LEARNING STRATEGY PREFERENCES OF INTERNATIONAL GRADUATE STUDENTS AT OKLAHOMA STATE UNIVERSITY

By

NEILL FORD ARMSTRONG

Bachelor of Arts
Oklahoma State University
Stillwater, Oklahoma
1978

Master of Science
Oklahoma State University
Stillwater, Oklahoma
1980

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF EDUCATION
December, 2001

LEARNING STRATEGY PREFERENCES OF

INTERNATIONAL GRADUATE STUDENTS

AT OKLAHOMA STATE UNIVERSITY

Thesis Approved:

Gary J. Conti
Thesis Adviser

Robert E. Nolan

Scott E. Segall

Nadine F. Olson

Timothy J. Pettibone
Dean of the Graduate College

ACKNOWLEDGEMENTS

This process, for which the realization of this study signals the completion, has been transformative in nature. As with most transformative experiences, the changes wrought have been intensely personal, yet, unattainable without the friendship, guidance mentoring and love of many exceptional and wonderful people. It would be, truly, an impossibility to name and personally thank all those who constitute the body of effort which allowed me to achieve what I surely would have never accomplished on my own. To all those people who selflessly, graciously, lovingly and sometimes unknowingly, contributed their time, thoughts, reflections and experiences toward the unfolding of my path, thank you.

I am uncommonly indebted to Dr. Gary Conti. Through his wisdom, approaches to learning and teaching, guidance, and most especially, his unwavering example as an effective adult educator, I understand the challenges of our field. Likewise, without his facilitation and friendship, this study would not have reached fruition.

I wish to thank Dr. William Segall profoundly. He not only mentored and befriended me in exemplary fashion, but he allowed me to work and teach in an environment that was enormously rewarding and challenging.

I am extremely thankful for the insights, suggestions, and friendship extended by Dr. Bob Nolan and Dr. Nadine Olson. More concerned and attentive committee members could not be found. My debt to them is great.

I am forever beholden to my mother, Jane, and my father, Neill, who have forever demonstrated unconditional love and allowed me to experience unparalleled freedom my entire life. Through them my life has been blessed and whatever small goodness I may yet accomplish it will be attributable to their touch.

Most of all, I must thank Jody Ann, the love of my life, my wife and dearest friend, for allowing this singular experience to occur. Her task has been for greater than mine and the beauty of our children, Hute, Aelee and Kiet, attest to the measure of her work. May our life as a family be enriched by our shared accomplishment.

TABLE OF CONTENTS

Chapter Page

LIST OF TABLES

CHAPTER I

INTRODUCTION

This study linked immigrants, minorities, foreign-born citizens, and international students studying at North American higher education institutions. The conceptual connection binding these particular groups was that they shared unique attributes related to ethnic and cultural differences and experiences in contrast to America's majority Euro-American population. An underlying intent of this investigation sought to examine how adult education may best respond to the adult learning needs of an increasingly diverse society.

The Demographic Transformation of America

With the passage of the Immigration and Nationality Act of 1965, the restrictive provisions of the national origin quota system were discontinued thereby eliminating immigrant preference based upon race, sex, nationality, place of birth, or place of residence, except as provided by law. An obvious consequence of the 1965 law has been a notable increase in the diversity of newcomers to America. "Between 1980 and 1990 nearly nine million legal immigrants arrived in this nation. With the exception of the decade between 1900 and 1910, this is the highest number in U.S. history. . .at present, more than 20 million U.S. citizens,

or more than one in twelve, are foreign born" (Miller & Miller, 1996, pp. 67-68).

> Between 1966 and 1997 more than 23 million immigrants arrived in the United States. The percentage from all of Europe hovers around the 15-17 percent mark; Asia (including the large numbers of refugees from countries like Vietnam and Cambodia) now accounts for roughly 37 percent of all immigrants, and Latin America and the Caribbean produce another approximately 40 percent of all U.S. immigration (Fernandez, 2000, p. 19).

The closing of the 20th century witnessed a profound and ongoing demographic transformation in America. The country had evolved from a predominantly white, European population to a society characterized by ever-increasing diversity. This relatively new multicultural and multiethnic milieu poses unique challenges and opportunities for the nation. American educational institutions and agencies, at all levels, are experiencing the effects of unprecedented diversity. This ongoing demographic phenomenon has significant implications for the teaching and learning processes.

Current projections suggest that immigration will continue to add one million people annually. According to Census Bureau estimates, those immigrants will be comprised of approximately 468,000 Hispanics and 229,000 Asians, as well as 161,000 non-Hispanic whites and 93,000 non-Hispanic blacks (Riche, 2000).

The proportion of minorities in the U.S. population is expected to rise from twenty-eight percent in 1999 to forty-seven percent by 2050. Hispanics will constitute nearly fifteen percent of the population in 2000 and nearly twenty-five percent by 2050. According to Riche, "By 2060, non-Hispanic whites are projected to account for less than one-half of all Americans. By 2100, non-whites and Hispanics are projected to make up sixty percent of the U.S. population, with Hispanics alone accounting for thirty-three percent (p. 14).

Cassara (1990) submits that:

> There is a new urgency to meet the needs of the ever-increasing numbers of newly arrived minorities in the United States, as well as the continuing needs of American Indians and Blacks. Will it be possible for these people to become fully functioning members of their communities, and nevertheless retain their prized cultural distinctiveness? Failure in this regard may well lead to increasing polarization with its inherent dangers (p. 1).

The field of adult education has an historical relationship with America's chain of immigration, having undertaken a vital role in Americanization programs for thousands of new immigrants who flooded into the country during the era of industrialization. Subsequently, immigrants and refugees have continued to benefit from adult literacy and basic education opportunities from programs that include adult basic education (ABE) and

English as a Second Language (ESL). Now, in the context of America's expanding population of ethnically and culturally diverse immigrants and citizens, adult educators are once again challenged. "The gap between the educational achievements of the majority population and those of most minorities is widening at an alarming rate. Projected growth trends indicate that the disparities will continue to increase at unprecedented rates" (Briscoe & Ross, 1989, p. 584). Because minority adults are disproportionately represented among the ranks of unemployed adults, adults with low income levels, and high school non-completers (Gross, 1981; Reder, 1985), they are far less likely to participate in adult education programs (Briscoe & Ross, 1989). Therefore, it is imperative that adult training and educational opportunities be as attuned as possible to not only the perceived learning needs of diverse populations, but also to the culturally distinct learning styles and perspectives of these populations, in order to facilitate their achievement of a sense of empowerment necessary to ameliorate their status within society.

The overwhelming majority of the nation's new immigrants (83-85%) are composed of non-European peoples (Fernandez, 2000). Clearly, adult education learning opportunities offer great potential for enhancing this

population's successful participation in U.S. society. An essential component to this process is recognition of the role that individual differences play in the teaching and learning processes, to include learning strategy preferences and cultural variability. Culturally sensitive instructional strategies and methodologies that are compatible with specific dimensions of cultural variability can only serve to add relevance and effectiveness to programs that are increasingly seen as vital to societal well-being.

Martin and Midgley (1994) stress that a critical issue for the United States in the 21st century is the question of how these newcomers should be integrated into U.S. society. A fundamental challenge in this regard pertains to the creation of worthy employment opportunities and a promising future for all Americans. Key to this challenge is the upgrading of skills and the education of minorities, including new immigrants, in order for the United States to continue to compete in the global economy and to insure the continued congruous functioning of U.S. society. How, then, should schools, institutions, and educational agencies respond to best serve the needs of an increasingly diverse citizenry?

Immigration

Immigration is the movement of people from one country to another for the purpose of resettlement. Movement of this nature is voluntary and implies personal choice. Typically, a person becomes an immigrant out of a desire to attain something better, to improve the quality of his or her life. Immigrants arrive in their new country with the intention of remaining there permanently. Large scale immigration is an especially modern phenomenon, applicable primarily to human movement in the 19th and 20th centuries (Scott, 2000). The primary factor behind the movement of immigrants is the issue of differences - "differences in resources and jobs, in demographic growth, and in security and human rights. These differences are widening, thus increasing potential migration" (Martin & Widgren, 1996). The World Bank calculates that the gap between average incomes in the richest and poorest countries was approximately eleven to one in 1870, thirty-eight to one in 1960, and fifty-two to one in 1985 (World Bank, 1995, 9).

America is a nation of immigrants. Over 20,000 years ago the first American immigrants began arriving. These people were wanderers and hunters, who, with their families, followed animal herds from Asia to North America across a land bridge where the Bering Strait is today.

From that distant time, through the "discovery" of the Americas by Europeans and up to the current moment, the process of immigration to America continues. The United States accepts more immigrants than any other country; in 1990, the U.S. population included nearly 20 million foreign-born persons (USIA, 1997). In addition to those immigrants who have arrived in the U.S. legally, in conformance with U.S. immigration law, the U.S. Immigration and Naturalization Service estimates that approximately five million people are living in the United States without permission, and the number is growing by about 275,000 a year (USIA, 1997).

The daily arrival of almost 3,000 foreigners hoping to make the U.S. their permanent home, insures that the phenomenon of immigration is destined to remain a major demographic, economic, and political issue in the United States well into the 21st century. This perspective is especially meaningful in that today's immigrants differ from the majority of American citizens in their ethnic origins and in their educational and skills background. Earlier waves of immigrants were primarily European, but today's immigrants arrive mostly from Latin American and Asian countries. Moreover, in contrast to the predominantly middle class status of most American

citizens, "today's immigrants tend to be bunched near the extremes of the education and income spectrum: whether professionals or unskilled workers, they tend to reinforce other factors promoting income inequality" (Martin & Midgley, 1994, p. 5).

Minority Populations

In the course of the 20th century, the United States has undergone an historic transformation. The country has changed from a predominantly white population engrained in Western culture to a highly diverse society comprised of an aggregation of racial and ethnic minorities. At the beginning of this century, the U.S. population was 87 percent white (Pollard & O'Hare, 1999). With the closing of the century, non-Hispanic whites accounted for less than 75 percent of the total population. Pollard and O'Hare (1999) estimate that by the middle of the 21st century, non-Hispanic whites will comprise a slender majority of Americans, while Hispanics may account for almost one-fourth of the U.S. population. Moreover, Blacks, Asians, and American Indians together will make up nearly one-fourth of the population. In this context, the term "minority" will likely have a very different meaning in the future.

At this time, the term "minority" usually refers to four major racial and ethnic groups: African Americans, American Indian and Alaska Natives, Asians and Pacific Islanders, and Hispanics. The growth of these populations is exerting a profound change in the ethnic make up of the country's schools, workplaces, and neighborhoods. Furthermore, it is creating a new multiracial and multicultural heritage in the United States.

As we continue into the 21st century, governments at all levels, as well as educators and educational institutions, are increasingly confronted by the new realities of America's minority populations. Adult educators, in particular, are uniquely positioned to influence the successful integration of disparate minority groups into the fabric of American society. In this post-industrial era, lifelong learning is a reality that applies to all segments of the population, to include, in transparently vital ways, the nation's burgeoning minority citizenry, a portion of whom are culturally diverse immigrants and refugees, arriving daily in search of a better life.

Culture

Because of the United State's changing demographic profile, educators must consider the influences of diverse

cultural backgrounds, experiences, and perspectives, and how those elements impact the learning environment. Without thoughtful consideration of cultural differences, the consequences of the teaching-learning processes are certain to be diminished. A multicultural society demands a heightened sensitivity towards those diverse segments of its population wherein each individual is viewed as distinctly molded by some group's way of life.

Concerns with cultural issues pertain primarily to the nation's ability to successfully integrate diverse components of the population into a harmonious framework of citizenship (Marcus, 1992). This notion has important learning implications. The various processes of education around the world have been and continue to be greatly influenced by social and cultural environments. The distinct approaches to educational processes and their underlying philosophical assumptions are presumed to be as diverse as the myriad assortment of cultures and ethnic groups distributed around the globe.

The notion of culture is complex. We are surrounded by culture. "It is personal, familial, communal, institutional, societal, and global in its scope and distribution" (Banks & Banks, 2001, p. 31). Yet, because of culture's ubiquitous nature, it becomes virtually

invisible. In this sense, culture tends to drift in and out of our conscious awareness. Culture may be viewed as the recognition of human differences in a broad sense.

Adult Learning

The education and training of America's culturally distinct populations, be they historically recognized minority groups, recently welcomed foreign-born citizens and residents, or new immigrants and temporary visitors, has become a vital concern for the nation's well-being (Cassara, 1990). Much of the responsibility for the successful integration of America's minorities into mainstream society falls to the field of adult education.

A fundamental component of adult learning stems from the advancement of the concept of andragogy articulated by Malcolm Knowles (1970). This theory is premised on four vital assumptions about adult learners. Those assumptions are: 1) adults are increasingly self-directed; 2) adults accrue a vast reservoir of experience that facilitates the learning process for themselves and others; 3) adults' readiness to learn is increasingly related to ongoing life events; and 4) adults seek prompt application of acquired knowledge and consequently, develop a problem-centered orientation (Knowles, 1970, p. 39). The amplification of andragogical theory has exerted a profound impact in the

way adult educators understand and work with adult learners (Merriam & Bockett, 1997).

Knowles continued to support the position that the ultimate determination of the learning experience is dependent upon the learner. "When people have the opportunity to learn by taking some initiative and perceiving the learning in the context of their own life situations, they will internalize more quickly, retain more permanently, and apply more confidently" (Knowles, 1992, p. 11).

Brookfield (1986) supports the subsequent reflection of andragogical theory by Knowles (1980) wherein andragogy is viewed as simply another set of assumptions about learners rather than an empirically based theory of learning. In this context, Brookfield asserts that the facilitation of learning "is a transactional encounter in which learner desires and educator priorities will inevitably interact and influence each other" (1986, pp. 97-98). Furthermore, Brookfield (1986) affirms that the experiences adults bring to the learning environment represent a significant resource for curriculum development and learning activities and that the critical reflection of these experiences, "along with the collaborative interpretation and exchange of such experiences, may

constitute the most significant forms of adult learning in which individuals can engage" (p. 98).

Smith (1982) offers six generally accepted observations about learning and stresses their relevance to adult learning. These six observations are (a) learning is a lifelong endeavor and the act of living is equated to learning; (b) learning is an intimate process, one that occurs naturally; (c) inherent in the process of learning is the notion of change - each learning experience implies gain or loss, "'unlearning' is often involved, especially in adulthood" (p. 36); (d) learning and human development are intrinsically bound together; (e) learning is intricately linked to experience as one interacts with one's environment. An adult's past experiences serve as both a potentially valuable resource for learning as well as an obstacle to learning; (f) there also exists an intuitive component to learning, that is, knowing can also be visceral - sometimes, through one's subconscious, critical insights may be gained allowing the learner to arrive at his or her own understanding via subtle, internal processes (Smith, 1982, pp. 35-36).

Smith (1988) expands upon the nature of adult learning by presenting six optimum conditions for learning. "Adults learn best when these conditions are met" (p. 47): (a)

adults should sense the necessity for learning and likewise be allowed input in the learning process; (b) the adult's past experience should be considered in the learning process and potentially serve as a resource for new learning; (c) the object of a teaching/learning transaction should, ideally, be linked to learner's developmental transformations and real life obligations; (d) the learner's level of autonomy should correspond to the mode or methodology in utilization for the particular learning experience; (e) learning should occur in a climate that reduces anxiety and encourages freedom for experimentation; (f) individual learning styles should be considered and factored into each learning project (Smith, 1982, pp. 47-49).

Empowerment

Empowerment incorporates learning from the social environment in order to comprehend and reckon with the political realities that one encounters in life's social and economic arenas (Fellenz & Conti, 1989). As such, empowerment is the ultimate goal of learning in the social environment (p. 28). Crucial to this notion of empowerment, Freire (1970, 1993) stresses the concept of praxis. In their quest for liberation, oppressed peoples should not rely upon intellectual discovery alone but

rather incorporate action, followed by critical reflection, followed by further action. "At all stages of their liberation, the oppressed must see themselves as women and men engaged in the ontological and historical vocation of becoming more fully human. Reflection and action become imperative. . .reflection - true reflection - leads to action" (pp. 47-48). Freire supports problem-posing education as a means of empowerment (1970, 1993). Problem-posing education, based on creativity, serves to stimulate true reflection and consequently, action upon reality, "thereby responding to the vocation of persons as beings who are authentic only when engaged in inquiry and creative transformation" (Freire, 1970, 1993, p. 65).

