsically oriented, responsive to external reinforcement, are cognizant of the effects that their learning has on others, and view things holistically. Field independent learners, in contrast, are inner-directed, individualistic, analytical, socially independent, and possess a strong sense of self-identity. Successful self-directed learners value social networks, skill modeling, oral consultation, peer evaluation, and learning accidentally—the capacities said to be possessed by field dependent learners. Yet field independence is typically regarded as the preferred adult learning style. According to Brookfield, “we have to rethink very critically the notion that the single-mindedness, planning capability, and goal orientation characteristic of field independent learning are somehow superior to the field dependent’s awareness of contextuality” (1986, p. 42). It was evident to Brookfield (1986) that studies were lacking

of the range of learning styles observable with different learners in different settings. Until such studies accumulate to the point where we can say with some certainty what the typical styles of learning in certain situations are, we should be wary. (pp. 45-46)

Brookfield recognized that the social and political aspects of self-direction were largely being ignored and offered his version of a critical practice of adult education (Brookfield, 1993). His critical practice of adult education posited that the self is culturally formed, thus demonstrating the political aspects of self-direction. If the cultural formation of the self is ignored, “it is all too easy to equate self-direction with separateness and even selfishness” (Brookfield, 1993, p. 239). Brookfield’s case for self-

direction as a political concept rests on two arguments. First is the issue of control over what learning activities and processes are considered politically correct. Second, exercising self-direction requires that certain political conditions be in place regarding access to resources.

When considering definitions of self-directed learning, "it is not only necessary to understand *who* has offered a particular definition, but *when* it was offered" (Brockett & Hiemstra, 1991, p. 21). For instance, Brookfield (1981a) used the term independent adult learning to describe the process by which learners generate goals, identify resources, rate their progress, and evaluate themselves. In using the term self-directed learning, Brookfield (1984b) highlighted the differences between learning (an internal change in consciousness) and education (the act of learning). In 1986 Brookfield used the term self-directed learning in describing a cognitive process grounded in reflection and action. Brookfield has since distinguished learning from "the educational setting or mode in which such learning occurs" (1988, p. 16). Most recently, Brookfield (1993) has reverted back to the use of self-directed learning as a critical theory of adult education.

Ralph G. Brockett and Roger Hiemstra. Brockett and Hiemstra (1991) embraced the view that the concept of self-direction in adult learning should not be limited to the term self-directed learning. To expand the concept, they recommended that the term self-directed learning be seen as only one part of a broader concept. The broader concept of self-direction in learning "can provide the breadth needed to reflect more fully

the current understanding of the concept" (Brockett & Hiemstra, 1991, p. 24).

Given that self-direction in learning can be thought of as both an instructional strategy and a personality characteristic, Brockett and Hiemstra grant both notions their own terminology. Self-directed learning refers to the "process in which a learner assumes primary responsibility for planning, implementing, and evaluating the learning process" (Brockett & Hiemstra, 1991, p. 24). Learner self-direction "centers on a learner's desire or preference for assuming responsibility for learning" (Brockett & Hiemstra, 1991, p. 24). Thus, self-direction in learning refers to "both the external characteristics of an instructional process and the internal characteristics of the learner, where the individual assumes primary responsibility for a learning experience" (Brockett & Hiemstra, 1991, p. 24). Brockett and Hiemstra's conceptualization of self-direction in adult learning is a synthesis of other writer's multidimensional conceptualizations, e.g., Kasworm (1983), Long (1983, 1988), and Oddi (1987).

Philip C. Candy. Candy's (1991) definition of self-direction is made up of the following basic tenets: (a) the interaction between a person and his or her environment, (b) knowledge as tentative, evanescent, and socially constructed, (c) learning as a qualitative shift in how phenomena are viewed, and (d) individuals as engaging in complex, mutually interdependent relationships with their environments. Moreover, Candy distinguished self-direction as an outcome of education from self-direction as a method of education.

As an outcome, self-direction is broken down into personal autonomy and self-management. Personal autonomy refers to a learner's personal characteristics. Self-management is "the willingness and capacity to conduct one's own education" (Candy, 1991, p. 23). As a method, Candy breaks self-direction down into learner control and autodidaxy. Learner control is one extreme of the instructional domain; teacher control is the other extreme. Self-direction as controlled by the learner occurs in formal instructional settings. Autodidaxy is one extreme of Candy's autodidactic domain; assisted autodidaxy is the other. Autodidaxy occurs in informal, everyday contexts. The entire educational continuum ranges from teacher-control to learner-control, from learner-control to assisted autodidaxy, and from assisted autodidaxy to autodidaxy.

Candy admits that the idea of an educational continuum is misleading. To better illustrate the idea of an educational continuum, Candy uses an area of overlap to reflect an intersection between the instructional domain and the autodidactic domain. From an observer's point of view, "it is impossible to discern whether the primary orientation (of the overlap area) is one of 'instruction' or of 'self-instruction' (autodidaxy)" (Candy, 1991, p. 17).

Self-direction is defined differently by different people. Among the differences are similarities, however. The definitions espoused by Knowles, Guglielmino, Brookfield, Brockett and Hiemstra, and Candy are similar in that they all identify self-directed learning as a characteristic of adulthood. The following four aspects of adult learning are inherent in the

aforementioned definitions: (a) learning for adaptation to and the transmission of culture, (b) learning for the understanding and development of expertise or specialist knowledge, (c) learning for the vitalization of organizations and societies, and (d) learning for personal fulfillment.

Theorizing Self-Directed Learning

There are many theoretical approaches to self-directed learning. Theoretical approaches to self-directed learning include humanism, personal responsibility orientation (PRO), behaviorism, neobehaviorism, critical perspectives, and constructivism.

Humanism. The predominating theoretical orientation underlying self-directed learning is humanism (Caffarella, 1993). Humanists believe that learners are impelled toward self-actualization. Self-actualization, according to Brockett and Hiemstra (1991),

refers to the highest level of human growth, where one has reached one's full potential. As with self-direction, though, it is important to think of self-actualization as an extreme on a continuum, an ideal state toward which one is continuously striving. (p. 125)

In a humanistic environment, the primary function of an educator is to facilitate with the intent of expediting individual learning needs. From a humanistic perspective, learner development and responsibility are of utmost importance. To a humanistic facilitator, the expert delivery of course content is of secondary importance. According to Ellis (1982),

a humanistic outlook on life virtually requires self-direction at almost every level This kind of outlook includes an emphasis on

viewing people holistically . . . , with the aim of helping them, individually and collectively, to live a happier, more self-actualizing, and more creative existence. Humanism fully accepts people with their human limitations. It particularly focuses upon and studies their basic experiences and their values. It emphasizes their ability to create and direct their own destinies. It sees them as goal-directed individuals who are important in their own right just because they are alive, and who have the right to continue to live and enjoy and fulfill themselves--in their private lives as well as in their communal and cooperative relations with others. (p. 28)

The Personal Responsibility Orientation (PRO) model illustrates the link between humanism and self-direction in adult learning (Brockett & Hiemstra, 1991). For instance, the PRO model purports "to recognize both the differences and similarities between self-directed learning as an instructional method and learner self-direction as a personality characteristic" (Brockett & Hiemstra, 1991, p. 26). According to the PRO model, the point of departure for understanding self-direction in learning is the internal notion of personal responsibility. Personal responsibility is not an either/or notion. Instead, individuals possess different degrees of willingness to accept responsibility for their thoughts and actions.

Departing from personal responsibility are two learning orientations: process and personal. Central to the process orientation to learning is the idea of self-directed learning as an instructional method. The process orientation of self-direction in learning focuses on external characteristics

of the teaching-learning process (i.e., planning, implementing, evaluating). Central to the personal orientation to learning is the idea of learner self-direction as a personality characteristic. The personal orientation of self-direction in learning focuses on internal characteristics of individuals (i.e., creativity, self-concept, life satisfaction). Both learning orientations can be viewed on a continuum. Refer to the Definitions section in Chapter One for more detailed descriptions of self-directed learning, learner self-direction, and self-direction in learning.

All combined, the process and personal orientations make up the concept of self-direction in adult learning. That is, via the notion of personal responsibility, the concept of self-direction in adult learning illustrates the strong connection between self-directed learning and learner self-direction. Self-direction in adult learning recognizes both the external and internal forces that when combined, provide "a key to understanding the success of self-direction in a given learning context" (Brockett & Hiemstra, 1991, p. 30). Optimal conditions for learning exist when there is a balance, or congruence between self-directed learning and learner self-direction. Learning difficulties and frustrations arise "when the balance between internal characteristics of the learner are not in harmony with external characteristics of the teaching-learning transaction" (Brockett & Hiemstra, 1991, p. 30).

In order to truly understand self-direction in adult learning, it is crucial to recognize and deal with the connections between individuals and society. All elements of the PRO model are encompassed by a circle.

Such a circle represents the social arena in which the activities of self-direction are executed. While the individual is the starting point, consideration of the social context in which learning occurs is vital to understanding the phenomenon of self-direction. From a humanistic perspective, the PRO model recognizes the social context in which self-directed learning has the potential to occur.

Behaviorism and neobehaviorism. Behaviorism is based upon the premise that learning occurs via the reinforcement of desired responses. That is, human nature is shaped by environmental influences. Three practices rooted in behaviorism are particularly valuable to the understanding of self-direction: learning contracts, skill-based instructional techniques, and self-modification (Brockett & Hiemstra, 1991).

Penland (1981) suggested that self-directed learning can be understood from a neobehaviorist perspective. Neobehavioral learning techniques have as their goal the internalization of reinforcement so that new learning is rewarded in and of itself (Kramlinger & Huberty, 1990). That is, an element of cognition mediates between a stimulus and its associated response. Thus, "where classical behaviorism is only concerned with the environment as a determinant of behavior, neobehaviorism stresses the interaction of the individual and environment" (Brockett & Hiemstra, 1991, p. 128).

Piskurich's (1993) definition of self-directed learning is a more recent example of how neobehavioral learning works. Piskurich defined self-directed learning as "a training design in which trainees masters packages

of predetermined material, at their own pace, without the aid of an instructor" (p. 330). Furthermore according to Piskurich, "in most training situations--particularly technical and skills training--SDL requires a more structured, less trainee choice-centered approach if it is to meet the needs of the organization" (p. 6). Thus trainees are expected to learn what is needed by their employing institution before they can choose to learn about topics of personal interest. Self-directed learning as a technical training design used by organizations in the development of human resources contrasts with the choice-centered definitions espoused by Knowles, Guglielmino, Brookfield, Brockett and Hiemstra, and Candy.

Critical perspectives. Critical perspectives of self-directed learning include those espoused by Paulo Freire, Jack Mezirow, and Stephen D. Brookfield. Freire's (1970) critical perspective is called conscientization. Conscientization is the defining characteristic of adulthood, and "is the process in which men, not as recipients, but as knowing subjects, achieve a deepening awareness both of the sociocultural reality which shapes their lives and of their capacity to transform that reality" (Freire, 1970, p. 27). There are varying levels of conscientization, ranging from the lowest level of consciousness to the highest level of critical conscientization. The ultimate goal of conscientization is praxis. Praxis is a continuous process of investigation and exploration, followed by action grounded in exploration, followed by reflection on action, followed by further investigation and exploration, followed by further action, reflection, and so on.

Rogers (1977) once compared his self-directed approach to

learning with Freire's (1970) ideals and found them to be remarkably similar. Roger's opinion has since been debated. One synthesis of the debate has been offered by O'Hara (1989). O'Hara suggested that any difference between Freire and Rogers could be understood by recognizing that

(b)oth unabashedly celebrate human existence and our evolutionary potential. They write of their fascination with human capacity for self-regulation, self-understanding, and transcendence. Neither begs the intervention of a God, magic, manipulative technology, or supernatural forces. They are both radical humanists. (p. 13)

Freire specializes in empowering oppressed individuals and groups. His technique of liberation is more partner-like than facilitative or educative in nature. He seeks to establish a dialogue regarding issues of concern to the disadvantaged, and based on trust, support, and openness, encourages a better understanding of religious, social, political, and economic issues. A better understanding of the issues motivates many individuals to act collectively for the sake of society (Freire, 1970).

Mezirow's critical view of self-directed learning is referred to as perspective transformation. According to Mezirow (1991),

(p)erspective transformation is the process of becoming critically aware of how and why our presuppositions have come to constrain the way we perceive, understand, and feel about our world; of reformulating these assumptions to permit a more inclusive, discriminating, permeable, and integrative perspective; and of

making decisions or otherwise acting upon these new understandings. (p. 14)

Perspective transformations are triggered by disorienting dilemmas (Mezirow, 1991). Disorienting dilemmas originate as individually meaningful realizations and are prone to triggering either individual or collective action. Perspective transformations caused by disorienting dilemmas move individuals toward new, more accurate assumptions, perceptions, and world views. According to Mezirow, "(b)ecoming critically aware of what has been taken for granted about one's own learning is the key to self-directedness" (1985, p. 17). To Mezirow, self-direction is both the basis for a theory of adult education and the mode of learning characteristic of adulthood.

Brookfield's (1991) perspective of self-direction centers on the occurrence and scrutiny of critical incidents. Critical incidents are self-written accounts of significant life events. Contextually specific aspects of people's experiences are highlighted on paper. The scrutiny of critical incidents entails identifying assumptions, analyzing their accuracy, and then reconstructing them. Assumptions are the "taken-for-granted ideas, commonsense beliefs, and self-evident rules of thumb that inform our thoughts and actions" (Brookfield, 1991, p. 177). They are "the interpretive glue that binds the various meaning schemes comprising our structures of understanding" (Brookfield, 1991, p. 177). We think and act based on meaning schemes derived from experiences. Personal and political meanings are oftentimes only partially accurate. Inaccurate views require

restructuring for the sake of self and society. The accuracy of one's world view determines the accuracy of one's actions. The purpose of scrutinizing critical incidents is to provide a catalyst for the reconstruction of inaccurate assumptions. Misassumptions tend to obscure reality.

Becoming aware of and adjusting the assumptions underlying thought and action is enormously difficult and raises ethical questions.

According to Brookfield (1991),

(e)ngaging in critical thinking is not a continuously joyful experience in creative self-actualization. It is psychologically and politically dangerous, involving risks to one's livelihood, social networks, and psychological stability. In some cultures, people who think critically--who question accepted assumptions--are the first to disappear, to be tortured, or to be murdered in the event of a political coup. (p. 179)

Critical thinking is a meaningful part of self-directed learning because it involves analysis and judgement of a problem or situation. According to Brockett and Hiemstra (1991),

by being critical, one is demonstrating an unwillingness to accept 'what is' as inevitable. By being critical, one is thus able to assume personal responsibility for one's beliefs or actions rather than pass off such responsibility to a source outside oneself. (p. 135)

Constructivism. Constructivism refers to an individual's attempt to impose meaning and significance upon events and ideas (Candy, 1991). According to the constructivist paradigm, learning is an active process of

constructing meaning and transforming understandings. Because no two people have identical experiences, each person constructs his or her own understanding of reality. The basic concern of constructivism is with "how people make sense of the perplexing variety and constantly changing texture of their experience" (Candy, 1991, p. 255). To Candy, three domains are of greatest relevance to self-directed learning (i.e., assumptions about human nature, the nature of knowledge, and the meaning of learning).

Constructivists maintain that from birth, people embark on a voyage of inquiry and exploration. They are not bound by conditioning, but are different as a result of choosing to act differently. Furthermore, individuals are in a state of dynamic equilibrium in which they seek to balance their world.

Knowledge cannot be taught but is constructed by the learner. Each person's world view and explanatory system is entirely unique. We constantly search for knowledge that supports or opposes our own world view.

Constructivism is concerned with how learners construe events and ideas and how they construct structures of meaning. Construing refers to a learner's interpretation of events and ideas. Construction refers to a learner's assemblage of meaning. Accepting constructivism involves embracing a different view of how people make sense of their worlds. Since this is central to understanding learning, "it is also a vital starting point in considering the nature of self-directed learning" (Candy, 1991, p. 257).

Synthesis of self-directed learning theories. The predominating orientation underlying theories of self-directed learning is humanism. The Personal Responsibility Orientation (PRO) model recognizes and deals with the connections between individuals and society. Freire's critical perspective of self-directed learning is called conscientization. The ultimate goal of conscientization is praxis. Mezirow's critical view is referred to as perspective transformation. Perspective transformations are triggered by disorienting dilemmas. Brookfield's (1991) perspective of self-directed learning centers around the occurrence and scrutiny of critical incidents. The purpose of scrutinizing critical incidents is to provide a catalyst for the reconstruction of inaccurate assumptions. The theory of constructivism refers to an individual's attempt to impose meaning and significance upon events and ideas. Constructivists maintain that from birth, people embark on a voyage of inquiry and exploration. The theories of behaviorism and neobehaviorism are exceptions in that they are compelled by positivism, not humanism.

