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MOTIVATIONS FOR OLDER ADULTS' PARTICIPATION IN DISTANCE EDUCATION: A STUDY AT THE NATIONAL OPEN UNIVERSITY OF TAIWAN

A Thesis in

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by

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ABSTRACT

The present study investigated the factor structure of motivation constructs as expressed by older adult learners and examined how these constructs correlated with older adults' socio-demographic characteristics, perceptions of the distance education learning environment, and student satisfaction. Furthermore, the study explored the relative contributions of each factor to student satisfaction.

Given the exploratory and descriptive purposes of this study, a cross-sectional survey research design was chosen for implementation. The population under study was older adults aged 55 and above registered as students at the National Open University of Taiwan (NOUT) in the Spring Semester 2005. Older adults affiliated with one of the identified six regional study centers (Taipei, Taipei [2], Taichung, Tainan, Kaohsiung, and Hualien study center) were targeted as potential participants in this study. Motivation, as reflected in personal goals, was operationalized as the reason for older adult learners' participation in distance education. Motivation was measured using the Reasons for Participation Scale (Steele, 1984). The perceived learning environment at NOUT was measured using a modified Distance Education Learning Environment Survey (Walker, 2003b). The survey was distributed to a sample of 990 older students; 371 completed it (Mean age = 61).

Study results revealed four major motivation constructs that attracted older adults to NOUT, namely, *keeping up and fulfillment*, *intellectual stimulation*, *escape and social contact*, and *adjustment*. Several similarities and differences exist between this study and past research. First, the motivations for older adults' participation in educational programs may be interpersonal and intrapersonal, expressive and instrumental in nature.

Second, in discovering the primary motivation—*intellectual stimulation*, this study confirmed the literature (Boshier & Riddle, 1978; Bynum & Seaman, 1993; Furst & Steele, 1986; Kim & Merriam, 2004; Lamb & Brady, 2005; Scala, 1996; Swindell, 2002; Swindell & Vassella, 1999) that cognitive-related motivation is the strongest reason for older adults' participation in educational activities. Third, it is also noteworthy that the social interaction component of a program may not be as appealing to older adults who choose distance learning over the face-to-face learning environment. Furthermore, the absence of degree-seeking motivation add further support to the belief that expressive reasons may be more important than instrumental reasons for learning in later life.

The overall findings confirmed the assumption that the motivational dispositions an individual adopts are very sensitive to context and are influenced by how the individual perceives the environment (Ames, 1992; Ford, 1992). The learning environment at NOUT was perceived in terms of *instructor support*, *student interaction and collaboration*, and *personal relevance*. The factor of *personal relevance* appeared to be the most important predictor in explaining all four motivation constructs, and was the strongest predictor in explaining student satisfaction, followed by the factor of *instructor support*. It is the perceived distance education learning environment, rather than motivation dispositions and socio-demographic characteristics, which are a more powerful predictor of learning outcome. In other words, when older adult learners perceived a supportive climate within their learning environment and were able to relate the subject matter of the class to their personal lives, they tended to be more satisfied with the distance education provided by NOUT. A brief discussion of implications and suggestions for future research are provided.

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Chapter 1

INTRODUCTION

Context of the Study

The growing interest in aging within most behavioral and social sciences arises from recent demographic trends in the developed and much of the developing world. According to United Nations projections, every region of the world will experience an increasing older population age structure over the next 50 years. The increases will be particularly rapid in contrast to past trends in less-developed regions (United Nations, 2001). Rapid declines in fertility and increases in life expectancy over the last two decades have created a rapidly aging society. By 2050, the number of older persons 60 years or over are expected to triple by 2050, and those above 80 are expected to be even more marked, passing from 69 million in 2000 to 379 million in 2050, more than a fivefold increase (United Nations, 2001).

Taiwan witnessed the aging of society when its older population (aged 65 and up) reached 7% of the total population in 1993, based on U.N. standards (Dept. of Statistics, Ministry of the Interior of Taiwan, 2000). Over the past several decades, Taiwan has undergone a number of changes that have had an effect on the demographic and socioeconomic structure of society. The current population aged 65 and older totals 2 million, which represents 9% of the population in 2004, a ratio of nine adults to one senior (Dept. of Statistics, Ministry of the Interior of Taiwan, 2005). In particular, the first wave of the baby boom generation, born during 1946–1964, will reach age 65 in less than 6 years. At the crest of the aging of the baby boomers, 25% of the population will be

65 years old or older in 30 years (Dept. of Statistics, Ministry of the Interior of Taiwan, 2005). Together with better medical care and increased life expectancy, individuals who live to age 65 can expect to live an additional 16 years in average. Never in the history of the Taiwan have so many adults lived so long and remained so active and healthy (Dept. of Statistics, Ministry of the Interior of Taiwan, 2000, 2002).

These demographic patterns have profound economic, political, social, cultural, and educational implications. Legislation to provide services for older people was introduced in Taiwan in 1980 through the Welfare Law for the Aged, and in recent years the implications of Taiwan's aging population have been increasingly recognized in policy and planning (Bartlett & Wu, 2000). However, in terms of older adult education policy, there is not yet a comprehensive model to follow or substantial experience with proven results to serve as a guide. It is also evident that the modern educational system will experience an increase in demand that could exceed its capacity unless careful planning for the future is implemented.

In addition, the change in economic structure that will accompany this demographic reality mandates a significant role for education: teaching new skills for coping with age-related phenomena such as leisure, retirement, housing, health, death, finances, families, and political realities (Fisher & Wolf, 1998; Peterson, 1983). In empirical studies, for example, it has been shown that learning can slow or compensate for some of the cognitive declines associated with aging. Schneider (2003) even suggested that the economy would benefit overall from higher levels of learning on the part of older people, if, for instance, Alzheimer's disease or other types of senile dementia could be delayed until a later point in the life course. Accordingly, investments

in educational programs to further health-maintaining lifestyles would be economically reasonable against the background of the high costs of treating illness in later life.

It is believed that learning is integral to successful aging (Jarvis, 2001; Lamdin & Fugate, 1997; Weaver, 1999). Perhaps one of the greatest challenges we face is the need to find new or better ways to foster the opportunities of older adults to live to the full, be independent, and maintain their mental and physical health through their later years. Thus, beyond providing the necessary health and social support services for older persons, it is also important to address their learning needs. Discussions about education for older adults have indicated that older people are capable of learning and willing to learn. Additionally, some believed that continuous learning could help older persons to live a better life in terms of health, well-being and independence (Fisher & Wolf, 1998; Hiemstra, 1994; Lamdin, & Fugate, 1997; Schaie & Willis, 2002).

During the past decades, educational gerontology gradually emerged as an academic discipline in Western literatures. The dramatic success of community and recreation programs for older persons, the Universities of the Third Age, and Elderhostel programs further demonstrate that many older persons are thriving in a learning environment. Data from the 1991, 1995, 1999, and 2001 Adult Education Surveys of the National Household Education Surveys Program, conducted by the National Center for Education Statistics (NCES), indicated that the percentage of older Americans participating in adult education programs continued to grow. The percentage of people in the United States aged 65 and older who took at least one adult education class more than doubled—from 8.4% in 1991 to 22% in 2001. The increase among the “younger-old” (ages 65–75) surpassed that of any other age group (Hamil-Luker & Uhlenberg, 2002;

Kim, Collins Hagedorn, Williamson, & Chapman, 2004). This trend of an increasing older learning population happened in Taiwan as well. There was an estimated 12% increase in people aged 55 years old and over who were participating in adult education programs between the year 2002 and 2003. Among them, people aged 55–64 is the largest group while the growth rate in the 65–70 age group surpassed any other two groups (Dept. of Statistics, Ministry of the Interior of Taiwan, 2005).

Meanwhile, the growth of information technology and the expanding power of computers have transformed the way education occurs and creates new ways of learning. With more and more seniors embracing such information technology with growing confidence, distance education, in which teachers and learners are separated by geographical distance, opens doors to them for pursuing subjects of their interests. Communication via distance education is through correspondence or other forms of technology such as radio, television broadcast, computer networks and multimedia (Jarvis, 1990; Moore & Kearsley, 1996).

Distance education can help senior citizens who wish to become involved in education, as either a learning or social experience, to overcome barriers present in more traditional campus settings. Issues such as flexibility of time and space, physical disability, geographic isolated location, or lack of safe transportation are all moot points when one is involved in a distance learning program. In her review of issues and trends in gerontology education, Weaver (1999) suggested that there has been a shift in preferred learning modalities among older learners—a movement away from the traditional classroom toward a more self-directed, technology-based medium of delivery. She called for collaborative efforts among legislators, educators, service providers, and others

working together to expand learning options for seniors, particularly in rural areas, by using distance education technology. However, with ample benefits documented, why are older adults not flocking to distance education programs? What factors may prevent their enrollment?

The study of motivation to participate in learning is one of the major keys to this question. It has been long believed that motivation is one of the most important components of learning in any educational environment. In fact, some researchers have argued that learning and motivation are so interrelated that one can't fully understand learning without considering motivation (Maehr, 1984; Pintrich & Schunk, 2002; Wlodkowski, 1999). However, the growth of the elder learning population coupled with technology revolution has broadened the scope of gerontological, adult and distance education, hence giving new meaning and reformulating the motivational constructs of the third agers.

Unfortunately, little research has been done about older learners in the field of distance education, and fewer yet have focused on the content structure of their motivation for participating in a highly competitive academic setting. Similar to the field of educational psychology as well, the majority of researchers concentrated their efforts either on the motivations of children in the elementary and middle grades or on undergraduate students (Furchtgott, 1999; Murphy & Alexander, 2000). Only recently has renewed attention been given to motivation and the aged, but these studies have somehow been confined to the study of motivational influences on cognitive performance in laboratory settings (Filipp, 1996).

Therefore, by studying the motivation of the current older distance learning population, we can have a better and clearer picture of who they are, what they are looking for, and what barriers they encounter during their learning. And since old age is a period often characterized by physical decline, cognitive changes, and changing social roles, we need to understand the role of motivation in these changes as well as their implications for education. With the bulk of the related literatures on participation motivation in old age being from a Western perspective, Taiwan provides an ideal setting for a probe on this topic given the substantial differences in culture, economy, and various social characteristics from the United States and other Western countries.

The purpose of this study was threefold. First, the study sought to identify the factor structure of motivational constructs expressed by older adult learners in order to develop a typology of their motivations for participating in distance education programs. Second, the study tried to determine how the motivational constructs of older adult learners correlate with their socio-demographic characteristics, and their perceptions of and satisfaction with the distance education learning environment. Finally, the study identified the factors that may contribute to older adult learners' satisfaction in a distance education program.

Conceptual Framework

In an area where there has been little research on motivation and aging in an academic setting, this study is an effort to link current literature focused on achievement motivation—specifically, goal theories—with considerations of age-related changes in biological, cognitive, and social needs across the life span. For the purposes of this study, motivation for participation as reflected in the personal goals of older adult learners was

operationalized as reasons why they engage in a distance education learning environment. The conceptual framework (see Figure 1-1) hypothesized that older adults' social-demographic characteristics and their perceptions of the distance education learning environment were correlated with personal goal dimensions. Individual motivations in turn influence the learning outcome—in this case, student satisfaction.

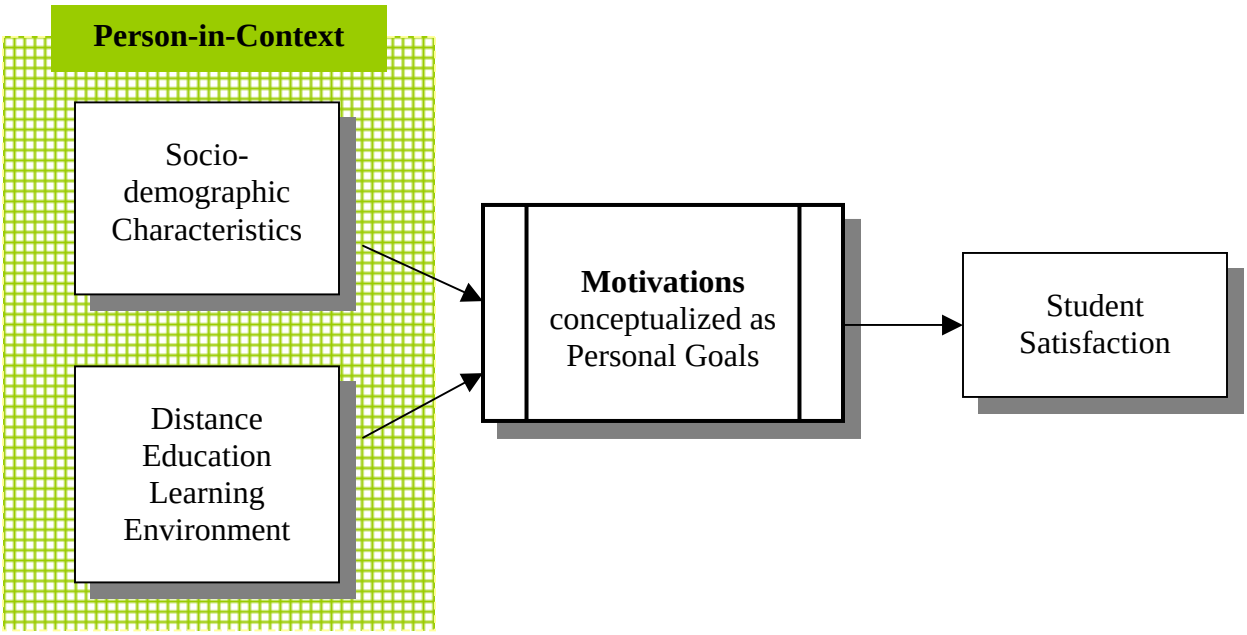

Figure 1-1. The relationships between motivation and its related variables.

Research Questions

1. What are the motivation constructs of older adult learners at the National Open University of Taiwan (NOUT)?
2. How do the motivation constructs of older learners at NOUT correlate with their socio-demographic characteristics, and perceptions of and satisfaction with the distance education learning environment provided by NOUT?

   2.1. What are the socio-demographic characteristics of the participants?

2.2. Are there differences between the motivation construct values when examined by socio-demographic variables?

2.3. Is there a relationship between the motivation constructs and distance education learning environment variables?

2.4. Is there a relationship between the motivation constructs and student satisfaction?

3. When examined simultaneously, what relative contribution do the socio-demographic characteristics, motivation constructs, and distance education learning environment have on student satisfaction?

Definitions of Terms Used in the Study

Motivation

Motivation is a process in which goal-directed activity is instigated and sustained. As a process, people do not observe motivation directly, but infer it from behaviors such as choice of tasks/interests, effort, persistence, and verbalizations (Pintrich & Schunk, 2002). In this study, motivation is reflected as goals that are defined as cognitive representations of what individuals are trying to achieve, and their function is to direct behavior toward attaining these outcomes (Ford, 1992). In short, goals provide impetus for and direction to action. Accordingly, motivations, conceptualized as goals, are operationalized as reasons "why" an individual engaging in a distance education learning environment.

Older Adult

Older adult learners are defined as persons age 55 and over in this study. This age definition is used because older adulthood is commonly associated with retirement, and most people do intend to retire early (Hermalin, Chan, Biddlecom, & Ofstedal, 2002).

Although age 65 is often viewed as the official retirement age, under the Civil Servant Retirement Regulations and Labor Standards Law, employees in Taiwan can retire either when they reach age 60, complete 25 years of service, or at age 55 with 15 years of service (Ofstedal, Chan, Chayovan, Chuang, Perez, Mehta, & Hermalin, 2002). Accordingly, if this study had defined older adults as those age 65 and older, it would have overlooked individuals in the important transition years (ages 55 to 64).

Later in the data analysis stage, the researcher further identifies four subgroups of older adults as the transition period group (aged 55–64), the young-old (aged 65–74), the old-old (aged 75–84), and the oldest-old (aged 85 and up).

Distance Education

The term distance education covers various forms of teaching and learning at all levels and in situations in which the teachers and students are separated by geographical distance and communication is through correspondence or other forms of technology, such as radio, television, satellites, computer networks and multimedia. Its main characteristic is that it relies on noncontiguous, i.e., mediated, communication (Holmberg, 1990, as cited in Wolf, 1996). Perraton (1982) summarized and synthesized Peters' (1971), Holmberg's (1981), and Moore's (1972) discussions of distance education. He defined distance education as "an educational process in which a significant proportion of teaching is conducted by someone removed in space and/or time from the learner" (p. 34).

The distance education context of this study took place in the National Open University of Taiwan (NOUT). NOUT offers higher education-level courses. Individuals over the age of 20 can register as either a full-time or part-time student. Full-time students are recommended to take five to ten course credits each semester. After

completing 128 credits, they receive a bachelor's degree. Part-time students, on the other hand, are not allowed to take more than eight credits each semester. Courses are tuition-free for older adults who are 65 years old and above.

NOUT courses are delivered using one-way broadcast media including radio, television, and videotaped lectures combined with correspondence instructions. Students are also required to attend four face-to-face instructions at the regional learning center during the span of each course. Recently, NOUT began to adopt computer-aid instructional programs by using computer networks and multimedia as subsidiary delivery methods. The teacher can conduct a computer conference interaction in real time or asynchronously by email and bulletin board. However, the computer-aided instruction is optional; teachers are encouraged to incorporate it into the existing course structure.

In the study, students at NOUT primarily learn through correspondence materials, television, and radio. Although computer-aided instruction is available for use, it has not been extensively considered by the teachers at NOUT.

Significance of the Study

The increasing diversity in the older learning population, coupled with technological advances, is making new demands on our educational system. It is vital for adult educators not only to keep our research updated, but also to nudge the current educational system to respond to such phenomena promptly and appropriately. However, the impacts of using information technology as a learning tool by older adults are not well documented, perhaps because it is a relatively recent phenomenon that is undergoing constant change. Even fewer empirical studies focus specifically on their learning motivations in a higher education setting. More importantly, the prevailing research in

relating fields is mostly done in the United States, the United Kingdom, and Australia. Basically it represented a Western philosophical perspective. Therefore, the results of this study not only build a fundamental base for similar research in the future, but also provide implications for instructional practice and educational theory and research from a different socio-cultural perspective.

Moreover, by recognizing the dynamics of older adult learners' motivation constructs and categorizing them into a conceptually sound typology, we can have a better understanding of human motivation in an educational setting and its effects on behavior from an aging stand point. The integration and systematization of findings give us some sense of how things are related so that we can begin to study the relationships among different factors. Meanwhile, we can identify the types of educational programs that will satisfy older adults' needs. For instance, programs offer independence studies are not going to motivate learners who are looking for social contact unless the program provides some opportunities for interactions. These insights could assist administrators, adult educators, and instructional designers in developing educational programs that meet the curricular needs of older learners, and further increase their satisfaction and enrollment. And hopefully, the results of this study will be used in developing a justification system to support both institutional and government policy by building an awareness of the various needs of this growing population.

Finally, research on motivation has long been used to explain dropout behavior in the field of adult education. It is not surprising that educators are interested in attracting non-participant segments of the general population or allaying dropouts. By improving our knowledge of those who have already participated or are currently participating, we

then will have a clear picture of their needs, expectations, and other potential factors that may affect their participation. Building upon a firmer knowledge base, we can devote our efforts to creating new opportunities for the disadvantaged groups to enlarge their participation. This is especially of importance for administrators and adult education organizations to consider the implications of these experiences for the development of a more supportive learning culture.

Chapter 2

REVIEW OF THE LITERATURE

Introduction

This chapter contains a discussion of the current literature on achievement motivation and age-related learning issues. The review is organized into two sections. The first section begins with a brief review of contemporary motivation theory, with emphasis on goal theories. The second section examines the motivation of older adults within the context of distance education. Older adults' motivation to participate in both residential education programs (e.g., Elderhostel programs, Learning in Retirement institutes, University of the Third Age, senior centers) and distance education programs (e.g., Open University, University of the Third Age online) are reviewed, followed by a close look at selected socio-demographic characteristics and their influence on participation motivation. Finally, a review of the contextual attributes of the distance education learning environment is provided.

Overview of Motivation Theory

People have always speculated about the "why?" of action. There is usually a desire to understand the basis of one's activities. Some of this may be attributed to mere curiosity, but more likely, it is an attempt to control or influence one's behavior. The Latin root of the word "motivation" means "to move"; in this sense the study of motivation is the study of action. In an achievement setting, motivation researchers are eager to find out the various aspects of student activity in a classroom, such as the direction of behavior, the intensity of behavior, the persistence of behavior, or the

cognitive and affective reactions that accompany behavior. However, one major problem in studying motivation is that there is no commonly accepted definition and no one all-encompassing theory of motivation (Filipp, 1996; Murphy & Alexander, 2000; Schaie & Lawton, 1998). Approaches to study motivation vary, but they all share the key assumption that human behavior is an expression of some underlying intent.