Brookfield (1986), in his discussion of self-directed learning, stresses that autonomy occurs for adult learners when they attain an awareness of their singularity and a mindfulness of the personal power inherent in themselves. Such awareness empowers individuals to perceive a scope of alternative possibilities and thus sets the stage for learning that is imbued with a sense of personal meaning. A praxis of thought and action is demonstrated when . . ."adults come to appreciate the culturally constructed nature of knowledge and values and when they act on the basis of that appreciation to reinterpret and recreate

their personal and social worlds" (p. 59). Empowerment, then, in adult learning, implies that informed adults take responsibility for their own actions and as a consequence participate in their own learning by engaging in a praxis of thought and action that leads to transformation of personal and social circumstance. As a result of recent trends in adult education, the new image of the adult learner is that of an empowered learner (Fellenz & Conti, 1989).

Learning Strategies

The research domain of adult education has evolved from a focus upon a field of practice to a field of study. A significant consequence of this shift has been the heightened emphasis on learning how to learn which in turn has stimulated research in the area of learning strategies. Learning strategies are the techniques or skills that an individual elects to use in order to accomplish a learning task (Fellenz & Conti, 1989, p. 7). These strategies vary by individual and by learning objective, and are typically so habitual that they may be given little thought, while on other occasions they may be allotted great deliberation before a specific strategy is chosen to meet a particular learning task (Conti & Kolody, 1999). Learning strategies are frequently confused with learning styles. Learning

styles are cognitive, affective, and physiological traits that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment (Keefe, 1982, p. 4). Learning style reflects the way in which information is usually processed in a learning environment. Learning style also influences the learner's choice of setting for learning activities, the subject or area of focus, and the way in which people choose to approach a learning situation (Conti & Welborn, 1986). These characteristics are elements of an individual's genetic composition, but are also quite likely illustrative of the totality of experiences that have impacted the learner in his or her lifetime (Fellenz & Conti, 1989). Some researchers (Anderson, 1988; Bell, 1994; Brookfield, 1990; Macias, 1989) suggest that learning styles may be partially culturally based. Learning strategies, in contrast, are perceived as contextual and preferential, determined by the learner's prior learning experiences and prevailing level of involvement in a learning situation. Thus, learning strategies may vary by task, while learning styles are constant and inherent (Conti & Fellenz, 1994, p. 64).

Research in the area of learning strategies evolved from the enduring interest in study skills. However,

unlike those skills devoted to facilitation of memory improvement or note taking, learning strategies have a purpose engendered by an awareness of learning processes (Nisbet & Shucksmith, 1986). This awareness allows the learner to assume greater control over those processes and, ultimately, provides the opportunity for learners to take responsibility for their own learning (pp. vii-viii). "Learning strategies tend to focus on solving real problems involving metacognitive, memory, motivational, and critical thinking strategies" (Fellenz & Conti, 1989, p. 4). A great deal of the research pertaining to learning strategies of North American adult learners has focused upon the use of the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) (Conti & Kolody, 1998). SKILLS measures learning strategies in the five areas of metacognition, metamotivation, memory, critical thinking, and resource management.

In order to effectively make use of the findings from the SKILLS research, the Assessing the Learning Strategies of AdultS (ATLAS) instrument was developed (Conti & Kolody, 1996). ATLAS employs a flow-chart design in order to determine the learning strategy category designations of Navigators, Problem Solvers, and Engagers. The ATLAS instrument requires approximately two minutes for

completion. As a result of the development of ATLAS, adult learners' learning strategy preferences may be easily identified, allowing teachers and instructors to gain useful insights in the facilitation of adult learning. Gaining such information before instructional activities begin allows the instructor to choose those methods deemed to possess the greatest potential for effectively facilitating the teaching-learning process (Conti & Kolody, 1998b, p. 137). Though methods may require adjustment once the learning activity has been initiated, knowing beforehand the learning strategies and characteristics of one's learners increases the likelihood that appropriate methodologies for commencing the learning activity have been selected (p. 137).

Problem Statement

American society continues to grow increasingly diverse. This diversity emanates from several sources, primarily immigration and expanding minority populations. A key area for concern in the field of education in the 21st century is the notion of learning and its relationship to individual differences.

Adult education practitioners have examined the concept of learning strategies. However, the knowledge that has been gained in the area of learning strategies has

been based upon studies of adult learners from Canada and the United States. This knowledge has been viewed as generally applicable to all people in U.S. society, regardless of ethnic origin or cultural background. Of fundamental interest to this inquiry is the degree to which learning strategies are culturally specific. How, for example, might cultural context and experience influence the selection of learning strategy preferences? One area where this and related issues may be readily examined is that of higher education.

International student populations at American universities and colleges represent an extraordinarily diverse array of nationalities, ethnicities, and cultures. They exemplify global diversity in a highly concentrated figuration. Moreover, this population is not overly dissimilar in profile to recent and current waves of immigration flowing into the United States at the approximate rate of 3,000 new arrivals per day. Such a tightly concentrated grouping of cultural diversity presents an uncommon opportunity for investigation of multiple aspects of cultural differences and their influence on the learning environment.

Enhanced understanding of the ways culturally diverse adults learn is vital to the well-being of the United

States. As the U.S. becomes increasingly multiethnic, the successful integration of foreign-born and diverse peoples is integral to the maintenance of our democratic society.

Purpose

The purpose of this study was twofold. One intent was to identify and describe the learning strategy preferences profile of international graduate students enrolled at Oklahoma State University, Stillwater campus, in the spring semester, 2001. A concomitant intent was to examine international graduate students' experiences within a North American, higher education learning environment, in particular, how a culturally distinct instructional and academic environment influenced international students' learning processes and applications of learning strategies. Aspects of the learning environment which were explored included students' approaches to learning and instructor conduct perceived by learners as facilitative of or hindering to learner success.

Research Questions

The research questions which were addressed in this study are:

1. What is the learning strategy preferences profile for international graduate students enrolled at Oklahoma State University?

2. How do international graduate student responses on ATLAS compare to the responses of those students used to create ATLAS?

3. Do learning strategies appear to be similar across various cultures?

4. How do various learning strategy groups describe their approaches to learning?

5. What conduct of American instructors do international learners perceive as facilitating or impeding the learning process?

6. What barriers to learning do international graduate students report having encountered at Oklahoma State University?

7. Does culture factor into international graduate students' use of learning strategies?

The learning strategy preferences profile was assessed by the participants' completion of ATLAS. Participant responses were compared to the database comprised of SKILLS responses using chi square. Participants' perceptions of how instructor conduct and instructional methodology has facilitated or impeded their learning experiences were attained through individual interviews.

CHAPTER II

REVIEW OF THE LITERATURE

America is changing. The country has evolved from a predominantly white, European population to a society characterized by ever-increasing diversity. This relatively new multi-cultural and multiethnic milieu now poses unique challenges and opportunities for the nation. American educational institutions and agencies at all levels are experiencing the effects of unprecedented diversity. This ongoing demographic phenomenon was significant learning implications for the teaching and learning processes.

In the context of America's expanding population of ethnically and culturally diverse immigrants, citizens, and visitors, adult educators are challenged to meet the perceived learning needs of diverse populations in their bid to facilitate these groups' assimilation into the nation's democratic, economic, and social fabric. An essential component of this process is the recognition of the broad spectrum of individual differences, to include learning strategy preferences and cultural variability, and the role these differences play in the learning environment.

Adult Education

> Education is life - not a mere preparation for an unknown kind of future living. . .The whole of life is learning, therefore education can have no ending. This new venture is called adult education - not because it is confined to adults but because adulthood, maturity defines its limits (Lindeman, 1926, p. 6).

The field of adult education is characterized by a seemingly limitless aggregation of activities, agencies and programs. It is the focus on the learner, or more precisely, the adult as learner, that unifies a vibrantly diverse, ostensibly disparate field (Merriam & Caffarella, 1999). Merriam and Cafferella further assert that, "It is also the nature of adults as learners and the distinguishing characteristics of the adult learning process that differentiate adult education from other kinds of education" (p. xi).

A universal definition of adult education has not been truly formulated, this is understandable considering the almost limitless spectrum of activities and agencies that facilitate adult learning. In this sense, it would be an extremely uncommon juxtaposition of words and thoughts that could capture the broad range of adult educational undertakings. With this caveat in mind, the following definition of adult education is submitted:

> A process whereby persons whose major social roles are characteristic of adult status undertake systematic and sustained learning activities for the purpose of bringing about changes in knowledge, attitudes, values or skills (Darkenwald and Merriam, 1982, p. 9).

Adult education is associated with a number of other terms as well. Those referred to most often include: lifelong learning, continuing education, independent learning projects, community education, andragogy and conscientization (Courtney, 1989). The common thread that links these various designations is learning. And learning, especially adult learning, seldom occurs "in splendid isolation from the world in which the learner lives;. . .it is intimately related to that world and affected by it" (Jarvis, 1987, p. 11). Due to the rapid pace of change in today's post-industrial society, a key role for adult education practitioners is determining how to respond to the amplified and ever changing demands imposed by a technological, information-oriented age. As such, Belanger (1996) views the motto of adult education to be 'lifelong learning.' In response to such key factors as changing demographics, a globalized economy, and constantly evolving technology, adult education has been "variously divided into formal, nonformal, and informal learning activities" (Coombs, Brosser, and Ahmad, 1973). Formal learning is assumed to take place in educational

institutions, typically leading to academic credit or degrees. Nonformal learning indicates those organized activities that occur outside of educational institutions. Informal learning denotes those learning experiences derived from everyday living.

Basic functions for those engaged in the field of adult education are administration, program development, counseling, and instruction (Darkenwald & Merriam, 1982). Historically, adult education has emanated in response to specific societal needs and, as suggested by Rachal (1989), is directly related in symbiotic fashion with the social environment from which it springs. An integral role of adult education has been and continues to be the improvement of individual's lives, as well as improving society. Adult education is capable of promoting change, in addition to responding to it. It is this ameliorative role of adult education, "its responsibility to make things better" (Rachal, p. 4), that is perceived as the field's most enduring trademark. As stated so clearly by Knowles (1970), "The primary and immediate mission of every adult educator is to help individuals satisfy their needs and achieve their goals" (p. 23).

Due to the dramatic changes occurring in the demographic structure of our society, specifically the

growth of that segment of the population over the age of sixty-five and the increasing levels of cultural and ethnic diversity, coupled with the effects of an expanding global economy and the incessant pace of technological advances, the field of adult education is poised as the educational frontier of the 21st century. In order to keep up with societal advancements modern man must locate him or herself in a state of perpetual learning. This new reality has evolved to make adult education a consequential component in contemporary social progress.

Of particular significance to this investigation was the expanding cultural and ethnic diversity of America's population. By the year 2050, minorities are expected to account for almost 47 percent of the overall population (U.S. Bureau of the Census, 1995). The implications of this and related trends are monumental, for U.S. society in general and adult education in particular (Merriam & Caffarella, 1999). Minority adults "are disproportionably represented among the unemployed, the low-income stratum, and the less educated. These characteristics are correlated with low rates of participation in organized adult education" (p. 9). Briscoe and Ross (1989) further emphasize the gravity of the issue:

> The consequences to North American society of leaving this resource undeveloped are great. It is likely that young people who leave school early will never participate fully in society or in the decision-making processes of government, and that they will neither enjoy the benefits of good health, nor experience the upward mobility needed as adults to make them full contributors and partners in shaping and participating in the larger society. One cause of the problem is educational institutions not responding quickly enough to change, even though educators are aware of the impact they can have on societal systems (p. 586).

Moreover, as submitted by Naisbitt and Aburdene (1990), the expanding cultural and ethnic diversity of American society has been identified as a megatrend for the 21st century. The field of adult education, due to its orientation towards learners, is uniquely poised to respond to the needs of the nation's diverse populations (Merriam & Caffarella, 1999).

Principles of Adult Learning

An essential component of adult learning theory is derived from the concept of andragogy. Knowles (1970) defined the concept of andragogy as "the art and science of helping adults learn" (p. 38). This term was coined initially by adult educators in Europe who were seeking a label for an emerging theoretical model that would allow them to discuss this new model in parallel with pedagogy. Later, Knowles (1980) revised his original perspective that viewed andragogy as an empirically based theory of learning

and reflected that andragogy be regarded instead as simply another set of assumptions above learners. Nonetheless, the concept of andragogy remains an elemental feature of adult learning. The amplification of andragogical theory has exerted a profound impact in the way adult educators understand and work with adult learners (Merriam & Brockett, 1997).

Andragogy, as developed by Knowles (1980), is premised on four vital assumptions about adult learners. Those assumptions are: 1) adults are increasingly self-directed; 2) adults accrue a vast reservoir of experience that facilitates the learning process for themselves and others; 3) adults' readiness to learn is increasingly related to ongoing life events; and 4) adults seek prompt application of acquired knowledge and consequently, develop a performance-centered orientation (pp. 44-45).

Andragogical principles may be transferred and applied to the process of planning and operating educational programs. When this is undertaken, the process varies substantially from traditional curriculum planning and teaching procedures utilized in education for young people (Knowles, 1970). Knowles viewed this process as consisting of seven phases. Accordingly, the seven phases or steps of this program planning model are: 1) the establishment of a

climate conducive to adult learning; 2) the creation of an organizational structure conducive to adult learning; 3) the diagnosis of needs for learning; 4) the formulation of directions of learning (objectives); 5) the development of a design of activities; 6) the operation of the activities; and 7) the rediagnosis of needs for learning (evaluations) (Knowles, 1970, p. 54).

The advancement of the concept of andragogy has had a substantive impact in the ways that adult educators understand and work with adult learners (Merriam & Brockett, 1997). In effect, the concept of andragogy has been the dominant theme in the professionalism of the adult education field (Courtney, 1989). Brookfield (1986) adds, "This concept is the single most popular idea in the education and training of adults, in part because of and for the way in which it grants to educators of adults a sense of their distinct professional identity" (p. 91). However, even though adult educators have generally warmly received the concept of andragogy there have been some concerns raised about the notion. Two primary considerations advanced by Merriam and Brockett (1996) are (a) whether situations prevail in which children can also demonstrate self-directedness or draw upon previous experience; and (b) what occurs when an adult enters a

learning situation with little or no experience in the field of study (pp. 135-136). Brookfield (1986), too, questioned whether andragogy was a "proven theory" (p. 98). In response, Knowles (1989) later wrote that he "prefers to think of andragogy as a model of assumptions about learning or a conceptual framework that serves as a basis for an emergent theory" (p. 112).

Although significant criticism surrounds the concept of andragogy and its theoretical underpinnings, adult education practitioners persist in viewing the concept "with its characteristics of adult learners, to be a helpful rubric for better understanding adults as learners" (Merriam & Caffarella, 1999, pp. 277-278).

Self-Directed Learning

Tough's inquiries (1967, 1971) in the area of adult learning projects stimulated widespread interest in self-directed learning (Merrian & Cafforella, 1999). Tough referred to this form of learning as self-planned learning, as the focus of his work was on adults' efforts to learn. Tough determined that most adults engage in a minimum of one or two significant learning endeavors each year. Some adults were found to attempt as many as 15 or 20 major learning efforts in the course of a year, while the median number was ascertained to be eight. Tough defined a

learning project as an important, purposeful endeavor in order to acquire specific knowledge or skill, or to effect a change of some sort on the part of the learner (1971, p. 1). Furthermore, such an undertaking had to consist of a series of related episodes and should total a minimum of seven hours. A particularly salient result of Tough's study was the recognition that approximately "70% of all learning projects are planned by the learner himself" (p. 1).

Knowles (1975) expanded upon the concept of self-directed learning and, like others before him (Linderman, 1926; Bryson, 1936; & Rogers, 1969) stressed the presumption that the guiding principle of adult education should be to assist participants in becoming intrinsically motivated, self-induced learners (Brookfield, 1986, p. 18). Knowles reasoned that self-directed learning was critical for two reasons: 1) people who assumed the actuation of their own learning tended to learn more, and learned more desirably, than those who sought their learning in a more passive, reactive fashion; and 2) self-directed learning was thought to be more harmonious with human beings' innate cognitive development (1975, p. 14). A crucial conviction of Knowles' was that individual maturation should include the development of the capacity for assuming ever greater

responsibility for one's own life, that is to say, to come to be increasingly self-directing. A key rationale for this belief stemmed from Knowles's perception that common education was no longer adequate for meeting the educational needs of today's and future generations. Due to the pace of change and the quickened obsolescence of facts, information and skills, educators were entreated to shift their focus from their traditional role of disseminating knowledge to one of fostering a competency for inquiry. Moreover, Knowles emphasized that education should be viewed as a lifelong process, rather than the domain of youth. In order to keep a pace with a swiftly changing world, mankind should strive for the attainment of critical survival skills, and Knowles viewed self-directed learning as one such skill (p. 18). As opposed to teacher-directed learning, wherein the experiences of the learner are viewed as inferior to those of the teacher, and the learner brings a subject-centered orientation to the learning environment, self-directed learning involves a process "in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning

outcomes" (Knowles, 1975, p. 18). Knowles's attitude towards self-directed learning is rooted in his theory of andragogy. In this regard, Knowles favors a relatively linear approach to the facilitation of self-directed learning. Moreover, Knowles (1986) viewed the learning contract as the primary means of strengthening student self-directedness especially as its use aided students in diagnosing their own learning needs, arranging for learning activities, recognizing and choosing pertinent resources, and developing self-evaluative competency (p. 81).