Researching Self-Directed Learning

Self-direction in adult learning is an extensively researched area in the field of adult education. According to Caffarella and O'Donnell (1988), the following five areas represent the content areas that make up the self-directed learning research base: philosophic perspectives, descriptive investigations of learning projects, program planning and implementation, characteristics of adult learners, and administrative/social policies. Brockett and Hiemstra (1991) offered an alternative classification scheme.

According to Brockett and Hiemstra, three methodological approaches account for the research efforts into self-directed learning. That is, the research concerning self-direction in adult learning can be been classified according to learning projects, qualitative studies, and quantitative measures.

Learning projects research. Self-directed learning, one of the most productive areas of research in adult education, was partially stimulated by Houle's (1961) The Inquiring Mind. Houle extensively interviewed 22 adults and consequently put their personal and social experiences into educative contexts. In 1988 Houle acknowledged having stimulated new topics for investigation in adult education. Topics for research inspired by Houle's work include adult learning projects. Learning projects are highly deliberate episodes planned by individuals in an attempt to gain certain knowledge and skills (Tough, 1971, 1979). Tough's learning projects investigation described in detail the process by which 66 adults planed their own learning activities. His descriptive survey data were obtained via a highly structured interview process and have been a major contribution to the explanation of the phenomenon of what Tough deemed self-planned learning. Tough found that the average number of learning projects attempted per year was 8.3 and that 68% of participants' learning projects were planned primarily by themselves.

Many replication studies have reaffirmed Tough's original findings. Coolican (1975) found that 48 mothers of adolescents averaged 5.8 learning projects per year and that 66% of these projects were self-

planned. Peters and Gordon (1974) interviewed 475 East Tennesseans and revealed that rural adults averaged 3.1 learning projects per year while urban adults averaged 4.1 learning projects per year. Overall, 66% of participants' projects were planned primarily by themselves.

The first study to focus on the learning projects of older adults was conducted by Hiemstra (1975). Of 256 randomly selected adults at least 55 years of age, Hiemstra found that an average of 325 hours per year was spent on 3.3 projects per individual and that 55% of all projects were self-planned. Penland (1977, 1979) is credited with one of the most comprehensive learning project studies. Survey interviews from a U.S. national sample of adults showed: (a) 78.9% considered themselves to be continuing self-learners, (b) number of projects per person averaged 3.3, and (c) an average of 155.8 hours was spent on each project.

Not all learning projects investigations indicate a high degree of self-planning among participants. Several studies have found that 50% or fewer learning projects are self-planned (Baghi, 1979; Field, 1979; Johnson, 1973; Miller & Botsman, 1975; Umoren, 1978).

There are three strengths and two limitations of the learning projects paradigm (Brockett & Hiemstra, 1991; Brookfield, 1981b). Strengths include: (a) the chance to study adults' informal learning activities, (b) the methodological structure accompanying inquiry into adults' learning projects, and (c) the generation of data concerning participation in self-directed learning activities. Limitations include the inconsistent use of structured interviews and the inconsistency of data analysis procedures.

Limitations aside, Tough's (1971) study and associated replications represent one of the most significant streams of research in all of North American adult education (Brockett & Hiemstra, 1991).

Qualitative studies of self-direction. Qualitative studies generally include the accumulation of observations, interviews, and theories. The descriptive data derived from qualitative studies of self-direction permits researchers to better understand the influence of adult education principles upon participants' experiences.

Gibbons, Bailey, Comeau, Schmuck, Seymour, and Wallace (1980) conducted a content analysis of the biographies of 22 individuals who had obtained expertise in their chosen field without formal training. Included were the biographies of Walt Disney, Virginia Woolf, and Malcolm X. It was concluded that the assumptions underlying formal schooling and self-directed learning are different. Brookfield (1981a) used a semi-structured interview process with his sample of 25 adults who were experts in their particular field. Participants exhibited a willingness to share their knowledge and valued the recognition that coupled success. Participants also exhibited signs of cooperation in the sense that they identified themselves as members of common interest groups, and competitiveness in the sense that peer recognition was valued. Cooperation was associated with objective measures of evaluation, e.g., requesting advice from peers. Competition was associated with subjective measures of evaluation (i.e., interrogating the work of other experts).

Based on interviews with 78 self-directed learners without high school

diplomas, Spear and Mocker (1984) found that a conscious effort to preplan learning activities did not exist among self-directed learners. Instead, the structure and direction of learning activities stemmed from available resources apparent to the individual. Kasworm (1988a) undertook an investigation into self-directed learning. Interviews with seven graduate students showed evidence of support for and the presence of self-direction in the graduate classroom. In a follow-up interview study with ten randomly selected adult undergraduates, Kasworm (1988b) identified response patterns that led her to conclude that self-direction is a vital part of learning in academia. Smith (1990) sought to understand self-directed learning as experienced by 22 public librarians. Data analyzed by a constant comparative method led Smith to better understand public librarians' facilitation of and institutional responses to self-directed learning. The Wright brothers used trial and error in the way they "planned, developed, and completed one of the most vivid examples of a self-planned, self-directed adult learning project" (Cavaliere, 1992, p. 51). In a case study of the Wrights' quest for flight, Cavaliere found that as their learning journey unfolded, the following five stages of self-direction became apparent: inquiring, modeling, experimenting and practicing, theorizing and perfecting, and actualizing.

Herd (1995) sought to gain insight into the learning experiences of eleven adult basic education students via interviews and observations. The majority of students were self-directed in that they were aware of their own learning processes and that different problems require different

approaches. The majority had a sense of when and where to seek help when undertaking their own learning projects. Gonzalez (1996) sought to gain insight into the perceptions of nontraditional students regarding their experience with and perceptions of adult teaching and learning concepts and practices. Document analysis, interviews, and observations indicated that nontraditional students and teachers were not guided by a comprehensive vision of adult education. Nontraditional students were further identified as a community of learners wherein members had not been fully recognized or developed.

Sipe (1995) explored the factors that supported and hindered self-directed learning in the lives of fifty experimentally open teachers. Findings from focus groups, interviews, and a psychometric instrument demonstrated that learning and changing are natural and essential. Change and risk taking were found to be invitations, not threats. And self-direction, collaboration, reflection, and challenge were highly valued in the teachers' learning situations. Uhland's (1996) examined the learning strategies of low-literate adults. Results from focus groups, interviews, and a psychometric instrument revealed that low-literate adults actively engage in real-life learning situations, and that active engagement in real-life learning can mitigate the negative effects of past schooling. Furthermore, past schooling did not appear to influence the selection or rejection of self-directed learning strategies.

There are two advantages and one disadvantage to the qualitative research paradigm (Brockett & Hiemstra, 1991). One advantage is its

compatibility with undereducated adults, or individuals unlikely to participate in formal learning activities. Another advantage to the qualitative paradigm is the variety of theoretical perspectives it has produced in relation to self-direction. The qualitative paradigm is particularly useful for studying self-direction from a sociological or anthropological perspective. However, "qualitative approaches are probably not useful in studies focusing on personality dimensions, such as those that fall within the bounds of learner self-direction" (Brockett & Hiemstra, 1991, pp. 95-96).

Quantitative measures of self-direction. In quantifying self-direction, most paper and pencil instruments measure the extent to which individuals possess the qualities associated with self-directedness. According to Brockett and Hiemstra, "studies designed to measure an individual's level of self-directedness have moved the body of knowledge in this area well beyond descriptions of the frequency and nature of self-directed learning activities" (1991, p. 81). Yet there is little evidence concerning the self-directed learning process. For instance, numerous research studies have identified the personological characteristics of self-directed learners, but few have examined the process of how one actually becomes a self-directed learner (Cranton, 1992). To remedy such a problem, Pilling (1991) created the Self-Directed Learning Test, subsequently named the Self-Directed Learning Perception Scale (SDLPS). The SDLPS assesses students' perceptions of what they are experiencing and feeling during the self-directed learning process (Pilling-Cormick, 1994). Pilling-Cormick has since

experienced resistance from adult educators to using the SDLPS in their classes. Pilling-Cormick maintains that misconceptions about the term self-directed learning and discrepancies between educators' beliefs and practices are potential reasons for not using the SDLPS.

The substantial use of two additional instruments have helped make self-directed learning one of the most thoroughly researched areas in adult education. These are the Oddi Continuing Learning Inventory, developed in 1984, and the Self-Directed Learning Readiness Scale, developed by Guglielmino in 1977.

The Oddi Continuing Learning Inventory is a 24-item Likert scale that measures self-directed continuing learning, a trait believed to be fundamental to success in continuing professional education. Research supports the reliability of the OCLI. Cronbach coefficient alphas of .77, .85, and .77 were estimated by Six (1987), Oddi (1984, 1986), and Landers (1990), respectively. Furthermore, by correlating pairs of factor scores as recommended by Gorsuch (1983), Six (1989) showed that the OCLI's factor structure is reliable throughout the data sets used by Six (N=328), Oddi (N=271), and Landers (N=98). Further reliability support for the OCLI has been provided by Oddi, Ellis, and Roberson (1990), Six and Hiemstra (1987) and West & Bentley (1991). Critics of the OCLI include Brockett and Hiemstra (1991), Landers, (1990), Six and Hiemstra (1987) and West & Bentley (1991).

Self-directed continuing learning as measured by the OCLI has been positively correlated with such variables as instruction technique (Newton,

1995), problem-based learning (Shulman, 1995), gender (Oddi, 1986; Shulman, 1995), perception of professional autonomy (Eyer, 1993), age (Eyer, 1993; Shaw, 1987; Oddi, 1986), mode of continuous learning (Reeder, 1994), level of education (Martin, 1993; Shaw, 1987), self-efficacy (Martin, 1993), self-care (Martin, 1993), personal responsibility (Martin, 1993), healthy behavior (Martin, 1993), self-directed learning readiness (Jude-York, 1993; West & Bentley, 1991), learning activity (Jude-York, 1993), learning climate (Jude-York, 1993), job performance (Jude-York, 1993), assessment of job performance by management (Jude-York, 1993), on-the-job learning (Oddi et al., 1990), participation in educational activities (Oddi, 1986), personality (Oddi, 1986), intellectual development (Shaw, 1987), left brain hemisphericity (Blackwood, 1989).

The Self-Directed Learning Readiness Scale is a 58-item Likert scale that measures the extent to which an adult is ready to accept responsibility for his or her own learning activities. Research supports the reliability of the SDLRS. A Cronbach coefficient alpha of .87 was estimated by Guglielmino in her original study in 1977. In another data analysis conducted by Guglielmino in 1988, the split-half reliability was .94. Further reliability support has been provided by Brockett (1985a), Finestone (1984), Long (1987), Long and Agyekum (1983), and Reynolds (1986).

Self-directed learning readiness as measured by the SDLRS has been positively correlated with such variables as self-concept (Bligh, 1992; Brockett, 1983b, 1985a; Sabbaghian, 1980; Savoie, 1980) and level of education (George, 1995; Guglielmino, 1992; Guglielmino, Guglielmino, &

Long, 1987; Herbeson, 1991; Jones, 1992; Leeb, 1984; Long & Agyekum, 1983; Sabbaghian, 1980; Stubblefield, 1993; Wood, 1995). Other variables include problem solving (Durr, Guglielmino, & Guglielmino, 1994), entrepreneurship (Guglielmino & Klatt, 1994), hobby and club activity (Long, Redding, & Eiseman, 1993; Long, Redding, & Eiseman, 1994), learning climate (Jude-York, 1993), learning activity (Jude-York, 1993), assessment of job performance by management (Jude-York, 1993), adults' childhood experiences (Stubblefield, 1993), standardized achievement scores (Cloud, 1993), parent-child relations (Cloud, 1993), self-directed continuing learning (Jude-York, 1993; West & Bentley, 1991), personality (Wilson, 1993), mode of learning (Verhey, 1993), sense of personal priority (Wood, 1995), deterrents to participation (Wood, 1995), empowerment (George, 1995), student orientation (Delahaye & Smith, 1995), job performance (Durr, Guglielmino, & Guglielmino, 1994; Guglielmino & Roberts, 1992; Jude-York, 1993), art related attitudes and behaviors (Jones, 1992), enthusiasm for learning (Bligh, 1992), creativity (Durr, Guglielmino, & Guglielmino, 1994; Roberts, 1986), right brain hemisphericity (Torrance & Mourad, 1978), frequency of learning projects/activities (Hall-Johnson, 1986; Hassan, 1982; Verhey, 1993), locus of control (Skaggs, 1981), life satisfaction (Brockett, 1983b, 1985a; Curry, 1983; East, 1987), cognitive maturity (Leeb, 1984), motivational orientation (Reynolds, 1986), achievement style (Bitterman, 1989), course grades (Price, Kudrna, & Flegal, 1992; Savoie, 1980), grade point average (Box, 1983; Murray, 1988; Price et al., 1992), age (George, 1995; Guglielmino, 1992; Guglielmino, et al. 1987; Jones, 1992; Long &

Agyekum, 1983), gender (Guglielmino, 1992; Guglielmino, et al. 1987; Stubblefield, 1993; Wood, 1995), race (Long & Agyekum, 1983), and time spent on learning projects (Graeve, 1987; Hall-Johnson, 1986).

Research regarding self-directed learning has resulted in findings that have gone unscrutinized (Brookfield, 1984b). Thus the implications of findings derived from self-direction research inspired Brookfield (1984b; 1985) and Brockett (1985c) to air their opinions within the pages of the Adult Education Quarterly. Brookfield's (1984b) assessment of research regarding self-directed learning was advanced by the following criticisms: (a) overuse of educated, middle-class caucasian populations, (b) overuse of quantitative research methodologies, (c) disregard for the social contexts in which self-directed learning occurs, and (d) the lack of discussion raised by research concerning implications for social and political change.

Brockett (1985c) responded to Brookfield's four (1984b) criticisms. According to Brockett, "studies provide evidence that hard-to-reach adults can and do engage in self-directed learning" and that "the evidence of self-directed learning among the hard-to reach is quite strong" (1985c, p. 55). Brockett argued that "contemporary self-directed learning research has followed at least three distinct streams of inquiry" (1985c, p. 56). Namely, learning projects, qualitative studies, and quantitative measures. Of Brookfield's third and fourth criticisms, Brockett admits that "this is where Brookfield's paradigm is at its strongest" (1985c, p. 57). According to Brockett, "(Brookfield's) discussion of social and political

implications of self-directed learning raises questions that should be a vital element in future inquiry within this area" (1985c, p. 58).

In a final response to Brockett (1985c), Brookfield reaffirmed his contention that "we have fallen into accepting an unchallenged paradigm of quantitatively oriented studies of the amount of self-directed learning undertaken by (primarily) middle class adults" (1985, p. 60). Furthermore, Brookfield (1985) was firm in his stance that

(t)he SDLRS may be an appropriate means by which the potential for educationally advantaged adults to undertake independent cognitive explorations of a new field of interest can be judged. To say, however, that the it provides a measure of the *adult's* (in a generic, all encompassing sense) readiness for self-directed learning is far too simplistic. (p. 62)

Use of the Self-Directed Learning Readiness Scale has been debated within the pages of the Adult Education Quarterly. One such debate was initiated by Field (1989). Field administered a modified version of the SDLRS to 244 vocational educators in Sydney, Australia. Data derived from this population prompted Field to conclude that the SDLRS is unreliable, invalid, "flawed, both methodologically and conceptually," and not justified for use (1989, p. 138). Furthermore, Field argued that Guglielmino's original research is methodologically and conceptually flawed. Issues of concern to Field included: (a) the use of the Delphi technique as the basis for item generation, (b) the definition of the terms readiness and self-directed learner, (c) the use of negatively phrased

items, and (d) the incorporation of additional items after validation of the scale.

Guglielmino (1989) reacted to Field's first criticism by explaining that "the Delphi was never used as a means of selecting items; rather, it was used as a means of arriving at a consensus" (pp. 235-236). Of Field's second criticism, Guglielmino insisted that "readiness for self-directed learning exists along a continuum" (pp. 236-237) and that while "self-directed learner is not defined by the researcher, it *is* defined by the Delphi panel" (p. 236). Of Field's third criticism, Guglielmino argued that "(w)hen all of the items on a self-report instrument are positively stated, subjects can easily develop a response set" (p. 237). And to combat Field's final criticism, Guglielmino pointed out that the "17 additional items were added after an initial field test, not 'after validation of the scale'" (p. 238).