Early motivation theorists viewed motivation as observable behaviors. Motivation is conceptualized in terms of drives (Hull, 1943) or needs (Murray, 1938) from within a person. Hull (1943) believed that human behavior is a result of the constant interaction between the organism and its environment, and motivation is “the initiation of learned, or habitual, patterns of movement or behavior” (p. 226). The environment provides the stimuli and the organism responds; all of this is observable. He viewed the drive as a stimulus, arising from a tissue need, which in turn stimulates behavior.

Hull's learning theory focuses mainly on the principle of reinforcement. When a S-R relationship is followed by a reduction of the need, the probability increases that in future similar situations the same stimulus will create the same prior response. These biological or psychological needs were believed to create a state of arousal and the state of arousal resulted in action or behavior to satisfy the need. However, much of the research has only been conducted with animals because it would be unethical to deprive humans of such basic needs. While such physiological drives may be sufficient to explain the actions of some animals, human behaviors are much more complex. As adults, our behaviors, in addition to basic physical needs, reflect cultural expectations, socialization experiences, and learned behaviors.

In contrast, contemporary motivation theorists address people's cognition and how these affect behaviors. Motivation is viewed as a process rather than a product (Pintrich & Schunk, 2002). Although theorists agree with the importance of the cognitive process, they disagree about which process is more important. The motivational process is conceptualized as attributions (Graham, 1994; Weiner, 1985, 1986), perceptions of competence (Bandura, 1989; Pajares, 1996; Zimmerman, 2000), expectancy-values (Wigfield & Eccles, 2000), and goals (Ames & Archer, 1988; Dweck, 1989; Elliot & Thrash, 2001; Pintrich, 2000; Pintrich, Conley, & Kempler, 2003; Ryan & Deci, 2000; Wentzel, 1992, 2000; Wolters, 2004).

As cognitive models of motivation, attribution theory, self-efficacy theory, and self-determination theory address beliefs about ability. The attribution theory proposes that an individual use a variety of information sources as data in order to make inferences (attributions) about the causes of success and failure (Weiner, 1985, 1986). The most prevalent inferred causes in achievement-related contexts are ability, effort, task difficulty, luck, mood, help or hindrance from others, etc. Among them, ability and effort are the most dominant perceived causes of achievement outcomes. These causes are characterized into three dimensions, namely, locus (internal versus external), stability (stable versus unstable), and controllability (controllable versus uncontrollable). For example, ability is considered to be internal and relatively stable while effort is considered to be external and relatively unstable. As incorporated with expectancy-value theory, value in the attribution theory is defined as emotions that include pride, gratitude, shame, guilt, pity, helplessness, schadenfreude, sympathy, contempt, and anger (Hareli &

Weiner, 2002). These emotions are then predictive of choice, persistence, and achievement behavior (Pintrich & Schunk, 2002).

Studies have shown that self-efficacy beliefs are significantly related to achievement motivation (Bandura, 1989, 1997; Jackson, 2002; Pietsch, Walker, & Chapman, 2003; Zimmerman, 2000). Self-efficacy refers to beliefs in one's capabilities to organize and execute courses of action to attain certain outcomes (Bandura, 1989, 1997). Students' self-efficacy beliefs determine their level of motivation, as reflected in choice of tasks, persistence and effort. In other words, the stronger the belief in their capabilities, the greater and more persistent are their efforts. How individuals interpret the results of their performance outcomes informs and alters their environments and their self-beliefs, which in turn inform and alter their subsequent performances. Therefore, self-efficacy beliefs are sensitive to contextual factors and are task- and domain-specific; and may be enhanced by performance accomplishments, vicarious experiences, verbal persuasion, and emotion arousal.

In a study examining the relationship between self-efficacy beliefs and test performance for college students taking an introductory psychology course, Jackson (2002) found that self-efficacy beliefs predicted learning performance and were affected by efficacy-enhancing communication. Although self-efficacy beliefs have been reported to be correlated with other self-beliefs, motivation constructs, and academic choices, changes, and achievement, it is argued that the effect sizes and relationships greatly depend on the manner in which self-efficacy and criteria tasks are operationalized and assessed (Pajares, 1996).

A third perspective on control beliefs for motivational dynamics is self-determination theory ([SDT]: Deci & Ryan, 1985; Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000). Deci and Ryan have suggested that motivated actions are self-determined to the extent that they are engaged in wholly volitionally and endorsed by one's sense of self. SDT distinguishes between different types of motivation based on the different reasons or goals that give rise to an action. The most basic distinction is between intrinsic motivation, which refers to doing something because it is inherently interesting or enjoyable, and extrinsic motivation, which refers to doing something because it leads to a separable outcome. Moreover, the level of intrinsic motivation in a person is determined by three psychological needs: autonomy, competence, and relatedness. The more these needs are met through some activities, the more pleasure a person gets from the activity and is motivated to continue it. Extrinsically motivated behaviors, on the other hand, are instrumental in nature and can be categorized into external regulation, introjected regulation, identified regulation, and integrated regulation. In the discussion of rewards and intrinsic motivation, Deci, Koestner, and Ryan (2001) concluded that the undermining of intrinsic motivation by tangible rewards is indeed a significant issue. Whereas verbal rewards tended to enhance intrinsic motivation and neither unexpected tangible rewards nor task-noncontingent tangible rewards affected intrinsic motivation, expected tangible rewards did significantly and substantially have a negative effect on intrinsic motivation.

The key difference between attribution theory and the intrinsic motivation of SDT is that attributions are post hoc explanations for performance after some feedback about success or failure has been provided to the student (Pintrich, 2003). The control beliefs

that are of concern to intrinsic motivation are prospective beliefs of the student before he or she begins a task. The above three perspectives on beliefs differ in motivational dynamics and roles in the theoretical models, but each type of construct is important and is usually positively correlated with one another. Accordingly, they may combine and interact with each other to influence student self-regulation processes and outcomes.

In addition to beliefs, one other prominent perspective in the study of achievement in education settings is goal theory. How the term "goal" is operationalized varied in studies, but it was often used to designate a complex set of processes (Ford, 1992; Spera & Wentzel, 2003; Wentzel, 1999), or to designate specific outcomes (Elliot & Thrash, 2001). Austin and Vancouver (1996) defined goals as "internal representations of desired states, where states are broadly construed as outcomes, events, or processes" (p. 338). Central to goal theories of motivation is the notion that people set goals in ways that are uniquely individualized, and that these goals can be powerful motivators of behavior. These personalized goal approaches assumed that the goals that drive behavior are accessible by the individual; they are not unconscious motives. In addition, these approaches acknowledged that in terms of daily life, motivational dispositions are constrained to a particular context.

To distinguish from achievement motives, achievement goals and orientations are assumed to be cognitive representations of what individuals are trying to do or what they want to achieve and are more domain-, situation-, or task-specific (Thrash & Elliot, 2001). A number of goal theories reflect a general social cognitive perspective of motivation (Austin & Vancouver, 1996). Among them, goal orientation and goal content theories are the two most relevant and applicable approaches in explaining learning behavior. There

are some subtle, but nevertheless, important theoretical differences between these two approaches. Goal orientations represent an integrated pattern of beliefs that leads to "different ways of approaching, engaging in, and responding to achievement situations" (Ames, 1992, p. 261), and are more specific to achievement tasks. Goal content, on the other hand, attempts to specify the range of potential goals that could subserve motivated behavior. The following section addresses these two perspectives, but with more focus on the goal content perspective.

Goal Orientations

Murphy and Alexander (2000) point out that the area with the greatest proliferation of categories and subcategories is the research on goals and goal orientations. However, one main problem with research on goals and goal orientations is the large number of different labels that have been used for similar constructs. Most models propose two general goal orientations that concern an individual's reasons for or purposes in pursuing a task. For example, in Dweck's model, the two orientations are labeled learning and performance goals (Dweck, 1989), with learning goals aimed at increasing one's competence in understanding, mastering, and figuring out something new and the performance goals concerned with validating one's competence.

On the other hand, Ames (1992) labels them mastery and performance goals. With a mastery goal, individuals are oriented toward "developing new skills, trying to understand their work, improving their level of competence, or achieving a sense of mastery based on self-referenced standards" (p. 262). In contrast, performance goals orient individuals to focus on their ability and self-worth, to do better than others by surpassing normative-based standards and to receive public recognition for their superior

performances. Several other researchers have labeled them mastery and performance goals as well (Barron & Harackiewicz, 2003; Elliot, 1999; Pintrich et al., 2003). Accordingly, this review uses the terms mastery and performance goals to refer to the two general goal orientations.

Both mastery and performance goals are associated with a divergent set of competence-related affects, cognition, and behavior. Mastery goals are often hypothesized to be linked to a positive set of results, such as persistence in failed tasks, deep processing of learning materials, or enhanced task enjoyment; performance goals are often hypothesized to be linked to a negative set of results, such as withdrawal of effort due to failure, and decreased task enjoyment.

Recent research on goal orientations has developed from the above dichotomy to a trichotomy. Researchers have questioned the maladaptive pattern of performance goal orientation; they proposed that the "classic" goal orientation theory that considers only two orientations, mastery and performance, is quite general and confusing because of mixed research results. Consequently, they make a distinction between two different types of performance goals: a performance-approach goal and a performance-avoid goal (Elliot, 1999; Elliot & Covington, 2001; Elliot & Harackiewicz, 1996; Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002; Sideridis, 2003). Performance approach-oriented students are trying to do better in a normative competence or outperform all other classmates. Performance-avoidance students, on the other hand, are trying to avoid failure by all means, even if they have to avoid working on the task. It is suggested that mastery goals are positive related to adaptive cognitive and self-regulation strategy use in the classroom.

However, the empirical picture is less clear for whether performance goals elicit negative processes and outcomes. Pintrich (2003) concluded that research that did not distinguish approach and avoidance performance goals tend to find that performance goals are negatively related to students' use of deeper cognitive strategies. But with research that distinguished between these two types of performance goals, results often indicate that it is specifically the performance-avoidance orientation that leads to maladaptive patterns of behaviors and not the performance-approach (Barron & Harackiewicz, 2003; Elliot, 1999; Harackiewicz et al., 2002).

Although this approach/avoid distinction is accepted in reference to performance goals, some researchers suggest a need for a 2 × 2 achievement goal framework with mastery-approach/avoidance goals and performance-approach/avoidance goals (Elliot, 1999; Pintrich, 2000). Prototypic exemplars include perfectionists who strive to avoid making any mistakes or doing anything incorrectly, and individuals in the latter part of their careers (athletes) or lives (elderly persons) who begin to focus on not performing worse than before, or not losing their skills, abilities, or memory. Elliot and McGregor (2001) examined the feasibility of a four-goal model and found empirical support for the differentiation of the four goals. Moreover, it appears that mastery avoid goals are mainly related to negative outcomes such as more anxiety and less adaptive approaches to studying and learning. However, Pintrich et al. (2003) pointed out that this is still not a well-accepted extension and more research is needed.

Goal Content

Goals are stable, higher-order entities that function as abstract, organizing structures and remain fairly stable over time (Austin & Vancouver, 1996; Chulef, Read,

& Walsh, 2001; Ford, 1992; Ford & Nichols, 1987). The goal constructs and the interactions among them has been proven useful in understanding and predicting the behavior in which individuals engage (Chunlef et al., 2001), and are related to the corresponding underlying motives (Emmons & McAdams, 1991, cited in King & Emmons, 2000). Therefore, goal content approach attempts to specify the range of potential goals that could subserve motivated behavior. The purpose is to develop a widely accepted taxonomy of human goals through a systematically classifying method. The importance of content analysis in the study of human motivation is that it is more or less the first step in the task of systematically describing and classifying the breadth of human goals. Efforts from personality and motivational researchers have led to the development of domain-specific, self-report measures of goals. Most of this work has involved the researchers deriving empirical taxonomies through either nomothetic (Chulef et al., 2001; Ford, 1992) or idiographic (Emmons, 1996; Little, 1983; Lawton, Moss, Winter, & Hoffman, 2002) self-report methods.

In the nomothetic approach, the general procedure is to present subjects with a standardized list of goals and have subjects rate these goals on a preselected dimension, typically importance or relevance. Intercorrelations of these rating are then subjected to factor or cluster analysis to generate taxonomy of human goals.

Martin Ford (Ford, 1992; Ford & Nichols, 1987) proposed Motivational Systems Theory (MST) as a comprehensive model of motivation for all human behavior, not just achievement in classroom contexts. The MST is conceptualized in the living systems framework, which represents an organismic-contextual model of human development. Central to this view is the notion that people are active organisms who intentionally set

and strive for goals. There is a strong emphasis on goal directedness at all levels of organization. In other words, goals organize and direct the activity of the system. The model attempts to provide a comprehensive theory of motivation, in which motivation is defined as “the organized patterning of an individual’s personal goals, emotional arousal processes, and personal agency beliefs” (Ford, 1992, p. 248).

$$\text{Motivation} = \text{Goals} \times \text{Emotions} \times \text{Personal Agency Beliefs}$$

Personal agency beliefs (PABs) are beliefs regarding the probability of goal attainment. Two factors influence PABs: context beliefs and capability beliefs. Context beliefs are beliefs about the responsiveness of the environment surrounding the goal, thus including perceived controllability and outcome expectancies. Capability beliefs are equivalent to self-efficacy beliefs regarding personal resources (e.g., time, effort) that individuals believe they have for accomplishing the goal. Thus motivation is an integrative construct representing the direction in which a person is going, the emotional energy and affective experience supporting or inhibiting movement in that direction, and the expectancies a person has about their goal attainment.

He classifies the contents of goals into a taxonomy that has 24 general categories under a two-part hierarchy: desired within-person consequences and desired person-environment consequences. Within-person goals include affective, cognitive, and subjective organization goals. Affective goals are feelings and emotions that individuals want to experience or avoid, including subgoals such as entertainment, tranquility, happiness, bodily sensations, and physical well-being. Cognitive goals include four kinds of goals, with the first three representing different levels of cognitive engagement, namely, exploration, understanding, and intellectual creativity. The fourth cognitive goal

is to maintain a sense of self-confidence, pride, or self-worth. Subjective organization goals represent a complex mix of both affective and cognitive states, including utility and transcendence goals. On the other hand, person-environment goals comprise self-assertive social relationship, integrative social relationship, and task goals. Both of the self-assertive social goals and integrative social relationship goals consist of four subgoals. Each of the self-assertive goals is paired with an integrative goal to reflect the general tension between individuality and the group, such as individuality versus belongingness, self-determination versus social responsibility, superiority versus equity, and resource acquisition versus resource provision. The final category of goals, tasks goals, refer to how we choose to relate to the different types of tasks we confront in our lives, such as mastery, task creativity, management, material gain and safety goal.

When compared to Murray's (1938) taxonomy of needs, there is a great deal of overlap. For example, Ford's mastery goal resembles Murray's achievement (nAch) while entertainment is similar to Murray's play (nPlay). The difference is that Ford's taxonomy is more specific and less global than Murray's taxonomy, but yet represents a more comprehensive list of goals than Maslow's five hierarchical needs (Maslow, 1970). Moreover, Ford highlights the notion of multiple goals that people can and do pursue within one situation. Finally, unlike Maslow, Ford does not propose that there is a hierarchy to the 24 goals in the taxonomy. In that sense, no one goal is more important or more fundamental than any of the other goals. But when it comes to the individual and the pursuit of multiple goals, he suggests that goal hierarchies help the individual set priorities and coordinate the multiple goals that might be evoked in any situation. As a result, within any one situation, there might be a larger overall goal as well as many

subgoals that help the individual to evaluate his progress and guide his overall direction to the larger target goal.

Building upon the work of previous researchers, Chulef et al. (2001) offered a hierarchical taxonomy of human goals based on the semantic-similarity judgments of naïve subjects (laypeople) who sorted a quite extensive set of goals into conceptually homogeneous categories. All 135 goals were sorted into a 30-cluster solution with three major categories: 1) family, marriage, sex, and romance; 2) interpersonal goals related to interacting with people in general; and 3) intrapersonal goals. Furthermore, in order to examine how particular age groups are similar and different in the way they conceptualize motivational constructs, the taxonomy of the total sample was compared to that of the three subsamples: young group (aged 17–30), middle age group (aged 25–62), and older adult group (aged 63–92). They found that the basic structure of the taxonomy was shared by the three groups; however, there were some differences that can be understood in terms of people of different ages facing different life tasks. For example, only the older adult group made a distinction about placing physical goals that strictly contain health-related goals into a separate higher-order cluster. This might suggest the salience that health has for older adults. On the contrary, the younger group perceived physical goals as instrumental to the pursuit of social goals.

The majority of the taxonomies developed aim to explain behavior across situations and ages; little was done concerning age-related changes and differences in the motivation literature. Given the range of individual differences and the complexity of the contextual factors affecting motivation, we might be better advised to concentrate on particular sorts of people, in well-defined circumstances, preferably over a relatively

narrow span of years. In a study identifying dimensions of individual differences in the content of older adults' personal goals and examining the relationship of goals to demographic, age-related transitions, and contextual variables, Rapkin and Fischer (1992) surveyed 179 older adults (aged 60 and over) participating in a Retired Senior Volunteer Program (RSVP). They identified ten life goal content factors: 1) active improvement, 2) maintenance of social values and relationships, 3) disengagement, 4) energetic life-style, 5) safety and security, 6) stability, 7) increased reliance on services, 8) easy life, 9) reduced activity, and 10) independence in living situation. The ten life goal factors were then grouped into three general goal factors, namely, global motivation factor (1, 2, 3), support concerns factor (5, 7, 10), and desired pace and complexity factor (4, 6, 8, 9).

An examination of influences on the three goal factors suggested that long-standing disadvantages in education and job status might increase disengagement and the desire for security and having an easy life, while higher socioeconomic status is related to independence and maintenance of social relationships. Being widowed is related to disinterest in or rejection of increased challenges and demands. More importantly, the emergence of themes regarding the pace and complexity of life signified the desire to have greater stimulation and challenge, and to reduce demands. Generally, desire for an energetic life-style was related to being married and healthy. It was suggested that low occupational status relative to level of education may signify unfinished business, which may encourage elders, younger men in particular, to keep striving.

The results of the above study are consistent with the perspective that elders' personal goals must be conceptualized in terms of multiple motivational forces active in later life. Results also show some overlaps with those identified by older subgroup in the

study by Chunlef et al. (2001). They both include interpersonal and intrapersonal categories but vary in given factor/domain names and importance of each factor. Overall, they both indicate that health-related concerns, and social and intellectual maintenance goals are shared within this age group.

In a similar study, Smith and Freund (2002) investigated the life domain and motivational orientation reflected in the possible selves of older adults aged between 70 and 100 in Berlin. Possible selves are highly personalized hoped-for and feared images of the self that function as incentives (goals) for action within domains. Possible selves reflect an individual's motivation for trying to control the direction of her/his future life; they represent specific, individually significant hopes, fears, and fantasies (Markus & Nurius, 1986). Over the four-year longitudinal study, participants were asked to generate at least two important hopes and fears about their future. Data presented hopes and fears in six life domains: personal characteristics (e.g., personality disposition, emotions, physical appearance, body image, political and religious attitudes), health and functional capacity, interest and activities (e.g., hobbies, daily routines), social relationships, life events, and cognition. Three motivational orientations were identified: self-improvement (gain or re-experience), self-maintenance, and prevention/minimization of loss.

It is suggested that the motivational orientations of old (aged 70–79) and very old (aged 80–103) persons expressed in their possible selves were related to well-being. Most hopes reflected approach motivation (self-improvement) whereas most fears reflected avoidance motivation. Becoming more oriented toward maintenance was linked to a lower decline in life satisfaction over time. The key contribution of this study is that it provides evidence that the future-oriented motivation reflected as possible selves

functions relatively well into very old age. The possible selves of older adults were highly personalized and varied. In most instances, inter-individual differences outweighed age-related differences. It is suggested that idiosyncratic changes in objective life circumstances play an important role in the dynamics and functioning of personal goal contents.

Study of Motivation within the Context of Distance Education

Motivational process cannot be understood without taking into account a variety of contexts within which a person is imbedded. One of the hallmarks of the goal content perspective is that the personal goals an individual adopts are very sensitive to contextual features. Goals can emanate either from the individual or from the context. The baseline principle is that a *whole* person always functions as a unit in coordination with the environments in which they are functioning biologically, psychologically, cognitively and socially.