Brookfield's conception of self-directed learning (1986) is less linear than the perspectives of Tough (1966, 1967) and Knowles (1975). Rather, Brookfield is more concerned with the learner's internal change and the ways which learners can come to view knowledge as relative and contextual, and understand themselves and their behavior in light of cultural constructs. With this understanding learners may reach a position where they are wholly capable of reconstructing not only their personal domains but their social realm as well. Brookfield (1986) outlined six principles of effective practice which he deemed essential for the facilitation of adult learning. These principles are: 1) participation in the teaching-learning transaction is voluntary; 2) a key characteristic of effective

facilitation is that participants respect one another's self-worth; 3) collaboration between learners and facilitators is constant and wide-ranging; 4) praxis forms the core of effective facilitation; 5) an overarching goal of facilitation is to encourage adults to develop a capacity for critical reflection; and 6) the objective of facilitation is the promotion of self-directed, empowered adults (pp. 9-11). Within the sixth principle, Brookfield elaborates upon his notion of the self-directed, empowered adult, expressing his view that such persons will come to look upon themselves as "proactive, initiating individuals engaged in a continuous re-creation of their personal relationships, work worlds, and social circumstances rather than as reactive individuals buffeted by uncontrollable forces of circumstance" (p. 11). Clearly, Brookfield's perspective of self-directed learning is critical in nature and less concerned with the more technical aspects of the development of adults' capacities for information retrieval and resource discovery. According to Brookfield, the core of self-directedness is represented by the adult's taking control of educational goal setting and developing criteria for the evaluation of learning that are distinctly meaningful to the individual (p. 19). For Brookfield, self-directed learning in adulthood involves perspective

transformation and paradigm shifts, and the capacity to reinterpret one's world view (p. 19). Brookfield's concept of self-directed learning is rooted in the idea of autonomy (p. 55) and adults' ability to effect personal as well as social change. The pinnacle of self-directed learning for adults, however, entails critical reflection of both internal and external dimensions, which implies a praxis of thought and action that greatly enhances the possibilities for both self and societal actualization.

The concept and subsequent implementation of self-directed learning may bear significant implications for foreign-born, minority populations in U.S. society. The ability of foreign-born citizens to assume additional control over their own learning may enhance the opening of a vital pathway towards attaining maximum benefit of their learning experiences in the United States. The preponderance of new immigrates to America come from countries designated as less developed, or third world (Riche, 2000). Typically, these countries exhibit a value dimension characterized by Hofstede (1980) as collectivistic. The United States, on the other hand, exhibits a value dimension characterized as individualistic (Hofstede). These two dimensions form a continuum representing "the degree to which a culture emphasizes

individual fulfillment and choice versus interdependent relations, social responsibility, and the well-being of the group" (Rothstein-Fisch, 1998, p. 10). As such, it is likely that a great many immigrants and foreign-born citizens are ill-prepared to approach the learning challenges ahead of them with the necessary degree of proactive perspective and diagnostic skill. The ability of new arrivals, and minority groups not fully integrated into mainstream American culture, to understand self-directed learning concepts and applications may greatly influence their adaption to the North American approach to individualistic learning and learning environment conduct.

Perspective Transformation

In 1978, Jack Mezirow introduced the concept of transformative learning. This theory is concerned with "how learners construe, validate, and reformulate the meaning of their experience" (Cranton, 1994, p. 22). Transformational learning focuses more on the cognitive process of learning rather than adult learner characteristics (Merriam & Caffarella, 1999). As mentioned, Mezirow's work is especially centered on the ways that adults interpret their life experiences, specifically, how adults make meaning of those experiences. Taylor (1998) defines the purpose of transformative

learning as an attempt "to explain how our expectations, framed within cultural assumptions and presuppositions, directly influence the meaning we derive from our experiences" (p. 14). How adults revise their meaning structures, based on experience, is the process that perspective transformation seek to explain. According to Mezirow (1991), meaning structures are composed of meaning schemes and meaning perspectives. Meaning schemes are the smaller components and they are comprised of "specific knowledge, beliefs, value judgments, and feelings that constitute interpretations of experience" (pp. 5-6). These are the more perceivable manifestations of our customary ways of acting and anticipating events. Changes in meaning schemes occur often. Meaning perspectives, however, are more encompassing, and provide general frames of reference, or world views, and involve "a collection of meaning schemes made up of higher-order schemata, theories, propositions, beliefs, prototypes, goal orientations and evaluations" (Mezirow, 1990, p. 2). Meaning perspectives are frequently acquired in non-discerning fashion as we move through childhood and the processes of socialization and acculturation and most often, in the course of meaningful encounters with significant adults. Mezirow (1991, p. 131) writes that meaning perspectives "mirror the

way our culture and those individuals responsible for our socialization happen to have defined various situations." As such, these perspectives become rooted in our essential nature and changing them is not common. They come to provide, therefore, a justification for much of what is logical and in this way we become dependent upon them (Taylor, 1998). Thus, meaning perspectives may validate our experiences, but in so doing they also serve to distort reality. The heart of Mezirow's theory is the change in meaning perspective, a transformed meaning perspective, that leads to the development of a new meaning structure. Often times, such development is the result of a disorienting dilemma "due to a disparate experience in conjunction with a critical reappraisal of previous assumptions and presuggestions" (Taylor, 1998, p. 14). A perspective transformation is "a more fully developed (more functional) frame of reference. . .one that is more (a) inclusive, (b) differentiating, (c) permeable, (d) critically reflective, and (e) integrative of experience" (Mezirow, 1996, p. 13). Mezirow's theory consists of three essential elements, they are: 1) centrality of experience; 2) critical reflection; and 3) rational discourse. Experience is viewed as socially constructed and therefore, it can be deconstructed and acted upon (Taylor, 1998).

Experience is the foundation for critical reflection. Rational discourse provides the vehicle wherein critical reflection and experience are engaged in order to transform meaning schemes and meaning structures. Once the processes of this model are completed, the outcome is permanent; people tend not to regress to lesser levels of understanding (1998).

Mezirow views perspective transformation as a model for adult learning. This theory offers an explanation of the way personal paradigms develop and grow. As such, Mezirow (1996) believes that fostering transformative learning is vital to the promotion of adult development. Facilitating transformative learning incorporates communicative learning which "involves identifying problematic ideas, values, beliefs, and feelings, critically examining the assumptions upon which they are based, testing their justifications through rational discourse and making decisions predicated upon the resulting consensus" (Mezirow, 1995, p. 58).

Mezirow views transformative learning as the essential component of adult education, the goal in fact, which is "to help the individual become a more autonomous thinker by learning to negotiate his or her own values, meanings, and purpose rather than uncritically acting on those of others"

(Mezirow, 1997, p. 11). Mezirow's theory emphasizes rationality in that critical reflection is fundamental for transformative learning to occur. There are several other perspectives to consider, however, in addition to Mezirow's.

Robert Boyd (Boyd & Myers, 1988) developed a theory of transformative education that is based on analytical psychology. Boyd views transformation as a process that leads to greater personality integration. The key component to this model is the process of discernment that engages both rational and extrarational elements (imagination) (Imel, 1998). Boyd's theory involves the concept of individualization, "that lifelong process of coming to understand through reflection the psychic structures that make up one's identity" (Taylor, 1998, p. 20). Unlike Mezirow, who concentrates on intellectual conflict incurred through one's relationship with culture, Boyd examines conflicts within the individual's psyche and the disentanglement of those entities that allows one to reach a transformation. Here, the emphasis is less ego-centered and more psychosocial. Rather than seeking to attain more personal autonomy, as with Mezirow, Boyd seeks to foster an enhanced interdependent relationship with society (Taylor, 1998).

Another transformative theory is offered by Paulo Freire (1970). In contrast to Mezirow, whose focus resides in personal transformation, Freire's theory is concentrated upon radical social change (Merriam & Caffarella, 1999). Personal empowerment is bound with social transformation. Through problem-posing education and dialogue, the teacher and student jointly explore their mutual reality with a goal of praxis, "the action and reflection of men [sic] upon their world in order to transform it" (1970, p. 66). Like Mezirow, critical reflection is an integral component of Freire's theory. In order for the educational process to be liberating, there must be a transformation of consciousness, what Freire calls conscientization, wherein men and women begin to perceive of themselves as subjects, capable of transforming their own reality. This conscientization is similar to Mezirow's perspective transformation in that both concepts characterize "adult learning as the process of becoming aware of one's assumptions, beliefs, and values and then transforming those assumptions into a new perspective or level of consciousness" (Merriam & Caffarella, 1999, p. 325). Although Freire's theory is innately linked to political action, his philosophy does share a key perspective with Mezirow's, that being the view that inner meaning and

cognitive constructs are essential in explaining the composition of adult learning (p. 325). Vital to both theories (Freire & Mezirow) is the notion of change, followed by action. For Mezirow, these two elements lead to personal transformation, while Freire anticipates social action to result from critical reflection.

Empowerment

Conti and Fellenz (1986) stipulate that "empowerment involves using learning from the social environment to understand and deal with the political realities of one's social and economic situation" (p. 21). Typically, the term "empowerment" is associated with forms of oppression, such as gender or racial issues, or poverty. In adult learning, it has traditionally been linked with an effort to facilitate individuals' and groups' participation in local, national and global society in an equitable and democratic fashion (Conti & Fellenz). Thus, "the ultimate goal of learning in the social environment is empowerment" (p. 21).

Miles Horton and Paulo Freire were both adult educators whose philosophies were viewed as radical by those representing the status quo or dominant group within their societies. Each of these educators endeavored to accomplish similar objectives, although they worked in

diverse environments. Their shared goals involved assisting people to improve the quality of their lives while also gaining a critical consciousness that would ultimately empower them to escape the control and oppression that had historically subjugated them (Conti, 1977).

Horton's work centered around impoverished adults in the South. In 1932 he founded the Highlander Folk School in Tennessee. Here, he and his staff employed the Highlander as an instrument for bringing together people, ideas, and resources in order to combat the oppression that engendered poverty and powerlessness. Highlander's educational philosophy focused upon the principle that people were capable of making their own decisions. Key to Horton's empowerment process was the facilitation of participants' problem-solving skills. Participants, as a group, originated, discussed, and defined problems that were relevant to them. Then, collectively, students set about the task of researching those particular issues and developing action plans that would ultimately lead to social change and the resolution of conflict. Horton and his staff contributed to the process by listening to the poor as they discussed their needs. Afterwards, the Highlander staff developed a program. If the student group

approved of that program then a formal educational plan was initiated.

Together, Miles Horton and the Highlander Folk School sought to educate poor people and "help empower them to alter the economic and political power relationship in which they find themselves" (Conti & Fellenz, 1986). The approach emphasized at Highlander is one that stresses democracy, trust, and human dignity (1986).

Paulo Freire's dialogical method for adult education was rooted in his literacy programs for Brazil's impoverished peasants. The core of his program was a pedagogy that allowed the poor to initiate participation in the political process. Through attainment of literacy via Freire's techniques the poor and dispossessed developed an expectation for change in their daily lives, an expectation that collectively, they would transform their social reality. Freire's methodology came to be known as "liberatory education".

Key to Freire's liberatory education was the notion of empowerment. This concept of empowerment was grounded in collective unity. Freire viewed education as a tool for oppression wielded by the dominating class in society. As such, education is never neutral. It either serves to promote conformity to the status quo or it may serve as a

process "for helping people deal critically with the realities of their world" (Conti, 1977, p. 39). Crucial to Freire's view of education as a tool for oppression is his concept of "banking education" wherein a teacher-centered system bestows knowledge in selected, discriminatory deposits. In this fashion, oppressed peoples are indoctrinated and facilitated in their adaptation to a state of subjugation. By development of a critical consciousness learners are empowered to more fully interpret their own problems and test their own judgments and conclusions. Moreover, learning becomes linked with action and this provides the necessary vehicle for transformation of peoples' social and political environments. Liberatory education:

> Provides a working model because it links the problem of illiteracy with broader social and political ills and because it does not propose merely educational solutions to these problems. Its hope and its promise lies in social action for change as an intended consequence of critical understanding (Heaney, 1995, p. 7).

Freire's theory of adult education focused upon radical social change - personal empowerment and social transformation as indivisible processes (Merriam & Caffarella, 1999). Through problem-posing education, Freire sought to raise the awareness of learners, which in

turn would lead to liberation through praxis, and ultimately, the transformation of their worlds.

The process of empowerment provides an expanding awareness of the social-cultural context that influences peoples' lives. . .it also offers insight towards the potential people have for transforming their society (Fellenz & Conti, 1989).

To a great extent, many immigrants and foreign-born citizens in the United States have roots in societies that have experienced oppressive, non-democratic political structures as well as widespread inequality in the educational domain. Such a background tends to engender a culturally derived role of submission and powerlessness in the face of authority, contributing to a learning disadvantage in most academic environments.

Real-Life Learning

Learning that is pertinent to an individual's daily chores of living, in contrast to those tasks assumed in the course of more formal educational endeavors, is oftentimes referred to as "real-life" learning (Conti & Fellenz, 1989). Sternberg (1990) submits that there is a difference between every day problems and academic, or school derived, problems (p. 35). In real-life conditions learners must be able to recognize and define problems for themselves.

"Real-world problems are ill-structured, not well-structured. . .Real-world problems are not decontextualized; they're contextualized" (p. 38). A relevant implication is that many of those skills gained in the school environment may not be adequate or appropriate for real-life needs. Unlike academic problem solving environments, most real-life problems have more than one correct solution and obtaining relevant information to resolve the issue is difficult in that it must be discovered by the learner. Further differences between real-life problem solving and academic problem solving involves the examination of opposing arguments and the ability to work under circumstances devoid of clear and frequent feedback. Finally, an especially salient aspect of real-life problem solving is that adults seldom work alone to resolve an issue. Academic environments stress individual problem solving and skills gained in that milieu do not adequately transfer to group settings. Sternberg asserts that "the meaningful challenge to adult educators is to help adults try to solve their real-life problems" (1990, p. 40).

Learning Strategies

A shift occurred in the field of adult education in the course of the 1970s and 1980s. This change reflected a

transference of emphasis from adult education to adult learning. With this transformation a field of study evolved with a focus on the individual learner (Fellenz & Conti, 1989, p. 1). Kidd (1983) interpreted this modification as "a paradigm shift," a "perspective transformation," a "leap in consciousness" (p. 527).

A particularly salient result of this new focus upon the learner has been an amplification of research "on helping learners to expand their learning abilities through 'learning-how-to learn' interventions" (Knowles et al., 1988, p. 166). Smith (1952) specified that "learning how to learn involves possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters" (p. 19). The concept of learning how to learn is fundamental to learning strategy preference research. The study of learning strategy preferences has evolved as a means of exploring individual differences in order to better understand how adult learners organize and undertake their self-directed learning projects.

Learning strategies are the particular techniques or distinctive skills that an individual learner selects to use in order to accomplish a learning task (Fellenz & Conti, 1989, p. 7). McKeachie (1978) observes that learning strategies have been developed by learners for use

in both formal and informal learning circumstances. Learning strategies are concerned with the ways learners approach specific learning situations (Rule & Gruppen, 1988), they are external behaviors generated by individuals' experiences with learning and are activated in order to realize a distinct learning objective. Moreover, learning strategies are perceived as a matter of individual preference, developed by people throughout the course of their lives and are known to vary by task (Fellenz & Conti, 1993, p. 4). The ability to select the appropriate strategy, and to adapt it where necessary, is a significant component of the definition of good learning (Nisbet & Shucksmith, 1986, p. vii). Strategies are different than skills in that strategies have a purpose. . .Understanding the strategies of learning and gaining self-knowledge, in the form of awareness of those processes we employ in learning, helps us to control such processes and affords us the opportunity to assume responsibility for our own learning (pp. vii-viii).

An expanding body of research supports the claims that a major difference between effective students and ineffective students is their understanding and utilization of productive learning strategies. Mayer (1987) suggests that student's choice of learning strategies impacts their

academic achievement and McKeachie (1978) maintains that a learner's efficient selection of learning strategies "usually results in greater learning" (p. 3). Hill's investigation (1992) supports two major themes: (a) the selection of learning strategies for a particular situation is influenced by numerous factors which in turn impact the quality and end product of the learning experience; and (b) students can be taught learning strategies that will assist them to approach learning tasks more efficiently and effectively, thereby enhancing their prospects for success (p. 27).

The Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) was developed to discover the learning strategies adult learners prefer to employ in real-life situations. SKILLS was developed at the Center for Adult Learning Research at Montana State University (Conti & Fellenz, 1991). SKILLS is composed of a series of six scenarios that depict real-life learning conditions involving diverse levels and forms of learning. Each scenario is comprised of 15 questions framed to assess how likely a learner is to use specific learning skills or techniques to resolve that particular learning scenario. SKILLS respondents are directed to select four of the scenarios which are deemed most relevant to them. They are

then requested to indicate which 5 of the 15 strategies delineated by the questions would they "definitely use," "probably use," or "not likely use" to complete the particular project identified in each scenario. SKILLS conceptualizes learning strategies as consisting of five constructs. Those constructs are: 1) Metacognition; 2) Metamotivation; 3) Memory; 4) Critical Thinking; and 5) Resource Management (Fellenz & Conti, 1993).

Metacognition

Metacognition is usually perceived as thinking about the process of thinking (Fellenz & Conti, 1989). The concept was originally introduced in the field of cognitive psychology in the 1970s by John Flavell (1976). Flavell was later joined by others (Brown, 1982 & Yussen, 1985) who facilitated the development of the construct. Brown's model of metacognition stressed self-regulatory tactics employed to attain success in learning endeavors. With the development of the concept, the value of the learner's self-understanding became clear in facilitating academic success. Metacognition is recognized as a conscious, reflective endeavor that requires the learner to analyze, assess, and manage learning activities (Conti & Kolody, 1999). Smith (1982) determined that "a central task of learning how to learn is developing awareness of oneself as

a learner" (p. 57). Sternberg (1986) suggested that the learner's ability to make the most of his or her strengths while minimizing or compensating for weaknesses constituted an integral component of practical intelligence. Metacognition strategies include planning, monitoring, and adjusting (Counter & Fellenz, 1993).

Planning for a learning task assumes that an individual has accepted responsibility for and taken control of their learning experience. The learner determines the best means for succeeding in the learning task. Learners must know how to develop a sense of self-purpose as well as assign purpose to the situation. Moreover, the learner must be familiar with the organization and identification measures necessary for the learning process. Over-viewing the learning task and acknowledging one's learning style are examples of Planning (Conti & Kolody, 1999, p. 4).

Monitoring requires that learners evaluate their progress throughout the course of a learning project. This process entails maintaining an awareness of on-task behaviors and reviewing learner's goals and strategies. Some monitoring strategies include self-testing, seeking feedback, and examining the relationship of the current learning task to previous endeavors.

Adjusting connotes that the learner modifies and revises the learning process as necessary to conform to the learner's evaluative perceptions. Adjustments are often time required as changes on the learning situation arise. Adjustment strategies include revision of one's learning plan, modifying learning strategies and restructuring learning to match the learner's knowledge status (Fellenz & Conti, 1989).

Metamotivation

Metamotivation "deals with one's knowing and understanding how or why one is motivated to participate or remain in a learning activity" (Conti & Kolody, 1999, p. 4). This component of SKILLS is grounded in adult education and cognitive psychology theory (Fellenz & Conti, 1993). Metamotivation pertains to learner awareness and control over those elements that energize and regulate one's learning. Those strategies associated with Metamotivation are Attention, Reward and Enjoyment, and Confidence.

Attention addresses the learner's capacity to focus on the material to be learned. Kidd (1973) suggests that high attention level, designated as engagement, is the key to learning. Elements of Attention include avoidance of

distractions and the activation of a sense of inquiry on the part of the learner.

Reward and Enjoyment strategies pertain to the learner's ability to anticipate or recognize the potential inherent in a learning activity to derive satisfaction and have fun (Fellenz & Conti, 1989). The affective domain is a predominate factor in this component of learning. Some strategies pertinent to the Reward and Enjoyment component include the learner's aspirations for personal growth, the desire to augment one's self-esteem, or an individual's inclination to help others. A prominent aspect of this strategy involves the learner's potential to envision the learning outcome as particularly useful or relevant (Fellenz & Conti, 1993).

Confidence in one's ability to learn is a vital element in motivation (Fellenz & Kolody, 1999). Those most likely to participate in educational experiences are individuals whose self-esteem and sense of self-efficacy are positive. Confidence, believing in one's ability to learn, is a key ingredient for success in the educational environment. "Belief that one can complete the learning task successfully is an important factor in motivation to learn" (Fellenz & Conti, 1993, p. 16).

Memory

Memory involves the processes of entering, storing and subsequently retrieving information. Memory functions are frequently equated with learning or are viewed as one of the principal mental operations related to learning (Huber, 1993). Neisser (1982) helped redirect the research on memory from the laboratory to the study of memory and its use in everyday life. Some of the obstacles associated with learning may be attributable to the learner's inability to employ suitable memory strategies for the learning task (Wingfield & Byrnes, 1981). Memory strategies employed in the SKILLS model include Organization, External Aids, and Memory Application (Paul & Fellenz, 1993).

Organization pertains to the techniques that learners employ in order to restructure information (Seamon, 1980). Strategies of this nature allow for processed material to be better stored, retained, and retrieved. Memories, imagery, and visualization all aid in the learner's ability to structure enduring memories from experiences thereby facilitating recall (Zechmeister & Nyberg, 1982). Another organization strategy is chunking. This entails the organization of information into sets, thus decreasing the amount of categories to be remembered (Paul & Fellenz, 1993).

External Aids strategies assist the learner in utilizing the environment in order to facilitate recall. External techniques include the use of appointment books, making "to do" lists, daily planners, and the enlistment of others to supply reminders at appropriate times.

Memory Application entails the use of internal strategies employed in Memory Organization to aid in "planning, completing, and evaluating learning" (Conti & Kolody, 1999, p. 7). Such techniques are used for self-improvement, problem solving, and critical thinking (Paul & Fellenz, 1993, p. 24).

Critical Thinking

Critical Thinking is "a reflective thinking process utilizing higher order thinking skills in order to improve learning" (Conti & Kolody, 1999, p. 7). The overriding goal of critical thinking is the improvement of the individual and societal learning.

Brookfield's (1987) four components of Critical Thinking form the basis of SKILLS Critical Thinking Strategies. Those components are "(a) identifying and challenging assumptions, (b) challenging the importance of concepts, (c) imagining and exploring alternatives, and (d) reflective skepticism" (Conti & Kolody, 1999, p. 7). Those strategies employed by SKILLS in this context include

testing assumptions, generating alternatives, and conditional acceptance of general knowledge.

Testing Assumptions is a process wherein assumptions are identified, examined, and challenged in the course of the learning process (Fellenz & Conti, 1993). In the SKILLS model these assumptions are pertinent to real-life learning situations.

Generating Alternatives involves the exploration for alternative solutions to real-life problems. Brookfield (1987) proposes that the capacity to envision alternatives to a learner's existent manner of thinking and living necessitates that one undertake a "deliberate break with rational modes of thought in order to prompt forward leaps in creativity" (p. 12). SKILLS strategies includes the use of brainstorming, ranking alternatives, and identifying alternative solutions.

Conditional Acceptance connotes "advocating reflective skepticism to avoid absolutes or over simplifications" (Conti & Kolody, 1999, p. 8). According to Brookfield (1987), where universal truth or idea validity are concerned considering and imagining alternatives promotes a critical frame of mind. Questioning simplistic answers and predicting consequences are examples of SKILLS strategies

for measuring Conditional Acceptance (Conti & Kolody, 1999).

Resource Management refers to identification, evaluation, and acquisition of suitable resources. "Management of these resources is an important aspect in finding solutions to real-life, everyday problems (Conti & Kolody, 1993, p. 8). Resources constitute sources of information, many of which are universally available but whose use tends to be specific to individual preference. Examples of resources include newspapers, books, magazines, television, computers and for many, other people. Due to the vast number and myriad forms of resources that are at hand it is necessary for learners to develop effective strategies for their use so that learning needs are met in a timely, economic, and productive fashion. For those who are engaged in the teaching of Resource Management, the challenges are great. Modifications in communication designs, the ever-evolving nature of communication technology, and a tendency for learners to persist with the employment of prior behaviors that may no longer yield desirable outcomes are all significant factors for consideration (Fellenz & Conti, 1993). Resource Management strategies utilized on the SKILLS model are Identification

of Resources, Critical Use of Resources, and the Use of Human Resources.

Identification of Resources refers to the identification and acquisition of the most desirable information sources available. Of concern to the learner is the issue of willingness, or inclination, to make use of a particular resource (Conti & Kolody, 1993). "The learner must judge whether obtaining the resource is equal in value to the time, energy, and expense in gathering it" (Tough, 1971).

Critical Use of Resources involves "critical reflection about the material and selection of the most appropriate resource rather than simply those that are readily available" (Conti & Kolody, 1999, p. 9). Issues that may impact this process include the timeliness of the information and the likelihood that a particular source might be biased (p. 9). Strategies measuring critical evaluation of resources in the SKILLS model include consultation with outside experts, confirmation of data with secondary sources, and probing for potential bias (p. 9).

Use of Human Resources pertains to involving others in learning tasks. This involvement, however, entails more than mere fraternization. Rather, it requires in-depth

collaboration to include meaningful dialogue with others as well as mutual exploration of issues and problems (Fellenz, 1993). On some occasions, "the support provided by human resources may be as important as the information they contribute" (p. 37). Relevant strategies in the incorporation of the use of Human Resources in the learning process are networking and the support received from others (Conti & Kolody, 1999).

ATLAS

Learning strategy research has informed the field of adult education that adult learners demonstrate clear preferences for the variety of learning strategies they employ when they commence real-life learning tasks (Conti & Kolody, 1999b, p. 86). The preponderance of learning strategy research undertaken with adults in both formal and informal learning situations has been carried out with the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) (p. 86). Findings from the SKILLS studies, utilizing a database of 3,070 adults from varying backgrounds, led to the development and validation of the Assessing the Learning Strategies of AdultS (ATLAS) instrument.

ATLAS "arose out of a need for a tool that was easy to administer, that could be completed rapidly, and that could

be used immediately by both facilitators and learners" (Conti & Kolody, 1999a, p. 16). As a result of the development of the ATLAS instrument, the identity of adult learner's learning strategy preference group may be quickly obtained, contributing to an improved understanding of individual differences among learners.

Through qualitative and quantitative research methodologies, to include cluster analysis, discriminate analysis, and analysis of variance, conducted with the 15 learning strategies in SKILLS and the cluster groupings, three groups of learners were identified (Conti & Kolody, 1999a, p. 9). The three ATLAS learning strategy preferences groups are Navigators, Problem Solvers, and Engagers. Each learning strategy preference group has a distinct profile.

Navigators

"Navigators are focused learners who chart a course for learning and follow it. They are conscientious, results-oriented high achievers who favor making logical connections, planning and organizing activities" (Conti & Kolody, 1999a, p. 9). Navigators rely heavily on the learning strategies of Planning, Attention, Identification and Critical Use of Resources, and Testing Assumptions (p. 9). As a group, Navigators tend to structure information

so that material can be better stored and retrieved from memory (Conti & Kolody, 1998a, p. 133). Data obtained through interviews and focus groups indicates that Navigators have a preference for structured learning environments that provide schedules and deadlines, clearly defined expectations and objectives and frequent summarizing to reinforce main points. Navigators value prompt feedback (Conti & Kolody, 1999a, p. 11). The presentation of material in an orderly, logical sequence is also helpful to the Navigators' learning process (p. 11).

Problem Solvers

Problem Solvers are critical thinkers who "rely on a reflective thinking process which utilizes higher order thinking skills" (Conti & Kolody, 1999a, p. 11). Problem Solvers scored high in the area of Critical Thinking strategies to include Testing Assumptions, Generating Alternatives, and Conditional Acceptance (p. 12). Problem Solvers tend to demonstrate a heightened ability for locating and utilizing the best information. However, curious, intuitive, and inventive the Problem Solver may be, this learner's capacity for generating alternatives and weighing diverse solutions may also contribute to difficulty in decision making (Conti & Kolody, 1998a, p. 135). Problem Solvers prefer a learning environment where

deadlines are clearly understood, the teacher draws upon personal experiences, and learning tasks offer hands-on activities and practical experiences (Conti & Kolody, 1999a, pp. 12-13). Lengthy lectures, group work, and conformity are often times learning disincentives for this group of learners (p. 13).

Engagers

"Engagers are passionate learners who love to learn, learn with feeling, and learn best when they are actively engaged in a meaningful manner with the learning task" (Conti & Kolody, 1999a, p. 13). Kidd (1973) suggested that engagement was the key to learning and this entailed a connection between "the learner, the task or subject matter, the environment, and the teacher" (p. 266). It is of considerable importance to this group of learners that the learning activity be perceived as enjoyable and that it be construed as having value or meaning. Interaction and collaboration are prime motivators for the Engager's entry into a learning task (Conti & Kolody, 1999a, p. 14). The affective domain is the principal component in learning for these individuals (p. 14). The Engager seeks long-term learning projects with a goal of self-development that may ultimately lead to enduring personal change and growth (p. 14).

In order to facilitate learning for Engagers, formal evaluation should not take precedence over edification. Engagers prefer teachers who take a personal interest in them and provide opportunities for interaction. "Engagers consider work as an extension of themselves and are motivated by feelings of satisfaction or pride" (Conti & Kolody, 1999a, p. 15). As such, it is not uncommon for Engagers to validate their self-worth based upon their efforts (p. 15).

While assessing individual learning strategy preferences is of great value, it is also essential to identify those learning strategies that a learner seldom employs. In this way a teacher may "provide instruction and examples to help learners use alternate learning methods" (Conti & Kolody, 1999a, p. 16). Facilitating learner's self-awareness, to include a better understanding of individual learning strategies, promotes the growth of self-direction in learning and enhances the potential empowerment of the individual.

IMMIGRATION

Around the world, people immigrate to new places for a multitude of reasons. When people move on a voluntary basis, they are known as immigrants. When immigration is involuntary, as when people leave their homes in search of

religious freedom or to avoid political persecution, then they are referred to as refugees. In either case, peoples' movement comes about due to their society's failure to provide for their essential needs and hopes. Insufficient economic opportunity is the most coercive factor in voluntary immigration, while political disempowerment has served as an increasingly compelling factor for immigration in recent years (Miller & Miller, 1996).

U.S. immigration policy from 1607 to 1917 has been generally characterized as "open door." As is the case today, economic activity was the primary inducement for immigration for that three hundred year period. Until 1850, most immigrants came from the United Kingdom, Germany, and Ireland, but after 1850 increasing numbers of newcomers arrived from Latin America, China, and Scandinavia (Miller & Miller). As immigration increased, opposition from national labor organizations developed, culminating in the Chinese Exclusion Act of 1882. Initially, the Act restricted the number of Chinese who could be allowed to immigrate to the United States but subsequent amendments prohibited any immigration from China. Concern regarding Asian immigration continued and later, the Japanese Exclusion Act of 1924 was enacted. Immigration decreased during World War I, but picked up

again in the 1920's. Once more, labor groups sought to oppose increasing numbers of immigrants. Job competition and loss of wage gains achieved during World War I were the primary rationales for dissent. However, racial and ethnic concerns were also involved. Those immigrants from eastern and southern Europe were regarded as inferior by those Americans with roots in northern and western Europe. In response to public opposition, Congress enacted the 1921 Quota Act. This act limited annual immigrations to three percent of the foreign-born population, by national origin, based upon those already in the U.S. according to the census of 1910. In efforts to fortify immigration control, the Immigration Act of 1924 made the national quota permanent and also limited annual immigration of people of any nation to two percent of their U.S. population as recorded in the 1890 census (Miller & Miller). This act permitted the highest levels of immigration to originate from northern and western Europe. Additionally, the 1924 act completely barred all immigration from Asia. Countries of the western hemisphere, Canada and Mexico in particular, were not affected by this act.

Immigration reforms were legislated by the Immigration Act of 1965, chief of which was the abolition of the national origin system. This act voided the 1890 country-

specific quota and specifically did away with the zero quotas for Asian countries. The 1965 act had a tremendous influence on the kinds of immigrants entering the United States. Preference was now given to skilled workers and this proved especially favorable to Asians. Furthermore, due to a critical shortage of laborers, prodigious illegal immigration ensued, primarily from Latin America. Another feature of the 1965 act was a provision for unifying families, which allowed legal relatives of those holding permanent resident status to come to the United States. Upon becoming U.S. citizens, these individuals could then bring additional family to the U.S., a phenomenon frequently referred to as "pyramiding." A serious flaw of the Immigration Act of 1965 was that it encouraged illegal immigration. Attempts were made to remedy the defects of the 1965 act by two subsequent acts: the Immigration Reform and Control Act of 1986 and the Immigration Act of 1990. The 1986 act sought to reduce the quantity of illegal aliens by reducing their flow into the U.S. and also by legalizing the status of those illegals who had come to the United States prior to 1980. The 1990 act restructured the migrant selection system, created new procedures for protecting aliens who had fled civil unrest in their home countries, and amplified the family reunification system

allowing unlimited visas for immediate relatives of U.S. citizens. New "diversity" visas were also created, encouraging previously underrepresented nationalities to immigrate.