Long (1989) and McCune (1989) lent their support to Guglielmino. Long accused Field (1989) of: (a) omitting research observations supporting the SDLRS's reliability and validity and (b) "particularly misleading" readers by inappropriately lifting quotes out of context (1989, p. 241). McCune questioned Field's understanding of statistical concepts, and noted that Field's criticisms were based on statistical analyses derived from a modified version of the SDLRS. According to McCune (1989),

(i)† is quite possible that altering the response format of the scale introduced a response bias into the test. Prior to using the modified SDLRS for a research study, (Field) should have verified that the scores obtained do not differ significantly from scores obtained using

the standard SDLRS. Because Field did not pretest the modified SDLRS, it is problematic that his analyses, findings, and conclusions should apply to the standard SDLRS. (p. 244)

In a final response to Guglielmino (1989), Long (1989), and McCune (1989), Field (1990) reasserted his original positions, essentially claiming that the SDLRS has serious statistical, methodological, and conceptual flaws, and that its use should be discontinued.

Others have raised concerns about the SDLRS. For instance, Bonham (1991) has suggested that the SDLRS is chiefly a measure of school- or book-oriented learning readiness, thus not measuring learning readiness for resources other than books or formal schooling. Brookfield (1984b) contended that the SDLRS is biased toward middle-class caucasians. It has also been argued that the research, controversies, and debate generated by the SDLRS outweigh any limitations that the instrument may have (Brockett, 1985b; Brockett and Hiemstra, 1991).

Only one previous research study has included measures of both self-directed learning and wellness. Leeb (1984) sought to identify the relationship between self-directed learning readiness and cognitive maturity among a random sample of adults who demonstrated high-level wellness behaviors as measured by the Personal Wellness Scale (Dull & Haun, 1981). Leeb assumed that learning was the process by which adults attained high-level wellness and addressed the question of whether self-directedness and cognitive maturity characterize individuals who practice wellness conducive lifestyles.

Analysis of the data led Leeb to describe her population of healthy adults as possessing high levels of both self-directed learning readiness and cognitive maturity. High total self-directedness and the influence of the SDLRS factor "acceptance of responsibility for one's own learning" supported the notion that individual responsibility and self-initiative are keys to attaining high-level wellness. Moreover, Leeb's population of adults who had successfully incorporated wellness practices into their lifestyle was at a stage of cognitive and ethical development that denoted a capacity for self-responsibility and self-efficacy.

The research concerning self-directed learning has contributed greatly to the adult education literature base. Yet it has been suggested that the topic has been relatively exhausted and that future inquiries be limited so that other research topics may gain momentum and attention (Brookfield, 1984b, 1993; Caffarella & O'Donnell, 1988, 1991; Merriam & Caffarella, 1991). Contrarily, many viable research possibilities regarding self-direction in adult learning have not been exhausted, e.g., the relationship between wellness and self-direction. Therefore, "self-direction in learning should continue to evolve as one of the major research directions in the field of adult education" (Brockett & Hiemstra, 1991, p. 221).

Summary

Wellness was defined according to Dunn, Ardell, Hettler, Dossey and Keegan, Travis and Ryan, and Pilch. Theoretical perspectives included

health and wellness, holism, wellness readiness, and social support.

Research related to wellness was discussed in terms of qualitative studies and quantitative measures.

Self-directed learning was defined according to Knowles, Guglielmino, Brookfield, Brockett and Hiemstra, and Candy. Theoretical approaches included humanism, personal responsibility orientation (PRO), behaviorism, neobehaviorism, critical perspectives, and constructivism. Approaches to research on self-directed learning included learning projects, qualitative studies, and quantitative measures.

Chapter Three will present information concerning methodology. The following topics will be covered: population, sample, research design, variables, instrumentation, research questions, procedures, and statistical analysis.

CHAPTER III

METHOD

Chapter Two reviewed the literature related to wellness and self-direction. Both concepts were reviewed in terms of leading definitions, theoretical perspectives, and research approaches. In Chapter Three, information concerning population, sample, research design, variables, instrumentation, research questions, procedure, and statistical analysis is presented.

Population and Sample

The population for this study consisted of graduate students enrolled at the University of Tennessee, Knoxville (UTK) for Spring Term, 1996. A total of 356 graduate students were randomly selected from a population of 4,881. The random sample was electronically generated by UTK's Office of Student Data Analysis at the 95% confidence level. Thus, the alpha level at which results were accepted was .05. Graduate students enrolled in the professional schools of veterinary medicine and law were not included in the population because these schools have their own enrollment systems.

Research Design

This study investigates the extent to which variables are related. According to Ary, Jacobs, and Razavieh, "(t)he possibility of the existence

of relationships between variables is a reasonable question to investigate in educational research" (1985, p. 329). Due to its focus on relationships, this study is correlational in nature.

Researchers who concern themselves with correlational research base their selection of variables for investigation upon theoretical constructs. For example, a researcher may wonder if a relationship exists between variable X and variable Y. A positive correlation between variable X and variable Y illustrates a predictive relationship, not a causal relationship. Causal relationships imply that the presence of one variable would not exist without the influencing effects of another variable. Instead, a positive correlation means that there are underlying theoretical constructs that make persons exhibit characteristics of both variable X and variable Y.

Correlational studies are particularly useful in making predictions from one variable to another (Ferguson & Takane, 1989). If a positive correlation exists between two variables, then it can be accurately predicted that persons who exhibit levels of variable X will probably exhibit levels of variable Y, or that persons who exhibit levels of variable Y will probably exhibit levels of variable X.

Variables and Instrumentation

This study examined 25 variables. The 25 variables in this study included total TW score, TW's ten subscale scores, total SDLRS score, the SDLRS's eight subscale scores, and five demographic variables.

Demographic variables included age, ethnicity, gender, student status, and level of education. Demographic information was gathered in order to describe respondents.

TestWell, a Wellness Inventory, consists of 100 items, which comprise a total score and ten subscale scores (National Wellness Institute, 1992). Ten subscales, or dimensions make up the TW (i.e., physical fitness and nutrition; medical self-care; safety; environmental awareness; social awareness; sexuality and emotional awareness; emotional management; intellectual wellness; occupational wellness; and spirituality and values) (Appendix D).

The Self-Directed Learning Readiness Scale consists of 58 items, which comprise a total score and eight subscale scores (Guglielmino, 1977). Eight subscales, or factors make up the SDLRS (i.e., love of learning; self-concept as an effective, independent learner; tolerance of risk, ambiguity, and complexity in learning; creativity; view of learning as a lifelong, beneficial process; initiative in learning; self-understanding; and acceptance of responsibility for one's own learning) (Appendix F).

TestWell, a Wellness Inventory

TestWell, a Wellness Inventory, was developed by the National Wellness Institute (1992) at the University of Wisconsin, Stevens Point. The TW measures the extent to which an individual's current lifestyle behaviors reflect potential risks and hazards. Containing 100 items, TW is scored on a five-point Likert scale. Seven of TestWell's ten dimensions add logic to this study's theoretical framework (i.e., physical fitness and nutrition; medical

self-care; social awareness; sexuality and emotional awareness; emotional management; intellectual wellness; and spirituality and values).

Previous research supports the reliability and validity of TW. For instance, Jones & Frazier (1994) calculated a Cronbach coefficient alpha of .84. In addition, Jones and Frazier found that wellness significantly correlated with self-esteem ($r = .59$; $p < .05$). Expert testimony can be used in substantiating the content validity of psychometric instruments (Efinger, 1984). As discussed in Chapter Three's Procedure section, this study included soliciting expert testimony concerning TW's content validity. Five university professors were asked if TestWell measures the theoretical construct of wellness. Professors unanimously testified that TestWell measures the theoretical construct of wellness and recommended it for use in this study.

TestWell, a Wellness Inventory, is a new version of a comparable instrument called the Lifestyle Assessment Questionnaire (National Wellness Institute, 1978). Hettler's (1980) theory and research contributed to the development of both the LAQ and TW. The LAQ demonstrates how choices affect one's overall health and wellness. The LAQ was rejected for this study because it consists of 239 items, which comprise four sections (i.e., personal data, lifestyle, health-risk, and topics for personal growth). The "lifestyle" section of the LAQ consists of 185 items, which comprise 11 wellness subscales scored on a five-point Likert scale. Previous research supports the reliability and validity of the LAQ (Cooper, 1990; Freeman & Gintner, 1989; Palombi, 1989, 1992; Richter, 1988).

Leeb (1984) used the Personal Wellness Scale (Dull & Hahn, 1981) in her study of the relationship between self-directed learning readiness and cognitive maturity. One hundred sixty-seven adults who engaged in wellness activities were asked to complete the Personal Wellness Scale. Seventy-five out of 167 scored at or below the mean. These 75 were omitted leaving a population of 92. The population was stratified according to age and gender, and a random sample of 56 wrote essays, were interviewed, and completed the SDLRS. Results showed an insignificant yet positive relationship (.21) between self-directed learning readiness and cognitive maturity.

The Personal Wellness Scale (PWS) was developed by Dull and Hahn in 1981 to provide a measure of personal status in six wellness categories (i.e., physical fitness; nutrition; alcohol, tobacco, and drug use; relationships; stress management, and safety and medical self-care). Scored on a five-point Likert scale, the PWS consists of 30 items, which comprise six subscale scores. Sources of inspiration to Dull and Hahn included the theory and research of Hettler (1980). There is little or no evidence of the PWS's reliability and validity, thus it was not chosen for use in this study.

TestWell was chosen for this study because of its reliability, validity, and ease of administration. With the exception of a study conducted by Jones and Frazier (1994), data concerning the reliability and validity of TW is sparse. This is one of the first studies to generate data concerning the reliability and validity of TestWell.

Self-Directed Learning Readiness Scale

The SDLRS was developed by Lucy Guglielmino (1977) for her doctoral dissertation at the University of Georgia. The SDLRS measures attitudes and skills concerning readiness for self-directed learning. Developed by the Delphi research method, the SDLRS is made up of 58 items, which comprise eight factors. Items are rated on a five-point Likert scale. Seven of the SDLRS's eight factors add logic to this study's theoretical framework (i.e., love of learning; tolerance of risk, ambiguity, and complexity in learning; creativity; view of learning as a lifelong, beneficial process; initiative in learning; self-understanding; and acceptance of responsibility for one's own learning).

Comparable to the Self-Directed Learning Readiness Scale is the Oddi Continuing Learning Inventory. The Oddi Continuing Learning Inventory (OCLI) was developed by Oddi in 1984 for her doctoral dissertation at Northern Illinois University. The OCLI measures self-directed continuing learning, a personality trait believed to be fundamental to success in continuing professional education. The OCLI consists of 24 items scored on a seven-point Likert scale, comprising three dimensions (i.e., motivation, affection, and cognition) and three factors (i.e., general, ability to be self-regulating, and avidity of reading).

At least three studies have included measures of both self-directed learning readiness as measured by the SDLRS and self-directed continuing learning as measured by the OCLI (Jude-York, 1993; West & Bentley, 1991; Landers, 1990). For instance, a significantly high correlation was found

between SDLRS and OCLI by Jude-York among 194 blue-collar workers in manufacturing jobs. Whereas a significantly low correlation was found by West and Bentley among 572 school administrators and teachers.

The relationship between self-directed learning readiness and self-directed continuing learning among 98 graduate students prompted Landers (1990) to conclude that the SDLRS is the most appropriate tool for measuring self-directed learning. Landers found significant positive correlations between only two of OCLI's three subscale scores and total OCLI score. Three of 24 items correlated negatively with total OCLI score. Two other items were statistically weak. Reliability of the OCLI was very low. Landers found that each of the 8 subscale scores of the SDLRS correlated significantly with total SDLRS score, and only 6 of 58 items were statistically weak. Reliability of the SDLRS as reported by Landers was very high.

Brockett and Hiemstra (1991), Guglielmino (1989), Landers (1990), Long and Agyekum (1988) and have suggested that the SDLRS is the most appropriate instrument for measuring self-directed learning. The SDLRS was selected for this study based upon the recommendations made by Brockett and Hiemstra, Guglielmino, Landers, and Long and Agyekum.

The SDLRS is not without its critics (Brockett, 1985b; Brockett & Hiemstra, 1991; Brookfield, 1985b; Curry, 1983; Field, 1989, 1990; Sabbaghian, 1980; West & Bentley, 1991). The most frequently cited criticism of the SDLRS is that it is biased against persons with little or no experience in formal learning situations. There is evidence of a positive relationship between self-directed learning readiness and educational

attainment (George, 1995; Guglielmino, 1992; Guglielmino, Guglielmino, & Long, 1987; Jones, 1992; Herbeson, 1991; Long & Agyekum, 1983; Sabbaghian, 1980; Stubblefield, 1993; Wood, 1995). The relevance of Leeb's results in 1984 was perhaps in part due to the fact that 85% of her sample of adults who demonstrated wellness behaviors held at least a baccalaureate.

Previous research supports the reliability of the SDLRS. A Cronbach coefficient alpha of .87 was estimated by Guglielmino in her original study in 1977. A subsequent analysis conducted by Guglielmino (1988) revealed a split-half reliability of .94. Further reliability support has been provided by Finestone (1984), Long (1987), Long and Agyekum (1983), and Reynolds (1986).

Evidence of the SDLRS's validity has been reported upon by numerous researchers. The following citations are evidence that the SDLRS is a valid instrument and thus worthy of use in correlational research: Curry (1983), Eisenman, (1989), Finestone (1984), Long and Agyekum (1983; 1988), Mourad (1979), Reynolds (1986), Russell (1989), Skaggs (1981), Torrance and Mourad (1978), and Young (1986). Conversely, the following citations are evidence of the controversies surrounding the SDLRS' validity: Bonham (1991), Brockett (1985a), Brookfield (1984b) and Field (1989).

Research Questions

This research study asked questions to identify the relationship between wellness and self-directed learning readiness. The following

research questions were addressed.

1. Is there a relationship between wellness and self-directed learning readiness among graduate students?
2. Is there a relationship between wellness and the factors that comprise self-directed learning readiness?
3. Is there a relationship between self-directed learning readiness and the dimensions that comprise wellness?
4. Are there relationships between the dimensions comprising wellness and the factors comprising self-directed learning readiness?
5. Is TestWell a reliable and valid instrument for the sample under investigation?
6. Is the Self-Directed Learning Readiness Scale a reliable and valid instrument for the sample under investigation?

Procedure

Solicitation of expert testimony is a reasonable procedure to use in substantiating the content validity of psychometric instruments (Efinger, 1984). Five experts were asked if TestWell measures the theoretical construct of wellness. The panel of experts consisted of two professors of health education, two professors of nursing, and one professor of health, leisure and safety at the University of Tennessee, Knoxville. Experts unanimously testified that TestWell definitely measures the theoretical construct of wellness as it is reported upon in the literature and furthermore

highly recommended TestWell for use in this study.

The University of Tennessee, Knoxville's Office of Student Data Analysis provided the names, addresses, and telephone numbers of 356 randomly selected graduate students from a population of 4,881. An introduction letter (Appendix A) explaining this study's significance was mailed to sample members in an attempt to solicit preliminary interest and support. One week after introduction letters were mailed, participation packets were mailed to sample members. Participation packets included a cover letter (Appendix B), TestWell, Self-Directed Learning Readiness Scale, Demographic Information Questionnaire (Appendix G), a coded index card measuring 3 inches by 5 inches, and a prestamped self-addressed return envelope.

Cover letters asked sample members to return three completed questionnaires and a coded index card. Returned index cards were entered in a drawing for \$50.00 in cash. The chance to win \$50.00 was not conditioned upon returning one or more completed questionnaires. The researcher provided the cash and notified the cash prize winner by both mail and telephone.

Three weeks after participation packets were mailed, 223 reminder postcards (Appendix H) were mailed to nonrespondents in an attempt to re-solicit interest and support. Reminder postcards asked nonrespondents who had misplaced their first participation packet to request a second participation packet by calling or writing the researcher. The researcher received no requests for second participation packets.

Possible group differences between respondents and nonrespondents were investigated. A 50% random sample was selected from the total population of nonrespondents. Randomly selected nonrespondents were surveyed by phone. Only their demographic information was gathered. Demographic information obtained from nonrespondents was compared to respondents' demographic information. Data from both groups were not combined for presentation and analyzation purposes.

Participants' and nonparticipants' identities were kept confidential. Confidentiality was assured by using numerical codes instead of students' names. Questionnaires were numerically coded to aid follow-up proceedings. Index cards were numerically coded for identifying the cash prize winner.

Statistical Analysis

Frequencies and percentages were used to describe the demographic characteristics of respondents and nonrespondents. Chi-square was the statistical test used to compare nonrespondents and respondents. Means, standard deviations, and ranges were used to illustrate overall scores on TestWell and the Self-Directed Learning Readiness Scale. Pearson product moment correlation coefficient was the statistical test used to address research questions one, two, three, and four. Split-half reliability, Cronbach coefficient alpha, and Pearson product moment correlation coefficient were the statistical tests used to answer

research questions five and six. Chi-square, Pearson product moment correlation coefficient, split-half reliability, and Cronbach coefficient alpha are most often used when instrument administration is untimed and when test items are measured on interval scales, as exemplified by both TestWell and Self-Directed Learning Readiness Scale.