These contextual features are so interrelated that changes in motivational parameters are likely to influence other motivational processes and other parts of the person-in-context system, and vice versa (Ford, 1992). In other words, the situation and the person will interact in complex ways to influence behavior patterns. We as researchers always need to take into consideration what the individual brings to the situation in terms of prior personal and developmental experiences. Of course, there are many different potential factors, but in this study we concentrate on a few personal factors specifically in old age and learning environment factors specifically in the distance education learning environment.

Achievement Goals in Old Age

Most of the research on achievement motivation focused on traditional achievement-related contexts such as schools or work settings, in which older adults are rarely to be found as subjects. And yet, a few hypotheses have been proposed. Raynor and Entin (1983) argued that people, as they age, change from a more extrinsic to a more intrinsic orientation; and goals related to striving and getting ahead are assumed to change to goals related to preserving their accomplishments and integrating the various aspects of their lives (cited in Filipp, 1996). However, empirical evidence to support such a view is insufficient given that the conceptual meaning and scope of motivational constructs varied in the study of aging. When examining age-related decline in motivation dispositions, Halisch and Geppert (2001) found a substantial impact of motivational determinants especially achievement and power on the well-being in old age. They also found gender differences in motivation dispositions. Achievement and power motivations were higher in males than in females; females, in turn, were affiliation-motivated to a somewhat higher degree.

Meanwhile, in the field of adult education, there has been some research on learning and aging. Discussions of older adult education often assume that the elderly are capable of learning and willing to learn, moreover, some researchers think that continuous learning helps older adults to live a better life (Fisher & Wolf, 1998; Hiemstra, 1994; Schaie & Willis, 2002). Many programs designed specially to meet older learners' needs have developed in the past 20–30 years; among them, Elderhostel and University of the Third Age may be the most famous (Hiemstra, 1998). Most important of all, the

overwhelming open and distance learning institutions that mushroomed all over the world had provided tons of opportunities and choices for older adult learners as well.

As a result, helping older people learn to become more autonomous and independent in their later lives, and trying to shift the emphasis from "doing for" them to helping them "do for themselves" are particularly necessary. Their motivation toward learning, therefore, is clearly a function of many factors. In the following review, the motivational factors that influence older adults' participation in both residential education programs and distance education programs are examined. Residential education programs include Elderhostel programs, tuition-waiver programs, Learning in Retirement institutes, and University of the Third Age. Little research has been done on older distance learners, and fewer yet on the structure of their motivation constructs for participation. As older distance learning participation rates increase, a better and clearer understanding of the characteristics of these older distance learners and the reasons for their enrollment are of great importance to adult educators, administrators, and educational gerontologists.

Motivation of residential older adult learners. The motivations of older learners have been studied by Roger Boshier. Together with various associates, he has conducted a series of studies over a 15-year period culminating in two large-scale analyses. To operate the motivational variables at issue, Boshier (1971) first developed the 48-item Education Participation Scale (EPS) and then refined it to a version with 40 items (reasons for participation) cast on a four-point Likert scale of influence. The widespread use of successive versions of the EPS in North America has produced a large database in adult education (Boshier & Collins, 1983; Turner, 1996). Essentially, Boshier and associates aimed their research at the structural foundations of motivations as measured

by the EPS. In the first of the two large-scale analyses, Boshier and Collins (1983) constructed a factor analysis on a pooled master file of 12,191 cases. They contributed six motivation domains, namely, social contact, social simulation, professional advancement, community service, external expectations, and cognitive interest.

The researcher has no quarrel with a general recommendation to use the EPS framework but I would question the idea of adopting it further for use with older generations. This is because the cited analyses (Boshier, 1971; Boshier & Collins, 1983, Turner, 1996) have largely sampled adults in the 18–55 year age span—the years of gainful employment. Older adult learners aged 60 and over, however, usually are retired and represent a stage of life marked by an abrupt transition, increased leisure time, and various adversities such as declining powers and loss of significant others.

Later, Boshier and Riddle (1978) administered the modified EPS with job-related items deleted to older students enrolled in courses designed especially for older people. They classified motivations as a) escape/stimulation, b) social welfare, c) social contact, and d) cognitive interest. The additions were tested on a group of 84 students averaging 70 years of age. The four-factor solution accounted for 49% of the variance in participation. Among them, cognitive interest was the most powerful motivator, and escape/stimulation was the least important reason that older adults took part in educational programs. Pritchard (1979) supplemented the modified EPS (of Boshier & Riddle, 1978) with 20 reasons pertaining to self-understanding, psychological adjustment, and self-actualization. The results confirmed the four factors found in Boshier and Riddle (1978), and added two additional factors of adaptation/self-understanding and self-actualization.

Attempts were also made by Kim and Merriam (2004) to clarify basic parameters associated with learning among older adults. They surveyed 189 older adults aged 50 and older who were attending a Learning in Retirement institute (LIR). The survey was a modified version of Boshier's 1991 EPS (A-form) with items relating to communication improvement, educational preparation, and professional advancement omitted. Consistent with previous studies, cognitive interest was the most influential factor in participation in LIR courses, followed by social contact. On the other hand, respondents appeared to be less motivated by social stimulation and family togetherness factors.

Furst and Steele (1986) conducted a two-stage mixed-method study to explore the motivations of older adults participating in university-level courses. They first interviewed 22 participants who were at least 62 years old, with the selection emphasis on continuing learners. Ten days after their interviews, participants were asked to fill out the Reasons for Participation Scale (RPS) to check consistency of responses over time. Two years later, 56 older learners who were selected using similar criteria to those used to select the first sample were surveyed using the same instrument. The combined samples consisted of 78 older adults from 62 to 85 years old with a relative high level of education. The results yielded a nine-factor solution that accounted for 68.5% of the total variance, including keeping up/becoming involved, fulfillment, stimulation and self-maintenance, practical achievement, self-understanding/personal adjustment, formal attainment and recognition, qualifying for privileges, prerequisite knowledge, and intellectual stimulation and enjoyment. Some of the factors corresponded with those found in Boshier and Riddle (1978); for example, intellectual stimulation and enjoyment, stimulation and self-maintenance, and formal attainment and recognition matched

cognitive interest and escape/stimulation, respectively. However, the drawback of their study was that the results from the factor analysis were not robust enough due to the small sample size. As a result, there was a great many overlaps between items, which as a result led to a failure to provide a "clean" interpretation.

In a different context, Bynum and Seaman (1993) administered RPS to a large sample of older adults who participated in Learning in Retirement (LIR) Institutes. Their survey had a few modifications. The modified version contained 30 items (instead of 32 items); items related to earning a degree were dropped since LIR offers noncredit courses. A total of 452 older adults over 50 years of age who had enrolled in LIR courses in five southeastern states were surveyed. Their findings identified four components to older learners' motivation: namely, self-actualization, perceived cognitive gap, intellectual curiosity, and social contact. They hypothesized that interpersonal and social motivation would be dominant since LIR offered noncredit courses and involved participants in the administrative and instructional process. Surprisingly, however, intellectual curiosity appeared to be the most powerful underlying motivation. This not only confirmed what was found in previous studies, but also suggested that LIRs provide intellectually stimulating activities even though they are not associated with other college- and university-sponsored programs for older adults. The appearance of self-actualization factor led them to conclude that such factors would be more readily evidenced within noncredit programs in institutions of higher education.

Even though the overall results coincided with the literature, the use of the label "self-actualization" was disputable. It is the researcher's understanding that the concept of self-actualization implied personal growth through the realization of one's potential

and capabilities (Maslow, 1970). It is the feeling of making progress toward reaching one's full potential, achieving both what one wants and is best suited to do. But when examined closely with the underlying items in the self-actualization factor, the item contents were more likely to translate into personal growth or self-improvement, which are not the same thing as self-actualization. Such items include: "to enable me to cope better with the challenges of daily living", "to gain insight into my personal problems", or "to re-examine my perspective on one or more contemporary issues", etc.

An emerging body of qualitative research supplied a deeper understanding of who these learners are and what their experiences have been in participating in learning activities. Results from these studies (Laanan, 2003; Lamb & Brady, 2005; Little, 1995; Martin, 2003) generally do not contradict the quantitative studies cited, but rather expand and elaborate upon it. During in-depth interviews with five older adults (55 years and older) regarding their motivation to participate in learning activities during the retirement transition, Adair and Mowesian (1993) concluded that the needs and goals to learn were instrumentally or expressively oriented, which corresponded with various developmental tasks related to later life. Instrumental learning was found to be primarily related to health, finances, and social support activities; it enabled the participants to manage basic survival needs and maintain both personal effectiveness and independence. Expressive learning, on the other hand, provided immediate gratification of needs and goals associated with identity, affiliation, and competence.

Martin (2003) interviewed four older adults ranging in age from 68 to 73, who maintain continued participating in a LIR institute over a period of at least two years. The findings identified with those from previous studies: that intellectual stimulation and

socialization were the strongest motivations when searching for learning opportunities. In addition, what made older adults choose LIR courses over the college courses was the interactive nature of LIR courses, through which peer members share their knowledge and experiences, and build companionship with people their own age. The impact of LIR experiences on older adults became apparent from the recurring four themes of personal growth, self-esteem, contribution (to family and society), and empowerment, which often overlapped and reinforced each other.

A similar study was done by Lamb and Brady (2005), who interviewed long-term participants on their experiences in one Lifelong Learning Institute (LLI, a later name for the Learning in Retirement Institute) and its impact on their sense of well being. Forty-five members aged 55 and older, who registered in at least one LLI course over three years, were interviewed in six focus groups. The findings revealed four major motives for continuing to participate in LLI courses: intellectual stimulation, community support, self-esteem, and spiritual renewal. What is interesting about this study was that the benefits of spiritual renewal as reasons for participation showed up for the first time on the chart in the related literature. This subject came up during the discussion about the openness and trusting atmosphere within the LLI learning environment. The authors explained that the desire to explore spiritual issues might result from two underlying motivations: a need to go beyond participants' own formal religious training, and a desire to understand other spiritual traditions. The findings proved that once again older learners persist in adult education programs for intricate and multifaceted reasons.

The choice made by older adults to attend classes in formal education settings has received attention as well. Laanan (2003) analyzed a secondary data that contained 114

older adults aged 55 and above attending 36 public two-year colleges across the U.S. When asked about their degree aspirations at the institution in which they had enrolled, the majority of older adults were pursuing associate degrees. However, to “learn more about things” ranked higher than to “gain general education” as their reasons for attending community colleges, followed by “improve reading and study skills” and “become a more cultured person”. Overall, theses findings supported those from previous studies that the motivation for older adults’ participation in education was to maintain intellectual engagement. The academic reputations of the school and special program offerings outranked financial concerns as the strongest factors to influence older adults’ decisions about which community college to attend.

During a series of in-depth interviews with sixteen older adults (mean age = 74) enrolled in both graduate and undergraduate programs at various universities throughout the southeastern United States, Little (1995) identified four motivations that explained their degree-seeking behavior: improving self-esteem, keeping old age at a distance, developing a mature sense of caring, and handling loss and grieving process. Improving self-esteem was the primary motivation for older adults seeking a degree in higher education. Unlike most of the conclusions from previous studies in which cognitive stimulation was the strongest motivator, Little (1995) suggested that improving self-esteem was the primary motivation for older adults seeking a degree in higher education. In a sense, education functions to repair or enhance self-esteem in old age. This study confirmed the connection between education and developmental tasks; in other words, learning in later life fulfills a function in older adulthood development.

Using a slightly different measurement from mainstream quantitative research, participants in Scala's (1996) study answered yes or no to a list of reasons for coming back to school at old age (instead of rating Likert-type items). One hundred and ninety one older adults aged 60 and older who had been enrolled at a local college between 1983 and 1992 were interviewed by phone. Expressive motivations such as "enrichment/love of learning" were the most important reasons for taking courses in a higher education setting, followed by "filling a void after life changes" and "interest in specific courses/subjects"—both were instrumental in nature. Another important aspect of her study was an exploration of the reasons for older adults no longer attending school. As expected, the most cited reason was health problems, either personal or those of a family member. Other reasons for leaving school included a lack of time and transportation, scheduling, and expenses. Academic difficulty was the least important reason for older adults' departure from school.

Regardless of the number of motivation categories identified through the above studies, most studies found that a cognitive-related factor was the strongest motivation reported by older adults who were participating in various residential learning activities. However, the commonly held belief that the reason for adults' engagement in educational activities is the need for socialization and for affiliation with members of their own age cohort (Fisher & Wolf, 2000) was challenged. There is no doubt about the importance of social interaction in old age, but decision about associations differed depending on their choices of educational programs. Older adults who chose to participate in programs such as Elderhostel, Learning in Retirement institutes, and senior centers where programs are designed specifically for older people, reported enjoying the companionship of people

their age. On the other hand, older adults who chose to participate in traditional higher education settings where courses are highly structured and the majority of the students are between 19 to 25 years old reported that forming connections with younger students was of major importance in their participation. It is often expressed that associating with and learning from younger generations made them feel younger and gave them a sense of well-being.

Furthermore, the existence of instrumental motivations that "lie outside or beyond the act of learning" (Kingston, 1982, p. 45) cannot be overlooked. This is of special importance for those who participate in higher education settings. After all, socializing is most frequently given as a reason in conjunction with other instrumental reasons (Wirtz & Charner, 1989). It is safe to conclude that any program that seeks to attract older adults must respond to both the expressive and the instrumental needs of the population. Finally, it is also imperative to put the developmental tasks of older adulthood into consideration when examining older adults' motivations for participating in educational programs. Developmental tasks associated with late adulthood included retirement adjustment, death and bereavement, and decline in health and strength. Therefore, educational programs should facilitate late life transitions and help participants to cope with challenges posed by developmental tasks.

Motivation of distance older adult learners. Even though there is limited literature on the motivation structure of older adult learners in the distance education environment, I believe that older learners participating in any distance education programs form a distinctive group that differs from those participating in face-to-face senior programs. There seems to be more challenges in distance education programs than in residential

senior programs for older learners. First, they are geographically isolated from other learners and instructors. Second, most of the distance education programs are highly structured and academic-oriented, so that older students in such programs study under pressure like traditional college students do; they must complete assignments in time, and pass final exams to obtain a degree. Third, most of them must overcome their latent technophobia; they must learn to use new computer skills, to navigate Internet, and to communicate through electronic mail. These are all big changes for them. Although there is no commonly accepted definition and measurement of 'motivation', researchers who conducted the following studies tended to operationalize motivations as the reasons for participation.

Kelly (1989) compared four groups of older adults who were participating in different learning environments: British Open University (BOU), other distance educational programs, liberal adult education programs (including U3As), and Local Education Authority (LEA) institutions in the United Kingdom. Results indicated a few differences between older students in BOU and older students in other educational organizations. Approximately two-thirds of the older students in the three other groups were studying to keep their mind active, and it is evident that the desire to keep mentally alert, to develop subject interests and to continue their own personal development are themes common to many older adults. However, the reason most frequently mentioned by BOU students for studying was to "make up for lack of opportunities or missed opportunities in the past". The second rated reason for studying was "to keep my mind active". To "continue developing as a person: stretching myself" and to "get a degree" were both the third highest given reasons. The main difference between the older BOU

students and other over-60 students was that a much lower percentage were studying to make up for missed opportunities in the past. According to Kelly (1989), some older people see BOU as “the University of the second chance” (p. 70) and as an opportunity to gain access to degree-level courses. Overall, four themes categorized the reasons for older students’ participation in BOU courses: namely, missed opportunities, active retirement, a second chance, and subject interest. Other studies showed that older learners wanted to engage in further study to foster a sense of achievement, and wanted to learn for the pleasure of learning (Johnson, 1995).

Similar results were found in Silverstein, Choi, and Bulot’s (2000) study. They surveyed 984 older adults aged 52 to 87 enrolled in both traditional campus settings and distance education. For those aged 60 and over, expressive reasons such as “becoming a more informed person”, “general interest in subject matter”, “keeping my mind active”, and “something I’ve always want to do” were significantly related to their age. Another important finding was that the majority (87%) of older learners considered the receipt of a tuition waiver an incentive in their enrollment. Studies by Swindell (2000, 2002; Swindell & Vassella, 1999) found that the majority of older adults participating in OnlineU3A were attracted by the “opportunity to learn new things”. The next highest reason was to “communicate with stimulating people”, closely followed by “enjoyment in doing new things”.

The weakness of the above studies, however, is the lack of completeness and generalization that will enable readers to draw a conclusion in some specific subject areas, as Boshier and Collins did in their 1983 study. Researchers did not categorize those individual items into the concept of “factor”, “domain”, “dimension” or “taxonomic

category". Though factors are tentative and subjective, it would be easier for readers to understand and believe that there is some reality behind the name if researchers can name the factor. Although Boshier (1976) argued that "factor names merely try to capture what seems to be the central theme of the factor" (p. 31), he admitted that the reality of factors such as those measured by the E.P.S. or R.E.P. will only be known through research that "investigated the psychological underpinnings of life-chance and life-space motivation" (p. 31). Therefore, a more prudent and feasible way for Kelly (1989) and Silverstein, Choi, and Bulot's (2000) studies was to apply factor analysis to achieve the clustering process, and factor scoring to ascertain the extent to which each participant was enrolled for the reasons that constitute each motivational construct, rather than using percentages. The next step was to relate the factor scores through correlation or analysis of variance to socio-demographic variables.

In summary, a review of studies on older adults learners' motivations for participation showed several similarities and slight differences between those who participated in general senior programs and credit distance education programs. Participants in both groups are foremost motivated by a desire to learn, to keep mentally alert, to develop subject interests, and to continue their own personal development, categorized as cognitive interests and fulfillment/self-actualization. In addition, social contact also was viewed as an important factor in several studies. Therefore, for those who participate in noncredit, face-to-face senior programs, we may foster a hypothesis that interpersonal and social motivators would be paramount for participation. As for those enrolled in credit distance education programs, most want to make up for missed opportunities, to get a degree, to get a better education, to be better informed generally,

and to prove something to themselves: all suggest that education in retirement is perceived as a personal benefit to make up for earlier deprivation or misfortune or perhaps as a reward for earlier self-denial.

Socio-demographic Characteristics

Socio-demographic characteristics have proven to be the most consistent predictors of participation. It is well-documented that the greater proportion of older adults participating in learning activities is female, married, well-educated and better off financially than nonparticipants (Bynum & Seaman, 1993; Kim & Merriam, 2004; Lamdin & Fugate, 1997; Lamb & Brady, 2005; Manheimer et al., 1995, Martin, 2003; Scala, 1996; Swindell, 2000, 2002). It is frequently suggested that the best predictor of whether an adult is likely to take part in adult education is his/her level of formal education. Generally, the higher the level of formal education, the higher the likelihood of participation. A bachelor's degree or higher appeared to be the mean level for participation in older adult education programs (Lamdin & Fugate, 1997). Therefore, it is possible that the relatively lower participation rate among current older adults may be in part a cohort effect. As the education level of future elder cohorts rises, their participation in adult education may also increase (Schaie & Willis, 2002). When the relationships between motivation factors and education attainment were examined, Kim and Merriam (2004) found that level of education predicted social stimulation negatively. The more educated participants were, the less they were motivated by social stimulation.

Gender is another well-discussed factor that may be an important source of differences in participation. The general perception is that the greater proportion of those who participate in older adult education programs is female. However, many researchers

(Lamdin & Fugate, 1997; Scala, 1996; Williamson, 2000) explained that the results could be misleading for several reasons. The first is the issue of women's greater longevity: women outlive men so there are more of them to draw from. Even though this explanation may be legitimate in a statistical sense, it does not explain why more women than men pursue learning activities in later life. Scala (1996) found that older women were more likely to state that they returned to undergraduate studies because "they always wanted to go to college, but never had the chance". Men, on the other hand, were more likely to attend due to "job training or to get a degree", and "interest in specific subject/courses" (p. 755). She further concluded that such gender differences seem to reflect cohort differences. Women in the current cohort of elderly were unlikely to receive much higher education, whether because it was considered unnecessary or because they were already married and raising kids at the traditional college age.

Williamson (2000), however, confirmed gender differences in older people's participation in adult education. In a mixed-method study in Australia, Williamson (2000) surveyed 190 members of the University of the Third Age (U3A) and further interviewed 56 of those surveyed. He found that the reasons men were less likely than women to participate in learning activities appeared to cluster around the issues of retirement and gender role socialization. Men were inclined to "sit" in retirement while women wanted to be free. For women, after an adult lifetime of household routines or traditional roles of primary care giver, U3A had offered them the opportunity to get out of the house and to join a group of people with similar interests. But for men, the sense of how well they retired in terms of seeing retirement as another beginning of life, not the end of it, shaped their personal dispositions and willingness to participate in learning activities after

retirement. For some men, their health problems at or after retirement compounded the usual difficulties of retirement and added to their desire to “sit”.