Between 1980 and 1990 almost 9 million legal immigrants arrived in the United States. This is the highest number of immigrants in U.S. history, with the exception of the decade between 1900 and 1910. The U.S. immigration rate rose from 2.0 per 1,000 residents in the 1950s and 1960s to about 3.2 per 1,000 residents in the 1980s. The immigration rate for the 1990s was estimated to be approximately 3.5 per 1,000 residents. Presently, almost 20 million U.S. citizens are foreign born, or 1 in 12. However, in the first decade of the 20th century, 1 in 6 Americans was foreign born. These figures indicate that the United States was more of a nation of immigrants a century ago than at this present time. However, since 1990 over 80 percent of U.S. immigrants have been Latin or Asian. A key concern in recognition of the diversity inherent in these groups is their ability, or desire, to culturally assimilate into the dominant culture of the nation. A major challenge, therefore, to the increasingly multiracial and multiethnic U.S. society relates to the provision of equal access for all peoples to all avenues of

success while adapting to the evolving changes in the country's cultural patterns (Miller & Miller, 1996, p. 71).

The U.S. population is now substantially more diverse ethnically and racially than it was in 1900. Current immigrants from Latin America, Asia and elsewhere are coalescing with Native Americans and African Americans. Contemporary immigration trends will probably continue as the less developed countries that supply most immigrants experience unparalleled numbers of young people in their populations, and young adults in those countries demonstrate the greatest inclination to move elsewhere, especially when jobs are scarce at home (Riche, 2000, p. 2). According to Riche, "if race and ethnic definitions remain the same, and so do immigration, fertility, and mortality patterns, minority groups will continue to grow faster than the nonminority population" (p. 2). Based upon current projections, non-Hispanic whites may comprise barely one-half of the U.S. population by 2050 and by 2060 they will have lost their majority status. As from its inception, population growth has shaped the United States. This continues to be true. U.S. population growth is fueled by relatively high fertility, immigration, and increasing life expectancy. Current projections suggest that immigration will keep the United State's minority

populations growing vigorously. Recent Census Bureau projections envision more than one million immigrants annually and that the share of minorities in the population will rise from 28 percent in 1997 to 47 percent by 2050. The nation's changing demographic profile has portentous economic and social implications. One area where this change is especially profound is located in the altered racial and ethnic makeup of the country's schools and the potential links to vital policy issues relating to educational reform and classroom practices.

For most Americans, education is the primary agent for attaining a good job and a promising future. Upgrading the skills and education of minorities is essential if the United States hopes to continue to compete in the global economy of the 21st century (Pollard & O'Hare, 1999).

> The traditional image of racial and ethnic minorities in U.S. society is shifting. The relatively young age structure, high birth rates, and heavy immigration flows of minorities will continue to make the U.S. population more racially and ethnically diverse. Minorities will increasingly share the national character, adding racial and ethnic diversity to schools, workplaces, and legislatures (Pollard & O'Hare, p. 35).

America's Foreign-Born Population

According to the Census Bureau, "the Foreign Born were not U.S. citizens at birth" (Lollock, 2001). The Current Population Report, March 2000, indicated that in 2000, 28.4

million foreign-born lived in the United States. These residents accounted for 10.4 percent of the total U.S. population. Camarota (2001) stresses that this is the largest number of immigrants ever recorded in the nation's history, and this figure represents a 43 percent increase since 1990. As a percentage of the population, the foreign born currently account for more than 1 in 10 residents (10.4 percent), the highest percentage in 70 years. Within the foreign born community, "51.0 percent were born in Latin America, 25.5 percent were born in Asia, 15.3 percent were born in Europe, and the remaining 8.1 percent were born in other regions of the world. . .the population from Central America (including Mexico) accounted for nearly two-thirds of the foreign born from Latin America and for about one-third of the total foreign-born" (Lollock, 2001, p. 1). Camarota's (2001) analysis of the Census Bureau's Current Population Survey for March 2000 includes the following findings:

1. More than 1.2 million legal and illegal immigrants combined now settle in the United States each year.

2. The number of immigrants living in the United States has more than tripled since 1970, from 9.6 million to 28.4 million. As a percentage of the U.S. population, immigrants have more than doubled, from 4.7 percent in 1970 to 10.4 percent in 2000.

3. By historical standards, the number of immigrants living in the United States is unprecedented. Even

at the peak of the great wave of early 20th century immigration, the number of immigrants living in the United States was less than half what it is today (13.5 million in 1910).

4. Immigration has become the determinate factor in population growth. The 11.2 million immigrants who indicated they arrived between 1990 and 2000 plus the 6.4 million children born to immigrants in the United States during the 1990s are equal to almost 70 percent of U.S. population growth over the last 10 years.

5. The percentage of immigrants without a high school diploma is 30 percent, more than three times the rate for natives. Also, of all persons without a high school education, one-third are now immigrants. Immigrants are also slightly more likely than natives to have a graduate or professional degree.

6. In 2000, 37.4 percent of immigrants are naturalized citizens, and immigrants account for 5.5 percent of all eligible voters.

7. The poverty rate for immigrants is 50 percent higher than that of natives, with immigrants and their U.S.-born children (under age 21) accounting for 22 percent of all persons living in poverty.

8. The proportion of immigrant households using welfare programs is 30 to 50 percent higher than that of native households.

9. One-third of immigrants do not have health insurance - two and one-half times the rate for natives. Immigrants who arrived after 1989 and their U.S.-born children account for 60 percent or 5.5 million of the increase in the size the uninsured population.

10. Immigration accounts for virtually all of the national increase in public school enrollment over the last two decades. In 2000, there were 8.6 million school-age children from immigrant families in the United States (pp. 1-2).

Three generations ago Americans and immigrants were equally unskilled, but currently the foreign born are three times more likely to be high-school dropouts than native-born Americans (Miller, 1998). Today, the foreign-born population comprises 12.8 percent of the nation's total workforce. This figure is slightly higher than the 10.4 percent of the total U.S. immigration population because in comparison to natives, a higher percentage of immigrants are of working age. In 1998, nearly 30 percent of the foreign-born who worked full time did not have a high school diploma (Camarota, 2000). Of those immigrants who arrived in the U.S. in the 1990s, 34.4 percent were dropouts (p. 8). This figure contrasts with slightly less than 9 percent of natives who did not complete a high school education. Yet, at the highest level of education, "immigrants tend to be slightly more educated than natives, with 10.7 percent of immigrants holding a graduate or professional degree compared to 9.3 percent of natives" (p. 9). Educational attainment, however, varies significantly among the foreign-born, by region of birth. For example, Asian and Europeans maintain the highest percentages of high school graduates, 83.8 percent and 81.3 percent, respectively (Lollock, 2001). Latin Americans reflect a 49.6 percent high school graduation rate. However, among

the foreign-born from Latin America, immigrants from South America were more likely to have graduated from high school (79.6 percent), while those from Central America were the least likely to have completed high school (37.3 percent) (p. 5). The proportion of those foreign-born residents who had earned a bachelor's degree ranged from 44.9 percent for Asians to 5.5 percent for Central Americans (p. 9). Regarding poverty levels, "16.8 percent of foreign-born residents in 1999 were living below the poverty level, compared with 11.2 percent of natives" (p. 6). Among the foreign-born population, Latin Americans reflected the highest poverty rate (21.9 percent) (p. 6). Among Latin Americans, South Americans had the lowest poverty rate (11.5 percent), compared with 24.2 percent for Central Americans and 20.6 percent for those from the Caribbean. These figures are particularly salient because, of the roughly one million new immigrants added to America's population each year, approximately 468,000 of those foreign-born newcomers will be Hispanic (Riche, 2000). And from that Hispanic population, the overwhelming majority arrive from Mexico. For most Americans, the key to a good job and a promising future is education. Yet, Pollard and O'Hare (1999) assert that although educational attainment has increased for most minorities, "a smaller percentage of

minority students than non-Hispanic whites graduate from high school" (p. 23). This poses an increasingly significant problem for the immediate future as U.S. Department of Labor projections indicate that the majority of new jobs in the future will demand an education beyond high school (p. 23). The greatest improvement relating to high school graduation and college attendance in recent decades belongs to African Americans and Native Americans. The lower levels of educational attainment for Hispanics are partially explained by the great numbers of Hispanic immigrants who arrive in the U.S. having completed little formal schooling in their countries of origin. In 1998, 44 percent of foreign-born Hispanics adults had completed high school, compared with 70 percent of U.S.-born Hispanic adults. More than any other minority group, Hispanics are less likely to attend or graduate from college (p. 23). For the United States to continue to compete in the global economy the upgrading of skills and education of minorities, in particular the foreign-born and their children, is vital. Pollard and O'Hare (1999) submit that the educational levels of parents do not fully explain the education gap among America's racial and ethnic groups. Explanations are also sought in light of "the quality of schools, cultural values that de-emphasize education, and a

tendency to track minority students into lower-level, remedial classes. . ." (p. 23).

Cassara (1990) stresses the existing urgency for facilitating the needs of the growing numbers of foreign-born minorities in the United States. Should these new arrivals fail to integrate satisfactorily in their communities the possibility of increased polarization may well yield negative social and political consequences. As such, the field of adult education has much to offer the foreign-born, as well as other minority groups. Adult basic education (ABE), English as a Second Language programs, the General Educational Development programs, and a myriad of other programs and training opportunities are extended to immigrants and native-born alike in an effort to improve the quality of life and opportunity for those whose skill levels or education levels are lacking or insufficient. Briscoe and Ross (1989) report that the nation's burgeoning minority populations embody a national human resource and it is in the country's best interest to develop that resource. Education, in its myriad forms, is the key to human development.

Minority Populations

Minorities have been described as those groups within a society that are identified as holding lower social

status, exercising less power and prestige, and employing fewer rights than the dominant groups of the society (Barron, 2000). Often times, minorities are excluded from full utilization of those privileges that accompany first-class citizenship. According to Barrons, minorities are not restricted solely to ethnic groups, although "until the 1950's, ethnic origin was virtually the only social basis for classifying people in either minority or dominant groups. Ethnic groups are usually identified on any one of the six bases of race, religion, nationality, nation-state, nativity, and language" (p. 1). In America, the domination of some ethnic groups by others has been attributed to: "1) invasion, conquest, and annexation; 2) emigration and immigration; and 3) importation of slave labor" (p. 1). Four minority groups in the United States that have been historically singled out on the basis of their ethnic origins are American Indians, blacks, Asians, and Hispanics. In recognition of the failure of these groups to be meaningfully integrated into federally funded education and employment programs the federal government sought to enhance these groups' participation by calling for the use of benign quotas, or "affirmative action" in these areas in an attempt to redress the years of abuse these minority groups had suffered. The Civil Rights Act

of 1964 provided the basis for affirmative action barring numerous forms of discrimination. As a result of the success of the civil rights movement of the 1960s, marginalized groups took actions to eliminate discrimination and effect changes within the educational system, seeking recognition of their needs, cultures, and histories.

Historically, the U.S. population has been multiracial. Of the original population, significant numbers of residents were American Indian or black. Early immigration trends and legal restrictions on immigration and citizenship allowed the share of whites to rise to almost 90 percent of the population by 1900 (Riche, 2000). However, by the close of the 20th century, significant demographic alterations had occurred in America. Non-Hispanic whites currently comprise approximately 72 percent of the population while the minority population is a great deal more diverse and more numerous (Riche). Non-Hispanic African Americans only slightly outnumber Hispanics with each group accounting for almost 12 percent of the population. Two other recognized ethnic minority groups, Asians and Pacific Islanders, currently account for about four percent. Riche notes that although the number of American Indians (to include Alaska Natives) has nearly

tripled over the course of the past century, their population only accounts for less than one percent of all Americans.

The growth of America's racial and ethnic origin groups has taken place in two ways: "from natural increase (the excess of births over deaths) or net immigration (immigration minus emigration)" (Riche, 2000, p. 13). Immigration has been the chief source for the increase of Hispanics and Asians. The foreign-born population reflects the relative contribution of recent immigration to each racial and ethnic group. In 1998, approximately 43 percent of the foreign-born were Hispanic, 26 percent were white, 25 percent were Asian and Pacific Islander, and 7 percent were black (U.S. Census Bureau, 2000). By the middle of the 21st century, Pollard and O'Hare (1999) indicate that non-Hispanic whites will quite likely comprise a "slim and fading majority of Americans" (p. 1), while Hispanics will account for almost one-fourth of the U.S. population. Together, blacks, Asians, and American Indians will embody nearly one-fourth of the U.S. population. In the nation's future, the term "minority" is likely to acquire a very different meaning (Pollard & O'Hare).

Clearly, America's changing demographic profile suggests portentous implications. An indication of this

may be noted in the recognition that the nation's minorities have become much more diverse socio-economically. The number of minorities in the highest income brackets has more than doubled since 1980, yet minorities continue to represent a disproportionate share of the poor (Pollard & O'Hare, 1999, p. 2). A great many more minorities are gaining election to public office yet minorities are still more likely than non-Hispanic whites to serve time in prison. In education, more minorities are completing graduate and professional degrees, however, a disproportionate percentage fail to graduate from high school. Pratt (1998) noted that in one recent year the percentages of 16-24-year-olds who were not enrolled in high school, nor had graduated from high school, were 29.4 percent for Latinos, 13.0 percent for African Americans, and 7.3 percent for whites. Although the dropout rate for Hispanics has improved over previous levels, current rates still remain extremely high (Armstrong, Henson & Savage, 2001). Because Hispanics constitute the nation's fastest growing minority group, unless U.S. educational systems begin to do a more adequate job of preparing Latino learners, an ever increasing percentage of our population is bound to be poorly prepared to participate in or contribute to a society that has come to demand an educated

workforce (p. 106). Moreover, since education is the key that allows most Americans to attain a good job and a promising future, improving the skills and education of U.S. minorities is vital if the nation is to continue to compete in the global economy.

Minority groups will continue to grow faster than the nonminority population (Riche, 2000). According to the Center for Immigration Studies (2000) the immigrant population is expanding at a rate six and a half times faster than the native-born population. Overwhelmingly, the immigrant population is comprised of minority peoples with the majority of new immigrants arriving from Latin America and Asia. Contemporary projections from the U.S. Census Bureau (2000) estimate that immigration will add 468,000 Hispanics and 229,000 Asians annually to the nation's population until 2025, along with 161,000 non-Hispanic whites and 93,000 non-Hispanic blacks. As a result, the share of minorities in the population will climb from 28 percent in 1999 to 47 percent by 2050. It is estimated that Hispanics will make up nearly 15 percent of the U.S. population in 2010 and almost 25 percent by 2050. By 2060, non-Hispanic whites are projected to account for less than one-half of all Americans. By 2100, non-whites

and Hispanics are calculated to comprise 60 percent of the U.S. population, with Hispanics accounting for 33 percent.

Brookfield (1995) comments on two noteworthy insights for practice that have been suggested by early research into cross-cultural adult learning. One perception asserts that adult educators from the dominant American, European and northern cultures should examine some of their assumptions and predirections about 'natural' adult learning and adult teaching styles (1986). Another insight that has surfaced in multicultural learning case studies is that when minority adults are taught by educators who came from the same ethnic community those adults tend to feel more comfortable and experience greater success in the learning task. Brookfield (1995) goes on to assert that more cross-cultural perspectives are necessary in order to quash the Eurocentric and North American dominance in areas pertaining to research in adult education as well as understanding of inter-cultural differences in industrialized societies (p. 6). Brookfield (1995) challenges adult education practitioners and researchers to exercise caution when considering culturally diverse adult learners. "Blithe generalizations," Brookfield emphasizes, "about the 'adult learner', 'adults as learners' or 'the nature of adult learning' imply that people over 25 form a

homogeneous entity simply by virtue of their chronological age" (p. 6). Brookfield goes on to stress that differences such as those suggested by class, culture, ethnicity, personality, cognitive style, learning patterns, life experiences and gender among adult populations are a great deal more meaningful than the fact that this population is not children or adolescents (p. 6). Of particular importance in this regard is the need to exercise caution when theorizing about adult learning in order to avoid an ethnocentric perspective that equates such learning as "a generic phenomenon" (p. 6) synonymous with learning which occurs in continuing education classes at the university level where white, middle class American adults predominate.