Chi-square is a test of significance among proportions (Ary et al., 1985). Two sets of frequencies are compared: observed and expected. Observed frequencies are the actual frequencies obtained. Expected frequencies are theoretical frequencies used for comparison. To calculate, the difference between observed frequency and expected frequency is squared and then divided by expected frequency.

Correlation coefficients are statistical tests that show both the direction and the strength of a relationship between variables (Ferguson & Takane, 1998). Once calculated, a correlation coefficient ranges in value from -1.00 to +1.00. A correlation coefficient of -1.00 means that a perfect negative relationship exists. A correlation coefficient of +1.00 is evidence of a perfect positive relationship. And a correlation coefficient of zero suggests that variables are completely independent of one another, or totally unrelated. Such exact relationships between variables are rarely or never calculated. In general, a negative coefficient means that X increases as Y decreases, or vice versa. Whereas a positive coefficient means that X increases as Y increases, or X decreases as Y decreases.

A correlation coefficient may be referred to as either significant or insignificant. A relationship's significance depends upon the level at which

a researcher chooses to make probable explanations. Typically, a researcher chooses a level of probability, or significance that enables him or her to make predictions with 90%, 95%, or 99% accuracy. Probable, or significant positive and negative correlation coefficients enable researchers "to make accurate predictions about one variable on the basis of information about the other" (Ary et al., 1985, p. 121).

The most commonly used correlation coefficient is the Pearson product moment. The Pearson product moment correlation coefficient is the mean of the z-score products (Ary et al., 1985). Each individual's z-score on variable X is multiplied by his or her z-score on variable Y. Paired z-score products are then added and the sum is divided by the number of pairs. The Pearson product moment correlation coefficient was the statistical test used to address research questions one, two, three, and four.

A correlation coefficient is not a proportion. It is the square root of a proportion expressed in the form of a fraction. Thus, a correlation coefficient does not indicate the percentage of a perfect relationship between variable X and variable Y. One way of determining the percentage, or proportion of a relationship between two variables is to calculate a statistic called coefficient of determination (Ary et al., 1985). A coefficient of determination is calculated by squaring a correlation coefficient. That is, it is the percentage of variance in one variable that is determined by the variance in another. A coefficient of determination is always positive and varies from 0 to 1. In interpreting the relationship between two variables, a coefficient of determination may be more

informative than a correlation coefficient (Ferguson & Takane, 1989). For instance, if we have a correlation coefficient of .80, then we have a coefficient of determination of 64%. Thus, 64% of the variance in variable X is predictable by the variance in variable Y. In other words, 64% of the total variation is accounted for; 36% of the variation remains unexplained. Pearson product moment correlation coefficients were squared as needed for illustration purposes.

Split-half reliability, Cronbach coefficient alpha, and Pearson product moment correlation coefficient were the statistical tests used to answer research questions five and six. Split-half reliability and Cronbach coefficient alpha are measures of reliability. Reliability refers to the consistency with which individuals respond to test items and is a measure of the extent to which item scores vary (Mehrens & Lehmann, 1984). Reliability is calculated by finding the variance of all scores for each item, and then adding variances across all items to get the sum of variances for the item scores (Ary et al., 1985).

The Pearson product moment correlation coefficient was used to measure the validity of TestWell and the Self-Directed Learning Readiness Scale. Validity is characterized by the extent to which a test truly measures a theoretical construct or behavior domain (Anastasi, 1988). Construct validity is concerned with the extent to which a test measures a specific theory or behavior. One approach to determining construct validity involves the correlation of subscale scores with total score (Palombi, 1992). Another approach to determining construct validity involves the

correlation of item scores with total score (Ary et al., 1985). Thus the extent to which item scores and subscale scores correlate to total score are measures of construct validity.

Summary

The population for this study was graduate students enrolled during Spring Term, 1996 at the University of Tennessee, Knoxville (UTK). A random sample of 356 graduate students was electronically selected from a population of 4,881 by UTK's Office of Student Data Analysis. Members of the random sample were asked to complete TestWell, Self-Directed Learning Readiness Scale, and Demographic Information Questionnaire.

This study was correlational in nature, thus investigating the extent to which wellness and self-directed learning readiness are related. Correlational data allow researchers to make predictions, not imply causation. The Pearson product moment correlation coefficient was the statistical test used to address research questions one, two, three, and four. Split-half reliability, Cronbach coefficient alpha, and Pearson product moment correlation coefficient were the statistical tests used to answer research questions five and six.

Data will be presented and analyzed in Chapter Four as they relate to the Demographic Information Questionnaire, TestWell, and Self-Directed Learning Readiness Scale. In addition, six research questions will be addressed.

CHAPTER IV

ANALYSIS OF DATA

Chapter Three presented information concerning population, sample, research design, variables, instrumentation, research questions, procedure, and statistical analysis. In this chapter, data are presented and analyzed as they relate to the Demographic Information Questionnaire, TestWell, and Self-Directed Learning Readiness Scale. In addition, the six research questions are addressed.

Demographic Information Questionnaire

The population for this study consisted of 4,881 graduate students enrolled at the University of Tennessee, Knoxville (UTK) for Spring Term, 1996. A sample of 356 graduate students was randomly selected from the population. This sample was electronically generated by UTK's Office of Student Data Analysis. Information pertaining to the following demographics was gathered: age, ethnicity, gender, student status, and level of education. The total number of respondents was 185, which is a response rate of 52%. Table 1 illustrates the frequencies and percentages derived from these respondents.

Respondents

The total number of respondents was 185, which is a response rate of 52%. Seventy-seven (41.6%) were 25 to 34 years of age. Forty-seven

**Table 1. Respondents' Frequencies and Percentages Derived From
Demographic Information Questionnaire**

Demographic	Frequency	Percent	Cumulative Percent
Age			
24 or less	47	25.4	25.4
25 to 34	77	41.6	67.0
35 to 44	41	22.2	89.2
45 to 54	19	10.3	99.5
55 or over	1	0.5	100.0
TOTALS	185	100.0	100.0
Ethnicity			
Caucasian	162	88.5	88.5
African American	8	4.4	92.9
Asian or Pacific Islander	13	7.1	100.0
TOTALS	183	100.0	100.0
Gender			
Male	68	36.8	36.8
Female	117	63.2	100.0
TOTALS	185	100.0	100.0
Student Status			
Part-time	77	41.8	41.8
Full-time	107	58.2	100.0
TOTALS	184	100.0	100.0
Education Level			
Masters	123	66.5	66.5
Specialist	4	2.2	68.7
Doctorate	50	27.0	95.7
Non-degree	8	4.3	100.0
TOTALS	185	100.0	100.0

(25.4%) were 24 years of age or less. The 35 to 44 segment of the sample represented the third largest category of respondents at a frequency of 41 (22.2%). Nineteen (10.3%) respondents were between the ages of 45 and 54. One (0.5%) respondent was 55 years of age or older.

One hundred eighty-three respondents answered the ethnicity item. The majority (88.5%) were Caucasian at a frequency of 162. Thirteen (7.1%) respondents described themselves as Asian or descending from a Pacific Island. African Americans made up 4.4% of the sample at a frequency of eight. There were no Hispanic respondents, nor were there any respondents of American Indian or Alaskan Native decent.

There were 185 responses to the gender item. One hundred seventeen (63.2%) were female, and 68 (36.8%) were male.

There were 184 responses to the student status item. One hundred seven (58.2%) were full-time graduate students, and 77 (41.8%) were part-time graduate students.

A total of 185 respondents answered the level of education item. One hundred twenty-three (66.5%) students were pursuing masters degrees. Fifty (27%) were pursuing doctoral degrees. The non-degree category represented the third largest segment of respondents at a frequency of eight (4.3%). Four (2.2%) respondents were pursuing specialist degrees.

Nonrespondents

There was a total of 171 nonrespondents, which comprised 48% of the sample. The following demographic information was gathered via

telephone from a 50% random sample (N = 86) of nonrespondents: age, ethnicity, gender, student status, and level of education. Table 2 illustrates the frequencies and percentages derived from nonrespondents.

A total of 85 nonrespondents answered the age item. Thirty-eight (44.7%) were 25 to 34 years of age. Twenty-four (28.2%) were 24 years of age or less. The 35 to 44 segment of the sample represented the third largest category of nonrespondents at a frequency of 13 (15.3%). Nine (10.6%) were between the ages of 45 and 54. One (1.2%) nonrespondent was 55 years of age or older.

Eighty-six nonrespondents answered the ethnicity item. The majority (99.3%) were Caucasian at a frequency of 80. African Americans made up 4.7% of the sample at a frequency of four. One (1.2%) nonrespondent descended from Asia or a Pacific Island. One (1.2%) nonrespondent identified himself as Hispanic. There were no nonrespondents of American Indian or Alaskan Native decent.

Forty-nine (57%) nonresponding graduate students were male, and 37 (43%) were female. Sixty-one (70.9%) nonrespondents were full-time graduate students, and 25 (29.1%) were part-time graduate students.

A total of 85 nonrespondents answered the level of education item. Fifty-nine (69.4%) were pursuing masters degrees. Twenty-four (28.2%) were pursuing doctoral degrees. The non-degree category represented the third largest segment of nonrespondents at a frequency of 2 (2.4%). No nonrespondent was pursuing a specialist degree from UTK's College of Education.

**Table 2. Nonrespondents' Frequencies and Percentages Derived From
Demographic Information Questionnaire**

Demographic	Frequency	Percent	Cumulative Percent
Age			
24 or less	24	28.2	28.2
25 to 34	38	44.7	72.9
35 to 44	13	15.3	88.2
45 to 54	9	10.6	99.5
55 or over	1	1.2	100.0
TOTALS	85	100.0	100.0
Ethnicity			
Caucasian	80	93.0	93.0
African American	4	4.7	97.7
Asian or Pacific Islander	1	1.2	98.8
Hispanic	1	1.2	100.0
TOTALS	86	100.1*	100.0
Gender			
Male	49	57.0	57.0
Female	37	43.0	100.0
TOTALS	86	100.0	100.0
Student Status			
Part-time	25	29.1	29.1
Full-time	61	70.9	100.0
TOTALS	86	100.0	100.0
Education Level			
Masters	59	69.4	69.4
Doctorate	24	28.2	97.6
Non-degree	2	2.4	100.0
TOTALS	85	100.0	100.0

* Does not total exactly 100 due to rounding.

Comparison of Nonrespondents and Respondents

Chi-square tests were used to compare nonrespondents and respondents. Chi-square tests revealed two significant differences. That is, statistical differences were found between nonrespondents and respondents on the variables of gender and student status. Table 3 illustrates Chi-square comparisons between nonrespondents and respondents.

The proportion of respondents to nonrespondents differed by gender. Compared to nonrespondents, respondents included a significantly higher proportion of females and a significantly lower proportion of males at the .01 alpha level. Similarly, the proportion of respondents to nonrespondents differed by student status. Compared to nonrespondents, respondents included a significantly higher proportion of part-time students and a significantly lower proportion of full-time students at the .05 alpha level. In other words, more females responded than males, and more part-time students responded than full-time students. Thus, respondents were not representative of the random sample on the variables of gender and student status.

TestWell, a Wellness Inventory

TestWell, a Wellness Inventory, was developed in 1992 by the National Wellness Institute and measures the extent to which current lifestyle behaviors reflect potential risks and hazards. The TestWell (TW) is comprised of 100 items that yield ten subscale scores and a total score.

Table 3. Chi-Square Comparison of Observed and Expected Frequency of Nonrespondents' and Respondents' Demographic Information

Demographic	Response	Observed	Expected	Degree(s) of Freedom	Chi-Square
Age					
24 or less	No	24	22.35	4	2.005
	Yes	47	48.65		
25 to 34	No	38	36.20		
	Yes	77	78.80		
35 to 44	No	13	17.00		
	Yes	41	37.00		
45 to 54	No	9	8.81		
	Yes	19	19.19		
55 or over	No	1	0.63		
	Yes	1	1.37		
Ethnicity					
Caucasian	No	80	77.37	3	6.238
	Yes	162	164.63		
African American	No	4	3.84		
	Yes	8	8.16		
American Indian or Alaskan Native	No	0	0.00		
	Yes	0	0.00		
Asian or Pacific Islander	No	1	4.48		
	Yes	13	9.52		
Hispanic	No	1	0.32		
	Yes	0	0.68		
Gender					
Male	No	49	37.13	1	9.784**
	Yes	68	79.87		
Female	No	37	48.87		
	Yes	117	105.13		
Student Status					
Part-time	No	25	32.49	1	4.071*
	Yes	77	69.51		
Full-time	No	61	53.51		
	Yes	107	114.49		
Education Level					
Masters	No	59	57.30	3	2.554
	Yes	123	124.70		
Specialist	No	0	1.30		
	Yes	4	2.70		
Doctorate	No	24	23.30		
	Yes	50	50.70		
Non-degree	No	2	3.15		
	Yes	8	6.85		

*p < .05 **p < .01

One-hundred eighty-five (52%) randomly selected graduate students responded to the TW. Table 4 illustrates respondents' overall scores on TW. Total TW scores ranged from 285 to 482. The sample's mean total TW score was 387.40.

A mean statistic takes into account each and every score, is the best indicator of the combined performance of an entire group, is the most frequently used measure of central tendency, and is the most precise index to use when describing interval scores (Ary et al., 1985). Thus the "safety" and "sexuality and emotional awareness" dimensions had the greatest statistical influence upon total TW score as indicated by mean subscale scores of 4.45 and 4.31, respectively. "Physical fitness and nutrition," "medical self-care," and "environmental wellness" had the least statistical influence upon total TW score as indicated by mean subscale scores of 3.27, 3.33, and 3.34, respectively. In Jones and Frazier's (1994) convenience sample of wellness professionals, mean subscale scores were highest on "safety" and "sexuality and emotional awareness." Mean subscale scores were lowest on "environmental wellness," "physical fitness and nutrition," and "emotional management."

Self-Directed Learning Readiness Scale

The Self-Directed Learning Readiness Scale (SDLRS) was developed by Lucy Guglielmino in 1977. The SDLRS measures attitudes and skills concerning readiness for self-directed learning. It is comprised of 58 items that yield eight subscale scores and a total score. One-hundred eighty-five

Table 4. Mean, Standard Deviation, and Range for Subscale Scores and Total Score of TestWell

TW Dimensions	Number of Items Per Dimension	N	Mean	Standard Deviation	Range Minimum	Maximum
Physical Fitness and Nutrition	10	184	32.67	8.36	13	50
Medical Self-care	10	185	33.23	8.04	01	48
Safety	10	185	44.38	3.98	34	50
Environmental Wellness	10	185	33.40	6.90	13	50
Social Awareness	10	185	40.02	5.55	25	50
Sexuality and Emotional Awareness	10	185	43.05	5.91	24	50
Emotional Management	10	185	38.90	5.30	21	50
Intellectual Wellness	10	185	42.31	4.90	30	50
Occupational Wellness	10	182	39.75	6.29	15	50
Spirituality and Values	10	184	40.73	6.25	18	50
TOTAL TESTWELL	100	185	387.40	36.54	285	482

Note: Items of the Wellness Inventory that comprise each dimension are identified in Appendix D.

(52%) randomly selected graduate students responded to the SDLRS. Table 5 illustrates respondents' overall scores on the SDLRS. Total SDLRS scores ranged from 157 to 282. The sample's mean total SDLRS score was 238.70. As indicated by a mean subscale score of 4.54, the "view of learning as a lifelong, beneficial process" factor had the greatest statistical influence upon total SDLRS score. As indicated by a mean subscale score of 3.90, the "initiative in learning" factor had the least statistical influence upon total SDLRS score.

Additional reports of overall scores on the SDLRS are available. In a sample of 103 adults who inquired into evening college credit programs, total scores ranged from 120 to 276 with a mean score of 228.4 (Wood, 1994). Total scores ranged from 169 to 272 with a mean score of 237.4 for a sample of 34 persons who exhibited health-conducive lifestyles (Leeb, 1984). Sixty-four older adults averaged a total SDLRS score of 212; scores ranged from 166 to 269 (Brockett, 1983b). Total scores for a sample of 77 nontraditional undergraduates ranged from 157 to 276 and averaged 229.1 (Sabbaghian, 1980). Comparitatively, the mean score (238.70) for the sample under investigation is greater than the mean scores reported by Brockett, Leeb, Sabbaghian, and Wood.