Employment may also have an effect on motivation for participation and experience in the learning environment. Older adults who were employed might face more time constraints and pressure than those who were retired. Scala (1996) found that older adults who were employed or who were seeking degrees were more likely to report participation motives that were instrumental in nature. Meanwhile, the significance of marital status in predicting motivation for participation in later life was found in Kim and Merriam (2004). Marital status appeared to predict social contact and family togetherness factors. Older adults who were married were less motivated by social contact than those who were widowed, divorced, or single. On the other hand, unmarried older adults scored lower in family togetherness than married participants. Contradicting previous literature, age, gender, and employment status did not predict any of the motivation factors in their study.

The influence of socio-demographic variables in predicting older adults’ participation in educational programs is equivocal given that the evidence to date is somewhat circumstantial. Studies at the British Open University (BOU) from 1984 to 1995 showed that men outnumbered women in enrollment and were more likely to have a degree or equivalent qualification. Kelly (1989) compared older BOU students and other older distance education students. He found that both groups were more likely to be male and to have some educational qualifications. However, older BOU students were not significantly better qualified than other older learners. In other words, BOU had attracted people with no or few educational qualifications as well as those with a degree. In general,

both men and women were found to have had positive memory of school earlier in life and had a positive wish to resume study, but had had their education interrupted by World War II (Johnson, 1995). One-third of the students over 60 had retired; the vast majority of BOU male students were married in contrast to approximately half of the women who were either single, widowed or divorced (Cutress, Morrison, & Palmer, 1983). Generally they do as well as younger BOU students, and even better on course assignments but not as well on final exams (Kelley, 1989, 1992). Similar patterns were also found in Taiwan; Chen (1999) surveyed 151 older students at the National Open University in Taiwan (NOUT). She found that the majority of NOUT older students were male with a mean age of 72. Most of the participants were highly educated, with a college/university level of education. As expected, the majority of the older students were retired and enrolled as full-time students.

Even though the attempt to conclude which socio-demographic variable could best adequately explain the variance in motivation factors was not successful, the review did raise some interesting questions. Are there differences in personal characteristics between older adults who participated in residential education programs and those in distance education programs? Are older distance learners unrepresentative of their generation? Or is it as Kelly (1989) suspected, that older adults enrolled in any OU are the educational elite whose experience had little relevance to other older adult learners.

With the above questions unanswered, it is only fair to say that the older learning population is and will continue to be too heterogeneous to provide a basis for a profile. Since the transition points or life events were proven to be important motivational triggers (Jamieson, Miller, & Stafford, 1998), the potential need for educational activity

will be growing as people are gradually experience life events such as divorce, retirement, and death during the life course. It is strongly believed that the elderly as a group are diverse in their interests and that a wide range of course offerings is needed to satisfy their needs and desires.

Distance Education Learning Environment

In addition to personal factors, the study reported on in this thesis also examined how the learning environment influences older adult learners' motivation constructs. The term "learning environment" has been used to refer to the psychosocial characteristics of classroom environments (Jegede, Fraser, & Fisher, 1995, 1998; Walker, 2002, 2003a, b, c). In this study, distance education learning environment is used to investigate the psychosocial aspects of post-secondary asynchronous distance education that support social and inductive perspectives of learning. Moore (1990, 1993) proposed that distance education could be categorized into Dialog, Support, and Structure in terms of its components. Dialog refers to the purposeful and constructive interaction directed towards improving and enhancing student learning. The usefulness of dialog depends on the content of the course, the characteristics of the students and the instructor, and the learning environment. Structure is a measure of the educational program's responsiveness to the needs of the individual learners. It represents the program's educational objectives, teaching strategies, and evaluation methods. Finally, support is described as the perceived support learners receive from the instructor and the institution offering the courses. It can be explained in terms of support for instruction, materials, or technical support.

Research involving learning environment instruments has consistently demonstrated the presence of associations between perceptions of classroom/educational

environment and students' cognitive and affective learning outcomes (Ames, 1992; Walker, 2003b; Wentzel, 1999, 2000). Cognitive learning outcomes in most motivational research are operationalized as course grades, performance on classroom tests, or performance on standardized achievement tests. Affective outcomes are often categorized as learners' satisfaction in the classroom, self-efficacy, intrinsic interest, or attitudes toward the subject matter and inquiry. Brady and Fowler (1988) operationalized learning outcomes as humanities/critical thinking and human relations/personal development. They surveyed older adults participating in Elderhostel programs. They found that even though socio-demographic and educational variables may be helpful in predicting initial participation, it is the motivational factors that were the stronger predictors of learning outcomes. Due to the scope of the present study, affective outcome is limited solely to students' satisfaction, with a focus on learners' enjoyment of distance education. Learners' satisfaction is usually a key indicator of educational quality (Walker, 2003b). In addition, research from diverse perspectives has shown that student satisfaction or enjoyment of learning is greater when classroom environments are perceived as encouraging student involvement (Ames & Archer, 1988).

Chapter 3

METHODOLOGY

Introduction

This chapter describes in detail the research methodology used to conduct the study. It is organized into five sections: 1) research design; 2) population and sampling; 3) survey instrument; 4) data collection procedure; and 5) data analysis.

Research Design

Given the exploratory and descriptive purposes of this study, a cross-sectional survey research design was chosen for implementation. The main purpose was to explore the factor structure of motivational constructs expressed by older adult learners at NOUT. Further, the study examined whether a relationship existed between the identified motivational constructs and participants' socio-demographic characteristics and their perceptions of the distance learning environment provided by NOUT.

In this study, older adults are defined as persons age 55 and over. This age definition is used because older adulthood is commonly associated with retirement, and most people do intend to retire early (Hermalin et al., 2002). Although age 65 is often viewed as the official retirement age, under the Civil Servant Retirement Regulations and Labor Standards Law, employees in Taiwan can retire either when they reach age 60, complete 25 years of service, or at age 55 with 15 years of service (Ofstedal et al., 2002). Accordingly, if this study had defined older adults as those age 65 and older, it would have overlooked individuals in the important transition years (ages 55 to 64).

Participants completed two self-administered questionnaires. Motivation, as reflected in the personal goals of older learners, was operationalized as the reason for participating in a distance learning environment context. Hence, motivation of older learners at NOUT was measured using Reasons for Participation Scale (R.P.S.) developed by Steele (1984; Furst & Steele, 1986). The questionnaire consisted of 32 four-point Likert scale items measuring the degree to which a stated reason for participation in educational programs was a motivating factor for the subject. Second, a modified version of the Distance Education Learning Environment Survey (DELES; Walker, 2003a, b, c) was used to evaluate participants' perceptions of the distance education learning environment at NOUT. The modified DELES consisted of 29 four-point Likert-type items measuring instructor support, student interaction & collaboration, personal relevance, and student satisfaction. Finally, selected socio-demographic variables, including age, gender, educational attainment, employment status, academic status, and academic major, which may influence the variance in learners' motivation for participation were investigated as well.

Attempts were made to acquire both authors' permissions to use both the DELES[1] and R.S.P[2]. Committee members who served as my expert panel reviewed the final version of the combined questionnaire. They reviewed the construction, operationalization, wording, format, and question flow of the questionnaires to ensure construct and content validity. After it was approved, the English version questionnaires

[1] Copyright 2003 by Scott L. Walker, ScEdD. Adapted with permission. See Appendix A.
[2] Dr. Edward Furst has retired from the University of Arkansas. In a telephone communication on April 19, 2005, he had no objection to the R.S.P. being used in the present study. However, the researcher was unable to reach the other author, Dr. Betty L. Steele. The personnel in the Department of Vocational and Adult Education of University of Arkansas were unable to find her contact information since she has married and changed her last name.

were translated into Mandarin since the research context was Taiwan. The translation process followed the APA guidelines to reduce bias in language. One certified linguist in Mandarin, one faculty member from the National Taiwan University with expertise in adult education, and one faculty member from NOUT with expertise in distance education and older adult learning were invited to validate the Chinese version questionnaires in order to ensure accurate, clear and unbiased communication.

In addition, the researcher conducted a field pretest of the Chinese version of the self-administered questionnaires on ten Taiwanese graduate students with distance learning experience at Pennsylvania State University (Mean age = 33) and two former NOUT students (Mean age = 62) in person. The purpose of the pretest was to find out how the survey instrument worked under realistic conditions and the approximate time for completing the survey (Fowler, 1993). Participants completed the questionnaire as they would if they were part of a survey. After completing the survey, the researcher discussed with each of the participants the questionnaires in terms of the clarity of the instructions and questions, and whether there were any problems in understanding the sorts of answers expected.

Population and Sampling

The population under study was older adult learners aged 55 and above registered as students at NOUT in the Spring Semester 2005. Data from the administration office showed that 1,191 students fit the above description. Among them, 558 (47%) were female and 633 (53%) were male students. Around 78% of the older student population was between 55 and 64 years old. Seventeen percent were between 65 and 74 years old

while 6% were between 75 and 84 years old. Only five people were aged 85 years old and above.

NOUT maintains thirteen regional study centers, of which eleven are on the main island of Taiwan, namely, Taipei, Taipei (2), Hsinchu, Taichung, Chiai, Tainan, Kaohsiung, Keelung, Ilan, Hualien and Taitung study centers. The other two, the Penghu and Kinmen study centers, are located on other smaller islands. Upon the suggestion of the NOUT, the researcher used multistage sampling techniques to produce a sample that is more likely to reflect the total older learning population at NOUT (Kalton, 1983).

The researcher first divided Taiwan into three sections—north, middle, and south—based on general population distribution (see Appendix B). Second, with help from the NOUT, the researcher systematically selected two centers from each section. The six identified centers included the Taipei, Taipei (2), Taichung, Tainan, Kaohsiung, and Hualien study centers. Finally, older adult learners who 1) were 55 years old and up, 2) enrolled in the Spring Semester 2005 at NOUT, and 3) affiliated with one of the six regional learning centers were recruited to participate in this study. The size of the study sample was 990 people, which represented 83% of the total older student population. There were a fairly even proportion of men and women. As anticipated, the majority of the sample was between 55 and 64 years old, which comprised 78% of the study sample.

Survey Instrument

This study used two instruments in order to measure motivation constructs and the perceived distance education learning environment.

Motivation

Motivation, operationalized as reasons for an individual's engagement in a distance learning environment context, was measured using the Reasons for Participation Scale (R.P.S) (Furst & Steele, 1986; Steele, 1984). The R.P.S consisted of 32 four-point Likert-type items—no, little, moderate, or much influence; each measured the degree to which a stated reason for participation in educational programs is a motivating factor for the subject (see Appendix C). The initial set of scale items for R.P.S. was modeled after the Educational Participation Scale (E.P.S.; Boshier, 1971) and the Reasons for Educational Participation Scale (Burgess, 1971, cited in Steele, 1984), and the Older Learner Participation Scale (Pritchard, 1979). The factor solution yielded nine varimax factors, which together accounted for 68.5% of the total variance. The nine factors were keeping up/becoming involved, fulfillment, stimulation and self-maintenance, practical achievement, self-understanding/personal adjustment, formal attainment and recognition, qualifying for privileges, prerequisite knowledge, and intellectual stimulation and enjoyment.

Participants were asked to circle the extent of influence of each factor on each statement and to add any reasons not covered at the end of the survey. They were told to concentrate on a recent course taken at NOUT, on the assumption that such a focus would give more reliable and valid responses than generalized judgments (Boshier, 1976). The reliability of the ratings as recorded by each person and item reliability were tested using the Pearson product-moment correlation coefficient; both indicated high consistency for a majority of R.P.S. items.

In the present study we chose to use R.P.S over another highly regarded instrument, Education Participation Scale (E.P.S) by Boshier (1971, 1978, 1991; Boshier & Collins, 1983, 1985) for several reasons. First, when the adjusted version of E.P.S. with job-related items deleted was applied to older learners' participation in adult education courses (n = 84, Mean age = 69.7), the four-factor solution accounted for 49% (as compared to 68.5% of R.P.S.) of the variance in participation (Boshier & Riddle, 1978). In addition, the R.P.S. not only covered a variety of reasons in a relatively short form (32 items as compared to 42 items in E.P.S.), but also broadened the scope of the reasons by incorporating previous research, particularly those appropriate to persons in retirement or in the transition to retirement. Reasons related to late-life development, concerns for adaptation, self-understanding, and self-actualization, which were considered important for older learners in academic settings (Little, 1995; Manheimer et al., 1995; Scala, 1996).

Finally, the E.P.S. seemed to be more suitable for use with adult learners in general, while the R.P.S. was designed to measure older learners who continue long-term participation in higher education settings. Studies that use E.P.S. to measure older adults' motivation for participation usually have to make modifications on the scopes of the survey instrument. For instance, O'Connell (1990) expanded the Boshier and Riddle (1978) version of E.P.S. to assess older people's participation in Elderhostel programs. Kim and Merriam (2004) modified the new version of the E.P.S. (Boshier, 1991) when surveying older adults (age 50 and above) engaging in courses in a Learning in Retirement institute. They eliminated three of the seven factors—communication

improvement, education preparation, and professional advancement—since those items were considered inappropriate in the context of their study.

Distance Education Learning Environment

Walker (2003a, b, c) developed a learning environment instrument for higher education courses delivered via distance education using asynchronous technologies—the Distance Education Learning Environments Survey (DELES). The DELES has been field-tested and resulted in 680 responses primarily from the United States, Australia, New Zealand, and Canada. Fifty-six field-tested items were reduced to 42 items after principle component factor analysis and internal consistency reliability analysis. It contains six psychosocial scales and a seventh attitudinal scale of satisfaction (enjoyment of distance education). These scales were: 1) instructor support, 2) student interaction and collaboration, 3) personal relevance, 4) authentic learning, 5) active learning, and 6) student autonomy. Together they accounted for 67% of the variance in students' perceptions of distance learning environment. The Cronbach's alpha coefficient for instructor support was .87, .94 for student interaction and collaboration, and .92 for personal relevance (Walker, 2003b).

To reduce the cognitive load of the participants, and to facilitate easy administration and collection of valuable data, this study employed a modified version of DELES (see Appendix D). The modified DELES consisted of the three major components, eight-items for instructor support, six-items for student interaction & collaboration, and seven items for personal relevance, for a total of 21 items, which together explain 42.3% of the variance. All of the items loaded 'clean' on the factors. Participants were asked to indicate the extent to which they agree with each item. The

original response scale was 5 = always, 4 = often, 3 = sometimes, 2 = seldom, and 1 = never. However, due to cultural differences in Asian cultures where people are more likely to score at the middle value on an odd-numbered scale, this study decided to adopt a four-point Likert scale with “sometimes” deleted. With no center or neutral point in the response scale, participants had to declare the extent of the frequency with which each item appeared to them. In addition, the modified four-point Likert scale was consistent with that of R.P.S.

Student Satisfaction

Student satisfaction has been consistently used in as a factor in post-secondary education to evaluate a program’s or institution’s effectiveness in delivering what students expect, need, and want, and is associated with student achievement (Kuh, 2001; Walker, 2002). To investigate the associations between student satisfaction and the psychosocial learning environment, Walker added eight items from the student satisfaction scale to the DELES. The satisfaction scale focused on students’ enjoyment of distance education (see Appendix D). The Cronbach’s alpha coefficient was .95 (Walker, 2003b).

The reason for adopting this scale was to ascertain whether there are relationships between identified motivational constructs and student satisfaction in NOUT, and to examine the factors that may influence older students’ satisfaction with the NOUT. Participants indicated the extent to which they agreed on each item using a four-point Likert scale ranging from 4 (always) to 1 (never). For the same reasons explained earlier, the scale was changed from a five-point to a four-point Likert scale.

Personal Characteristics

The selected socio-demographic questions (see Appendix E) were placed at the end of the survey since the provision of personal information is often considered a more sensitive area in Asian culture. Questions about age, gender, education level, employment status, academic status, and academic major served to gather baseline information. The purpose was to determine whether these personal factors would explain the differences in older learners' motivation to participate in a distance education setting.

Age. Participants were asked to indicate the year in which he/she was born. This variable was treated as a nominal scale, with 1 indicating 55–64 yrs, 2 indicating 65–74 yrs, 3 indicating 75–84 yrs, and 4 indicating 85 yrs and up.

Gender. Gender was treated as a dichotomous nominal scale, with 1 indicating male and 2 indicating female.

Level of education. This question asked participants to indicate their highest education attainment. This variable was scored as nominal into six levels, with 1 indicating less than high school, 2 indicating high school graduate, 3 indicating two-year associate postsecondary degree, 4 indicating four-year bachelor degree, 5 indicating graduate school including both master and doctorate degrees, and 6 indicating other. If choosing "other", participants were asked to give a specific answer.

Employment status. This variable identified whether the participant had retired from work. It was treated as a nominal scale, with 1 indicating retired, 2 indicating semi-retired, 3 indicating not retired yet, and 4 indicating other. By choosing "semi-retirement" and "other", participants were asked to give a specific answer, such as have retired but

continue to work as part-time or volunteer work, being a housewife/homemaker, or never being employed, etc.

Academic status. This question asked about participants' current academic status at NOUT. It was treated as nominal data, with 1 indicating part-time student, 2 indicating full-time student, and 3 indicating other. By choosing "other", participants were asked to give a specific answer.

Academic major. This question asked participants to indicate their current academic major at NOUT. It is treated as a nominal scale, with 1 indicating humanities, 2 indicating social sciences, 3 indicating business, 4 indicating public administration, 5 indicating living sciences, 6 indicating management and information, 7 indicating have not decided, and 8 indicating have more than one major.

Data Collection Procedure

Besides correspondence, television and radio broadcast, and computer-based instruction, NOUT students also receive face-to-face instruction from the instructors. Students were expected to attend the face-to-face session four times at the regional study centers during the span of each course. In order to get a higher response rate at comparatively lower cost within a shorter time period (Fraenkel & Wallen, 2003; Trochim, 2001), the study employed a direct administration mode of data collection. In other words, participants were given a questionnaire to complete in their classroom at the end of their final face-to-face session.

After obtaining permission from the NOUT, the researcher communicated directly with each of the directors of the selected six regional study centers. Due to issues of student privacy and time-space constraints in which the last face-to-face session was

scheduled on the same date, it would be more efficient and appropriate if the course instructors distributed the survey to the target audiences directly. Therefore, a cover letter along with Chinese version questionnaires (see Appendix F) were given to each instructor when he/she came into the regional study center office to pick up the class roster. The cover letter informed the instructors about the study, explained its purpose, and requested their help in identifying the potential subjects and distributing the questionnaires. After the participants completed the survey, they either returned it to the course instructor or the appointed drop box in the study center office.

Although both R.P.S and DELES questionnaires were characterized as self-administered instruments, detailed instructions on how to answer the questions properly were included with the questionnaires. Additionally, a human subjects form was incorporated with the cover letter to assure participants about confidentiality and safety in participating in this study. Finally, the researcher's contact information was provided on the cover letter that accompanied the questionnaires; participants were encouraged to contact the researcher directly regarding the study.

Data Analysis

Data were processed using the computer-based Statistical Package for the Social Sciences (SPSS version 12.0 for Windows). Descriptive statistics were used to profile the participants. Inferential statistics, including principal component factor analysis, analysis of variance, and multiple regression analysis, were used to reach conclusions about the three research questions guiding this study. The use of inferential statistics was justified even though the sample for this study was not randomly selected from an abstract population—older adult learners participating in distance education in Taiwan. Huck

(2004) suggests that inferential statistics apply when the researcher intends to generalize the findings beyond the current sample to an abstract population, which serves only hypothetically as a larger “mirror image” of the sample (p. 115).

Research Question One

Research question one explored the motivation constructs expressed by older adult learners at NOUT. It was measured using the 32-item Reasons for Participation Scale ranging from 0 (no influence) to 3 (much influence). Item scores were subjected to principal component factor analysis (PCA) to uncover the latent structure of the 32 variables. Other than reducing the number of variables without losing much of the information, the other reason for conducting PCA specifically is to produce a small number of uncorrelated principal components (Afifi, Clark, & May, 2004). A common rule for running PCA is to have at least 10–15 participants per variable; Field (2005) reviewed previous studies and concluded that a sample of 300 or more would most likely result in a stable factor solution.

The researcher used PCA with a varimax rotation of factors and discarded principal components with eigenvalues under 1.0. Once the number of principal components was selected, the researcher decided which item to retain based on its factor loadings. The significance of a factor loading depends on the sample size. Steven (1992) suggested that for a sample size of 300, a loading greater than .298 can be considered significant (as cited in Field, 2005). In this study, items with factor loadings less than .50 were eliminated.