> Adult education will become an agency of progress if its short-time goal of self-improvement can be made compatible with a long-time, experimental but resolute policy of changing the social order (Lindeman, 1926, p. 166).

Cassarra (1990) speaks of a "new urgency to meet the needs of the ever-increasing numbers of newly arrived minorities in the United States, as well as the continuing needs of American Indians and Blacks" (p. 1). Cassarra further articulates her concern as to whether the possibility truly exists for minority peoples to "become fully-functioning members of their communities, and

nevertheless retain their prized cultural distinctiveness" (p. 1)? At issue here, apart from Cassara's concern for the potential societal dangers inherent in the failure to successfully integrate minority populations into the nation's mainstream, is the question of the role of adult educators in meeting the education needs of minority ethnic groups in the United States. Beyond issues involving social consciousness, quality of life, and economic and political implications, how might adult educators best facilitate the learning experience for ethnically and culturally diverse populations? Jarvis (1987) suggests that adult learning should be understood to a greater extent as a socially embedded and socially constructed phenomenon. Brookfield (1995) stresses that learning is a collective process, one that involves "the cultural formation and reproduction of symbols and meaning perspectives" (p. 6). In short, human experience is culturally framed and shaped (Brookfield, p. 3) and as adult educators attempt to determine their role in facilitating the optimal inclusion of ethnic populations it appears that, like their colleagues in the public schools, awareness of and appreciation for cultural differences is of growing and vital importance.

Culture

There is little in education that does not relate to culture. "Everybody is cultural and everybody is multicultural (every person and every human group possesses both culture and cultural diversity)" (Banks & Banks, 2001, p. 33). Culture is man-made, a result of the patterns applied by human beings as they attempt to perpetuate their survival in a particular physical and human environment.

Until recently, anthropology has maintained an operative notion of culture as "something that all peoples uniformly possess and the surface forms of which are underlain by certain premises or logics that constitute keys to a distinctive way of life" (Marcus, 2000, p. 5). But in recent decades this concept of culture in anthropology has changed. The transformation of the concept is due to several developments. Those developments are:

> 1) all cultures are internally differentiated in systematic ways and therefore cannot be studied simply as relatively homogeneous totalities governed by uniform logics or principles; 2) there is currently a worldwide movement of heightened cultural self-consciousness, such that cultures are keenly understood both by their members and by outsiders not as natural or timeless but as having been created through historical circumstances and inventions; 3) all cultures are shaped by complex world historical processes that are as much responsible for culture's internal characteristics as are underlying structures or logics and; 4) many of the cultures and culture

> areas that anthropologists have traditionally studied are subject to great population migrations and diffusion of cultural artifacts on an unprecedented scale (Marcus, 2000, pp. 5-6).

Key to understanding the relevancy of these developments is an awareness that cultures can no longer be perceived as entirely homogeneous due to internal divisions based upon gender, class and the relative involvement of groups within a particular society. Additionally, anthropology today views culture as an idea that no longer adheres to a restricted, self-contained entity, but rather involves a complex process of commingling and heterogeneity where any standardizations are only temporary and quite likely imposed (Marcus, 2000). A final factor that undergirds the change in the traditional notion of cultural study in anthropology is the impact of population migration. This implies that cultures now often present themselves in elaborate hybrid forms (Marcus, 2000). Ethington (1996) suggests that all cultures are in a never-ending "process of reinvention" (p. 38).

For purposes of this study, culture is perceived to be those conventional patterns of thought and behavior, to include values, beliefs, rules of conduct, political organization, economic activity, and especially communication styles, that have been developed over time by

groups of people in order to survive in particular environments. Such patterns of thought and behavior are passed on from generation to generation so that the group shares common experiences that shape the way in which it understands the world. These shared values allow the group to adapt to constant change and the external pressures exerted by globalizing processes and the flow of historic events.

Culture, then, is a system of knowledge that informs us as to how we should interact and communicate with others, as well as how to interpret others' behavior. However, not all members of a culture share exactly the same view of their culture (Keesing, 1974). No one member of a culture is aware of all aspects of the culture. Moreover, cultures are constantly reinventing themselves and the deterritorialization of cultures and the internal differentiation of cultures makes it increasingly difficult to impose a homogeneous perspective when scrutinizing cultural patterns (Marcus, 2000).

It is the values, symbols, interpretations, and perspectives that distinguish one group of people from another in modernized societies; it is not material objects and other tangible aspects of human societies (Kuper, 1999).

Dimensions of Cultural Variability

In order to better understand the differences between cultural groups, a number of classifications have been elaborated. One of the most widely recognized designations of cultural variability is Hofstede's (1980). This model, the four-dimensional model of cultural differences, focused upon the relationship between nationality and mean value scores based upon 32 values-related questions administered to samples of employees of subsidiaries of the same multinational business corporation. As such, the country, and not the individual, became the unit of analysis. The four-dimension are: 1) Individualism-Collectivism: this dimension is defined by the extent to which individuals' behaviors are influenced and defined by others, Individualists preferring self-sufficiency, Collectivists recognizing their interdependent roles and obligations to the group; 2) Uncertainty Avoidance: this dimension refers to peoples' level of comfort in regards to ambiguity, or the way cultures resolve uncertainty. Cultures high in uncertainty avoidance prefer rules and set procedures to reduce uncertainty, while cultures low in uncertainty avoidance tolerate greater ambiguity and prefer additional flexibility in their responses; 3) Power Distance: according to Hofstede and Bond (1984), this dimension is

defined "as the extent to which the less powerful members of institutions and organizations accept that power is distributed unequally" (p. 4). Low power distance cultures support egalitarianism, high power distance cultures approve of hierarchies; 4) Masculinity-Femininity: this dimension refers in part to expected gender roles in a culture. Masculine cultures tend toward distinct expectations of male and female roles in society, while more feminine cultures allow greater tolerance of role expectation for each gender. Masculinity-Femininity also alludes to quality of life issues, with high masculinity cultures endorsing assertiveness and competition, while low masculinity cultures endorse modesty, compromise, and cooperation.

Triandis (1995) warns that individuals within every society exhibit tendencies toward both collectivism and individualism. Indeed, most people begin life as collectivists due to their family attachments (p. xiii). Furthermore, "there is a constant struggle between the collectivist and individualist elements within each human" (p. xiv). However, in general, cultures that perceive most relationships as interpersonal in nature tend to be essentially individualistic, while those cultures that

define the majority of situations as occurring between or among groups are essentially collectivistic (p. xiv).

The concept of structural tightness is another perspective regarding variability between cultures. This concept focuses upon "the norms, rules, and constraints cultures place on members' behaviors" (Gudykunst & Kim, 1997, p. 81). In this context, norms are viewed as standards for behavior predicated upon the moral code while rules serve as indexes for behavior that are not grounded in the moral code (Olsen, 1978). Triandis (1994) suggests that tight cultures prescribe numerous rules and constraints on behavior, while loose cultures enjoin few rules and constraints on behavior. In tight cultures, the norms and rules of the culture are inclined to be evident and people are counted upon to follow them (Pelto, 1968). In loose cultures, norms and rules may be more ambiguous and thus, some deviation is permitted (Pelto, 1968). In loose cultures, norms and rules bear some elasticity, while in tight cultures, they tend to be more rigid (Gudykunst & Kim, 1997).

Triandis (1994) contends that cultural homogeneity is inclined to lead to structural tightness. Cultural heterogeneity, on the other hand, tends to encourage cultural looseness.

Mosel (1973) specifies that a relationship exists between the looseness or tightness of a culture's social structure and the predictability of behavior within that culture. His view is that behavior is more readily predictable in a tight culture than in a loose social structure. The United States is generally considered a loose culture, but yet not as loose as Thailand (Phillips, 1965). Japan is an example of a tight culture (Embree, 1950).

Some other theories of cultural variability include the Chinese Culture Connection's (1987) Confucian Work Dynamism, and Kluckhohn and Strodtbeck's (1961) value orientations. The broadest division of cultures may be located in the contrast between Eastern and Western assumptions, maintaining an awareness, however, that the West/East polarity is not a purely geographical concept (Cushner & Brislin, 1997). It is the notion that "basic intellectual and religious traditions of Western and non-Western societies have organized their cultures differently, resulting in many divergent assumptions about the organization of self and society" (Cushner & Brislin, 1997, p. 190-191). Thus, the intellectual and philosophical traditions associated with these areas leads

to a general dimension of variability designated as Western and non-Western.

A final broad category of cultural difference pertains to cultural styles as proposed by Ramirez and Castaneda (1974) who submit that all cultures, communities, and families can be divided into two primary dimensions: traditional and modern. Individuals from Euro-American cultures tend to subscribe to those values that reflect modern environments, a sample of those being flexible boundaries in the gender-role domain, strong individual identity, an orientation towards the future, and a view that tradition acts as a barrier to progress (Ramirez, 1991). Individuals from traditional environments tend to subscribe to the following values: gender-roles are rather distinct and defined, identity with family and community is strong, time orientation is more focused on the past and the present, and traditional ceremonies are valued (Ramirez). A final relevant difference in this category relates to individuals' attitudes towards subservience to convention and authority: the traditional perspective is one of respect for convention and authority, while the modern perspective is to question authority (Ramirez).

In reaction to the aforementioned dimensions of cultural difference or variability, it is clear that

culture implies difference and those differences are wide-ranging. Since child rearing practices differ within cultures and ethnic groups, there is strong evidence to suggest that culture's impact on learning is significant.

Culture and Learning Styles

One area where the influence of culture upon learning has been investigated is the construct of learning styles. Kirby (1979) posits that the term "learning style" emerged when researchers began to investigate ways to synthesize course presentation and materials to match individual learner's needs. In this sense, learning style is considered a broad term that includes the construct of cognitive style.

Cognitive styles "are characterized as consistencies in information processing that develop in concert with underlying personality traits" (Merriam & Caffarella, 1999, p. 208). Joughin (1992, p. 4) views cognitive style as reflective of "how individuals typically receive and process information." Cognitive style is also perceived as an incorporation of the ways people view and make sense of their world and attend to disparate elements of their environment (Merriam & Caffarella, 1999). Claxton and Murrell (1987), and Griggs (1991), define cognitive style as intrinsic information processing patterns that represent

a person's typical modes of perceiving, remembering, thinking, and problem-solving.

Claxton and Ralston (1978) defined learning style as a student's consistent way of responding to and using stimuli in the context of learning. Reichman (1978) suggests that learning style is a particular set of behaviors and attitudes related to the learning context. The definition adopted by the National Association of Secondary School Principals was derived from Keefe (1982, p. 4) who defined learning style as the cognitive, affective, and physiological factors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment.

A number of studies have been undertaken regarding the mediating influence of culture in learning style differences. Results from some of those investigations suggest that group patterns do exist and that culture, in general, does play a part in learning style development (Swanson, 1995). As such, culture's impact in the learning environment merits keen consideration as instructional strategies and methodologies are developed.

CHAPTER III

METHODS AND PROCEDURES

Introduction

This descriptive study was undertaken in an effort to examine two aspects of learning related to international graduate students at Oklahoma State University. One branch of inquiry endeavored to determine the learning strategy preferences profile of the target population. This component investigated the potential commonality of learning strategies across cultures, specifically, whether international graduate students fell predominantly into one ATLAS learning strategy preference category or, as did non-international graduate students in the database compiled from the SKILLS studies, into three fairly even categories. A second area of inquiry focused upon an interview segment wherein respondents were asked to provide their impressions regarding specific aspects of the learning process, to include: recent learning projects, approaches to learning, helpful learning strategies, teacher actions or behaviors within the learning environment, barriers to learning, individual or teacher responses to barriers to learning, and perceptions relating to culture's role in learning strategy preference.

According to Gay (1996), a descriptive study:

> Involves collecting data in order to test hypotheses or to answer questions concerning the current status of the subject of the study. A descriptive study determines and reports the way things are. . .Typical descriptive studies are concerned with the assessment of attitudes, opinions, demographic information, conditions, and procedures. Descriptive data are usually collected through a questionnaire, survey, interviews, or observation. Just as the historical researcher has no control over what was, the descriptive researcher has no control over what is, and can only measure what already exists (pp. 249-250).

Population

The target population for this study was the international graduate student body enrolled at Oklahoma State University, Stillwater campus, in the spring semester, 2001. This population consisted of 916 students. Of that number, 593 were master's candidates and 323 were doctoral candidates. The international student population enrolled at Oklahoma State University in the spring of 2001 represented 91 countries of origin. All international students enrolled at Oklahoma State University, Stillwater campus, including undergraduate as well as graduate students and special students totaled 1,661 (Office of International Students and Scholars, 2001). This aggregate population comprised 8.9 percent of the University's total Stillwater campus enrollment.

In this study, the learning strategy preferences of 126 international graduate students were examined. These

students were enrolled at Oklahoma State University, Stillwater campus, in the Spring of 2001. Participants either completed ATLAS on-line or executed the booklet version. Thirty participants were also asked to take part in individual interviews. ATLAS results were compared to the distribution of groups derived from the SKILLS studies. Data collected from the individual interviews were transcribed and analyzed.

ATLAS

ATLAS is an easy to administer, easy to complete instrument which enables learners and facilitators to rapidly identify learning strategy usage patterns (Conti & Kolody, 1998b, p. 109). ATLAS employs a flow-chart design wherein items are printed on one-quarter, colored sheets of standard-sized, 8.5" x 11" paper, bound in a booklet format. Individual learners read the sentence stems in a box at the top of each page, which lead to options in other boxes that complete the stem. Participants follow connecting arrows which direct them to the options. Each option leads the respondent to an additional box which either directs him/her to continue to another colored page or which supplies information regarding the respondent's learning strategy preference group. Five colored quarter sheets, or cards, constitute the instrument packet.

Depending upon the individual participant's reading level, ATLAS can be completed in one to three minutes. For purposes of this study, the ATLAS instrument was adapted to an on-line, electronic format. The same flow-chart design, with connecting sentence stems, was incorporated into the on-line version. This adaptation allowed the target population to access ATLAS quickly and easily, in the privacy and comfort of a location of their choice. The on-line version of ATLAS offered respondents an even quicker, more "user friendly" opportunity to complete the instrument, a factor which took into consideration the need for economy of time and effort.

The ATLAS instrument is a relatively new tool that allows for prompt identification of the learning strategy preferences of adults. ATLAS is based upon research results derived from the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS). As such, the validity of ATLAS is rooted in the validity of SKILLS.

"Whether you are testing hypotheses or seeking answers to questions, you must have a valid, reliable instrument for collecting your data" (Gay, 1996, p.33). Validity is the degree to which a test or instrument measures what it is supposed to measure. Because validity is evaluated in terms of an instrument's purposiveness, there are multiple

forms of validity. "Content validity is the degree to which a test measures an intended content area (p. 139) . . .construct validity is the degree to which a test measures an intended hypothetical construct (p. 140) . . .and criterion-related validity is determined by relating performance on a test to performance on another criterion" (p. 139).

SKILLS content validity (the representativeness of the items with respect to learning strategies used by adults in real-life situations) and construct validity were determined by means of an extensive process that included expert opinion, an expansive review of the literature regarding the five constructs of metacognition, metamotivation, memory, critical thinking, and resource management, and critiques by groups of adult educators who agreed that the instrument addressed the five theoretical constructs and that the scenarios employed by the instrument were illustrative of real-life conditions (Conti & Fellenz, 1991).

SKILLS content validity was additionally measured through field tests conducted in a variety of adult learning situations across the United States (Conti & Fellenz, 1991). Results from these field tests confirmed the validity assessments provided by expert opinion.

Furthermore, field testing led to modification of SKILLS instructions and the answer sheet. Information was not available on SKILLS criterion validity allowing comparison of SKILLS scores against external criteria.

SKILLS reliability was confirmed by grouping 130 field test respondents into two similar categories. Correlation of these categories was assessed using Spearman-Brown and Guttman split-half tests. The tests determined SKILLS to be a reliable instrument for assessing adult learning strategies in real-life conditions (Conti & Fellenz, 1991).

The ATLAS instrument, making use of the SKILLS database of 3,070 adult learners from heterogeneous environments, was developed in order to quickly identify the learning preference grouping of adults (Conti & Kolody, 1998a). ATLAS is a user-friendly instrument that employs a flow-chart design to identify learning strategy preference. Completion time for ATLAS is approximately two minutes. The online, electronic version, requires even less time to complete. The conceptual foundation for ATLAS was the SKILLS data and cluster analysis of the aggregate data set, which led to the identification of the three distinct learning strategy categories of Navigators, Problem Solvers, and Engagers.