Analysis of Research Questions

This study asked six research questions. The research questions were asked in order to: (a) identify relationships between wellness and self-directed learning readiness, and (b) generate data concerning the

Table 5. Mean, Standard Deviation, and Range for Subscale Scores and Total Score of the Self-Directed Learning Readiness Scale

SDLRS Factors	Number of Items Per Factor	N	Mean	Standard Deviation	Range Minimum	Range Maximum
Love of Learning	17	185	73.70	7.79	47	85
Self-concept as an Effective Learner	12	185	47.81	4.93	30	60
Tolerance of Risk, Ambiguity, and Complexity in Learning	17	185	67.39	8.48	40	83
Creativity	10	185	36.41	3.90	25	45
View of Learning as a Lifelong, Beneficial Process	7	185	31.77	3.34	18	35
Initiative in Learning	5	185	19.49	2.48	12	25
Self-understanding	9	185	37.46	3.90	19	45
Acceptance of Responsibility for One's Own Learning	2	185	8.57	1.57	03	10
TOTAL SDLRS	58	185	238.70	21.60	157	282

Note: Items of the Self-Directed Learning Readiness Scale that comprise each factor are identified in Appendix F.

reliability and validity of TestWell and the Self-Directed Learning Readiness Scale.

1. Is There A Relationship Between Wellness And Self-Directed Learning Readiness Among Graduate Students?

The relationship between total TW score and total SDLRS score was determined by computing Pearson product moment correlation coefficient. Table 6 illustrates the relationship between total TW score and total SDLRS score. The correlation between total TW score and total SDLRS score was .45 and statistically significant at the .001 alpha level. This suggests that there is a significant relationship between wellness and self-directed learning readiness. Significance is not to be confused with numerical value. A low correlation always represents a low relationship. The low correlation between wellness and self-directed learning readiness suggests that a relation can be predicted among graduate students at greater than chance level. However, predictions of wellness have only a weak relationship with self-directed learning.

Table 6. Pearson Product Moment Correlation Coefficient Between Total Score of TestWell and Total Score of the Self-Directed Learning Readiness Scale

	Correlation with Total Score of the Self-Directed Learning Readiness Scale	Determination Coefficient
Total Score of TestWell	.45***	.20

***p < .001

According to the coefficient of determination statistic, 20% of the variation in total TW score is predictable by the variance in total SDLRS score. The remaining proportion (80%) can therefore be attributed to something other than total SDLRS score.

2. Is There A Relationship Between Wellness And The Factors That Comprise Self-Directed Learning Readiness?

The relationship between total TW score and the eight subscale scores of the SDLRS was determined by computing Pearson product moment correlation coefficient. Table 7 illustrates the relationship between total TW score and the eight factors of the SDLRS. Correlations between total TW score and the eight subscale scores of the SDLRS ranged from .10 (acceptance of responsibility for one's own learning) to .48 (creativity). Likewise, coefficients of determination ranged from one percent to 23%.

According to the correlation coefficient of determination statistic, one percent of the variation in "acceptance of responsibility for one's own learning" is predictable by the variance in total TW, and the remaining proportion (99%) can be attributed to something other than total TW. The same concept is true of the relationship between "creativity" and total TW. That is, 23% of the total variation is accounted for; 77% of the variation remains unexplained.

Only one of the SDLRS's eight factors was not statistically significant at the .001 alpha level. Specifically, "acceptance of responsibility for one's own learning" was not related to total TW score.

Table 7. Pearson Product Moment Correlation Coefficients Between Total Score of TestWell and the Eight Subscale Scores of the Self-Directed Learning Readiness Scale

Eight Factors of the SDLRS	Correlation with Total Score of TestWell	Determination Coefficient
Love of Love of Learning	.38***	.14
Self-concept as an Effective Learner	.38***	.14
Tolerance of Risk, Ambiguity, and Complexity in Learning	.33***	.11
Creativity	.48***	.23
View of Learning as a Lifelong, Beneficial Process	.31***	.10
Initiative in Learning	.40***	.16
Self-understanding	.36***	.13
Acceptance of Responsibility for One's Own Learning	.10	.01

***p < .001

3. Is There A Relationship Between Self-Directed Learning Readiness And The Dimensions That Comprise Wellness?

The relationship between total SDLRS score and TW's ten subscale scores was determined by computing Pearson product moment correlation coefficient. Table 8 illustrates the relationship between total SDLRS score and TW's ten subscale scores. Correlations between total SDLRS score and TW's ten subscale scores ranged from .12 (environmental wellness) to .51 (spirituality and values). Likewise, coefficients of determination ranged from one percent to 26%.

According to the correlation coefficient of determination statistic, one percent of the variation in "environmental wellness" is predictable by the variance in total SDLRS. That is, 99% of the variance in "environmental wellness" is predictable by the variance in total SDLRS. Twenty-six percent of the variance in "spirituality and values" is predictable by the variance in total SDLRS; 74% of the variation remains unexplained.

Three of TW's ten subscales were not related to total SDLRS score at the .001 alpha level. Instead, "safety" and "emotional management" were related to total SDLRS at the .01 alpha level, and "environmental wellness" was not related to total SDLRS score.

4. Are There Relationships Between The Dimensions Comprising Wellness And The Factors Comprising Self-Directed Learning Readiness?

Relationships between the ten subscale scores of TW and the eight subscale scores of the SDLRS were determined by computing Pearson product moment correlation coefficient. Table 9 illustrates the relationships

Table 8. Pearson Product Moment Correlation Coefficients Between Total Score of the Self-Directed Learning Readiness Scale and the Ten Subscale Scores of TestWell

Ten Dimensions of TestWell	Correlation with Total Score of the SDLRS	Determination Coefficient
Physical Fitness and Nutrition	.23***	.05
Medical Self-care	.26***	.07
Safety	.18**	.03
Environmental Wellness	.12	.01
Social Awareness	.32***	.10
Sexuality and Emotional Awareness	.23***	.05
Emotional Management	.20**	.04
Intellectual Wellness	.49***	.24
Occupational Wellness	.33***	.11
Spirituality and Values	.51***	.26

**p < .01

***p < .001

Table 9. Pearson Product Moment Correlation Coefficients Between the Ten Subscale Scores of TestWell and the Eight Subscale Scores of the Self-Directed Learning Readiness Scale

Eight Factors of the Self-Directed Learning Readiness Scale	Ten Dimensions of TestWell									
	Physical Fitness and Nutrition	Medical Self-care	Safety	Environmental Wellness	Social Awareness	Sexuality and Emotional Awareness	Emotional Management	Intellectual Wellness	Occupational Wellness	Spirituality and Values
Love of Learning	.18**	.24***	.11	.08	.29***	.16*	.12	.45***	.33***	.42***
Self-concept as an Effective Learner	.18**	.23***	.18**	.05	.36***	.15*	.19**	.47***	.27***	.41***
Tolerance of Risk, Ambiguity, and Complexity in Learning	.20**	.18**	.12	.12	.10	.23***	.14*	.31***	.24***	.43***
Creativity	.26***	.26***	.18**	.15*	.36***	.23***	.29***	.47***	.31***	.48***
View of Learning as a Lifelong, Beneficial Process	.18**	.23***	.09	.09	.21**	.15*	.08	.29***	.24***	.32***
Initiative in Learning	.15*	.30***	.13	.08	.44***	.13	.15*	.44***	.27***	.39***
Self-understanding	.18**	.18**	.16*	.08	.33***	.14	.18**	.37***	.30***	.44***
Acceptance of Responsibility for One's Own Learning	.02	.02	-.04	-.09	.19**	.02	.04	.18**	.13	.15*

*p < .05 **p < .01 ***p < .001

Note: Dimensions of the Wellness Inventory and factors of the Self-Directed Learning Readiness Scale are further identified in Appendices D and F, respectively.

between the ten subscale scores of TW and the eight subscale scores of the SDLRS. Correlations between the ten subscale scores of TW and eight subscale scores of the SDLRS ranged from $-.09$ (environmental wellness with acceptance of responsibility for one's own learning) to $.48$ (spirituality and values with creativity).

Two TW subscale scores (i.e., intellectual wellness and spirituality and values) significantly correlated with every subscale score of the SDLRS. One SDLRS subscale score (i.e., creativity) significantly correlated with every subscale score of TW.

Fifty-eight (73%) of 80 correlations between the ten subscale scores of TW and the eight subscale scores of the SDLRS were statistically significant and 22 (27%) were not related. Of the fifty-eight correlations that were related, all were statistically positive. That is, there were no significantly negative correlation coefficients between the ten subscale scores of TW and the eight subscale scores of the SDLRS.

5. Is TestWell A Reliable And Valid Instrument For The Sample Under Investigation?

This study investigated the reliability and validity of TestWell, a Wellness Inventory. More specifically, the internal consistency reliability and the construct validity of TW were examined.

Reliability. Based on the information derived from 185 randomly selected graduate students, the split-half reliability of TW was $.87$. The reliability of TW, determined by computing Cronbach coefficient alpha, was $.92$.

Previous research supports the reliability of TW. A Cronbach coefficient alpha of .84 was calculated by Jones and Frazier (1994) among 90 conveniently sampled wellness professionals attending a national conference on wellness. The reliability of a test is partly a function of sample size (Ary et al., 1985). That is, the greater the sample size used with a test, the more representative the test is expected to be of the population.

Coefficient alphas for TW's 10 subscale scores are illustrated in Table 10. Coefficient alphas of .71 or above were calculated for eight of ten subscales. The two exceptions were "medical self-care" (.68) and "safety" (.56).

Validity. Construct validity of the TW was determined by computing Pearson product moment correlation coefficient between total TW score and TW's ten subscales. Table 11 illustrates the relationship between total TW score and TW's ten subscales. Correlations between TW's ten subscales and total TW score ranged from .44 (safety) to .72 (medical self-care), all were statistically significant at the .001 alpha level.

Pearson product moment correlation coefficient was used to correlate TW item scores with total TW score. According to Ary et al., "(e)ach item should correlate at least .25 with the total score" (1985, p. 197). Twenty (20%) of 100 items (3, 7, 21, 23, 24, 26, 27, 28, 31, 34, 35, 36, 45, 56, 60, 61, 71, 76, 77, 80) correlated .24 or less with total TW score. There were no negative correlations between TW item scores and total TW score. Items that have low or negative correlation with the total score

Table 10. Cronbach Coefficient Alphas for the Ten Subscale Scores of TestWell

Ten Dimensions of TestWell	Cronbach's Coefficient Alpha
Physical Fitness and Nutrition	.79
Medical Self-care	.68
Safety	.56
Environmental Wellness	.71
Social Awareness	.77
Sexuality and Emotional Awareness	.77
Emotional Management	.77
Intellectual Wellness	.73
Occupational Wellness	.85
Spirituality and Values	.83

**Table 11. Pearson Product Moment Correlation Coefficients
Between Total Score of TestWell and the
Ten Subscale Scores of TestWell**

Ten Dimensions of TestWell	Correlation with Total Score of TestWell
Physical Fitness and Nutrition	.55***
Medical Self-care	.72***
Safety	.44***
Environmental Wellness	.56***
Social Awareness	.65***
Sexuality and Emotional Awareness	.55***
Emotional Management	.56***
Intellectual Wellness	.49***
Occupational Wellness	.54***
Spirituality and Values	.67***

***p < .001

should be eliminated because they do not measure the same thing as the total score (Ary et al.).

6. Is The Self-Directed Learning Readiness Scale A Reliable And Valid Instrument For The Sample Under Investigation?

This study investigated the reliability and validity of the Self-Directed Learning Readiness Scale. More specifically, the internal consistency reliability and the construct validity of the SDLRS were examined.

Reliability. Based on the information derived from 185 randomly selected graduate students, the split-half reliability of the SDLRS was .87. The reliability of the SDLRS, determined by computing Cronbach coefficient alpha, was .92.

Previous research supports the reliability of the SDLRS. An analysis of 3,151 accumulated respondents conducted by Guglielmino (1988) revealed a split-half reliability of .94. A reliability coefficient of .87 using Cronbach alpha was estimated by Guglielmino (1977) in her original study. Further reliability support has been provided by Finestone (1984), Long (1987), Long and Agyekum (1983), and Reynolds (1986). The reliability of a test is partly a function of group heterogeneity (Ary et al., 1985). That is, reliability increases as the spread or heterogeneity of those who take the test increases. Conversely, the more homogeneous the group is with respect to the trait being measured, the lower will be the reliability coefficient.

Coefficient alphas for the SDLRS's eight subscale scores are illustrated in Table 12. Coefficient alphas of .52 or above were calculated

Table 12. Cronbach Coefficient Alphas for the Eight Subscale Scores of the Self-Directed Learning Readiness Scale

Eight Factors of the Self-Directed Learning Readiness Scale	Cronbach's Coefficient Alpha
Love of Love of Learning	.69
Self-concept as an Effective Learner	.69
Tolerance of Risk, Ambiguity, and Complexity in Learning	.80
Creativity	.61
View of Learning as a Lifelong, Beneficial Process	.38
Initiative in Learning	.52
Self-understanding	.58
Acceptance of Responsibility for One's Own Learning	.77

for seven of eight subscales. The exception was "view of learning as a lifelong, beneficial process" (.38).

Validity. Construct validity of the SDLRS was determined by computing Pearson product moment correlation coefficient between total SDLRS score and the SDLRS's eight subscales. Table 13 illustrates the relationship between total SDLRS score and the SDLRS's eight subscales. Correlations between the SDLRS's eight subscales and total SDLRS score ranged from .41 (acceptance of responsibility for one's own learning) to .88 (love of learning), all were statistically significant at the .001 alpha level.

Pearson product moment correlation coefficient was used to correlate SDLRS item scores with total SDLRS score. Only item 33 correlated .24 or less with total SDLRS score. There were no negative correlations between SDLRS item scores and total SDLRS score.

Summary

The population for this study consisted of 4,881 graduate students enrolled at the University of Tennessee, Knoxville for Spring Term, 1996. A sample of 356 graduate students was randomly selected from the population. Information pertaining to the following demographics was gathered from 185 respondents and 86 nonrespondents: age, ethnicity, gender, student status, and level of education.

The majority of respondents (41.6%) were 25 to 34 years of age. Caucasians represented almost 90% of the sample while other ethnicities represented just over 10%. Nearly twice as many females responded than

Table 13. Pearson Product Moment Correlation Coefficients Between Total Score of the Self-Directed Learning Readiness Scale and the Eight Subscale Scores of the Self-Directed Learning Readiness Scale

Eight Factors of the Self-Directed Learning Readiness Scale	Correlation with Total Score of the Self-Directed Learning Readiness Scale
Love of Learning	.88***
Self-concept as an Effective Learner	.78***
Tolerance of Risk, Ambiguity, and Complexity in Learning	.81***
Creativity	.77***
View of Learning as a Lifelong, Beneficial Process	.74***
Initiative in Learning	.62***
Self-understanding	.77***
Acceptance of Responsibility for One's Own Learning	.41***

***p < .001

males. One-hundred seven (58.2%) full-time and seventy-seven (41.8%) part-time graduate students made up the sample. The majority (66.5%) of respondents were pursuing masters degrees.

The majority of nonrespondents (44.7%) were 25 to 34 years of age. Caucasians represented 93% of the sample while other ethnicities represented 7%. Forty-nine (57%) males and thirty-seven (43%) females made up the sample. Sixty-one (70.9%) were full-time graduate students, and 25 (29.1%) were part-time graduate students. The majority (69.4%) of nonrespondents were pursuing masters degrees.

Chi-square tests were used to compare respondents and nonrespondents. Chi-square tests revealed significant statistical differences between respondents and nonrespondents on the variables of gender and student status, suggesting that proportionally more females responded than males, and proportionally more part-time students responded than full-time students.

Total TW scores ranged from 285 to 482. The sample's mean total TW score was 387.40. Total SDLRS scores ranged from 157 to 282. The sample's mean total SDLRS score was 238.70. A significant correlation (.45) was found between total TW score and total SDLRS score at the .001 alpha level. Twenty percent of the proportion of variation between total TW score and total SDLRS score is accounted for and 80% of the proportion of variation remains unexplained. The correlations between total TW score and the eight subscale scores of the SDLRS ranged from .10 to .48. One SDLRS factor was not related to total TW score. The correlations between

total SDLRS score and TW's ten subscale scores ranged from .12 to .51. One wellness dimension was not related to total SDLRS score. The correlations between the ten subscale scores of TW and the eight subscale scores of the SDLRS ranged from -.09 to .48. Fifty-eight (73%) of the 80 correlations between TW subscales and SDLRS subscales were statistically significant and 22 (27%) were not related.

The split-half reliability of TW was .87. By computing Cronbach coefficient alpha, the reliability of TW was .92. Coefficient alphas of .71 or above were calculated for eight of ten subscale scores. Correlation coefficients between total TW score and TW's ten subscales ranged from .44 to .72, all were statistically significant at the .001 alpha level. Twenty (20%) of 100 items correlated .24 or less with total TW score. There were no negative correlations between TW item scores and total TW score.