Subsequently, the Cronbach’s alpha coefficient was calculated to estimate the reliability (internal consistency) for each factor. The alpha coefficient value ranges from

0 to 1; a general rule of thumb is that reliability coefficients should be at least .70 and preferably higher (Fraenkel & Wallen, 2003; Isaac & Michael, 1995).

Research Question Two

This research question consisted of four sub-questions. It examined the differences in motivation constructs when examined by socio-demographic characteristics, perceived distance education learning environment, and student satisfaction.

Question 2-1. This question attempted to provide a profile for the study sample in terms of gender, age, level of education, employment status, academic status, and academic majors. All variables were treated as nominal type of data. Descriptive statistics including frequency, mode, skewness value, and percentage were applied.

Question 2-2. The second sub-question examined the effects of the socio-demographic characteristics on the values for the motivation constructs identified from research question one. The socio-demographic characteristics of the participants (X) were treated as a nominal type of data while the motivation constructs (Y) served as interval/ratio. Analysis of variance (ANOVA) was used to uncover the main and interaction effects of the independent variables on the dependent variable. Generally, ANOVA is robust when 1) there is a normal distribution of the sample; 2) independent variables are uncorrelated; and 3) there is a relatively equal number of people in each category of the independent variables, or within a ratio of 4 to 1 (Field, 2005; Tabachnick & Fidell, 2001).

Skewness value was used to test normality. A skewness value $\pm$ 2.0 is acceptable (George & Mallery, 2005). Levene's test was used to test the homogeneity of variance.

Furthermore, participants' age, level of education, and academic major were recorded to obtain more meaningful interpretations and robust results. Age was recorded into two categories: those who were 55–64 and those who were 65 years old and above. Level of education was recoded into two categories: those who had less than a college degree and those who were college graduates and further. Finally, academic majors were recorded into three categories: those who had one major, those who had not yet decided, and those who had more than one major at NOUT.

Question 2-3. The third sub-question tested the relationships between the identified motivation constructs (*Y*s) and distance education learning environment variables (*X*s). The perceived distance education learning environment was measured using the modified DELES with 21 items. The DELES item scores were first subjected to principal component factor analysis and Cronbach's alpha coefficient. Based on Walker's (2003a, b, c) study, it yielded three categories, namely, instructor support, student interaction and collaboration, and personal relevance. Afterward, Pearson's correlation was used to measure the associations between the independent variables and dependent variables. Correlation coefficient ranged from 0 (random relationship) to 1 (perfect linear relationship) or −1 (perfect negative linear relationship). Generally, the correlation coefficient value of ± .10 represents a small effect, ± .30 is a medium effect, and ± .50 is a large effect (Field, 2005).

The correlation coefficient squared (R^2) was used to interpret the percent of the variance in the motivation constructs (*Y*s) explained by the perceived distance education learning environment (*X*s). Although R^2 is a useful measure of the substantive importance of an effect, it cannot be used to infer causal relationships. To further explore the

relationship between those two factors as proposed in the conceptual framework (see Figure 1-1, p. 7), multiple regression was used to analyze the predictive importance of the perceived distance education learning environment in motivation constructs.

Question 2-4. The fourth sub-question investigated the relationships between motivation constructs and participants' satisfaction with the distance learning offered by NOUT. Student satisfaction was measured using the eight-item DELES satisfaction scale. Both independent (motivation constructs) and dependent (satisfaction) variables were treated as interval/ratio type of data. Multiple regression analysis was implemented to, first, explain the proportion of variance in student satisfaction accounted for through various motivation constructs as expressed by the participants, and, second, explore which of the motivation construct variables may predict high student satisfaction.

Prior to analysis, motivation construct values were examined for the fit between their distributions and the assumptions of multivariate analysis. Skewness values were used to check normality while bivariate scatterplots were used to assess linearity and homoscedasticity. If both variables are normally distributed and linearly related, the scatterplot is oval-shaped. Condition index was used to determine the existence of multicollinearity. The presence of multicollinearity, in which two or more independent variables were highly correlated, made it difficult to determine the separate effects of the dependent variables. The regression model may be biased when a high condition index appears. Belsely, Kun, and Welsch (1980) suggested rules for multicollinearity: "a condition index > .30 for a given dimension coupled with at least two variance proportions for an individual variable > .50" (as cited in Tabachnick & Fidell, 2001, p. 85).

Multiple regression yielded a regression equation and *b* coefficients. The *b* coefficient was the slope of the regression line: the larger the *b*, the steeper the slope, the more the dependent variable changed for each unit change in the independent variable. The size of *R*-square was used to estimate the proportion of variance in student satisfaction explained by the motivation constructs collectively. *R*-squares ranged from 0 to 1, with 1 representing a situation in which the model perfectly predicts the observed data. The probability indicated the likelihood that a statistical result would have been obtained by chance. The smaller the number ($p < .001$), the less likely the results were due to chance.

Research Question Three

This question examined the collective and separate contributions of three blocks of independent variables, including socio-demographic characteristics (*X*1), motivation constructs (*X*2), and distance education learning environment (*X*3) on student satisfaction (*Y*). First, all of the nominal variables in participants' socio-demographic characteristics were dummy coded into quasi interval/ratio data. Then a hierarchical block multiple regression was carried out. Each set of independent variables was entered in a planned order to test its expected effects. Independent variables with lesser importance were entered first whereas the major set was evaluated for what it added to the prediction over the lesser set (Tabachnick & Fidell, 2001). Therefore, socio-demographic characteristics of the participants were entered first so that its effects could be controlled. The second block to enter was motivation constructs, which were hypothesized to be related to learners' satisfaction. The final block to enter was distance education learning environment variables to see what they added to the prediction.

F-tests were used to compute the significance of each block of variables to the explanation reflected in *R*-square. The size of *R*-square was used to estimate the proportion of variance in student satisfaction explained by the three blocks of the independent variables separately and collectively. The *b* coefficients were used to explain the estimated predictive importance of the independent variables. Field (2005) suggested that 15 participants per predictor would be necessary to obtain a reliable regression equation.

Chapter 4

RESULTS

Introduction

This chapter presents the results for the current study as based on the data analysis procedures outlined in the previous chapter. The purposes of this study were to investigate the factor structure of motivation constructs as expressed by older adult learners and to determine how the motivational constructs correlated with older adults' socio-demographic characteristics, perceptions of the distance education learning environment, and learning satisfaction.

A summary of the socio-demographic characteristics of the National Open University of Taiwan (NOUT) respondents was reported first even though it was constructed as a sub-question of the second research question. Subsequently, an overview of statistical data analysis results from principal component factor analysis was presented (Research Question One). Then the findings for the motivation constructs when examined through different blocks of independent variables were presented (Research Question Two). Finally, the relative contribution of socio-demographic factors, motivation constructs, and distance education learning environment on student satisfaction were examined (Research Question Three).

Socio-demographic Characteristics of the Respondents

The subjects in this study were older adult learners aged 55 and older from six regional study centers including Taipei, Taipei (2), Taichung, Tainan, Kaohsiung, and Hualien of NOUT in the Spring Semester 2005. From a sample of 990 older students

targeted via a survey, 403 responded. The return rate was 41%; the adjusted usable return rate was 37% with 32 incomplete questionnaires not included. The researcher was aware that a higher return rate would lend more credibility to the study. There was no official attempt to examine non-response bias.

Table 4-1 displays the data that provides a profile of the study sample. A total of 371 older learners at NOUT completed the survey (Mean age = 61). Around 80 % of the respondents were between 55 and 64 years old. Learners in the young-old age group (aged 65–74) and the old-old age group (aged 75–84) comprised 15.4% and 5.1% of the sample, respectively. No one in the oldest-old age group (aged 85 and up) participated in this study. Gender distributions were quite even in this sample, with 48% male and 52% female. But when examined more closely by age and gender, it was interesting to find that female (56%) outnumbered male (44%) learners in the younger age group (55–64 years old) while males (64%) dramatically outnumbered females (36%) in the older age group (65 years old and up).

When asked about their highest education attainment, a majority of the older adult learners (56.3%) were high school graduates. Older adult learners with a four-year bachelor degree comprised the second largest group (24.3%) in the sample, followed by those with less than a high school diploma (11.9%), two-year associate postsecondary degree (6.2%), and graduate school including both master and doctorate degrees (1.3%). Considering that compulsory elementary and secondary education did not begin in Taiwan until 1968, this profile of older NOUT learners revealed them to be much more educated than those in their age cohort.

As for their current employment status, most older adult learners in NOUT were retired (42.3%), 34.5% were not yet retired. About 16.2% of respondents were semi-retired. They reported themselves to be doing part-time work, participating in volunteer work, being a stay-at-home babysitter taking care of grandchildren, trying to restart a second career, or being a substitute teacher (working only when needed). Seven percent of the respondents chose the answer, “other”. They often described themselves as a housewife, missionary (as lifelong career), self-employed, in-between jobs, or never being employed. When cross-examined by age, about 52% of respondents in the younger age group (55–64) were either retired or semi-retired while 41% remained in the workforce. This indicated a trend toward early retirement. As expected, the majority of respondents (78%) in the older age group (65 and above) were retired.

When examined by their involvement in the NOUT, a majority of the older adult learners (88.1%) were registered as full-time students, which means that they need to take 128 credits to graduate. Roughly one of ten (11.9%) was studying as a part-time student. As for their choice of major, participants were divided among Humanities (13.7%), Social Sciences (13.7%), Business (10.8%), Public Administration (7.0%), And Management and Information (7.8%). Living Sciences seemed to be a more popular choice, with 25.6% of the sample. In general, the majority of the participants (78.7%) had one academic major while 5.4% of the sample remained undecided. It was surprising to see that 15.9% of the respondents had more than one major. When cross-examined by age and gender, males aged 55-64 appeared to be more likely to have more than one major.

Table 4-1

Socio-demographic Profile of the Respondents

Characteristic	Frequency	Percent (%)
Age		
55-64	295	79.5
65-74	57	15.4
75-84	19	5.1
85 and up	0	0.0
	371	100.0
Gender		
Male	178	48.0
Female	193	52.0
	371	100.0
Level of Education		
Less than high school	44	11.9
High school graduate	209	56.3
Two-year associate postsecondary degree	23	6.2
Four-year bachelor degree	90	24.3
Graduate school	5	1.3
	371	100.0
Employment Status		
Retired	157	42.3
Semi-retired	60	16.2
Not retired yet	128	34.5
Other	26	7.0
	371	100.0
Academic Status		
Part-time	44	11.9
Full-time	327	88.1
	371	100.0
Academic Major		
Humanities	51	13.7
Social sciences	51	13.7
Business	40	10.8
Public administration	26	7.0
Living sciences	95	25.6
Management and information	29	7.8
Have not decided	20	5.4
Have more than one major	59	15.9
	371	100.0

Motivation Constructs of Older Adult Learners at NOUT

Research Question One explored the motivation constructs expressed by older adult learners at NOUT. Motivation, operationalized as the reasons for older adult learners' participation in distance education, was measured using the 32-item Reasons for Participation Scale with potential responses ranging from 0 (no influence) to 3 (much influence). Item scores were subjected to principal components factor analysis with varimax rotation to uncover the latent structure of the 32 variables, and items with factor loadings less than .50 were omitted. Results were shown in Table 4-2.

The KMO (Kaiser-Meyer-Olkin test) measure of sampling adequacy (> .9) and Bartlett's test (< .05) indicated a multivariate normal distribution for the data set and was robust for conducting a factor analysis to yield distinct and reliable factors (Field, 2005; George & Mallery, 2005). Five components were retained with eigenvalues greater than 1, and together they explained 59.7% of the variance. However, one of the components was dropped since it contained only two items. The two items were Q27 (To help me earn a degree, diploma, or certificate) and Q29 (To complete some previously unfinished learning), and they explained a relatively small proportion of the variance (3.2%). Meanwhile, in order to retain the most orthogonal structure, items with ambiguous loadings (i.e., loading fairly high on more than one factor) and those items with loadings lower than .50 were eliminated. Six items, including Q11 (To enable me to cope better with the challenges of daily living), Q12 (To share a common interest with my spouse or friend), Q13 (To improve my ability to participate in community work), Q14 (So that other would have a higher respect for me), Q31 (To prepare myself for retirement living), and Q32 (To maintain or enhance my self-respect), on the Reasons for Participation Scale

were omitted. The remaining 24 items factored into four components, namely, *keeping up and fulfillment, intellectual stimulation, escape and social contact,* and *adjustment,* and together they accounted for 56.5% of the variance.

Factor I, *keeping up and fulfillment,* consisted of seven items. The main theme was introspections about oneself and the desire to be involved in the contemporary world. For example, the reasons older adult learners enrolled at NOUT may be due to a re-examination of the learner's perspective on one or more contemporary issues (Q22), to re-examine myself and my role in life (Q17), to keep up with what is going on in the world (Q18), and to become more effective as a citizen (Q20). A secondary theme of this factor was fulfillment, the act of consummating something. Older adults who chose to take courses at NOUT might want to develop an undeveloped talent (Q19), to feel a sense of achievement (Q16), and to gain insight into human relations (Q21).

Factor II, *intellectual stimulation,* consisted of eight items. The term intellectual stimulation covered a variety of submotives. It included both instrumental and expressive goals. Learning focused toward some external outcome(s) has been viewed as instrumental while learning centered on enjoyment or self-actualization has been viewed as expressive-oriented (Hiemstra, 1982; Manheimer et al., 1995). Instrumental reasons to participate in NOUT included pursuit of earlier interests that I could not get around to before (Q9), to supplement a narrow previous education (Q5), to satisfy a desire to develop new interests (Q15), to gain insight into my personal problems (Q3), and to acquire knowledge to help with other educational courses (Q1). Reasons such as to learn just for the joy of learning (Q8) and to satisfy an inquiring mind (Q24) were concluded to be expressive. Additionally, intellectual stimulation sometimes involved a fear of

cognitive decline for older adults: i.e., to keep my mind active and alert by making intellectual demands upon it (Q6).

Factor III, *escape and social contact*, consisted of six items. It depicted a need to change and to step out of the routine of life, and included items such as getting a break in the routine of home or work (Q7) and getting relief from boredom (Q2). Sometimes another way to escape the current situation is to re-experience the feeling of being a student, such as by qualifying for privileges such as use of library, swimming pool, etc. (Q4). Moreover, items on this factor embodied a desire for social interaction and activity; in other words, older adult learners participating in NOUT were seeking opportunities to become acquainted with congenial people (Q10), to participate in group activity (Q20), or to comply with the recommendations or urging of someone else (Q23).

Factor IV, *adjustment,* consisted of three items. The main theme was the concerns for personal problem and adjustment in later life. Older adult learners who decided to take courses at NOUT may desire to acquire knowledge on a particular subject (Q25), to learn a specific skill (Q28), and to gain assistance during a crisis in their personal life (Q26). Despite Furst and Steele's (1986) interpretations of this factor, that it was not common in this age group; the emergence of this factor was important since it corresponded with Manheimer's (1992) notion that older learners' motives tend to emphasize either an adaptational or transformational perspective due to the developmental change during older adulthood (as cited in Manheimer et al., 1995).

Table 4-2

Reasons for Participation

Factor and Item	Overall Crobach Alpha	Factor Loading	Index *M*	Index *SD*	Eigenvalue	Variance Explained (%)
Keeping Up and Fulfillment	.90		1.77	.66	13.09	40.90
To become more effective as a citizen (Q20)		.72				
To re-examine my perspective on one or more contemporary issues (Q22)		.70				
To gain insight into human relations (Q21)		.65				
To develop an unfulfilled talent (Q19)		.64				
To feel a sense of achievement (Q16)		.62				
To re-examine myself and my role in life (Q17)		.61				
To keep up with what is going on in the world (Q18)		.60				
Intellectual Stimulation	.87		2.01	.58	2.23	6.98
To learn just for the joy of learning (Q8)		.70				
To pursue earlier interests that I could not get around to before (Q9)		.67				
To keep my mind active and alert by making intellectual demands upon it (Q6)		.65				
To supplement a narrow previous education (Q5)		.61				
To satisfy an inquiring mind (Q24)		.57				
To satisfy a desire to develop new interests (Q15)		.56				
To gain insight into my personal problems (Q3)		.53				
To acquire knowledge to help with other educational courses (Q1)		.52				

Table 4-2 (*continued*).

Factor and Item	Overall Crobach Alpha	Factor Loading	Index *M*	Index *SD*	Eigenvalue	Variance Explained (%)
Escape and Social Contact	.79		1.14	.63	1.47	4.58
To get a break in the routine of home or work (Q7)		.68				
To get relief from boredom (Q2)		.62				
To qualify for privileges such as use of library, swimming pool, etc. (Q4)		.62				
To comply with the recommendations or urging of someone else (Q23)		.61				
To become acquainted with congenial people (Q10)		.57				
To participate in group activity (Q20)		.55				
Adjustment	.80		1.64	.71	1.28	4.00
To acquire knowledge on a particular subject (Q25)		.64				
To learn a specific skill (Q28)		.62				
To give me help during a crisis in my personal life (Q26)		.58				

Note. n = 371. Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) = .956, Bartlett's Test of Sphericity = .000. The theoretical score range for Keeping up and Fulfillment, Intellectual Stimulation, Escape and Social Contact, and Adjustment was 0-3, with 0 = no influence and 3 = much influence.

Reliability of the Factor Summated Scores

Cronbach alpha coefficients were calculated for each factor to assess the reliability (internal consistency) of the resulting scale (see Table 4-2). The reliability coefficients for four factors ranged from .79 to .90. Considering the commonly minimal acceptable level for internal consistency, .70 (Fraenkel & Wallen, 2003; Isaac & Michael, 1995), these values suggested that these four factors could be perceived to provide reliable summated scores and used in further analysis.

Differences in Motivation Constructs When Examined by Socio-demographic Characteristics, Perceptions of Distance Education Learning Environment, and Student Satisfaction

Research Question Two examined the differences in motivation constructs of older adult learners at NOUT when examined by their socio-demographic characteristics, their perceptions of the distance education learning environment, and their satisfaction with the distance education provided by NOUT. The differences were presented in three sections: differences by socio-demographic characteristics, relationships between motivation construct values by perceptions regarding distance education learning environment, and relationships between motivation constructs and student satisfaction.

Differences by Socio-demographic Characteristics

ANOVA was conducted to ascertain which effects the socio-demographic characteristics have on the values for the four motivation constructs, *keeping up and fulfillment, intellectual stimulation, escape and social contact,* and *adjustment*. The skewness values (all within – 1.0 to + 1.0) and Levene's test results showed that the assumptions requiring a normal distribution and homogeneity of variance were met for

each of the four motivation construct score distributions. Table 4-3 reports the descriptive results for the four motivation constructs when examined by gender, age, highest level of education, employment status, academic status, and academic major. The summated item average score range of motivation constructs was 0-3. The results of ANOVA are presented in Table 4-4.

The results showed no differences in *keeping up and fulfillment* scores when examined by gender, age, level of education, employment status, and academic status. Only academic major had a significant effect, $F(2, 368) = 4.91$, $p < .01$. Results indicated that people who had one major or more than one major scored higher on the keeping up and fulfillment factor than those who had not yet decided their major. Similarly, gender, age, level of education, and employment status did not have an effect on the second motivation construct scores, *intellectual stimulation*. There was, however, a significant effect of academic status $F(1, 369) = 5.61$, $p < .05$ and academic major $F(2, 368) = 8.63$, $p < .01$ on the construct score of *intellectual stimulation*. Older adult students who registered as full-time students sought (had a higher score for) more intellectual stimulation than did part-time students. Meanwhile, older adult learners who had one major or more than one major scored higher on the *intellectual stimulation* factor than did those who had not yet decided on their major. In the third construct of *escape and social contact*, there were no significant differences when examined by any of the socio-demographic characteristics. Finally, the only significant effect for the *adjustment* construct was academic major $F(2, 368) = 3.75$, $p < .05$, which indicated that older adult learners with one major or more than one major at NOUT participated to a greater extent for reasons of adjustment than those who had not yet decided on their major.

Also, the researcher examined first-order interactions, and results for interactions appear as a footnote in Table 4-4. For example, for the *keeping up and fulfillment* construct, there were two interactions; both of them had a rather small effect size.