Construct validity for ATLAS was established by examining earlier SKILLS research and consolidating analogous data. This process led to the discernment of three groups with comparable patterns of learning strategy usage (Conti & Kolody, 1999b). Due to the similarity of these groups with groups in previously reviewed SKILLS studies, they were designated as Navigators, Problem Solvers, and Engagers. Respondent distribution was relatively equal among the three groups: Navigators - 36.5%, Problem Solvers - 31.7%, and Engagers - 31.8% (Conti & Kolody, 1999b, p. 18).

Content validity pertains to the sampling adequacy of the instrument's content. Content validity for ATLAS relates to the degree with which the terms exemplify learning strategy characteristics of the three groups identified in the SKILLS research. A succession of discriminate analyses were administered to ascertain differences between the groupings. "The structure matrix of the discriminate analysis for these three groups revealed that the major process that separated the groups related to how each group of learners sought to accomplish the learning task" (Conti & Kolody, 1999b, p. 18). Discriminant analysis, therefore, established content validity by determining the precise pattern of learning

strategies used by each group in comparison to the other groups and ultimately, accurately describing the content for each item.

Criterion-related validity, which compares scores of an instrument with external criteria known or perceived to measure the attribute under study, was determined by comparing ATLAS scores with SKILLS group placement (Conti & Kolody, 1999b, p. 19). Adult learners in Alberta, Canada, Montana, and Oklahoma were administered SKILLS and the draft versions of ATLAS. Individual interviews and group discussions were conducted upon completion of the instruments to gather respondents' comments. Suggestions derived from this qualitative data were factored into the improvement of ATLAS. In its current form, ATLAS correctly places approximately 70% of the respondents in their corresponding SKILLS group (p. 19). Ongoing qualitative investigation seeks to discern precise ways individuals go about the learning process, as well as to determine instructor behaviors and actions that serve to enhance or hinder learning success. As a result of this information, item wording will be reviewed and adjusted as necessary to allow extreme compatibility with participants' comments. Upon completion of this process, a criterion-related

validity check will be performed on the final version of the instrument (pp. 19-20).

The reliability of ATLAS has not yet been reported. However, on-going tests denote that test-retest results indicate approximately 65% accuracy in the consistent placement of individuals in the same group (James, 2000).

Interviews

Interviewing is perhaps the most common form of collecting qualitative data for research in education (Merriam, 1998, p. 70). "The main purpose of an interview is to obtain a special kind of information" (p. 71). The researcher seeks to discover what is "in and on someone else's mind" (Patton, 1990). "A typical qualitative interview is a one-on-one session in which the researcher asks a series of open-ended, probing questions" (Gay, 1998, p. 223). Good qualitative interviews are those in which the respondents are at ease and talk openly about their beliefs. Good interviews are rich with data and contain detailed examples of participants' perspectives (Bogdan & Biklen, 1998, p. 5).

According to Merriam (1998), interviews are commonly perceived as falling on a continuum based upon the amount of structure the researcher desires. One end of the continuum features highly structured interviews regulated

by the researcher's pre-designed questions; the opposite end of the spectrum is typified by lack of structure and an open-ended, expansive format. The semi-structured interview is located mid-way on the continuum and is characterized by more flexibly worded questions, or by a mixture of highly structured and less structured questions. The greater part of the interview is driven by a list of questions, but neither the precise wording nor the question order is predetermined (p. 74).

In order to obtain useful data from the interview process, good questions must be asked (p. 75). Questions should be understandable to the interviewee and be reflective of his or her world view. Types of questions have been characterized (Strauss, Schatzman, Bucker, & Sabshin, 1981) as hypothetical, devil's advocate, ideal position, and interpretive. Hypothetical questions invite the respondent to speculate. Devil's advocate questions fit controversial topics when respondents' opinions are sought. Ideal questions derive respondents' opinions, as well as information. Interpretive questions allow the interviewer to verify understanding while also yielding additional information and opinions. Questions to avoid are those that pose multiple questions, those that lead the respondent, and those questions that can be answered with a

simple yes or no (Merriam, 1998, pp. 76-79). Most interviews make use of an interview guide comprised of the list of questions to be posed in the interview. Dependent upon the interview's structure, the guide may include specific questions arranged in a certain order, or merely topical references with no particular order specified. Most interviews tend toward the semi-structural format (p. 81). In this study, the interview guide will incorporate specific questions for all respondents as well as more open-ended questions.

The researcher in this study designed a semi-structured interview format that sought to elicit participants' perceptions towards their use of learning strategies when engaged in a learning project. Additionally, respondents' reflections on instructor behaviors and use of instructional strategies was sought. The interview guide incorporated 11 specific questions for all respondents. These questions were predetermined but interpretive in nature and thus, open-ended, allowing for expanded exploration of the topic and for the emergence of individual respondent's unique views and insights. Participants were interviewed in-depth in relation to their responses to each topic.

All qualitative research is grounded in the notion that reality is constructed by individuals in the course of their interactions with their social worlds (Merriam, 1998, p. 6). Those engaged in qualitative research "are interested in understanding the meaning people have constructed, that is, how they make sense of the world and the experiences they have in the world" (p. 6). The overruling concern of qualitative investigation lies in understanding the event or experience of interest from the perspective of the participant, and not the researcher (p. 6). This position is often referred to as the *emic*, or the insider's perspective. This view is in opposition to the *etic*, or the outsider's standpoint.

Another characteristic of qualitative research is that the investigator is the principal instrument for data collection and analysis. In this context, the researcher must be responsive and adaptive to the circumstances making use of a wide range of personal feelings, insights and ideas in order to interpret information from participants (Merriam, 1998; Nievaard, 1996). Understanding, description, meaning and discovery are chief objectives of qualitative inquiry. Underlying all qualitative methodology is the assumption that data will undergo continuous comparisons leading to the formation of groups

and patterns (Merriam, 1998). Data collection ceases for a particular category when "theoretical saturation" is attained or when continued collection of data fails to yield new information (Darkenwald, 1982, p. 63). Interview data in this study were compared continuously to ascertain groupings and patterns in the information. Resultant patterns formed the basis for some of the study's conclusions and recommendations.

Procedures

The first step in gathering data for this descriptive study was to establish contact with the international graduate student body at Oklahoma State University, Stillwater campus. The Office of International Students and Scholars (ISS), of Oklahoma State University, provides assistance to all international students enrolled in the University. With the support and encouragement of the ISS office, the researcher was invited to provide a computer diskette bearing an explanatory letter outlining the research plan and objectives, and an invitation to participate in the learning strategy survey (ATLAS). At the end of the letter, a website address was provided that would immediately connect the participants to the ATLAS online site. The ISS office offered to post the researcher's information and request to participate in the

study on their Internet site. The international graduate student body, composed of 916 students for the spring semester, 2001, comprised the target population. Utilization of computer technology was perceived as an efficient and effective method for reaching these students and initiating the inquiry process.

Within a period of several days, data began to accumulate on the researcher's own Internet site that had been previously established as a data collection point. The quantity of data collected, however, was not of sufficient degree to support the study. Therefore, alternative collection strategies were developed. One strategy consisted of stationing a supply of ATLAS survey instruments in booklet format at the ISS office in the Student Union. As international graduate students visited the office to conduct routine business, office personnel invited them to participate in the study and consequently, to complete the survey. To effect this approach, a paper version of the online informational and personal data component was created and provided as an accompaniment to the survey. A second strategy for collecting data consisted of the researcher's efforts to personally contact international student groups and individual international graduate students and invite them to participate in the

study. This was accomplished in several ways. International student groups, composed of individual student organizations, or associations based upon national origin, were identified and contacted. Through these contacts, students were asked to participate in the study. A common approach was for association leaders to send an e-mail to all members of their organization notifying them of the study and inviting their participation. An alternative to this approach consisted of the researcher locating individual international graduate students and requesting their participation in the study. This element of the collection process was facilitated by the researcher's personal contacts within the target population, by word of mouth, and by referrals from various personnel in the university community who became aware of the study.

By means of these various data collection strategies, data were collected and organized for analysis. At the time analysis procedures were initiated, a total of 126 ATLAS responses had been accumulated. This response rate represented 13.8 percent of the target population.

Prior to completion of the data collection associated with ATLAS, a second data collection process was initiated. This component of the study consisted of the gathering of qualitative data through interviews. International

graduate students were solicited as volunteers. Thirty students were arbitrarily selected to participate in the interview process. Before each interview began, participants were asked to complete the ATLAS instrument, even if they had previously done so.

Each interviewee was asked the same predetermined, open-ended questions. Some of the questions were general in nature, others were specifically linked to learning strategy preference. Several questions pertained to the learning environment and instructors' actions or behaviors that facilitated or hindered the learning experience for the student. The following questions were specifically addressed to each interview participant:

1. Tell me about a recent learning project you have been engaged in.
2. How do you go about learning a particular task?
3. What sort of activities or strategies do you employ to help yourself in a learning situation?
4. What sort of actions or behaviors have teachers displayed in a learning situation that you liked and that facilitated your learning?
5. What short of actions or behaviors have teachers exhibited in a learning situation that you did not like and that hindered your ability to learn?
6. What kinds of things have you done when engaged in a learning activity that may have hindered your success?

7. Can you think of other barriers to learning that you have encountered in the course of a learning project?

8. Do you have any suggestions as to how you or the teacher might respond to these barriers?

Problem Solvers rely on reflective thinking and generating alternatives. Therefore, these additional questions were posed to them:

1. How would you describe the way in which you plan for a learning project?

2. In what manner do you identify resources for a learning project?

Navigators rely heavily upon planning and identifying resources. As such, they were asked the following additional questions:

1. How would you describe your use of organization in a learning project?

2. In what way do you monitor your progress in a learning project?

Engagers seek assurance that the learning activity is worthwhile and then are passionate about their engagement in the learning task. Therefore, these additional questions were posed to them:

1. How do you go about determining if a learning project is worth doing?

2. What behaviors do you prefer to employ in a learning project?

A final, general question regarding culture was directed to all interviewees. The concept of culture was not defined by the interviewer, nor was it elaborated or discussed. This particular question was:

1. How does "culture" factor into learning strategies, if at all?

Interviews lasted, on average, one hour. Before each interview began, participants filled out a consent form and several brief forms requesting demographic information. Of the thirty interview participants, ten had previously completed the ATLAS survey. Of those ten, three arrived at a different learning strategy category upon the second administration of the instrument. Participants in the interview component of the research consisted of twelve women and eighteen men. Participant age ranged from 22 years to 47 years. Geographic origin of the participants spanned five continents to include South America, Europe, Asia, Africa and Australia.

The conclusive component of this study consisted of (a) analyzing ATLAS results, (b) comparing those results to the previous learning strategy studies database which utilized SKILLS, and (c) compiling data from the individual interviews.

Data Analysis

This study employed a multi-method approach, that is, both quantitative and qualitative research methodologies were utilized to describe the learning strategy preference profiles of international graduate students and additionally, to derive a deeper understanding of those factors that both hinder and facilitate the learning process for international students at Oklahoma State University. Patton (1990) submits that quantitative and qualitative inquiry methodologies are not mutually exclusive. "Both qualitative and quantitative data can be collected in the same study" (p. 14). Gay (1996) reinforces this view, stating that a current trend "is for studies to use a combination of methodologies. . .and to collect both qualitative and quantitative data in the same study" (p. 232).

"Research is the formal, systematic application of the scientific method to the study of problems; educational research is the formal, systematic application of the scientific method to the study of educational problems" (Gay, 1996, p. 6). Quantitative research, or logical positivism, seeks to put all problems through a process of empirical testing under the assumption that everything can be logically explained; that truth can be verified.

Reality, from this perspective, is not socially constructed, and can therefore be studied. The scientific method is an orderly, linear process, comprised of various sequential steps: recognition and definition of the problem; articulation of hypothesis; collection of data; and statement of conclusions confirming or disconfirming the hypotheses (p. 6). A primary purpose of this research was to describe a specific condition, the learning strategy profiles of international graduate students. Thus, a quantitative design, in the form of a descriptive study, was employed.

However, many aspects of educational research are not wholly suited to the positivist approach. Gay (p. 7) refers to this as the difference located in the nature of the phenomena under study. Situations involving human beings are "considerably more difficult to explain, predict, and control" and "findings are extremely difficult to generalize or replicate" (p. 7). Therefore, a qualitative component was also integrated into the study in order that students' experiences could be understood and interpreted from their unique perspectives. Merriam (1998, p. 6) states that "the key philosophical assumption . . .upon which all types of qualitative research are based is the view that reality is constructed by individuals

interacting with their social worlds." Additional characteristics of qualitative research employed in this study were (a) the researcher served as the primary instrument for portions of the data collection and analysis, (b) fieldwork was involved in part of the data collection process, and (c) part of the product of this study was richly descriptive in nature in that words, rather than numbers, were employed to impart what the researcher had learned about an aspect of the phenomenon under study.

Quantitative data in this study were analyzed using chi square (χ^2). Chi square is a nonparametric test of significance. It may be used when data are in the form of frequency counts. A chi square test compares proportions that are actually observed in a study with those proportions that are expected to determine if they are significantly different. Expected proportions typically are the frequencies that would be anticipated if the groups were equal. As the difference between the observed and expected frequencies increases, the chi square value increases (Gay, 1996, p. 483). Chi square was used to assess the difference between the observed ATLAS scores and the expected ATLAS scores based on the norm groups that led to the creation of ATLAS.

A secondary focus of this study was to gain insight into the perceptions of international graduate students regarding instructors' behaviors, activities and strategies within the classroom that served to both facilitate and hinder students' learning processes. Towards that end, a methodology of nonprobability sampling was selected, with a goal of interviewing thirty international graduate students. Probability sampling "allows the investigator to generalize results of the study from the sample to the population from which it was drawn" (Merriam, 1998, pp. 60-61). However, generalization in a statistical sense is not a goal of qualitative research (p. 61) thus, nonprobability sampling was selected as the method of choice for this aspect of the study. Nonprobability sampling allows the researcher to gain qualitative insight into the problem under study, that is, understanding and information from the participants' perspectives and not the researcher's. This is oftentimes referred to as the *emic*, or insider's perspective (p. 6).

A common form of nonprobability sampling is purposive sampling, also known as purposeful sampling. This implies that the sample is selected because it is perceived to be a rich source of data (Gay, 1996, pp. 213-214). Moreover, it is based upon the investigator's assumption that the sample

selected should yield the insight and understanding that is desired and from which the most can be learned (Merriam, 1998). The selection criterion for this interview sample was that the participants be international graduate students at Oklahoma State University, Stillwater campus, for the spring semester, 2001. The sample number of thirty was selected because data derived from the SKILLS studies and subsequent ATLAS studies reflected the tendency of participants to fall within a fairly even pattern of distribution among the three learning strategy preference groups of Navigator, Problem Solver, and Engager, when the respondent number averaged 30 or more. Although qualitative research is not necessarily interested in generalizing results, a concern nonetheless exists regarding sample representativeness, in that observations gained should "at least accurately reflect the situation under study" (Gay, pp. 214-215). However, in this study, participants were selected arbitrarily from the international graduate student body. That is, they were not selected for reasons of generalizability, but instead to increase the credibility of the findings as they related to distribution among the learning groups identified by ATLAS. Patton (1990) has designated this procedure as purposive random sampling.

Interview data were analyzed through the constant comparative method of data analysis (Merriam, 1998). Categories, or themes, were constructed through continuous comparison of respondents' comments. As Merriam asserts, these themes are abstractions that originate from the data and are not the data themselves (p. 181). The emergent themes served not only to facilitate a narrative account of the findings, but also aided in the interpretation of meaning as well. The resulting patterns contributed to the basis for some of the conclusions and recommendations of this inquiry.

CHAPTER IV

FINDINGS

This descriptive study sought to examine two aspects of learning related to international graduate students at the Stillwater campus of Oklahoma State University. One branch of inquiry sought to determine the learning strategy preferences of the target population. This component investigated the potential for the commonality of learning strategies across cultures.

A second element of inquiry focused upon an interview process wherein respondents were asked to provide their perspectives in regards to the following issues: 1) descriptions of recent learning projects; 2) approaches to learning; 3) activities or strategies employed by students deemed as helpful in learning situations; 4) actions or behaviors exhibited by teachers in learning situations that respondents perceived as facilitative to their learning success; 5) actions or behaviors exhibited by teachers in learning situations that respondents perceived as hindering to their learning success; 6) things done in the course of a learning endeavor that were perceived as detrimental to learning success; 7) any additional barriers to learning encountered in the course of a learning project; 8) suggestions as to how the learner or teacher might respond

to learning barriers; 9) individual learner perceptions relating to learning strategy categories; and 10) perceptions of culture's role in learning strategy preference.