The split-half reliability of the SDLRS was .87. By computing Cronbach coefficient alpha, the reliability of the SDLRS was .92. Coefficient alphas of .52 or above were calculated for seven of eight subscale scores. Correlation coefficients between the SDLRS's eight subscales and total SDLRS score ranged from .41 to .88, all were statistically significant at the .001 alpha level. Only item 33 correlated .24 or less with total SDLRS score. There were no negative correlations between SDLRS item scores and total SDLRS score.

Purpose, procedure, findings, and conclusions will be discussed in Chapter Five. In addition, implications for practice and recommendations for further research will be made.

CHAPTER V

FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Chapter One stated that the purpose of this study is to measure the degree to which wellness and self-directed learning readiness are related among graduate students. Chapter One also included a problem statement, research questions, theoretical framework, significance of the study, assumptions, limitations, and definitions. Chapter Two reviewed the literature related to wellness and self-direction. Both concepts were reviewed in terms of definitions, theoretical perspectives, and research approaches. Chapter Three presented information concerning methodology. The following topics were covered: population, sample, research design, variables, instrumentation, research questions, procedures, and statistical analysis. Data were presented and analyzed in Chapter Four as they related to the Demographic Information Questionnaire, TestWell, and Self-Directed Learning Readiness Scale. In addition, six research questions were addressed.

Purpose, procedure, findings, and conclusions are discussed in Chapter Five. In addition, implications for practice and recommendations for further research are made.

Purpose and Procedure

The purpose of this study was to measure the degree to which

wellness and self-directed learning readiness are related among graduate students. Moreover, this study yielded a contribution to the concern that previously existing theory and research were inadequate for relating the concepts of wellness and self-directed learning.

The population of this study consisted of 4,881 graduate students enrolled at the University of Tennessee, Knoxville for Spring Term, 1996. The University of Tennessee, Knoxville's Office of Student Data Analysis electronically generated the names, addresses, and telephone numbers of 356 randomly selected graduate students.

An introduction letter explaining this study's significance was mailed to sample members in an attempt to solicit preliminary interest and support. One week later, participation packets were mailed to sample members. Participation packets included a cover letter, TestWell, Self-Directed Learning Readiness Scale, Demographic Information Questionnaire, a coded index card, and a prestamped self-addressed return envelope. Returned index cards were entered in a drawing for \$50.00 in cash. Three weeks after participation packets were mailed, 223 reminder postcards were mailed to nonrespondents in an attempt to re-solicit interest and support.

There were 185 respondents for a 52% response rate. The majority of respondents (41.6%) were 25 to 34 years of age. Caucasians represented almost 90% of the sample while other ethnicities represented just over 10%. Almost twice as many females responded than males. One-hundred seven (58.2%) full-time and seventy-seven (41.8%) part-time graduate students

made up the sample. The majority (66.5%) of respondents were pursuing masters degrees. Four respondents were pursuing specialist degrees.

Possible group differences between respondents and nonrespondents were investigated. A 50% random sample ($N = 86$) was selected from the total population of nonrespondents in order to compare demographic information with that of respondents. Chi-square tests revealed significant statistical differences between respondents and nonrespondents on the variables of gender and student status, suggesting that proportionally more females responded than males, and proportionally more part-time students responded than full-time students.

TestWell, a Wellness Inventory (1992), measures the extent to which current lifestyle behaviors reflect potential risks and hazards. TestWell (TW) is comprised of 100 items that yield ten subscale scores and a total score. Total TW scores ranged from 285 to 482. The sample's mean total TW score was 387.40. As indicated by a mean subscale score of 4.45, the "safety" dimension had the greatest statistical influence upon total TW score. The "physical fitness and nutrition" dimension had the least statistical influence (3.27) upon total TW score.

Developed in 1977, the Self-Directed Learning Readiness Scale (SDLRS) measures attitudes and skills concerning readiness for self-directed learning. The SDLRS is comprised of 58 items that yield eight subscale scores and a total score. Total SDLRS scores ranged from 157 to 282. The sample's mean total SDLRS score was 238.70. As indicated by a mean subscale score of 4.54, the "view of learning as a lifelong, beneficial

process" factor had the greatest statistical influence upon total SDLRS score. The "initiative in learning" factor had the least statistical influence (3.90) upon total SDLRS score.

Findings and Discussion

This study sought to examine the relationship between wellness and self-directed learning readiness by asking six research questions. Findings and discussion can be gleaned from correlational studies. In this case, Findings and discussions are arranged according to six research questions.

1. Is There A Relationship Between Wellness And Self-Directed Learning Readiness Among Graduate Students?

Findings. A significant positive correlation (.45) was found between total TW score and total SDLRS score at the .001 alpha level. This accounts for 20% of the proportion of variation between total TW score and total SDLRS score.

Discussion. The relationship between wellness and self-directed learning readiness is said to be positive because low scores on TW are associated with low scores on the SDLRS, and high scores on TW are associated with high scores on the SDLRS. The probability of the relationship between total TW score and total SDLRS score being due to chance is one in 1,000 or less.

A coefficient of .45 indicates 20% common variance. Common variance refers to "the variation in one variable that is attributable to its tendency to vary with the other" (Gay, 1981, p. 186). More specifically,

common variance refers to the percentage of variance in scores on TW that is determined by the variance in scores on the SDLRS. Thus, 20% of the variation between scores on TW and scores on the SDLRS is accounted for; 80% of the variation remains unexplained.

2. Is There A Relationship Between Wellness And The Factors That Comprise Self-Directed Learning Readiness?

Findings. Correlations between total TW score and subscale scores of the SDLRS ranged from .10 (acceptance of responsibility for one's own learning) to .48 (creativity). One SDLRS factor was not related to total TW score. Contrary to this study's theoretical framework, "acceptance of responsibility for one's own learning" was not related to total TW score.

Discussion. Significantly positive correlations were found to exist between total TW score and seven of eight SDLRS factors (love of learning; self-concept as an effective learner; tolerance of risk, ambiguity, and complexity in learning; creativity; view of learning as a lifelong, beneficial process; initiative in learning; and self-understanding). At the .001 alpha level, the probability that these correlations are due to chance is one in 1,000 or less.

Correlations between variables are not always statistically significant. Such is the case of the relationship between "acceptance of responsibility for one's own learning" and total TW score. The relationship (.10) between "acceptance of responsibility for one's own learning" and total TW score was not related, meaning that their association is more likely to be a function of chance than probability.

3. Is There A Relationship Between Self-Directed Learning Readiness And The Dimensions That Comprise Wellness?

Findings. Correlations between total SDLRS score and TW's ten subscales ranged from .12 (environmental wellness) to .51 (spirituality and values). Three of TW's ten dimensions were not related to total SDLRS score at the .001 alpha level (i.e., safety, environmental wellness, and emotional management). That is, "safety" and "emotional management" related to total SDLRS at the .01 alpha level, and "environmental wellness" was not related to total SDLRS score.

Discussion. The positive relationship between total SDLRS score and "environmental wellness" was not statistically significant. Thus this association is more likely to be a function of chance than probability.

The probability of the relationship (.18) between "safety" and total SDLRS score as being a chance occurrence is one in 100. Similarly, the probability of the relationship (.20) between "emotional management" and total SDLRS score as being a chance occurrence is one in 100.

The dimensions of "physical fitness and nutrition," "medical self-care," "social awareness," "sexuality and emotional awareness," "intellectual wellness," "occupational wellness," and "spirituality and values" correlated positively with total SDLRS score at the .001 alpha level. The probability that these correlations are due to chance is one in 1,000 or less.

4. Are There Relationships Between The Dimensions Comprising Wellness And The Factors Comprising Self-Directed Learning Readiness?

Findings. Correlations between TW's ten subscales and the SDLRS's

eight subscales ranged from $-.09$ (environmental wellness with acceptance of responsibility for one's own learning) to $.48$ (spirituality and values with creativity). Fifty-eight (73%) of 80 correlations between TW subscale scores and SDLRS subscale scores were statistically significant and 22 (27%) were not related. Of the 58 correlations that were related, all were positive.

Discussion. Four conceivable relationships between the dimensions of TW and the factors of SDLRS lend support to this study's theoretical framework. First, the probability of the relationship $(.18)$ between "intellectual wellness" and "acceptance of responsibility for one's own learning" as being a chance occurrence is one in 100. A correlation of $.18$ indicates 3% common variance. Second, the relationship $(.18)$ between "physical fitness and nutrition" and "self-understanding" as being a chance occurrence is one in 100. Third, the probability of the relationship $(.29)$ between "emotional management" and "creativity" as being a chance occurrence is one in 1,000. A correlation of $.29$ indicates 8% common variance. And fourth, the probability of the relationship $(.24)$ between "medical self-care" and "love of learning" as being a chance occurrence is one in 1,000. A correlation of $.24$ indicates 6% common variance.

5. Is TestWell A Reliable And Valid Instrument For The Sample Under Investigation?

Findings. The split-half reliability of TW was $.87$. The reliability of TW, determined by computing Cronbach coefficient alpha, was $.92$. Coefficient alphas of above $.71$ were calculated for eight of ten subscale scores. The two exceptions were the coefficients of $.68$ (medical self-care)

and .56 (safety).

Correlations between TW's ten subscales and total TW score ranged from .44 (safety) to .72 (medical self-care), all were statistically significant at the .001 alpha level. Twenty (20%) of 100 items correlated .24 or less with total TW score. There were no negative correlations between TW item scores and total TW score.

Discussion. The split-half reliability of TW was .87 and Cronbach coefficient alpha was .92. A reliability coefficient of .90 or above is acceptable for almost any test (Gay, 1981). According to Gay, "(i)f a test is composed of several subtests, then the reliability of each subtest must be evaluated, not just the reliability of the total test" (1981, p. 123).

Examination of subtest reliability is especially important when subtests are used for research purposes. Coefficient alphas of .56 or above were calculated for each of TW's ten subscale scores. According to Ary et al.,

(t)he degree of reliability needed in a measure depends to a great extent on the use that is to be made of the results. If the measurement results are to be used for making a decision about a group or even for research purposes, a lower reliability coefficient (in the range of .30 to .50) might be acceptable. But if the results are to be used as a basis for making decisions about individuals, especially important or irreversible decisions, only instruments with the highest reliability are acceptable. (1985, p. 237)

In the construct approach to validity, "the object is to determine what psychological construct is being measured by a test and how well it is

being measured" (Ary et al., 1985, p. 219). The term construct most often refers to a personality characteristic that is not directly measurable but which explains observable effects. The concept of wellness has been constructed by experts to account for observable influences. Wellness cannot itself be measured directly but many of the characteristics believed to be associated with wellness can be identified and described. The sum of these descriptions provide a measure of the abstract construct of wellness.

The construct approach to validity combines intuitive logic as exemplified by the testimony of experts, and statistics as exemplified by intratest correlation coefficients. The intratest analysis method "examines the test itself and gathers information about the content of the test, the process used in responding to the test, and correlations among items of the test" (Ary et al., 1985, p. 222). Furthermore according to Ary et al., "(i)nternally, relationships within the test should be as predicted by the construct" (p. 219). Correlation coefficients provide support for the theory that the construct of wellness consists of interrelated elements and evidence for the degree to which TestWell's items and subscales measure these interrelated elements.

Correlations between total TW score and TW's ten subscales ranged from .44 (safety) to .72 (medical self-care), all were statistically significant at the .001 alpha level. A correlation of .44 indicates 19% common variance. A correlation of .72 indicates 52% common variance. The probability that these relationships are due to mere chance is in 1,000 or less.

Twenty (20%) of 100 items (i.e., 3, 7, 21, 23, 24, 26, 27, 28, 31, 34, 35, 36, 45, 56, 60, 61, 71, 76, 77, 80) correlated .24 or less with total TW score. In other words, the variances of 20 items correlated with the variance of total TW score at .24 or less. There were no negatively correlated relationships between TW item scores and total TW score. Items 3 and 7 belong to "physical fitness and nutrition." Items 21, 23, 24, 26, 27, and 28 belong to "safety." Items 31, 34, 35, and 36 belong to "environmental wellness." Item 45 belongs to "social awareness." Items 56 and 60 belong to "sexuality and emotional awareness." Item 61 belongs to "emotional management." And items 71, 76, 77, and 80 belong to "intellectual wellness." According to Ary et al.,

item discrimination index shows the extent to which each item mean discriminates among the respondents in the same way as the total score discriminates. If high scorers on an item have high total scores and if low scores on the item have low total scores, then the item is discriminating in the same way as the total score. The item discrimination index is calculated by correlating item scores with total scores Each item should correlate at least .25 with the total score. Items that have low correlation or negative correlation with the total score should be eliminated because they are not measuring the same thing as the total score and hence are not contributing to the measurement of the attitude. (1985, pp. 196-197)

There were low correlations between TW item scores and total TW score because respondents scored basically the same on 20 items. That is,

answers to 20 items varied very little among respondents. Respondents' answers to 20 items were virtually identical. Based on these findings, the developers of TestWell might want to reconsider items 3, 7, 21, 23, 24, 26, 27, 28, 31, 34, 35, 36, 45, 56, 60, 61, 71, 76, 77, and 80 on the grounds that graduate students' answers to these items were similar to the extent that they did not vary enough to correlate with total TW score at .25 or above.

This study's findings and conclusions are primarily based upon the relationships between subscale scores and total scores. Even though 20 TestWell item scores correlated .24 or less with total TW score, all ten TW subscale scores significantly correlated with total TW score at the .001 alpha level. This point illustrates the broad variance among answers to the remaining 80 items. Variance among the remaining 80 items was wide enough to permit significant relationships between all ten TW subscale scores and total TW score. Thus, correlations between item scores and total score are of relative importance when compared to correlations between subscale scores and total score. The confidence with which one may interpret the findings and conclusions of this study remains the same.

Two conceivable relationships between the dimensions of TW and total TW score lend support to this study's theoretical framework. For instance, the probability of the relationship (.65) between "social awareness" and total TW score as being a chance occurrence is one in 1,000. A correlation of .65 indicates 42% common variance. Similarly, the probability of the relationship (.67) between "spirituality and values" and total TW score as being a chance occurrence is one in 1,000. A

correlation of .67 indicates 45% common variance.

6. Is The Self-Directed Learning Readiness Scale A Reliable And Valid Instrument For The Sample Under Investigation?

Findings. The split-half reliability of the SDLRS was .87. The reliability of the SDLRS, determined by computing Cronbach coefficient alpha, was .92. Coefficient alphas of .52 or above were calculated for seven of eight subscale scores. The exception was the coefficient of .38 (view of learning as a lifelong, beneficial process).

Correlations between total SDLRS score and its eight subscales ranged from .41 (acceptance of responsibility for one's own learning) to .88 (love of learning), all were statistically significant at the .001 alpha level. Only item .33 correlated .24 or less with total SDLRS score. There were no negative correlations between SDLRS item scores and total SDLRS score.

Discussion. The split-half reliability of the SDLRS was .87 and Cronbach coefficient alpha was .92. According to Gay, "(p)ersonality measures do not typically report (reliabilities in the nineties) (although certainly some do) and one would therefore be very satisfied with a reliability in the eighties" (1981, pp. 122-123).

Examination of subtest reliability revealed coefficient alphas of .52 or above for seven of the SDLRS's eight subscale scores. The exception was .38 (view of learning as a lifelong, beneficial process). The factor "view of learning as a lifelong, beneficial process" consists of only seven items. According to Gay, "(s)ince reliability is a function of test length, the reliability of a given subtest is typically lower than the total test reliability" (1981, p.

123).

Correlations between total SDLRS score and SDLRS's eight subscales ranged from .41 (acceptance of responsibility for one's own learning) to .88 (love of learning), all were statistically significant at the .001 alpha level. A correlation of .41 indicates 17% common variance. A correlation of .88 indicates 77% common variance. The probability that these relationships are due to mere chance is one in 1,000 or less.

Only item 33 correlated .24 or less with total SDLRS score. There were no negatively correlated relationships between SDLRS item scores and total SDLRS score. An item not correlating at .25 or above may be stated ambiguously, or written as a fact rather than an expression of feelings or attitudes about the construct being measured (Ary et al., 1985). Such is the case of item 33 on the SDLRS. Item 33 says, "I don't have any problem with basic study skills." Bonham (1991) argued that item 33 does not measure an attitude toward self-directed learning, but instead measures an attitude toward learning in general.

Three conceivable relationships between the factors of SDLRS and total SDLRS score lend support to this study's theoretical framework. For instance, the probability of the relationship (.74) between "view of learning as a lifelong beneficial process" and total SDLRS score as being a chance occurrence is one in 1,000. A correlation of .74 indicates 55% common variance. Second, the probability of the relationship (.62) between "initiative in learning" and total SDLRS score as being a chance occurrence is one in 1,000. A correlation of .62 indicates 38% common variance. And

third, the probability of the relationship (.81) between “tolerance of risk, ambiguity, and complexity in learning” and total SDLRS score as being a chance occurrence is one in 1,000. A correlation of .81 indicates 66% common variance.