Table 4-3

Descriptive Results of Motivational Constructs by Socio-demographic Characteristics

Variable	Keeping Up and Fulfillment			Intellectual Stimulation			Escape and Social Contact			Adjustment		
	M	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*
Gender												
Male	1.75	.65	178	1.95	.60	178	1.14	.64	178	1.68	.72	178
Female	1.78	.67	193	2.05	.56	193	1.15	.63	193	1.60	.70	193
Age												
55-64	1.76	.64	295	2.00	.56	295	1.14	.63	295	1.63	.70	295
65-84	1.81	.72	76	2.01	.64	76	1.16	.65	76	1.67	.76	76
Level of Education												
Less than college	1.76	.65	276	2.01	.57	276	1.15	.62	276	1.63	.73	276
College and above	1.79	.68	95	2.00	.60	95	1.13	.66	95	1.64	.66	95
Employment Status												
Retired	1.77	.69	157	2.03	.58	157	1.18	.68	157	1.67	.76	157
Semi-retired	1.69	.63	60	1.95	.59	60	1.08	.61	60	1.51	.59	60
Not retired	1.78	.64	128	1.99	.58	128	1.11	.58	128	1.65	.68	128
Other	1.91	.66	26	2.09	.59	26	1.21	.67	26	1.65	.71	26

Table 4-3 (*continued*).

Variable	Keeping Up and Fulfillment			Intellectual Stimulation			Escape and Social Contact			Adjustment		
	M	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*
Academic Status												
Part-time	1.65	.64	44	1.81	.50	44	1.28	.63	44	1.55	.74	44
Full-time	1.78	.66	327	2.03	.59	327	1.13	.64	327	1.65	.71	327
Academic Major												
One major	1.78	.66	292	2.00	.56	292	1.16	.64	292	1.63	.71	292
Not decided	1.34	.58	20	1.57	.60	20	.99	.52	20	1.28	.61	20
More than one major	1.85	.65	59	2.18	.60	59	1.14	.61	.59	1.78	70	59

Note. The theoretical score range for Keeping up and Fulfillment, Intellectual Stimulation, Escape and Social Contact, and Adjustment was 0-3, with 0 = no influence and 3 = much influence.

Table 4-4

ANOVA Results of Motivational Constructs by Socio-demographic Characteristics

Variable	Keeping Up and Fulfillment			Intellectual Stimulation			Escape and Social Contact			Adjustment		
	F	*p*	*Effect size*	*F*	*p*	*Effect size*	*F*	*p*	*Effect size*	*F*	*p*	*Effect size*
Gender	.19	.66	.00	2.77	.10	.00	.07	.80	.00	1.19	.28	.00
Age	.48	.49	.00	.02	.88	.00	.03	.87	.00	.18	.67	.00
Level of Education	.14	.71	.00	.04	.85	.00	.11	.74	.00	.01	.92	.00
Employment Status	.73	.52	.00	.47	.71	.00	.59	.62	.00	.82	.48	.00
Academic Status	1.52	.22	.00	5.61	.02*	.02	2.30	.13	.00	.69	.41	.00
Academic Major	4.91	.00**	.03	8.63	.00**	.05	.62	.54	.00	3.75	.02*	.02

Note. Keeping Up and Fulfillment (Gender × Academic major) $F = 3.98$**, Partial Eta Squared = .03; (Age × Level of education × Academic major) $F = 6.41$*, Partial Eta Squared = .02; Intellectual Stimulation (Level of education × Employment status) $F = 2.68$*, Partial Eta Squared = .03; (Gender × Academic major) $F = 3.09$*, Partial Eta Squared = .02; Escape and Social Contact (Education* Academic Status) $F = 4.26$*, Partial Eta Squared = .01; Adjustment (Age × Level of education) $F = 4.88$*, Partial Eta Squared = .02.

*$p \leq .05$. **$p \leq .01$.

Relationships between Motivation Construct Values by Perceptions Regarding Distance Education Learning Environment

One sub-question of the second research question tested the relationships between distance education learning environment variables (*Xs*) and the four motivation constructs (*Ys*). Before correlation was conducted, principal component factor analysis was used to determine the factor structure of the distance education learning environment items. A modified version of DELES (Walker, 2003a, b, c) was used to measure the distance education learning environment at NOUT; item scores ranged from 1 to 4.

The measure of KMO (> .9) and Bartlett's test (< .05) indicated a multivariate normal distribution of the data set and was considered robust for conducting factor analysis (Field, 2005; George & Mallery, 2005). Three components, as expected, were retained with eigenvalues greater than 1; together, they explained 62.49% of the variance. Results are shown in Table 4-5. All twenty-one items had a factor item loading above .60, and resulted in three components, including *instructor support* with eight items, *student interaction and collaboration* with six items, and *personal relevance* with seven items. The Cronbach alpha coefficients for the three component summated scores ranged from .88 to .91, which were considered to yield reliable scores.

In addition to *instructor support*, *student interaction and collaboration*, and *personal relevance*, the modified DELES also included a separate student satisfaction scale that focused on perceived enjoyment of distance education. Results are shown in Table 4-6. Student satisfaction consisted of eight items with factor loadings above .80. The Cronbach alpha coefficient was .95.

Table 4-5

Distance Education Learning Environment

Factor and Item	Overall Crobach Alpha	Factor Loading	Index *M*	Index *SD*	Eigenvalue	Variance Explained (%)
Instructor Support	.91		2.99	.58	8.27	39.37
If I have an inquiry, the instructor finds time to respond (Q1).		.79				
The instructor helps me identify problem areas in my study (Q2).		.81				
The instructor responds promptly to my questions (Q3).		.79				
The instructor gives me valuable feedback on my assignments (Q4).		.73				
The instructor adequately addresses my questions (Q5).		.82				
The instructor encourages my participation (Q6).		.67				
It is easy to contact the instructor (Q7).		.73				
The instructor provides me positive and negative feedback on my work (Q8).		.71				
Student Interaction and Collaboration	.88		2.43	.59	2.10	9.98
I work with others (Q9).		.75				
I relate my work to other's work (Q10).		.70				
I share information with other students (Q11).		.80				
I discuss my idea with other students (Q12).		.82				
I collaborate with other students in the class (Q13).		.77				
Group work is part of my activities (Q14).		.73				

Table 4-5 (*continued*).

Factor and Item	Overall Crobach Alpha	Factor Loading	Index *M*	Index *SD*	Eigenvalue	Variance Explained (%)
Personal Relevance	.89		2.95	.51	2.76	13.14
I can relate what I learn to my life outside of university (Q15).		.71				
I am able to pursue topics that interest me (Q16).		.60				
I can connect my studies to my activities outside of class (Q17).		.79				
I apply my everyday experiences in class (Q18).		.75				
I link class work to my life outside of university (Q19).		.75				
I learn things about the world outside of university (Q20).		.74				
I apply my out-of-class experience (Q21).		.78				

Note. n = 370 for Instructor Support and Student Interaction and Collaboration; n = 371 for Personal Relevance. Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) = .928, Bartlett's Test of Sphericity = .000. The theoretical score range for Instructor Support, Student Interaction and Collaboration, and Personal Relevance was 1-4, with 1 = never and 4 = always.

Table 4-6

Student Satisfaction

Factor and Item	Overall Cronbach Alpha	Factor Loading	Index *M*	Index *SD*	Eigenvalue	Variance Explained (%)
Student Satisfaction	.95		2.81	.64	5.90	73.74
Distance education is stimulating (Q22).		.82				
I prefer distance education (Q23).		.86				
Distance education is exciting (Q24).		.87				
Distance education is worth my time (Q25).		.86				
I enjoy studying by distance (Q26).		.90				
I look forward to learning by distance (Q27).		.87				
I would enjoy my education more if all my classes were by distance (Q28).		.85				
I am satisfied with distance education (Q29).		.83				

Note. n = 369. Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) = .927, Bartlett's Test of Sphericity = .000. The theoretical score range for Student Satisfaction was 1-4, with 1 = never and 4 = always.

The correlation analysis results summarized in Table 4-7 reveal a statistically significant relationship between motivation constructs and distance education learning environment. *Instructor support* (r = .27), *student interaction and collaboration* (r = .26), and *personal relevance* (r = .43) were all positively associated with *keeping up and fulfillment*. Only *personal relevance* had a medium effect that accounted for 18.8% of the variability in *keeping up and fulfillment*. Second, both *instructor support* (r = .32) and *personal relevance* (r = .48) had a medium effect on the construct of *intellectual stimulation*, and accounted for 10.4% and 23% of the variability, respectively. Subsequently, only *student interaction and collaboration* (r = .38) had a medium effect on *escape and social contact*, which explained 14.6% of variance. Finally, each of the distance education learning environment variables had a medium effect on the construct of *adjustment*; together, they accounted for 42.1% of the variability.

Table 4-7

Correlations between Motivation Constructs and Distance Education Learning Environment

		Instructor Support	Student Interaction and Collaboration	Personal Relevance
Keeping Up and Fulfillment	Pearson Correlation	.27**	.26**	.43**
	p-value	.00	.00	.00
Intellectual Stimulation	Pearson Correlation	.32**	.21**	.48**
	p-value	.00	.00	.00

Table 4-7 (*continued*).

		Instructor Support	Student Interaction and Collaboration	Personal Relevance
Escape and Social Contact	Pearson Correlation	.21**	.38**	.28**
	p-value	.00	.00	.00
Adjustment	Pearson Correlation	.32**	.31**	.48**
	p-value	.00	.00	.00

Note. $n = 370$ for Instructor Support and Student Interaction and Collaboration; $n = 371$ for Personal Relevance.

**$p \leq .01$, two-tailed.

However, the results of the correlation coefficient do not indicate in which direction causality operates, multiple regression was used to further explore the predictive importance of the perceived distance education learning environment on motivation constructs. Table 4-8 summarizes multiple regression results for four motivation variables regressed separately on the three distance education learning environment variables. Each regression model was significant ($p < .001$), but each explained only about 20% or less of the variance in the dependent variable. Most importantly, the results verify the association between motivation constructs and perceived distance education learning environment as proposed in the conceptual framework (see Figure 1-1, p. 7) that students' perceptions of the distance education learning environment in fact influence students' motivational dispositions.

Table 4-8

Multiple Regression of Motivation Constructs by the Distance Education Learning Environment Components

Variable	Keeping Up and Fulfillment			Intellectual Stimulation			Escape and Social Contact			Adjustment		
	t-stat.	*p-value*	*b*	*t-stat.*	*p-value*	*b*	*t-stat.*	*p-value*	*b*	*t-stat.*	*p-value*	*b*
Instructor Support	1.15	.25	.07	2.45	.02*	.13	.55	.58	.03	1.95	.05*	.13
Student Interaction and Collaboration	.94	.35	.06	–.81	.42	–.04	5.63	.00**	.33	1.72	.09	.11
Personal Relevance	6.78	.00**	.50	7.90	.00**	.50	2.13	.03*	.15	6.83	.00**	.53
Model Summary												
R square			.20			.24			.16			.24
F-statistic			30.35			38.61			23.38			38.29
p-value			.00**			.00**			.00**			.00**

Note. $n = 369$.

*$p \leq .05$. **$p \leq .01$.

Relationships between Motivation Constructs and Student Satisfaction

Multiple regression analysis was used to investigate the relationships between motivation constructs and satisfaction of the NOUT older students, and to establish the relative importance of *keeping up and fulfillment*, *intellectual stimulation*, *escape and social contact*, and *adjustment* on student satisfaction. Table 4-9 summarizes the regression results.

The regression analysis showed the significant influence of the four motivation constructs on student satisfaction ($F = 13.15$, $p < .01$). Thirteen percent of the variance in student satisfaction was explained by the four motivation constructs together. Among them, *adjustment* was the only significant factor ($t = 3.93$, $p < .01$) in explaining differences in student satisfaction, which accounted for 26% of the explained variance.

Table 4-9

Multiple Regression of Student Satisfaction by Motivational Constructs

Variable	Keeping Up and Fulfillment			Intellectual Stimulation			Escape and Social Contact			Adjustment		
	t-stat.	*p-value*	*b*	*t-stat.*	*p-value*	*b*	*t-stat.*	*p-value*	*b*	*t-stat.*	*p-value*	*b*
Student Satisfaction	–.37	.71	–.03	1.85	.07	.16	–.29	.78	–.02	3.93	.00**	.26
Model Summary												
R square												.13
F-statistic												13.15
p-value												.00**

Note. $n = 369$.

*$p \leq .05$. **$p \leq .01$

Factors Influencing Student Satisfaction

Hierarchical block multiple regression was used to examine collective and separate contributions of three blocks of independent variables, including socio-demographic characteristics (*X*1), motivation constructs (*X*2), and distance education learning environment (*X*3), on student satisfaction (*Y*). Results are summarized in Table 4-10 (see pp. 91–92).

Each independent variable block was entered in a planned order with socio-demographic characteristics entered first, followed by motivation constructs, and distance education learning environment entered last. Results of the model summaries were in the exact order as well. Model 1 indicated that, collectively, socio-demographic characteristics had no statistical influence on student satisfaction. However, when motivation constructs were added in Model 2, it showed a significant relationship, which indicated that motivation constructs were making a significant contribution to the model ($F = 5.61$, $p < .001$). *Adjustment* ($t = 3.48$, $p < .001$) was the only significant factor among the motivation constructs. Together with socio-demographic characteristics and motivation constructs, Model 2 explained 14% of the variance in student satisfaction.

When distance education learning environment joined the regression in Model 3, a significant relationship was also found ($F = 10.37$, $p < .01$), explaining 28% of the variance in student satisfaction. *Instructor support* and *personal relevance* were of significant importance, indicating that the distance education learning environment was an important factor in explaining student satisfaction, with 14% of the variance.

When all three blocks of independent variables were examined together in Model 4, the combined results showed a significant relationship ($F = 10.37$, $p < .01$). The three

independent variables collectively explained 28% of the variance in student satisfaction. It was surprising to find that the influence of motivation constructs, specifically the factor of *adjustment*, was no longer significant. On the other hand, the factors of *instructor support* and *personal relevance* in the distance education learning environment remained significant influences in explaining student satisfaction. Among them, the factor of *personal relevance* accounted for 38% of the explained variance while the factor of *instructor support* accounted for 24% of the explained variance in student satisfaction.

Table 4-10

Multiple Regression of Student Satisfaction by Socio-demographics, Motivation Constructs, and Distance Education Learning Environment

Variable	Model 1			Model 2			Model 3			Model 4		
	t-stat.	*p-value*	*b*	*t-stat.*	*p-value*	*b*	*t-stat.*	*p-value*	*b*	*t-stat.*	*p-value*	*b*
Socio-demographic Characteristics												
Age	.21	.83	.02							–.49	.62	–.04
Gender	.18	.86	.01							.36	.72	.02
Level of Education	–.60	.55	–.05							–.72	.47	–.05
Employment Status	2.05	.04	.15							1.29	.20	.08
Academic Status	.76	.45	.08							.42	.68	.04
Academic Major	1.49	.14	.14							.37	.71	.03
Motivation Constructs												
Keeping Up and Fulfillment				.08	.93	.00				.08	.94	.00
Intellectual Stimulation				1.39	.16	.12				–.17	.86	–.02
Escape and Social Contact				–.18	.86	–.01				–.28	.78	–.02
Adjustment				3.48	.00**	.23				1.88	.06	.12

Table 4-10 (*continued*).

Variable	Model 1			Model 2			Model 3			Model 4		
	t-stat.	*p-value*	*b*	*t-stat.*	*p-value*	*b*	*t-stat.*	*p-value*	*b*	*t-stat.*	*p-value*	*b*
Distance Education Learning Environment												
Instructor Support							3.99	.00**	.24	3.99	.00**	.24
Student Interaction and Collaboration							.11	.91	.00	.11	.91	.00
Personal Relevance							4.83	.00**	.38	4.83	.00**	.38
Model Summary												
R square			.02			.14			.28			.28
F-statistic			1.45			5.61			10.37			10.37
p-value			.19			.00**			.00**			.00**

Note. $n = 368$.

*$p \leq .05$. **$p \leq .01$.

Chapter 5

DISCUSSION AND CONCLUSION

Introduction

This study investigated the factor structure of motivation constructs as expressed by older adult learners and examined how the motivation constructs interacted with older adults' socio-demographic characteristics, perceptions of the learning environment, and student satisfaction with a distance education learning environment. Furthermore, the study examined the relative contributions of socio-demographic characteristics, motivation constructs, and distance education learning environment factors on student satisfaction.

The study took place at the National Open University of Taiwan (NOUT). Two self-administered questionnaires—Reasons for Participation Scale and a modified Distance Education Learning Environment Survey—were used. Older adults who were 55 and above, registered as a student during Spring Semester 2005 and affiliated with one of the selected six regional study centers (Taipei, Taipei (2), Taichung, Tainan, Kaohsiung, and Hualien study center) were targeted as potential participants in this study. From a criterion-based sample of 990 older students, 371 completed the survey.

The overall findings are discussed in terms of the three main research questions: 1) motivation constructs of older adult learners at NOUT; 2) differences in motivation constructs when examined by socio-demographic characteristics, perceptions of distance education learning environment, and student satisfaction; and 3) factors influencing

student satisfaction at NOUT. The implications and limitations of the study findings are discussed. Finally, recommendations for future research are provided.

Motivation Constructs of Older Adult Learners at NOUT

Research Question One explored the motivation constructs expressed by older adult learners at NOUT. In this study, motivation was measured using the 32-item Reasons for Participation Scale (RPS). The results yielded a four-factor solution; Table 4-2 (see pp. 72-73) listed the factors and the item composition of each factor. The four motivation constructs that explain the reasons for older adults' enrollment in courses at NOUT were *keeping up and fulfillment*, *intellectual stimulation*, *escape and social contact*, and *adjustment*.

Factor I, *keeping up and fulfillment*, represented two sub-themes. One was introspections about oneself and the desire to be involved in the contemporary world, and the other was the act of consummating something important to oneself. Factor II, *intellectual stimulation*, included both expressive and instrumental reasons. Other than the enjoyment of learning, it also involved a fear of cognitive decline in old age. Factor III, *escape and social contact*, represented two sub-themes—a need to change and to step out the routine of life and a desire for social interaction. The last factor, Factor IV_*adjustment*, had to do with concerns for personal problems and adjustment in later life.

Although the factor of *adjustment* was not pervasive in most of the prior studies (e.g., only found as "adaptation/self-understanding" in Pritchard [1979]; "self-understanding/personal adjustment" in Furst & Steele [1986]), the emergence of this factor was important in terms of developmental tasks for each life stage. As people age, they start to face a variety of changes. Some of these changes involve retirement from the

workforce, decreased physical strength, reduced income, death, and bereavement. One possible explanation for the emergence of this factor is that older adults hoped that NOUT courses facilitate late life transitions and help them cope with challenges posed by developmental tasks. In addition, the results supported Manheimer's (1992) notion that older learners' motives tend to emphasize either an adaptational or transformational perspective due to developmental changes during older adulthood (as cited in Manheimer et al., 1995).

When compared with studies that also employed RPS with older adult learners, the four-factor solution resulting from this study was more solid for two reasons. First, items retained within each factor were more definitive, no items had ambiguous loadings and all had factor loadings higher than .50, and therefore provided a "clean" interpretation. On the other hand, there was a great deal of overlap between items in the nine-factor solution by Furst and Steele (1986), and yet still two factors contained less than three items. Their decision to retain so many factors not only compromised statistically the data reduction purpose of the factor analysis, but also weakened the interpretability of their findings.

Second, the appropriateness of the factor titles in this study in which each title corresponded closely with the underlying item content was stronger than those of Bynum and Seaman (1993). They modified the RPS by eliminating two degree-seeking items to fit their research context. Despite using the same criteria to retain possible factors as in the present study and yield a four-factor solution as well, the results in terms of items retained and composition varied, and hence, provided a somewhat different interpretation from the present study.

Two factors matched closely. Intellectual curiosity and social contact, respectively, matched Factor II_*intellectual stimulation*, and Factor III_*escape and social contact*. The factor of perceived cognitive gap did not show up in this study, but the representative items were merged into either Factor I_*keeping up and fulfillment* or Factor II_*intellectual stimulation*. The composition of the factor self-actualization resembled those of Factor I; however, the use of such titles is disputable. The concept of self-actualization implied personal growth through the realization of one's potential and capabilities (Maslow, 1970). It is the feeling of making progress toward reaching one's full potential, achieving both what one wants and is best suited to do. But if examined closely according to the underlying items in the self-actualization factor, we found that the item contents were more likely to translate into personal growth or self-improvement, which are not the same thing as self-actualization. Examples include items such as "to re-examine my perspective on one or more contemporary issues", "gain insight into human relations", or "to keep up with what is going on in the world". To avoid ambiguity, the present study labeled it as "keeping up and fulfillment" in terms of its two sub-themes.

The factor of *intellectual stimulation* (M = 2.01, SD = .58) appeared to be the strongest attractor of older adults to NOUT; the factor of *keeping up and fulfillment* (M = 1.77, SD = .66) was the second most influential motivator, followed by the factor of *adjustment* (M = 1.64, SD = .71). The lowest motivator based on overall mean values was *escape and social contact*, which yielded a mean score of 1.14 (SD = .63). The study added further support to the conclusions of previous research on older adults' participation in education programs: that they were more influenced by the cognitive-related factor than by any other factors (Boshier & Riddle, 1978; Bynum & Seaman,

1993; Furst & Steele, 1986; Kim & Merriam, 2004; Lamb & Brady, 2005; Scala, 1996; Swindell, 2000, 2002; Swindell & Vassella, 1999).

The main differences between the findings of this study and those of previous research were the relative importance of each motivation factor. In this study, the factor of *escape and social contact* was found to be the least important for older adults in NOUT, while it was the second most important factor in most studies (e.g., the social contact of Boshier & Riddell [1978]; the social contact factor of Bynum & Seaman [1993]; the social contact factor of Kim & Merriam [2004]; the community support of Lamb & Brady [2005]). Results from these previous studies suggested that older adults wanted to participate in an experience that would keep their mind engaged while at the same time offer an opportunity either to meet people their own age or to form connections with the younger generation depending on the research context. However, evidence in this study indicated that older adults taking courses at NOUT were less motivated for social reasons. The same phenomenon was observed at the British Open University (BOU; Cutress et al., 1983; Kelly, 1989, 1992). The reason 'to make new friends/meet congenial people' was least mentioned by older BOU students. Such evidence suggests that the proportion of social interaction was not as important to older distance learners as to those who participated in residential education programs. The relative importance of the motivation factors showed a clear pattern of older adults being more influenced by intrapersonal than by interpersonal reasons.

The most striking finding was the absence of degree-seeking motivation, particularly given that this study took place at a highly academic-oriented environment. The fact that NOUT is a highly recognized academic institute and offers credit and

degree-granting courses may have fostered a hypothesis that receiving formal degree attainment and recognition would be important. In addition, findings from the British Open University (Cutress et al., 1983; Johnson, 1995; Kelly 1989, 1992) emphasized the significance for older students at BOU of making up for a lack of opportunities or missed opportunities in the past and getting a degree than at other educational organizations. It is this degree-seeking motive that separated older adults at BOU from any other educational organizations.

However, such motivation was not pervasive among older NOUT students. In fact, the factor was dropped since it contained only two items and explained a fairly small percentage of variance in motivations. A majority of older NOUT students (60%) indicated that the reason for earning a degree, diploma or certificate had no or little influence on them. In contrast, 66% of the participants reported that the reason for completing some previously unfinished learning had moderate or much influence on their participation at NOUT. Before jumping to a quick conclusion, we need to understand that participants in this study were born between 1920 and 1950, and had experienced their compulsory schooling during the Japanese colonization and World War II. For this age cohort, compulsory education ended at primary school, which may explain the desire among older NOUT students to complete unfinished learning. But most participants in this study have retired from their jobs. They certainly did not need a degree to advance their careers. The present findings suggest that NOUT may prove attractive to older adults who were denied the opportunity in earlier life to continue with their education, but earning or not earning a degree may not seem as important to them at this stage of life.

Differences in Motivation Constructs When Examined by Socio-demographic Characteristics, Perceptions of Distance Education Learning Environment, and Student Satisfaction

Research Question Two examined the differences in the motivation constructs of older adult learners at NOUT when examined by their socio-demographic characteristics, their perceptions of the distance education learning environment, and their satisfaction with the distance education provided by NOUT. The differences are presented in three sections: differences by socio-demographic characteristics, relationships between motivation constructs and distance education learning environment, and relationships between motivation constructs and student satisfaction.

Differences by Socio-demographic Characteristics

A total of 371 older adults at NOUT, averaging 61 years of age, completed the survey. The majority of them (80%) were between 55 and 64 years old, and consisted of a fairly even proportion of men and women. As anticipated, the majority of participants had completed high school or higher and were clearly from a more advantaged educational background than the average older Taiwanese (Huang, 2005). Most of the participants (42.3%) were retired while 16.2% were semi-retired. The majority of the older adults registered as full-time students and had one academic major. Living science appeared to be the most popular choice of study. The profile of this sample generally fit the descriptions of older NOUT students in 1997 (Wu, Lin, Chiang, Huang, & Chen, 1997). However, it was also interesting to observe a few changes over the eight-year range. These included an increase in the proportions of full-time older students, and the emergence of older students who had more than one academic major. Such patterns of

growing involvement and persistent participation not only indicated that more older students were committed to NOUT, but also suggested NOUT as a great learning outlet for older adults in Taiwan.

An examination of the effects of socio-demographic characteristics on each motivation construct surprisingly showed that gender, age, level of formal education, and employment status had no significant difference on participants' motivational disposition at NOUT (see Table 4-4). Academic status, however, reflected a difference in the factor of *intellectual stimulation*. Older adult students registered as full-time students sought more intellectual stimulation than part-time students. The most unexpected and exclusive finding in this study was the differences due to academic major in motivation constructs. Differences in the scores for the factors of *keeping up and fulfillment*, *intellectual stimulation*, and *adjustment* were found for the variable academic major. The differences occurred between older students who had one major or more than one major and those who had not yet decided on their major. For example, older adult learners who had one major or more than one major scored higher on the *keeping up and fulfillment* factor than those who had not yet decided their major. The results may suggest that it is the extent of commitment that makes a difference in older students' motivational disposition at NOUT.

Relationships between Motivation Constructs and Distance Education Learning Environment

A modified Distance Education Learning Environment Scale (DELES; Walker, 2003a, b, c) was used to measure older adult learners' perceptions of the NOUT learning environment. As anticipated, the learning environment was represented in terms of *instructor support*, *student interaction and collaboration*, and *personal relevance* (see

Table 4-5). The results (see Table 4-7) indicated that *instructor support*, *student interaction and collaboration*, and *personal relevance* were positively correlated with each of the four motivation constructs expressed by older NOUT students. However, each of the learning environment components had a small to medium effect on the motivation constructs.

The researcher examined the predictive power of *instructor support*, *student interaction and collaboration*, and *personal relevance* on the four motivation constructs (see Table 4-8). *Personal relevance* appeared to be the most important predictor in explaining all four motivation constructs. In other words, for older NOUT students, the more they can connect their personal experiences to the course materials and classroom experiences, the more they are motivated. *Student interaction and collaboration* significantly explained the factor of *escape and social contact*. The higher the extent to which older adults have opportunities to interact with one another, exchange information and engage in collaboration, the higher their social contact scores. Meanwhile, *instructor support* significantly influenced the factors of *intellectual stimulation* and *adjustment* positively. That is, when older NOUT students perceived more instructor support during their learning process, they felt more encouraged intellectually, and adjusted better to challenges in later life.

Relationships between Motivation Constructs and Student Satisfaction

Older adults' satisfaction toward NOUT was regarded as a learning outcome in this study, which focused on their enjoyment of distance education. It was measured using the eight-item DELES satisfaction scale (see Table 4-6); item scores were subjected to multiple regression analysis (see Table 4-9). The results indicated that four motivation

constructs together appeared to have a significant influence on older NOUT students' satisfaction. Among them, the factor of *adjustment* was the strongest predictor in explaining student satisfaction. In other words, the more an older adult is motivated by concerns for personal problems and adjustments in later life, the more likely he/she will find NOUT courses satisfying. This may further suggest that courses offered by NOUT are applicable to those who are in need of acquiring knowledge on a particular subject, learning a specific skill, and getting help during a personal crisis.

Factors Influencing Student Satisfaction at NOUT

Research Question Three examined the collective and separate contributions of three blocks of independent variables, including socio-demographic characteristics, motivation constructs, and distance education learning environment on student satisfaction (see Table 4-10). When examined separately, both motivation constructs and perceptions of distance education learning environment had a significant effect on older adults' satisfaction at NOUT. To be specific, the motivation factors *adjustment*, *instructor support* and *personal relevance* of distance education learning environment were important factors in explaining student satisfaction.

However, when all of the variables were included in the analysis, it was students' perceptions of the distance education learning environment that was the most significant factor relating to student satisfaction. The influence of *adjustment* was not significant; only *instructor support* and *personal relevance* of the distance education learning environment remained significant for student satisfaction at NOUT. The factor of *personal relevance* was the strongest predictor, explaining 38% of the explained variance while *instructor support* accounted for 24% of the explained variance in student

satisfaction. The finding that *personal relevance* had the most influence on student satisfaction is consistent with Walker's (2003a, b, c) findings. Walker (2003b) field-tested the full scale of the DELES on 680 postsecondary distance education students, and found that personal relevance had the strongest correlation with students' enjoyment of distance education. One may speculate that older adults in this study and graduate students in Walker's alike were more aware of their time and personal reasons for advancing their education. They would enjoy distance education more when they can relate the subject matter of that class to their personal lives. Furthermore, the significance of *instructor support* on satisfaction in this study indicated that older adult learners enjoyed the distance education classes more when they felt the course instructor was approachable and responsive.

In summary, this study found that four motivational constructs attracted older adults to NOUT, namely, *keeping up and fulfillment, intellectual stimulation, escape and social contact*, and *adjustment*. Several similarities and differences exist between this study and past research. First, the motivations of older adults participating in educational programs may be interpersonal and intrapersonal, expressive and instrumental in nature. Second, in discovering the primary motivation—*intellectual stimulation*—this study confirmed the literature (Boshier & Riddle, 1978; Bynum & Seaman, 1993; Furst & Steele, 1986; Kim & Merriam, 2004; Lamb & Brady, 2005; Scala, 1996; Swindell, 2000, 2002; Swindell & Vassella, 1999) that cognitive-related motivation is the strongest reason for older adults to take part in educational activities. Third, it is also noteworthy that the social interaction component of a program may not be as appealing to older adults who choose distance learning over the face-to-face learning environment. In

addition, the absence of degree-seeking motives add further support to the finding that expressive reasons may be more important than instrumental reasons for learning in later life.

The results of the present study not only validated the associations proposed in the conceptual framework (Figure 1-1, see p. 7), but also added further evidence to the association between the perceived learning environment and learning outcomes—in this case, student satisfaction and enjoyment of distance education. The overall results confirmed the assumption that the motivational dispositions an individual adopts are very sensitive to context and are influenced by how the individual perceives the environment (Ames, 1992; Ford, 1992; Wentzel, 1999, 2000). The results in terms of how personal context influences motivational disposition suggested that the extent to which an individual committed himself/herself to educational programs makes a difference in his/her motivational dispositions. In contrast, the lack of associations between some of the well-documented socio-demographic variables (e.g., age, gender, level of education, and employment status) and motivation constructs does not tell us much, since they have no influence on the motivation processes and behavior patterns. It merely tells us that controlling for these socio-demographic variables and addressing issues of causality remain of considerable interest for researchers. More extensive longitudinal analysis addressing such issues is needed.

Furthermore, the factor of *personal relevance* appeared to be the most important predictor in explaining all four motivation constructs. In other words, for older NOUT students, the more he/she can connect his/her personal experiences to the course materials and classroom experiences, the more he/she is motivated. The factor of *personal*

relevance also appeared to be the strongest predictor in explaining student satisfaction, followed by the factor of *instructor support*. It is the perceived distance education learning environment, rather than motivation dispositions and socio-demographic characteristics, which are suggested to be a more powerful predictor of learning outcome. Therefore, it is reasonable to conclude that when older adult learners perceived a supportive climate within their learning environment and were able to relate the subject matter of the class to their personal lives, they tended to be more satisfied with the distance education provided by NOUT and gained more enjoyment from it.

Finally, the results of this study challenged some stereotypes about the implementation of older adult education in Taiwan. Lin (2004) analyzed different ways to implement older adult education in Taiwan; she surveyed 312 professionals including leaders in educational institutes and organizations for older people, administrators in social and educational departments, and scholars. Based on their opinions, distance education is not recognized as a desirable way to carry out learning activities for older adults in Taiwan. However, results from this study revealed that there might be disparity between professionals and older adults who were actually taking distance education courses. Participants in this study showed great satisfaction with NOUT; they enjoyed learning through distance education. Although one may argue that the high satisfaction is due to the relatively highly educated samples, we cannot overlook the importance of NOUT in providing academic-structured, mind-stimulating, learner-centered, and self-directed learning activities.

Implications

The area of education for older adults is only going to become more pervasive in the future. As the proportion of older adults continues to grow and with it the demand for education for older adults, it is important for administrators of older adult education programs to know how to attract, plan for, and accommodate this population on their campuses. One of the major tasks for program planners and service providers is to match organizational goals and institutional policies with the actual educational needs of older people. Lack of correspondence between organization goals and educational needs of older adults will result in programs that are unattractive to the target population.

Even though this study does not and cannot imply that the NOUT experience is appropriate for every older adult; it sheds light on the possible application of distance education to older adult learning in the near future. Older adults in this study wanted to participate in experiences that were intellectually stimulating, kept them involved in the contemporary world, helped them adjust better in later life, and yet at the same time, provided an opportunity for social interaction. Distance education provides participants with an activity that meets older adults' educational needs in ways that senior centers, community centers or traditional universities/colleges cannot. While senior and community centers may provide social opportunities, they often do not provide intellectually challenging activities.

Traditional university/college courses may provide academic content, but they often have strict requirements for enrollment and are often expensive. To the contrary, distance education courses in Taiwan usually are tuition-free for older adults who are 65 years old and older, have no enrollment threshold, provide access and time flexibility,

and provide opportunities to interact with people of diverse backgrounds. Moreover, its self-pacing nature has proved to facilitate and improve older adult learning (McDonald, 1995).

Meanwhile, the fact is that older adults are heterogeneous and have a diverse array of learning interests and needs that can only be met through alternative forms of adult education that are responsive to those needs. No matter how the learning activity is organized and carried out, via either formal or informal education programs, it all comes down to one question: how can we make this older learning population satisfied? One fundamental concern for adult educators and instruction designers is to provide them with quality education and rich learning experiences. Student satisfaction is a key indicator of educational quality (Walker, 2003b).

The results from this study indicated that perceived learning environment, *personal relevance* and *instructor support* to be exact, is the strongest predictor in explaining student satisfaction. Therefore, more effort should be made when designing course materials and learning activities to make connections between students' out-of-school experiences and their classroom experiences. In addition, instructors' attitudes in terms of their approachability and responsiveness to the needs of older learners have a great influence on student satisfaction as well. It is very likely that older adults find themselves spending considerable time relearning how to learn or redeveloping the required study skills and routines after a long absence from school, even though they are intellectually capable. It can be difficult to pick up the books again and break through the non-studious habits of life; hence, the significance of instructor support is only natural to expect. Only when older adult learners perceive a supportive climate within their learning

environment and are able to relate the subject matter of the class to their personal lives, will they enjoy the learning process and be more satisfied with educational programs.

Limitations of the Study

The study has several limitations that need to be addressed. First, the sample for this study was not randomly selected. Instead, it was a two-stage systematic sample based on suggestions from the NOUT. Therefore, the results from this study may not be generalizable beyond the context of NOUT. In addition, the majority of the participants in this study were between 55 and 64 years old, hence, the findings from this study have limited generalizability for those aged 65 years old and older.

Second, this study was cross-sectional in nature. That is, older adults who registered as students in the Spring Semester 2005 were surveyed. Consequently, it is impossible to assess how motivational disposition and its impact on the perceived distance education learning environment and learning outcome may change over time.

Third, to reduce the cognitive loading of older participants, this study used only parts of the DELES with three learning environment variables. However, with the significant results of perceived distance education learning environment on motivations and student satisfaction, the researcher cannot help but wonder: if the full scope of the DELES had been implemented, would those omitted factors (e.g., authentic learning, active learning, and student autonomy) affect motivation dispositions and student satisfaction differently? In addition, since little research has been done on the perceived learning environment and participation motivation of older adults, more such research is desirable.

Given these limitations, the results of the present study provide valuable and useful information about older adults' motivational dispositions toward distance learning, and how they interact with the perceived distance education learning environment and student satisfaction. The findings begin to scratch the surface of what we need to know about this growing population of older adults in higher education.

Recommendations for Future Research

The increasing life expectancy together with the trend toward earlier retirement mean that men and women will spend a greater proportion of their lives in retirement than earlier cohorts. Given the changing age structure in Taiwan and the aging of the huge baby boomers, there are and will continue to be interests in older adult learners, who they are and what they bring to an educational experience, what they want to achieve, and whether they achieve it. The findings from this study suggest that more research needs to be conducted to expand our understanding of this unique population.

First, longitudinal studies are needed to gain insights into the changes in the patterns and motivational dispositions of older adults in educational programs as they age and to identify predictors of persistence in education. One feasible way is to collect data at the beginning point of their enrollment, and conduct a follow-up survey at a later time. With longer intervals between two administrations, participants receive increasing exposure to contextual influences that might lead to genuine changes in motivational dispositions and learning outcomes.

Second, results from qualitative studies would supplement a more extensive and deeper understanding of older adult participation in education. A semi-structured in-depth

interview is an excellent data collection strategy that could help illuminate the quantitative findings from survey instruments.

Third, a larger and more representative sample would be desirable to expand the generalizability of the motivation constructs found in this study. Replicating this study on a cross-national sample within the context of distance education or on other educational contexts would not only validate the latent structure of motivation constructs, but also explore the differences between groups of older learners and impacts of different educational contexts on motivations. In addition, based on Huck (2004)'s concept of marginally significant results, the researcher did examine the fifth factor in the motivation constructs, which was not retained in the present study. Interestingly, the fifth factor did not influence the results for the study. However, the researcher would suggest including the underlying items in this factor in the future on a larger sample to help the external validity of the factor solution.

Finally, cross-cultural comparative studies between Western and Eastern societies are recommended to further our understanding of how racial-ethnic, socio-cultural differences influence motivation dispositions in later life. More importantly, more studies should be done on the older adults who have historically been nonparticipants in adult education programs: minorities, persons with low incomes and low levels of education, who are isolated, and powerless to initiate participation in educational activities of any sort. It is crucial that we identify deterrents to their participation in education activities, and then devote our efforts to creating new opportunities for the disadvantaged groups.

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Appendix A

Distance Education Learning Environments (DELES) Permission Letter

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Distance Education Learning Environments (DELES) Permission Letter

Jr-Shiuan Liang has been granted permission to use the Distance Education Learning Environments Survey (DELES) for the purpose of his **doctoral research project "Motivations of older adults participating in distance education: A study at the National Open University of Taiwan" at Pennsylvania State University** with the following usage rights being granted:

☐ One time U.S. rights for e-mail distribution of the Preferred, Actual, and Instructor forms of the DELES through

☐ One time worldwide rights for e-mail distribution of the Preferred, Actual, and Instructor forms of the DELES

☐ One time U.S. rights for Web posting of the Preferred, Actual, and/or Instructor forms of the DELES, or parts thereof, to be removed from the Web after April 11, 2006.

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Scott L. Walker, ScEdD

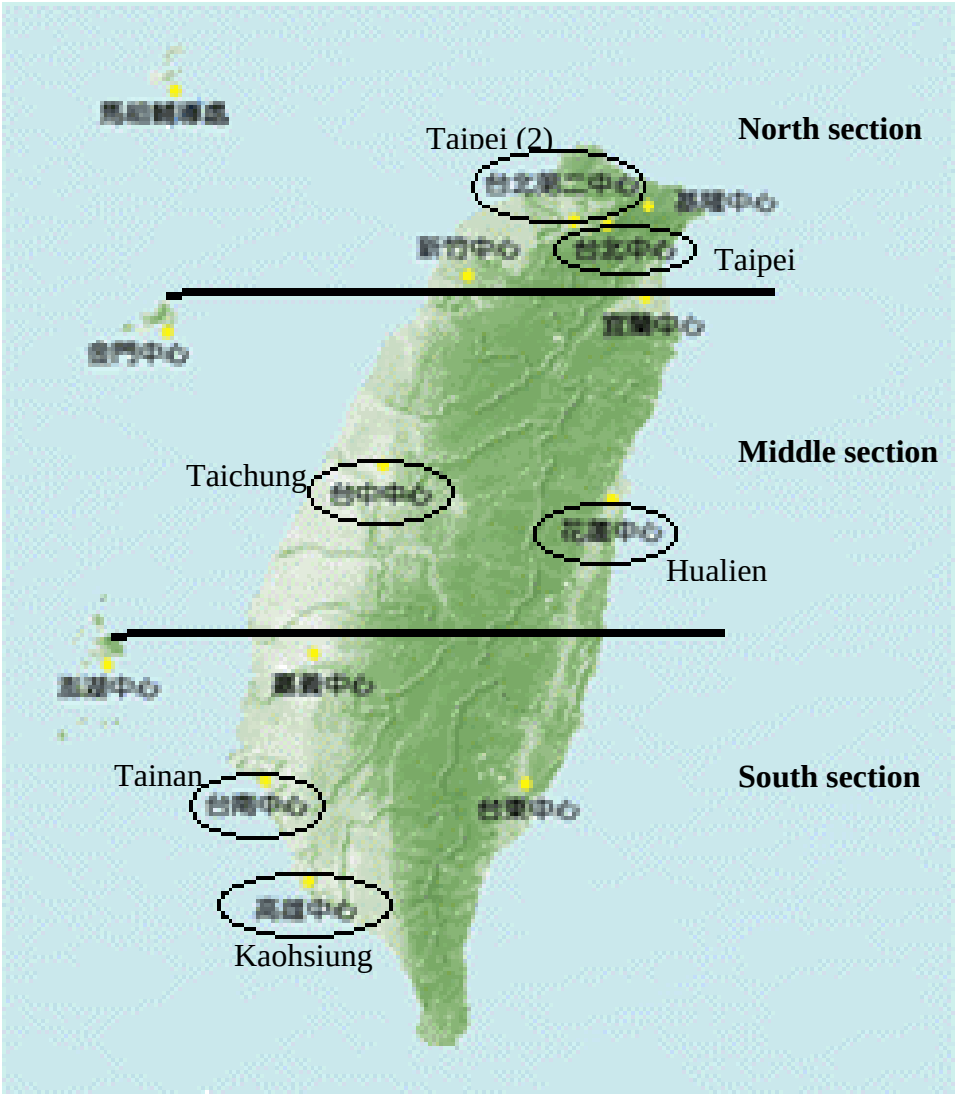
April 25, 2005
Date

Appendix B

Multistage Sampling Map

Multistage Sampling

This map indicates the location of thirteen regional study centers of the NOUT. To sample the population, Taiwan was divided into three sections—north, middle, and south— in the first stage. Each section contained four or five regional study centers. Later in stage two, two centers from each section were systematically selected. The six identified centers included Taipei (2), Taichung, Tainan, Kaohsiung, Hualien, and Taipei study centers (in a clockwise direction).