Conclusions

Six conclusions can be drawn from this study. One, a positive relationship was found between wellness and self-directed learning readiness. Two, “acceptance of responsibility for one’s own learning” was not related to wellness. Three, self-directed learning readiness was most associated with “intellectual wellness” and “spirituality and values.” Four, “intellectual wellness” and “spirituality and values” were related to all eight subscale scores of the Self-Directed Learning Readiness Scale. And “creativity” was related to all ten subscale scores of TestWell. Five, TestWell is a reliable and valid instrument for use among graduate students. And six, the SDLRS is a reliable and valid instrument for use among graduate students.

Implications for Practice

It is important to make connections between research and practice. For instance, a better understanding of the relationship between wellness and self-directed learning can enable employers, trainers, administrators, and faculty to better serve the developmental and educational needs of adults.

Adult students are enrolling in training and education programs in record numbers. This influx of adult students has prompted business, industry, colleges, and universities to modify their practices. For instance, barriers that once discouraged adult learners (i.e., access, fees, compensation, location, time) have been modified for the purpose of encouraging adults to participate in training and education. Institutional policies and procedures that hinder adult learners' training and educational progress continue to be reconsidered. According to Bogue and Saunders, "policy should have a rational and a philosophical base that leads to a better understanding of reasons for actions and consequently better human relations" (1976, p. 131). Federal, state, local, and institutional legislation encourages cooperation among providers of adult education, continuing education, and health education. Modified policies and procedures have in turn helped to increase participation and satisfaction among adult learners.

One of the responsibilities of an educational leader is to ensure that the goals of his or her organization are clearly stated and understood (Bogue & Saunders, 1976). Identification and communication of institutional goals and mission enables students to determine the level at which they wish to immerse themselves in the learning process. It is assumed that adults approach education and training with initiative and a clear understanding of personal learning goals. An adult student expecting to receive outstanding instruction might be disillusioned to find that his or her educational institution values research over instruction. Students with a

high tolerance for risk, ambiguity, and complexity in learning would be expected to resolve such a conflict with relative ease. According to Bogue, "(t)aking the risk rather than accepting defeat without trial emboldens the (whole) learner, quickens the mind and body" (1991, p. 38).

Awareness of the whole learner perspective, or the mind-body-spirit connection is one of the most influential factors contributing to the practice of wellness (McCoy, 1988). Other factors that contribute to the practice of wellness include health care cost increases, self-care consciousness, willingness to question authority, the proliferation of printed material, and changing demographic trends. Changing demographic trends are becoming increasingly pronounced in colleges, universities, business, and industry. Brockett and Hiemstra (1991) offered several suggestions for promoting the practice of self-direction among nontraditional students. Suggestions include: (a) encouraging networks of adults built around common interests, (b) providing adults from different cultures with an orientation to what self-directed learning entails, (c) identifying and utilizing various educational resources, (d) fostering self-direction in learning among educational leaders, and (e) promoting the use of learning contracts.

The learning contract is a behavioristic practice that facilitates the humanistic concept of self-directed learning. The use of learning contracts among adult educators is plentiful. Acceptance of responsibility is the point of departure for self-directed learning (Brockett & Hiemstra, 1991). Thus, learning contracts are written agreements of responsibility between

learner and facilitator. Learning contracts vary in style and form. For instance, they can include statements of short- and long-range wellness goals, target dates for completion of each goal, rewards and punishments, and change strategies.

When a person decides to change his or her lifestyle, they are likely to make mistakes (Anspaugh et al., 1994). For instance, some individuals make the mistake of setting unrealistic goals. Others regard changing their lifestyle as an unobtainable aspiration rather than a lifelong plan of action. To combat such mistakes among self-directed learners seeking lifestyles characterized by wellness, an attitude of moderation is recommended. Moderation requires a higher level of learning than complete abstinence. In moderation, success depends upon learning to live within certain wellness parameters. According to Anspaugh et al., "(n)o single strategy for lifestyle change is right for everyone" (1994, p. 11). However, it is essential that individuals choose to accept responsibility for their own action plans. Lifestyle changes are most often achieved by self-directed plans. Learning contracts suppose that individuals can direct their own lifestyle changes and can learn to withstand environmental features that are detrimental to one's well-being.

Creative learning contracts can include agreements for the establishment of lifelong wellness attitudes and activities. In a society of ceaseless and rapid change, it is essential to perceive learning as a self-directed, wellness-based, life-long process. The Tennessee Higher Education Commission espoused this perception of learning in 1977.

According to the Tennessee Higher Education Commission,

(individuals) should manifest a heightened sense of personal awareness. By this we mean knowing how to maintain a healthy mind and body, assuming responsibility for self, and contributing to one's society. Such personal awareness is based on several critical areas of knowledge, such as that needed for maintenance and preservation of a healthy body. Also basic is some understanding of how human behavior is influenced as well as the ability to recognize constructive behavior in oneself and others. No individual's physical or psychological welfare is isolated from the welfare of one's neighbor and society. Each (individual) should attain a very personal realization that the struggles for the freedoms enjoyed in the United States are never ending and that participation in those struggles is a moral obligation of each of us. (1977, p. 19)

According to Greenberg and Gold, "(a)chieving success in society regarding what is and what is not moral is difficult" (1992, p. 7). The right course of action is sometimes uncertain. That is why researchers debate such practices as holism and self-direction. Situations abound in the education of adults where the potential for unethical behavior exists. Brockett (1988) proposed the Dimensions of Ethical Practice model as a way of understanding the different kinds of ethical questions that can arise in adult education practice. The model identifies ethical dilemmas according to value system, responsibility, and operation. Ethical dilemmas can arise due to conflicts that a person holds within his or her own value

system. For instance, an individual who believes that adult learning should be self-directed can expect to experience conflict when an authority dictates how, when, where, and what he or she is required to learn. As adults, our responsibilities extend in many directions. Meeting one responsibility can create a conflict with another responsibility. Discrediting a competing wellness program for the sake of increasing one's own enrollment is an example of conflicting responsibilities. It is crucial to strive toward a balance in meeting multiple responsibilities (Brockett, 1988). Operationalism involves the identification of ethical strategies that put values into practice. Examples of operationalized ethics include personal philosophy, code of ethics, and critical reflection. The Dimensions of Ethical Practices model can help educational leaders identify situations in which ethical conflict may arise in their service to adult students.

No institution can provide a completely comprehensive student services package. Moreover, the availability and delivery of student services is not the sole responsibility of any group or individual, but an obligation to be shared by educational leaders. Essential provisions for traditional students include choice of housing option and choice of meal plan. In order to alleviate stress among nontraditional students, a different variety of services is needed. Sources of stress for adult students include perceived low status as student (Butler, 1972), difficulties readjusting to the role of student (Kirk & Dorfman, 1983), conflicting field and classroom demands (Mayer & Rosenblatt, 1974), and lack of emotional support (Munson, 1984).

Multiple role responsibilities are a source of stress for adult students. For instance, married students experience stress from role overload (Brennan & Black, 1982), time management difficulties (Coombs & Fawzy, 1982), and decreasing levels of marital communication, sexual gratification, and leisure time (Sales, Shore, & Bolitho, 1980). Students with children express guilt over abandoning their child (Sales et al., 1980), confusion concerning society's definition of acceptable parenthood (VanMeter & Agronow, 1982), and have trouble finding child care (Hooper, 1979). Working students experience stress as derived from conflicting personal and professional responsibilities (Lusk & Miller, 1985), and conflicting financial priorities (Hammes & Haller, 1983).

Though no institution can provide a completely comprehensive student services package, it is essential that educational leaders cooperate to satisfy adult students' needs. Unlimited access by adult students to institutional strategy sessions and departmental meetings is one way to build trust among leaders. Input from concerned adult students must be valued by administrators. On the other hand, adult students must be mindful of the potential risks and liabilities that accompany petitions and unconventional requests. Above all, adult students have a right to choose services that support their wellness efforts as self-directed learners.

Recommendations for Further Research

Recommendations for research include experimental studies, the consideration of stress as an ingredient in the adult learning process, and

further validation of wellness instruments. Other suggestions include qualitative assessment of hard to measure attitudes, and follow-up studies as measures of quality assurance.

According to Ary et al., "it is recommended in many instances that a relationship study be supplemented by an experimental study in which the alternative interpretations can become hypotheses for experimentation" (1985, p. 329). The relationship between wellness and self-directed learning can be investigated experimentally by manipulating classroom teaching orientation (i.e., from teacher-directed to self-directed) and consequently determining the effects of teaching orientation on wellness scores. Another way to experimentally relate wellness and self-direction is to compare the self-direction scores of employees not participating in wellness activities to a group of employees actively participating in wellness activities. Differences between groups might exist after such treatments. Such differences may be statistically significant or attributable to chance. The statistical test used to identify the significance of the difference between the means of two randomly assigned samples is called the t-test for independent samples.

If two variables are highly correlated, then scores on one variable can be used to predict scores on the other variable. Thus, investigations are needed to see how useful personal responsibility and stress are for predicting wellness and self-direction among adult students. Since a combination of variables usually results in a more accurate prediction than any one variable, "prediction studies often result in a prediction equation

referred to as a multiple regression equation. A multiple regression equation uses all variables that individually predict the criterion to make a more accurate prediction" (Gay, 1981, p. 194). For instance, job stress may be significantly correlated with personal responsibility, wellness, and self-direction. In this case, an employment recruiter would use a multiple regression equation to combine an applicant's scores on personal responsibility, wellness, and self-direction. Such an equation's product would allow the recruiter to more accurately predict an applicant's tendency toward job stress.

Data are needed concerning the relationship between self-directed learning and stress. According to McClary, "the consideration of stress as an ingredient in the adult learning and development process appears to be timely and necessary" (1990, p. 66). Negative stress, or distress, can keep adult students from succeeding academically. On the other hand, positive stress, or eustress, can motivate exceptional academic performances. Other research avenues in need of development include a longitudinal exploration into self-directed learning and a comparative examination into the nature of novice versus expert self-directed learners.

Data are needed concerning the relationship between wellness and demographic variables among specific student populations (i.e., Greek students, undergraduates, international students, student athletes, adult students) and specific professional populations (i.e., nurses, teachers, social workers, athletic trainers). Such data would provide insight into the advising and coaching needs of nontraditional students. Appropriate advising and

coaching can boost student performance, improve employee productivity, and lower stress among adult learners. Populations of unwell students and employees need to be identified and their wellness scores correlated with deterrents to participation in wellness activities. A plan for the removal of deterrents could be team developed, implemented, and eventually evaluated by the participant and an accompanying change agent.

Additional validation studies are needed to confirm TestWell's soundness. A comparative investigation into the reliability and validity of the 100-item TestWell and the 185-item Lifestyle section of the Lifestyle Assessment Questionnaire is needed. Such an investigation would determine if both instruments measure the construct of wellness. If both instruments are reliable and valid, then continued use of the less parsimonious instrument would be nonsensical.

There are additional variables that theoretically relate to wellness and self-direction but have not been tested due to methodological circumstances. For instance, variables such as attitudes toward holism, personal responsibility, ability to discriminate among alternative choices, and reactions to change are difficult to measure. One way to overcome such difficulties is to design psychometric instruments that objectively measure these variables. An alternative to quantitative measurement is the exploration of variables from a qualitative viewpoint. For instance, a researcher might ask participants to share their perspectives on the interrelatedness of such life roles as student, spouse, parent, and

employee. Another researcher might ask questions to ascertain how adult students approach the developmental tasks of wellness or self-direction. Yet another researcher might be in a position to observe the successful completion of, or failure to meet personal wellness or self-directed goals.

Recognizing adult students' perceptions is an advantage of follow-up studies (Bogue & Saunders, 1992). Perception and satisfaction among adult students should be of concern to educational leaders because adults are the fastest growing segment of the student population. Adult students' standards range from short-term to long-term. According to Bogue and Saunders,

(i)mediate gratification is nice; a job, a degree (or certificate) to hang on the wall. Promotions, advanced degrees, greater earning power, an improved quality of life happen over time, but we also need to measure our quality, in part at least, by students' standards within *their* time frame. (1992, p. 97)

Students are a key element in any effective program of quality assurance. By showing interest in students' perceptions and evaluations, educational leaders model a performance curiosity and a willingness to risk knowing exactly what has been fostered in students' lives. According to Marsick and Smedley, "(q)uality assurance problems facing the health educator and the health practitioner are similar since difficulties of noncompliance and multiple health problems result as much from socioeconomic and life-style conditions as from disease" (1991, p. 505).

Correlational studies are attempts to gain insight into the relation

between oftentimes illusive and complex variables. According to Gay, "(t)he relationship study strategy of attempting to understand a complex variable by identifying and analyzing variables related to it has been more productive for some complex variables than for others" (1981, p. 189). For example, while many variables related to self-direction have been recognized, few variables thought to be related to wellness have been identified. Either "some wholes are greater than the sum of their parts, or all the relevant parts have not yet been identified. If nothing else, however, relationship studies that have not uncovered useful relationships have at least identified variables which can be excluded from future studies" (Gay, 1981, p. 189).

It is recommended that persons undertaking similar studies consider five suggestions. One, there is virtually no methodological substitute for a randomly selected sample. For instance, the possibility exists that generalizations to a larger population can be made from results derived from a random sample. But with a convenience sample there is little or no potential for generalization to a larger population. Two, demographic descriptions of samples and populations should be provided when possible. Such descriptions can be used to verify the extent to which they compare to descriptions of respondents' demographic information. Three, the Chi-square statistical test is a useful tool for comparing observed and expected frequencies. That is, an accurate assessment of observed and expected frequencies can enable a researcher to determine the extent to which survey respondents are similar to nonrespondents. Four, it is

important to recognize that potential problems are associated with negatively phrased survey items such as those in the SDLRS. These items need to be scored in reverse and have the potential to cause confusion among respondents. And five, it is oftentimes difficult to persuade potential respondents to participate in a study. It is suggested that incentive has the potential to increase response rate. It is believed that the chance to win a cash award helped to increase the response rate in this study.

Concluding Comment

Educational institutions are responsible for providing atmospheres and environments in which adult learners have the opportunity to improve themselves. There is evidence that companies and universities have benefitted from wellness and self-directed learning activities. Self-directed lifestyles characterized by wellness are of benefit to adult learners. For instance, individuals who exhibit lifestyles characterized by wellness and self-direction have an employability edge. That is, in the minds of employers, healthy individuals are profitable employees. Benefits to employing healthy individuals include minimized medical care costs, motivated learners, and improved performances. It is important that wellness and self-directed learning activities meet the needs of both individuals and institutions.

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APPENDICES

APPENDIX A

INTRODUCTION LETTER

January 12, 1996

Dear Graduate Student,

Congratulations! I am pleased to announce that you have been randomly selected to participate in a very important study concerning graduate education. In addition, you have the opportunity to **win \$50.00 in cash**.

My research team is interested in the relationship between wellness and self-direction. Your participation includes completing and returning the following three documents: TestWell, Self-Directed Learning Readiness Scale, and Demographic Information Questionnaire.

A pre-stamped, self-addressed return envelope will be provided for your convenience, of course. Approximately 30 minutes of your time will be needed. All responses will be kept completely anonymous and confidential.

You are aware of the importance of generating and disseminating knowledge. Were it not for previous scholarly efforts, today's students would have scarce data upon which to base our theories and practices. Your participation will contribute to the same knowledge base from which we all partake. Rest assured that you will be making a significant contribution to the generation and dissemination of knowledge.

I have arranged for a participation packet to be mailed to you. Expect it to arrive in approximately one week. Your chance to **win \$50.00 in cash** will be included.

Please feel free to call or write me at the number or address above concerning any questions or comments you may have. In advance, thanks for your cooperation.

Cordially,

T. Ross Owen
Graduate Assistant

APPENDIX B

COVER LETTER

January 19, 1996

Dear Graduate Student,

Here is your participation packet. Your chance to **win \$50.00 in cash** is included. Please complete and return the enclosed questionnaires by **Friday, February 16**. I will enter your name in a drawing for **\$50.00 in cash** upon receiving the inclosed index card.

Graduate students are different. We live unique lives, share unique experiences, and have unique learning needs. You now have the opportunity to improve the way in which graduate students are educated and evaluated. Now you have the opportunity to provide the information needed to make innovative changes in how graduate education is taught and administrated. The dual purpose of this investigation is to study the relationship between wellness and self-direction among graduate students and to fulfill the requirements of my doctoral studies.

Your participation packet includes TestWell, Self-Directed Learning Readiness Scale, Demographic Information Questionnaire, an index card, and a return envelope. The questionnaires have no right or wrong answers. Mark your answers according to what is actually true of you—not according to what *should* be true of you or according to how you *think* others perceive you. Note that TestWell, Self-Directed Learning Readiness Scale, and Demographic Information Questionnaire contain further instructions.

Approximately 30 minutes of your time is needed. All answers will remain anonymous and confidential. Only grouped data will be reported. Grouped data may be published either in part or in whole. The return of your completed questionnaires constitutes your informed consent to participate. Your questionnaires have been coded to aid administrative proceedings. Your index card has been coded for the purpose of identifying the winner of **\$50.00 in cash**.

The data derived from this study will not be complete without your cooperation. Your participation is voluntary and you may discontinue participating at any time, however. You have the opportunity to provide valuable insight into the concepts of wellness and self-direction. In addition, you have the opportunity to **win \$50.00 in cash**.

Please feel free to call or write me at the number or address above should you have any questions or comments. I look forward to receiving your completed questionnaires and registering you for the chance to **win \$50.00 in cash**.

Cordially,

T. Ross Owen
Graduate Assistant

APPENDIX C

TESTWELL, A WELLNESS INVENTORY

INSTRUCTIONS:

Please write the number that identifies your response in the box to the left of each question.

Please respond to the statements using the following responses:

- 5....**Almost always** (90% or more of the time)
 4....**Very often** (approximately 75% of the time)
 3....**Often** (approximately 50% of the time)
 2....**Occasionally** (approximately 25% of the time)
 1....**Almost never** (less than 10% of the time)

♦ PHYSICAL FITNESS AND NUTRITION

- | | |
|--|--|
| ☐ 1. I exercise aerobically (continuous, vigorous, sweat-producing exercise for 20-30 minutes) at least three times per week. | ☐ 6. I avoid eating foods that are high in fat (fatty cuts of meat, whole milk dairy products, fried foods, hot dogs, processed foods, rich desserts, and creamy sauces). |
| ☐ 2. Stretching is a routine part of my exercise program. | ☐ 7. I eat at fast food restaurants less than once per week. |
| ☐ 3. I increase my physical activity by walking or biking for transportation whenever possible. | ☐ 8. I intentionally include foods high in fiber in my diet on a daily basis (i.e. whole grain breads and cereals, beans, etc.) |
| ☐ 4. My exercise program includes an adequate amount of each of the three major fitness components—endurance (aerobic), strength (weight training), and flexibility (stretching). | ☐ 9. I maintain my weight within the recommendations for my height and gender. |
| ☐ 5. If I am not in shape, I avoid sporadic (once per week or less), strenuous exercise. (If you are in shape, answer "5".) | ☐ 10. I eat at least four servings (one serving equals $\frac{1}{2}$ cup) of fruits and/or vegetables every day. |

♦ MEDICAL SELF-CARE

- | | |
|--|---|
| ☐ 11. I maintain an up-to-date immunization record. | ☐ 17. I engage in an adequate amount of physical activity to keep my resting heart rate at 60 beats or less per minute. |
| ☐ 12. I examine my breasts or testes on a monthly basis. | ☐ 18. I protect my skin from sun damage by using sunscreen or by taking other precautions to prevent overexposure to the sun. |
| ☐ 13. I take action to minimize my exposure to tobacco smoke. | ☐ 19. I maintain my blood pressure within the range recommended by my doctor. (If you do not have your blood pressure checked, answer "1".) |
| ☐ 14. I consider alternatives to taking medications when ill. | ☐ 20. I maintain my blood cholesterol level within the range recommended by my doctor. (If you have never had your cholesterol checked, answer "1".) |
| ☐ 15. I drink enough water (6-8 glasses per day) to keep my urine light yellow. | |
| ☐ 16. I floss my teeth once per day. | |

Please respond to the statements using the following responses:

- 5....**Almost always** (90% or more of the time)
 4....**Very often** (approximately 75% of the time)
 3....**Often** (approximately 50% of the time)
 2....**Occasionally** (approximately 25% of the time)
 1....**Almost never** (less than 10% of the time)

♦ SAFETY

- | | |
|--|--|
| ☐ 21. I refrain from operating vehicles while I am under the influence of alcohol or other drugs. | ☐ 26. I enjoy myself without the use of drugs or alcohol. |
| ☐ 22. I refrain from riding with vehicle operators who are under the influence of alcohol or other drugs. | ☐ 27. I use approved child restraints for all children riding in my vehicle. (If children do not ride in your vehicle, answer "5".) |
| ☐ 23. I stay within five miles per hour of the speed limit. | ☐ 28. I refrain from using drugs obtained from unlicensed sources. |
| ☐ 24. I wear my seat belt and/or shoulder harness while traveling. | ☐ 29. I use the recommended safety equipment for any activity in which I participate. |
| ☐ 25. The vehicles I drive are maintained to assure safety. | ☐ 30. When I travel on a motorcycle, bicycle, or all-terrain vehicle, I wear a helmet. |

♦ ENVIRONMENTAL WELLNESS

- | | |
|---|--|
| ☐ 31. To conserve energy I turn off lights and electrical appliances when I am not using them. | ☐ 36. I refrain from letting the water faucet run while I am brushing my teeth, shaving, or washing my car. |
| ☐ 32. I avoid purchasing food that is packaged in styrofoam. | ☐ 37. I regularly recycle my paper, plastic, glass, and aluminum. |
| ☐ 33. I operate fuel efficient motor vehicles. (If you do not operate a motor vehicle answer "5".) | ☐ 38. I am involved in learning more about how I can protect the environment. |
| ☐ 34. I keep the thermostat in my home set at 68° F or lower in the winter. | ☐ 39. I encourage others to support efforts to protect the environment. |
| ☐ 35. When I go shopping, I take my own reusable bag to carry my purchases rather than accept plastic or paper bags. | ☐ 40. I purchase products made with recycled materials whenever possible. |

♦ SOCIAL AWARENESS

- | | |
|--|---|
| ☐ 41. My behavior reflects fairness and justice. | ☐ 47. I help others in need. |
| ☐ 42. I contribute to the feeling of acceptance with my family, friends, and coworkers. | ☐ 48. When I notice a safety hazard I take action to correct the situation. |
| ☐ 43. I resolve conflict in a positive and respectful manner. | ☐ 49. I contribute time and/or money to at least one organization that strives to better the community where I live. |
| ☐ 44. I use my creativity in constructive ways. | ☐ 50. I participate in community events. |
| ☐ 45. I exercise my right to vote. | |
| ☐ 46. I take time to play with and enjoy my family and friends. | |

Please respond to the statements using the following responses:

- 5....**Almost always** (90% or more of the time)
 4....**Very often** (approximately 75% of the time)
 3....**Often** (approximately 50% of the time)
 2....**Occasionally** (approximately 25% of the time)
 1....**Almost never** (less than 10% of the time)

♦ SEXUALITY AND EMOTIONAL AWARENESS

- | | |
|--|--|
| ☐ 51. I am comfortable with my level of sexual involvement. | ☐ 57. I am able to love others without expecting them to "earn" my love. |
| ☐ 52. I feel positive about myself as a sexual person. | ☐ 58. I have positive relationships with men in my life. |
| ☐ 53. My sexual relationships and behaviors are maintained in a manner that is healthy for me and for others. | ☐ 59. I have positive relationships with women in my life. |
| ☐ 54. I am able to develop close, intimate, personal relationships. | ☐ 60. When engaging in sexual behavior, I take steps to minimize the risk of spreading or contracting sexually transmitted diseases. (If you do not engage in sexual behavior, answer "5".) |
| ☐ 55. My sexual needs are satisfied without conflicting with other needs in my life. | |
| ☐ 56. I am tolerant of others who have different sexual orientations. | |

♦ EMOTIONAL MANAGEMENT

- | | |
|---|--|
| ☐ 61. I express my feelings of anger in ways that are not hurtful to others. | ☐ 66. When I make mistakes, I try to learn from them. |
| ☐ 62. I can say "no" without feeling guilty. | ☐ 67. I set realistic objectives for myself. |
| ☐ 63. I make decisions with a minimum of stress and worry. | ☐ 68. I can relax my body and mind without the use of drugs or alcohol. |
| ☐ 64. I do not feel unreasonably hurried in my daily routine. | ☐ 69. I accept responsibility for my actions. |
| ☐ 65. I include relaxation time as part of my daily routine. | ☐ 70. I accept responsibility for creating my own feelings. |

♦ INTELLECTUAL WELLNESS

- | | |
|---|---|
| ☐ 71. I keep informed about social and political issues. | ☐ 76. I watch educational programs on television. |
| ☐ 72. I am interested in learning about scientific discoveries. | ☐ 77. I maintain a continuing education program relative to my occupation or activities. |
| ☐ 73. I make an effort to maintain and improve my writing and verbal skills. | ☐ 78. I read about different topics from a variety of newspapers, magazines, or books. |
| ☐ 74. I seek opportunities to learn new things. | ☐ 79. I gather information from several sources before making important decisions. |
| ☐ 75. I participate in activities such as visiting museums, exhibits, and zoos, or attending plays and concerts at least three times a year. | ☐ 80. I am interested in understanding the views of others. |

Please respond to the statements using the following responses:

- 5....**Almost always** (90% or more of the time)
 4....**Very often** (approximately 75% of the time)
 3....**Often** (approximately 50% of the time)
 2....**Occasionally** (approximately 25% of the time)
 1....**Almost never** (less than 10% of the time)

♦ OCCUPATIONAL WELLNESS

- | | |
|--|---|
| ☐ 81. I enjoy my work. | ☐ 86. I am satisfied with the balance between my work time and leisure time. |
| ☐ 82. I take advantage of opportunities to learn new skills in my work. | ☐ 87. I am satisfied with my ability to manage and control my workload. |
| ☐ 83. There is an acceptable amount of challenge in my work. | ☐ 88. My work is consistent with my values. |
| ☐ 84. I perform my work in a satisfactory manner. | ☐ 89. The level of stress in my work environment is comfortable to me. |
| ☐ 85. I look forward to doing my job. | ☐ 90. At work my level of authority is consistent with my level of responsibility. |

♦ SPIRITUALITY AND VALUES

- | | |
|--|---|
| ☐ 91. I feel that my life has a positive purpose. | ☐ 96. My spiritual awareness occurs at times other than during crises. |
| ☐ 92. I spend a portion of every day in prayer, meditation, and/or personal reflection. | ☐ 97. My leisure time activities are consistent with my values. |
| ☐ 93. My values guide my daily life. | ☐ 98. I am tolerant of the values and beliefs of others. |
| ☐ 94. I am mainly guided by my "inner self" rather than the expectations of others. | ☐ 99. I am able to discuss my own death with family and friends. |
| ☐ 95. I am concerned about humanitarian issues. | ☐ 100. I am satisfied with my spiritual life. |

APPENDIX D

ITEMS OF TESTWELL THAT COMPRISE EACH DIMENSION*

Dimension	Items
1. Physical Fitness and Nutrition	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
2. Medical Self-care	11, 12, 13, 14, 15, 16, 17, 18, 19, 20
3. Safety	21, 22, 23, 24, 25, 26, 27, 28, 29, 30
4. Environmental Wellness	31, 32, 33, 34, 35, 36, 37, 38, 39, 40
5. Social Awareness	41, 42, 43, 44, 45, 46, 47, 48, 49, 50
6. Sexuality and Emotional Awareness	51, 52, 53, 54, 55, 56, 57, 58, 59, 60
7. Emotional Management	61, 62, 63, 64, 65, 66, 67, 68, 69, 70
8. Intellectual Wellness	71, 72, 73, 74, 75, 76, 77, 78, 79, 80
9. Occupational Wellness	81, 82, 83, 84, 85, 86, 87, 88, 89, 90
10. Spirituality and Values	91, 92, 93, 94, 95, 96, 97, 98, 99, 100

*Source: National Wellness Institute. (1992). TestWell. Stevens Point, WI: National Wellness Institute.

APPENDIX E

SELF-DIRECTED LEARNING READINESS SCALE

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

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

RESPONSES

ITEMS:

1. I'm looking forward to learning as long as I'm living.
2. I know what I want to learn.
3. When I see something that I don't understand, I stay away from it.
4. If there is something I want to learn, I can figure out a way to learn it.
5. I love to learn.
6. It takes me a while to get started on new projects.
7. In a classroom, I expect the teacher to tell all class members exactly what to do at all times.
8. I believe that thinking about who you are, where you are, and where you are going should be a major part of every person's education.
9. I don't work very well on my own.

	<i>Almost never true of me; I hardly ever feel this way.</i>	<i>Not often true of me; I feel this way less than half the time.</i>	<i>Sometimes true of me; I feel this way about half the time.</i>	<i>Usually true of me; I feel this way more than half the time.</i>	<i>Almost always true of me; there are very few times when I don't feel this way.</i>
1	1	2	3	4	5
2	1	2	3	4	5
3	1	2	3	4	5
4	1	2	3	4	5
5	1	2	3	4	5
6	1	2	3	4	5
7	1	2	3	4	5
8	1	2	3	4	5
9	1	2	3	4	5

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

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

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

APPENDIX F

ITEMS OF THE SELF-DIRECTED LEARNING READINESS SCALE THAT COMPRISE EACH FACTOR*

Factor	Items
1. Love of Learning	1, 5, 8, 17, 24, 26, 28, 31, 32, 39, 45, 46, 47, 49, 51, 53, 54
2. Self-concept as an Effective Learner	2, 4, 9, 10, 11, 13, 25, 27, 33, 38, 42, 57
3. Tolerance of Risk, Ambiguity, and Complexity in Learning	3, 6, 7, 9, 12, 19, 20, 22, 23, 29, 31, 32, 35, 44, 48, 53, 56
4. Creativity	25, 26, 30, 34, 36, 37, 39, 41, 43, 55
5. View of Learning as a Lifelong, Beneficial Process	43, 49, 52, 54, 55, 56, 58
6. Initiative in Learning	18, 40, 41, 42, 58
7. Self-understanding	2, 4, 8, 14, 16, 18, 21, 35, 55
8. Acceptance of Responsibility for One's Own Learning	15, 50

*Source: Sabbaghian, Z. S. (1980). Adult self-directedness and self-concept: An exploration of relationships (Doctoral dissertation, Iowa State University, 1979). Dissertation Abstracts International, 40, 3701A.

APPENDIX G

DEMOGRAPHIC INFORMATION QUESTIONNAIRE

INSTRUCTIONS: Please answer the following questions.

1. What is your age?
 - ☐ 24 years of age or less
 - ☐ 25 to 34 years of age
 - ☐ 35 to 44 years of age
 - ☐ 45 to 54 years of age
 - ☐ 55 years of age or over

2. What is your ethnicity?
 - ☐ Caucasian
 - ☐ African American
 - ☐ American Indian or Alaskan Native
 - ☐ Asian or Pacific Islander
 - ☐ Hispanic

3. What is your gender?
 - ☐ Male
 - ☐ Female

4. What is your student status?
 - ☐ Part-time graduate student
 - ☐ Full-time graduate student

5. Which of the following levels of education are you pursuing?
 - ☐ Masters
 - ☐ Specialist
 - ☐ Doctorate
 - ☐ Non-degree

APPENDIX H

REMINDER POSTCARD

February 9, 1996

Dear Graduate Student,

Recently you received a letter requesting your participation in an investigation into the relationship between wellness and self-direction. In addition, you were offered the opportunity to **win \$50.00 in cash**. At this time, I have not received your index card, TestWell, Self-Directed Learning Readiness Scale, or Demographic Information Questionnaire.

You have the opportunity to provide information needed to make innovative changes in how graduate education is administered and taught. Your responses will remain anonymous and confidential. Only grouped data will be reported.

Please consider this an earnest plea to complete and postmark your index card and three questionnaires by **Friday, February 16**. Your information is very important to the success of this study.

Should you need additional questionnaires or have any concern, please contact me at (423)974-0906 or 211 Claxton Addition, Knoxville, TN 37996.

Cordially,

T. Ross Owen
Graduate Assistant

VITA

Thomas Ross Owen was born in Waynesville, North Carolina on March 20, 1966. He attended public primary and secondary schools in Haywood County, North Carolina. In May 1989 he received a Bachelor of Science in Psychology from Western Carolina University. Ross was employed by Haywood Community College as Program Operator from November 1989 until June 1991. In December 1992 he received a Master of Science in Human Resource Development from Western Carolina University.

An investigation into potential doctoral programs lead Ross to the University of Tennessee, Knoxville. He served as Graduate Teaching Assistant with the Department of Technological and Adult Education from July 1992 until June 1993. Another Graduate Assistantship enabled Ross to work for the University Evening School from July 1993 until December 1993. From July 1994 until June 1995 he was employed as Graduate Research Associate by the Institute for Assessment and Evaluation. Ross's final Graduate Assistantship was from July 1995 until June 1996 in the College of Education Graduate Center. He spent the summers of 1994, 1995, and 1996 working as Instructor for University Federal Programs. In August 1996 Ross earned a Doctor of Education in Leadership Studies in Education with a concentration in Technological & Adult Education.