Appendix C

Reasons for Participation Scale

Reasons for Participation Scale

Listed below are 32 reasons you may have had for enrolling courses at the National Open University at Taiwan. It is designed to indicate the extent to which each of the reasons listed below would influence you to participate. Please concentrate on a particular, recent course you take at National Open University at Taiwan. Your participation in this survey is voluntary, and will not influence your grade for this course. The information that you provide in this survey is also confidential. Thank you for your assistance.

None of the reasons listed below is intended to be more important than any other one. There are no 'right' or 'wrong' answers. Be frank. Your opinion is what is wanted on each item. Please weigh each statement as a possible influence. Do this by rating each statement on a four-point scale (No influence, Little influence, Moderate influence, Much influence). **Please circle your choice for each statement.**

---

1. To acquire knowledge to help with other educational courses

   No influence Little influence Moderate influence Much influence

2. To get relief from boredom

   No influence Little influence Moderate influence Much influence

3. To gain insight into my personal problems

   No influence Little influence Moderate influence Much influence

4. To qualify for privileges such as use of library, swimming pool, etc.

   No influence Little influence Moderate influence Much influence

5. To supplement a narrow previous education

   No influence Little influence Moderate influence Much influence

6. To keep my mind active and alert by making intellectual demands upon it

   No influence Little influence Moderate influence Much influence

7. To get a break in the routine of home or work

   No influence Little influence Moderate influence Much influence

8. To learn just for the joy of learning

   No influence Little influence Moderate influence Much influence

9. To pursue earlier interests that I could not get around to before

   No influence Little influence Moderate influence Much influence

10. To become acquainted with congenial people

    No influence Little influence Moderate influence Much influence

11. To enable me to cope better with the challenges of daily living

    No influence Little influence Moderate influence Much influence

12. To share a common interest with my spouse or friend

    No influence Little influence Moderate influence Much influence

13. To improve my ability to participate in community work

    No influence Little influence Moderate influence Much influence

14. So that other would have a higher respect for me

    No influence Little influence Moderate influence Much influence

15. To satisfy a desire to develop new interests

    No influence Little influence Moderate influence Much influence

16. To feel a sense of achievement

    No influence Little influence Moderate influence Much influence

17. To re-examine myself and my role in life

No influence Little influence Moderate influence Much influence

18. To keep up with what is going on in the world

No influence Little influence Moderate influence Much influence

19. To develop an unfulfilled talent

No influence Little influence Moderate influence Much influence

20. To become more effective as a citizen

No influence Little influence Moderate influence Much influence

21. To gain insight into human relations

No influence Little influence Moderate influence Much influence

22. To re-examine my perspective on one or more contemporary issues

No influence Little influence Moderate influence Much influence

23. To comply with the recommendations or urging of someone else

No influence Little influence Moderate influence Much influence

24. To satisfy an inquiring mind

No influence Little influence Moderate influence Much influence

25. To acquire knowledge on a particular subject

No influence Little influence Moderate influence Much influence

26. To give me help during a crisis in my personal life

No influence Little influence Moderate influence Much influence

27. To help me earn a degree, diploma, or certificate

No influence Little influence Moderate influence Much influence

28. To learn a specific skill

No influence Little influence Moderate influence Much influence

29. To complete some previously unfinished learning

No influence Little influence Moderate influence Much influence

30. To participate in group activity

No influence Little influence Moderate influence Much influence

31. To prepare myself for retirement living

No influence Little influence Moderate influence Much influence

32. To maintain or enhance my self-respect

No influence Little influence Moderate influence Much influence

Appendix D

The Modified Distance Education Learning Environment Survey

Distance Education Learning Environment Survey

This survey contains 21 statements about practices that take place in this class, followed by eight statements regarding your opinion about distance education. This survey is designed to collect data on some of the issues relating to the learning environment. Your participation in this survey is voluntary, and will not influence your grade for this course. The information that you provide in this survey is also confidential. Thank you for your assistance.

There are no 'right' or 'wrong' answers. Your opinion is what is wanted on each item. Please think about how well each statement describes what this class is like for you. Do this by rating each statement on a five-point scale (Never, Seldom, Sometimes, Often, Always). **Please circle your choice for each statement.**

In this class…

---

1. If I have an inquiry, the instructor finds time to respond.

   Never Seldom Often Always

2. The instructor helps me identify problem areas in my study.

   Never Seldom Often Always

3. The instructor responds promptly to my questions

   Never Seldom Often Always

4. The instructor gives me valuable feedback on my assignments.

   Never Seldom Often Always

5. The instructor adequately addresses my questions.

   Never Seldom Often Always

6. The instructor encourages my participation.

Never Seldom Often Always

7. It is easy to contact the instructor.

Never Seldom Often Always

8. The instructor provides me positive and negative feedback on my work.

Never Seldom Often Always

In this class…

---

9. I work with others.

Never Seldom Often Always

10. I relate my work to other's work.

Never Seldom Often Always

11. I share information with other students.

Never Seldom Often Always

12. I discuss my idea with other students.

Never Seldom Often Always

13. I collaborate with other students in the class.

Never Seldom Often Always

14. Group work is a part of my activities.

Never Seldom Often Always

In this class…

---

15. I can relate what I learn to my life outside of university.

Never Seldom Often Always

16. I am able to pursue topics that interest me.

Never Seldom Often Always

17. I can connect my studies to my activities outside of class.

Never Seldom Often Always

18. I apply my everyday experiences in class.

Never Seldom Often Always

19. I link class work to my life outside of university.

Never Seldom Often Always

20. I learn things about the world outside of university.

Never Seldom Often Always

21. I apply my out-of-class experience.

Never Seldom Often Always

The following items refer to your satisfaction with distance education.

---

22. Distance education is stimulating.

Never Seldom Often Always

23. I prefer distance education.

Never Seldom Often Always

24. Distance education is exciting.

Never Seldom Often Always

25. Distance education is worth my time.

Never Seldom Often Always

26. I enjoy studying by distance.

Never Seldom Often Always

27. I look forward to learning by distance.

Never Seldom Often Always

28. I would enjoy my education more if all my classes were by distance.

Never Seldom Often Always

29. I am satisfied with distance education.

Never Seldom Often Always

Appendix E

Personal Information

Personal Information

1. When were you born?
   Year _____ Month _____

2. What is your gender?
   ____ Male
   ____ Female

3. What is your highest level of education completed?
   ____ Less than high school
   ____ High school graduate
   ____ Two-year associate postsecondary degree
   ____ Four-year bachelor degree
   ____ Graduate degree (master or doctorate)
   ____ Other (Specify)
   _____

4. What is your retirement condition?
   ____ Retirement
   ____ Semi-Retirement, please specify_____
   ____ Non-retirement
   ____ Other, please specify _____

5. What is your academic status at National Open University?
   ____ Part-time
   ____ Full-time

6. What is your major?
   ____ Humanities
   ____ Social Sciences
   ____ Business
   ____ Public Administration
   ____ Living Sciences
   ____ Management and Information
   ____ Undecided

Appendix F

Chinese Version Questionnaires and Cover Letter

高齡者的學習動機與學習環境之研究
以國立空中大學爲例

敬啓者：

您好，我是美國賓州大學成人教育研究所的博士班研究生，很冒昧地打擾您幾分鐘來填寫這份問卷。此問卷是爲了要更了解目前在空中大學的高齡學生（55 歲以上）的學習動機與其對學習環境及滿意度而設計的，共分爲三個部分：

(一) 學習動機：旨在探究是什麼原因讓您選擇在空中大學修課

(二) 學習環境：旨在獲知您對目前空中大學學習環境的看法和滿意度

(三) 個人基本資料。

此問卷的目的純粹是想瞭解您的觀點，所以並沒有對或錯的答案。參與本問卷是一項自發性的工作，其結果並不會影響您的上課成績。所有結果僅供研究參考，謝謝您的協助。

關於這份問卷：

◎當你填寫這份問卷時，請**就一門最近修的課或正在修的課**來回答。

◎爲了維護您意見的私密性，此問卷並不會問涉及個人隱私的問題，例如姓名及聯絡方式等。

◎如果您對這研究有任何疑問，請與聯絡我。再次感謝您的協助。

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TEL：(814) 863-3492

一. 學習動機

問卷填寫說明：

學習動機共包含 32 個可能的原因。請依據每個原因對您的影響程度，勾選最適當的選項（毫無影響，有些影響，頗有影響，非常有影響）。請就一門最近修的課或正在修的課來回答。

1. 爲獲得知識以幫助其他正在學習的課程。

□毫無影響 □有些影響 □頗有影響 □非常有影響

2. 爲填補無聊的空閒時間

□毫無影響 □有些影響 □頗有影響 □非常有影響

3. 爲更深刻理解自己的問題，例如個人身心狀態，對家庭、社會、人生的疑惑。

□毫無影響 □有些影響 □頗有影響 □非常有影響

4. 爲能享有當學生的福利，例如使用學校圖書館、游泳池、學生票優待等。

□毫無影響 □有些影響 □頗有影響 □非常有影響

5. 爲了彌補以前所受教育的不足。

□毫無影響 □有些影響 □頗有影響 □非常有影響

6. 爲能藉由學習活動的刺激，讓頭腦保持靈活。

□毫無影響 □有些影響 □頗有影響 □非常有影響

7. 能暫時紓解家庭或工作的例行公事。

□毫無影響 □有些影響 □頗有影響 □非常有影響

8. 單純是爲了學習時所帶來的快樂。

□毫無影響 □有些影響 □頗有影響 □非常有影響

9. 爲追求先前未能完成的興趣。

□毫無影響 □有些影響 □頗有影響 □非常有影響

10.爲能認識志趣相投的人。

□毫無影響 □有些影響 □頗有影響 □非常有影響

11.讓我更能面對日常生活的挑戰。

□毫無影響 □有些影響 □頗有影響 □非常有影響

12.爲能和配偶或朋友分享共同的興趣。

□毫無影響 □有些影響 □頗有影響 □非常有影響

13.爲增進參與社區工作的能力。

□毫無影響　□有些影響　□頗有影響　□非常有影響

14.爲獲得別人的尊敬。

□毫無影響　□有些影響　□頗有影響　□非常有影響

15. 渴望學習新事物。

□毫無影響　□有些影響　□頗有影響　□非常有影響

16.爲獲得成就感。

□毫無影響　□有些影響　□頗有影響　□非常有影響

17.爲能重新審視自己和在生活中自己的角色。

□毫無影響　□有些影響　□頗有影響　□非常有影響

18.爲能跟得上時代。

□毫無影響　□有些影響　□頗有影響　□非常有影響

19.爲展現自己以前未能發揮的潛能。

□毫無影響　□有些影響　□頗有影響　□非常有影響

20. 爲讓處事更有效率。

□毫無影響　□有些影響　□頗有影響　□非常有影響

21.爲更洞悉人際關係。

□毫無影響　□有些影響　□頗有影響　□非常有影響

22.爲能重新審視自己對時事的觀點。

□毫無影響　□有些影響　□頗有影響　□非常有影響

23.因爲他人的推薦或鼓勵。

□毫無影響　□有些影響　□頗有影響　□非常有影響

24.爲滿足求知慾。

□毫無影響　□有些影響　□頗有影響　□非常有影響

25.爲了獲得某一專業領域的知識。

□毫無影響　□有些影響　□頗有影響　□非常有影響

26.爲加強生活中的危機處理能力。

□毫無影響　□有些影響　□頗有影響　□非常有影響

27.爲獲得學位及文憑。

□毫無影響　□有些影響　□頗有影響　□非常有影響

28.爲了學習某種技能。

□毫無影響　□有些影響　□頗有影響　□非常有影響

29.爲了完成先前中斷的教育。

□毫無影響　□有些影響　□頗有影響　□非常有影響

30.爲了參與團體活動。

□毫無影響　□有些影響　□頗有影響　□非常有影響

31.爲退休生活做準備。

□毫無影響　□有些影響　□頗有影響　□非常有影響

32.爲了維持或提高自信心。

□毫無影響　□有些影響　□頗有影響　□非常有影響

請問還有其他原因讓您選擇在空中大學修課嗎？請說明

_____

二. 遠距教學學習環境

問卷填寫說明：

這份學習環境共包含 21 項關於面授的敘述和 8 項有關您對遠距教學的看法。請依據這堂課的經驗來評斷下列的陳述。並勾選最適合的選項（從不，不常，經常，總是）。

在這堂課…

1. 當我有疑惑時，面授老師會花時間回答我。

□從不 □不常 □經常 □總是

2. 面授老師會協助我尋找問題之癥結。

□從不 □不常 □經常 □總是

3. 面授老師總能及時回答我的問題。

□從不 □不常 □經常 □總是

4. 面授老師對我的作業給予寶貴的意見。

□從不 □不常 □經常 □總是

5. 面授老師能適當地解決我的疑問。

□從不 □不常 □經常 □總是

6. 面授老師鼓勵我參與課程相關活動。

□從不 □不常 □經常 □總是

7. 我很容易能聯絡到面授老師。

□從不 □不常 □經常 □總是

8. 面授老師對我的作業能同時給予正面和反面的意見。

□從不 □不常 □經常 □總是

在這堂課…

9. 我有和其他同學互動。

□從不 □不常 □經常 □總是

10.我在做作業時會參考其他同學的作法。

□從不 □不常 □經常 □總是

11.我會和其他同學分享資訊。

□從不 □不常 □經常 □總是

12.我會和其他同學討論我的看法。

□從不 □不常 □經常 □總是

13.在課堂活動中, 我會與其他同學合作。

□從不 □不常 □經常 □總是

14.團隊(分組)活動是我學習的一部分。

□從不 □不常 □經常 □總是

在這堂課…

15.我能把我所學和校外生活相結合。

□從不 □不常 □經常 □總是

16.我能自由的選擇我有興趣的研究課題。

□從不 □不常 □經常 □總是

17.我能將我的學識應用於課堂之外的活動。

□從不 □不常 □經常 □總是

18.我能將日常經驗應用在課堂上。

□從不 □不常 □經常 □總是

19.我能將課堂上的作業與校外生活相連結。

□從不 □不常 □經常 □總是

20.我能學到對社會動態的掌握。

□從不 □不常 □經常 □總是

21.我能在學習中運用課外的經驗。

□從不 □不常 □經常 □總是

以下項目是有關您對遠距教學的滿意度

22.遠距教學的方式能勾起我的學習意願。

□從不 □不常 □經常 □總是

23.我比較偏好遠距教學。

□從不 □不常 □經常 □總是

24.遠距教學讓我學習意志高昂。

□從不 □不常 □經常 □總是

25.我花在遠距教學上的時間是值得的。

□從不 □不常 □經常 □總是

26.我很享受這種有距離的學習方式。

□從不　□不常　□經常　□總是

27.我期盼這種有距離的學習方式。

□從不　□不常　□經常　□總是

28.如果所有的課都是透過遠距教學的模式, 我會比較享受學習的樂趣。

□從不　□不常　□經常　□總是

29.我對目前所接受的遠距教學感到滿意。

□從不　□不常　□經常　□總是

三. 個人基本資料

(1)您出生於民國_____年_____月。

(2)您的性別是

☐ 男性　　☐ 女性

(3)就讀空中大學前，您的最高學歷是

☐ 小學　　☐ 四技
☐ 中學　　☐ 二專
☐ 高中　　☐ 技術學院、大學
☐ 高職　　☐ 碩士
☐ 五專　　☐ 博士

(4)工作狀況

☐ 已經退休
☐ 半退休，請說明_____
☐ 尚未退休
☐ 其他，請說明_____

(5)在空中大學裡，您的學生類別是

☐ 全修生　　☐ 選修生
☐ 其他，請說明_____

(6)在空中大學裡，您所選讀的科系

☐ 人文學系　　☐ 生活科學學習
☐ 社會科學系　　☐ 管理與資訊學系
☐ 商學系　　☐ 公共行政學系
☐ 尚未決定

Appendix G

IRB-approved Informed Consent

Title of Project:	Motivations of Older Adults Participating in Distance Education: A Study at the National Open University of Taiwan **THE PENNSYLVANIA STATE UNIVERSITY**
Principal Investigator:	Jr-Shiuan Liang 314 Keller Building University Park, PA 16802 (814) 867-7801; jul103@psu.edu 011-886-6-2382438
Advisor:	Derek C. Mulenga 310C Keller Building University Park, PA 16802 (814) 863-3492; dcm10@psu.edu

1. Purpose of the Study: The purpose of this study is to explore the reasons expressed by older adult learners participating in distance educational programs. Also of interest are the relationships of older adult learners' reasons for participation between their socio-demographic characteristics, their opinions and satisfaction with the distance learning environment.

2. Procedures to be followed: You will be asked to answer a survey. The survey includes questions about some demographics and possible reasons for participating in a distance education programs, and your opinion of the distance learning environment.

3. Discomforts and Risks: There are no risks in participating in this research beyond those experienced in everyday life. Some of the questions are personal and might cause discomfort.

4. Benefits: Your participation will help us to increase our knowledge about older distance learning population in Taiwan. This information might help better plan the programs and pave ways to elder education in the future.

5. Duration: It will take about 15-20 minutes to complete the questions.

6. Statement of Confidentiality: The survey does not ask for any information that would identify who the responses belong to. The Office for Research Protections and the Social Science Institutional Review Board may review records related to this project. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared because your name is in no way linked to your responses.

7. Right to Ask Questions: You can ask questions about the research. Contact Jr-Shiuan Liang at (06) 238-2438 with questions. If you have question about your rights as a research participant, contact the Pennsylvania State University's Office for Research Protections at (814) 865-1775.

8. Voluntary Participation: Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer.

You must be 18 years of age or older to take part in this research study.

Completion and return of the survey implies that you have read the information in this form and consent to take part in the research. Please keep this form for your records or future reference.

This consent document (IRB#21131) was reviewed and approved by the Social Science Institutional Review Board on 06/13/05; it will expire on 05/29 /06 (JKG).

VITA

Jr-Shiuan Liang

Education

2002–2006	Ed.D. in Adult Education, The Pennsylvania State University, University Park.
2000–2002	M.Ed. in Adult Education, The Pennsylvania State University, University Park.
1995–1999	B.S. in Agricultural Extension, National Taiwan University, Taipei, Taiwan.

Professional Experience

2002–2004	Graduate Assistant, Adult Education Program, The Pennsylvania State University, University Park.
	Student Leadership Committee, Dept. of Learning and Performance Systems, The Pennsylvania State University, University Park.
2002	Intern, The Gerontology Center, Pennsylvania State University
1999–2000	Administration Assistant, Wen-Shun Industrial Corp., Tainan, Taiwan.

Awards/Honors

2004–2005	Floyd B. Fischer Graduate Fellowship in Adult Education
	Lavanda P. Muller Graduate Fellowship in Education
2002	Burdett E. Larson Graduate Fellowship
	Rose Drexel Award in Education
1999	Industrial Association Scholarship, Tainan, Taiwan