Frequency Data

A total of 126 international graduate students participated in the on-line or booklet administration of ATLAS. Of those 126 participants, 76 (60.3%) were males, 43 (34.1%) were females, and seven (5.6%) did not designate their gender. The 126 respondents represented 41 different nationalities, with seven participants (5.6%) electing not to specify their nationality, 29 respondents (23.0%) cited their nationality as Indian, nine (7.1%) as Malaysians, eight (6.3%) as Chinese, seven (5.6%) as Turkish, five (4.0%) as Thai, five (4.0%) as Taiwanese, four (3.2%) as South Korean, four (3.2%) as South African, three (2.4%) as Kenyan, three (2.4%) as Cameroonian, three (2.4%) as Ethiopian, two (1.5%) as Bulgarian, two (1.5%) as Venezuelan, two (1.6%) as Tanzanian, two (1.6%) as Spanish, two (1.6%) as Brasilian, two (1.6%) as Indonesian, two (1.6%) as Kuwaiti, two (1.6%) as Namibian, two (1.6%) as Filipino, and one each (.80%) as Nepali, Congolese, Togoan, Syrian, Azerbaijani, Beninese, Botswanan, Danish, Australian, Sri Lankan, Senegalese, Japanese, Bolivian,

French, Nigerian, Swazi, Qatari, Saudi, Jordanian, Mongolian, and Pakistani. These 126 participants represented 13.8% of the total international graduate student population at OSU Stillwater.

The mean number of years participants reported having attended OSU was 2.62 years. The mean period of residency in the USA was determined to be 3.38 years. The mean age of participants was 28.03 years. Student age ranged from 17 years (.8%) to 47 years (.8%), with the mode determined as 23 years (14.3%) and the median age as 27 years (4.0%).

Chi square was used to examine participants' learning strategy preference distribution to determine if respondents fell within relatively equal groupings across the three ATLAS categories, as did those respondents who comprised the database for the original SKILLS studies which led to the creation of ATLAS. This analysis revealed no significant difference between the culturally diverse population of international graduate students and the North American population that constituted the SKILLS' database. This analysis suggested that culture did not invoke a significant influence in participants' learning strategy preferences grouping (X^2=1.442, df=2, p=.486).

Results from the ATLAS surveys indicated that 35.7% of the participants were Problem Solvers, 32.5% were Engagers,

and 31.7% were Navigators. It was a reasonable expectation to anticipate the results to present 36.5% Navigators, 31.8% Engagers, 31.7% Problem Solvers within this group of participants (Conti & Kolody, 1999a). Observed results from this study indicated that (a) Navigators were under-represented by 4.8%, (b) Engagers were over-represented by .7%, and (c) Problem Solvers were over-represented by 4.0%.

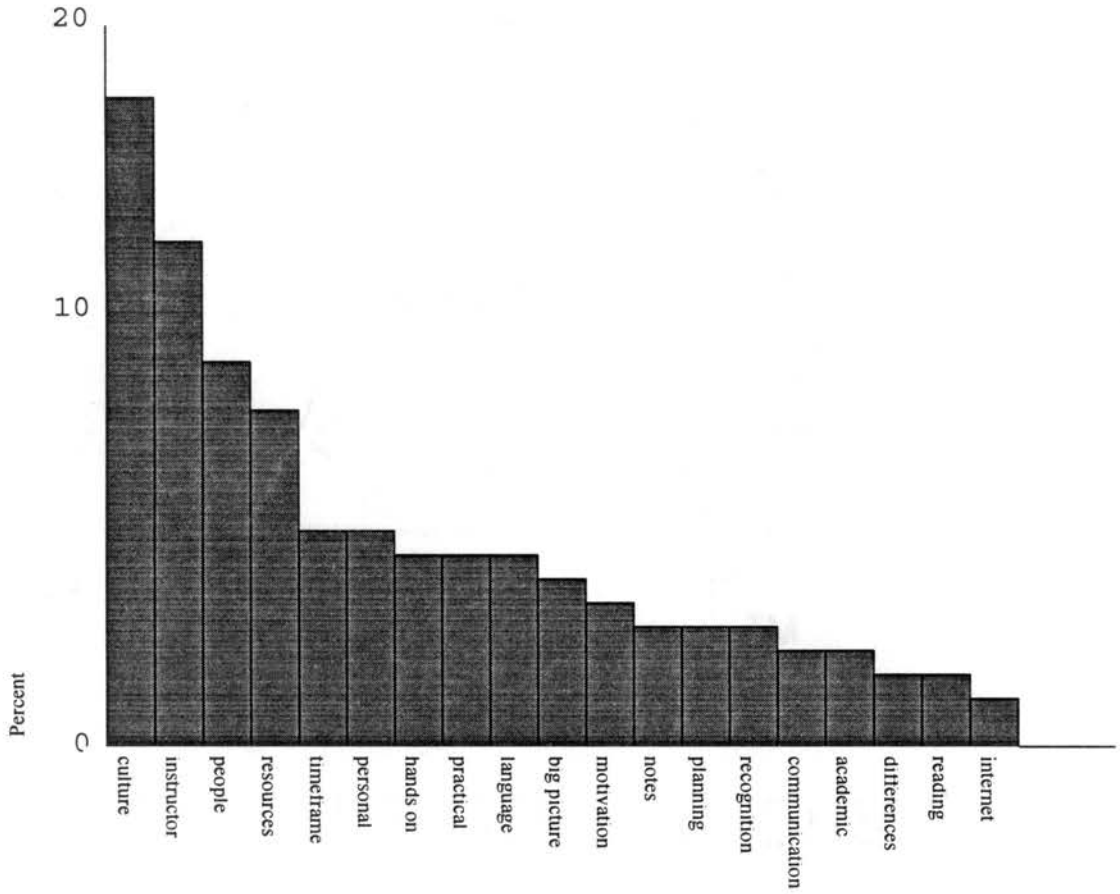
Interview Data Analysis

In this study, individual interview data were analyzed in order to identify emergent patterns. These patterns led to the formation of themes, or categories, which in turn facilitated a heightened understanding of the phenomenon under investigation. The process of consolidating and reducing data, and interpreting respondents' shared experiences, comprised the greater part of the effort of making sense of the information that was collected.

This aspect of the inquiry sought to describe the population's perspectives regarding approaches to learning, teacher actions and behaviors, barriers to learning, confirmation or repudiation of expected learning strategy category characteristics, and culture's role in learning strategy application. This component of the study comprised the preponderance of the research dealing with cultural issues, specifically, culture's impact on the

learning environment. It was here, in the emerging themes derived from the interview data, that the meaningfulness and the criticality of culture's role in learning activities became apparent.

Table 1: Keywords - Interview Responses



An investigation of learning habits, preferences, strategies and perspectives, under any circumstances, is bound to reflect a universe of individual differences. An inquiry that examined these topics within a population comprised of 30 individuals representing 23 nationalities, from five of the Earth's six continents, speaking at least

22 separate native languages, was certain to encounter more than the anticipated level of individual difference. However, an added range of dissimilitude was confronted in the form of cultural differences. This cacophony of voices and differences, however, was focused and mediated to a significant extent by the fact that these respondents' impressions were filtered through the sieve of a common relationship, that being the notion of learning and the associated domains of learning projects, approaches to learning, learning strategies, teacher behaviors or actions, barriers to learning, perception of learning categories, and impressions of culture's role in learning processes. Moreover, these learners' comments were couched in a rather specific context as well, that being the learning environment of graduate coursework pertinent to North American universities in general and Oklahoma State University in particular. With this understanding in mind, it was reasonable to assume that culture and its attendant facets and configuration of differences was certain to impact the findings of this study.

There is little in education that does not relate to culture. Of the 19 major categories or themes that emerged from the interview data, the most frequently cited was that of culture. A total of 314 respondent comments were

collected from the 30 interview participants. Of that total, 56 comments (17.8%) related to culture's impact in the learning environment. Furthermore, implications of culture and cultural differences bled over into many of the other major categories, extending the sense that culture's presence is truly ubiquitous. Everything that occurs within a learning environment involves communication. And communication is culture bound.

> One of the defining characteristics of a culture is the agreement among the people who share a culture or the general meaning of symbols. . .The meaning of symbols are learned through the process of socialization, the process of learning to be a member of our culture. . .messages can be transmitted from one person to another; meanings cannot (Gudykunst & Kim, 1997, pp. 6-7).

Culture

Of the eight general interview questions posed to participants, question number five registered the most comments specifically linked to culture. This question pertained to those actions or behaviors exhibited by teachers in the classroom that respondents did not like or that they construed as hindrances to learning. The number of comments directed to this question linking teacher behavior and cultural issues suggested the importance international students placed upon the role of the instructor in the learning environment and the relevant

nature of the instructor's sensitivity to cultural issues. Comments relating to these perceptions included:

> One thing I really don't like is acronyms! Say you're talking about something and the instructor throws in an acronym and it is culturally specific. . .Another thing, I don't know if it's teacher strategy, but people are not warm. For the first few weeks you are not known or called by name. This causes a lot of suffering. It takes a while. Let me compare with our culture. In our culture, you see a stranger, you make them feel welcome, you help them, you make them feel a part of the community. But here, teacher-wise, there is a tendency among professors - they might have a different grading scale for internationals than for American students. I want to educated equally (37 year old male, Problem Solver, Kenya).
>
> Well, number one thing is English. You know, problems with proficiency is major obstacle. So, note taking is very hard, very difficult, especially when in class are too many interruptions. Also, big cultural difference of not engaging in questions and answers with instructor until invited to do so by instructor (40 year old male, Engager, Malaysia).
>
> Forcing me into discussions. In Thailand, no talking or discussion is expected in class. Just listen and write! (33 year old female, Navigator, Thailand)
>
> Specially studying social sciences, uh, you have to learn everything new. New terms, ideas we don't bring with us, Western ways, no? Learning new teaching methods - as in critical reflection, we don't have this, so we don't get to contribute or get involved like this, you know, until we learn concepts (28 year old male, Navigator, Turkey).

A key to facilitating understanding of cultural issues and their importance to the learning success of international students is to gain an awareness of some notions related to cultural variability. As mentioned in

Chapter two, one of the most widely recognized designations of cultural variability is Hofstede's (1980) four-dimensional model of cultural differences. The dimension most often referred to is that of Individualism-Collectivism. This dimension is defined by the extent to which individuals' behaviors are influenced and defined by others. Individualists prefer self-sufficiency, collectivists recognize their interdependent roles and obligations to the group. Although Triandis (1995) warns that "there is a constant struggle between the collectivist and individualist elements within each human" (p. xiv), cultures that generally perceive most relationships as interpersonal in nature tend to be essentially individualistic, while those cultures that define the majority of situations as occurring between or among groups are essentially collectivistic (p. xiv). This concept of cultural difference has an impact on the degree to which international students accommodate themselves to an American learning environment. Students' ability to adapt to particular instructional strategies and teaching styles is often related to their sense of belonging to the group (class) and the recognition they receive from teachers, placing them within or outside of the learning group.

Another broad category of cultural difference that is relative to international students' adaptability to American learning environments is that which pertains to cultural styles as proposed by Ramirez and Castaneda (1974). This theory suggests that all cultures, communities, and families can be divided into two primary dimensions: traditional and modern. Individuals from Euro-American cultures tend to subscribe to those values that reflect modern environments. Examples of such environments would be flexible boundaries in the gender-role domain, strong individual identity, an orientation towards the future, and a view that tradition acts as a barrier to progress (Ramirez, 1991). Those from traditional environments tend to subscribe to the following values: gender-roles are quite distinct and defined, identity with family and community is strong, time orientation is more focused on the past and the present, and traditional ceremonies are valued (Ramirez). One relevant difference in this particular category relates to individuals' attitudes towards subservience to convention and authority: the traditional perspective is one of respect for convention and authority, while the modern perspective is to question authority (Ramirez).

Reflection on these concepts of cultural difference suggests a hypothetical clash of values which, in this particular discussion, would or could occur in the learning environment of an American university or college where the focus of learning is typically grounded in individual endeavor, there is characteristically a strong orientation towards the future, and the gender-role domain is exceptionally indistinct. Moreover, American students are quick to challenge their teachers and often reflect an inclination to question authority. International students, on the other hand, tend to be reluctant to engage their teachers or challenge authority, especially early on in their programs.

The broadest division of cultures is found in the contrast between Eastern and Western assumptions. It is important, however, to preserve an awareness that the East/West polarity is not entirely a geographical concept (Cushner & Brislin, 1997). Rather, it is the notion that "basic intellectual and religious traditions of Western and non-Western societies have organized their cultures differently, resulting in many divergent assumptions about the organization of self and society" (pp. 190-191). As such, the intellectual and philosophical traditions

associated with these domains leads to a general dimension of variability designated as Western and non-Western.

Reflecting upon these various dimensions of cultural variability, it appears likely that culture does imply difference and those differences are apt to be wide-ranging. Since child rearing practices differ within cultures and ethnic groups, the evidence suggests that culture's impact on learning is significant (Fierro, 1997). This presumption is strengthened upon the review of culture's perceived role in learning strategy preference as provided by interview respondents.

> We have greater respect for instructors than most Americans. . .our attitude towards learning is more serious. We know that the only way "up" is via education and our studies (36 year old female, Problem Solver, Taiwan).

> For sure, culture plays a big role. Everything we do, how we do it, how we think, what things mean, all is culture. But, one can "unlearn" some things and change to fit new situations. But change is not permanent, only used to meet new demands. In my own space, I am still doing things in my traditional way. One can be more than one way, you know? (40 year old male, Engager, Malaysia)

> Learning is an extension of home life, cannot be separated! (40 year old female, Engager, Swaziland)

> I brought a lot of respect. . .no, total respect, for the instructor into my classroom views. Because of this, I was too long in challenging the teacher, or speaking up in class. I guess my strategies were to just listen, obey, and study hard. Like back home (43 year old male, Navigator, Togo).

> Like, Western culture is very much a written culture, everything is written down. They don't sit down with you and explain it to you. In other cultures, more communication is oral. So, we will always be looking for a "leader", someone to tell them, rather than learning, observing on our own (28 year old male, Navigator, Turkey).
>
> I think culture has an impact, regardless of how you want to change or adjust. Say, if you are not used to studying with women in a Muslim culture, but here they may influence how you regard women in a study situation (28 year old male, Navigator, South Africa).
>
> Yeah, I think very much. When choosing a learning strategy, I feel cultural background and personality. I am traditional, I learn collectively and share things. But, in my culture girls should not stand up in front of men. So, I have to force myself to go against my traditions. This is a real challenge, to overcome cultural (42 year old female, Problem Solver, Namibia).
>
> Yeah, I guess so. In Bulgaria, we are used to lectures. Here, participation counts! If you want a high grade you must contribute to the group's progress. In my, culture, no! Also, in my culture memorization and retelling is the way we perform. Here, it is analyzing and thinking more (24 year old female, Engager, Bulgaria).

And finally:

> Values, beliefs, educational backgrounds, previous knowledge - all are culturally influenced. Even the way he walks, moves, reflect everything (42 year old male, Engager, Venezuela).

The final interview question pertained to respondents' perceptions of how "culture" factored into learning strategies, if at all. Of the 30 comments recorded, 26 respondents (86.6%) indicated that culture, explicitly or implicitly, was a significant factor in learning strategy

preference or use. Two respondents (6.6%) did not articulate a clear answer to the question, while one respondent (3.3%) indicated a perception that culture's influence in learning strategy utilization was minimal. One interviewee (3.3%) registered the opinion that culture was not a factor in learning strategy use. This single negative response was provided by a Western European male who had resided in Stillwater for five years and had attended OSU while participating in an organized athletic program. It is reasonable to assume that this respondent may have become assimilated to American culture, to include American university culture in general and Oklahoma State University culture specifically, to the extent that cultural difference was no longer a conscious consideration for him.

Of the 56 comments that formed the category of response designated as "culture", 22 (39.3%) were derived from Navigators, 20 (35.7%) emanated from Problem Solvers, and 14 (25.0%) resulted from Engagers. Apart from question number five, other general interview questions that elicited a significant number of comments directed towards culture included: question number eight (6), pertaining to respondents' suggestions for self or teacher to react to barriers to learning; question number seven (4), pertaining

to learning barriers encountered in a learning project; question number six (4) pertaining to respondent action that hindered success in a learning project; and question number four (3) pertaining to teacher actions or behaviors exhibited by leaders in a learning situation that were perceived as facilitative of student learning.

When respondents were asked how culture factored into learning strategy usage, the responses elicited by the three learning preference groups were uniformly similar. With only two exceptions (both Navigators), all interviewees viewed culture as having a consequential impact on their use of learning strategies, particularly, how they behaved in the learning environment. All categories of learners, for instance, expressed initial reluctance to interact with the instructor and, additionally, experienced inappropriate use of memorization strategies.

However, apart from the general culture question, Navigators dominated the responses pertaining to culture's influence in the learning process. Although Navigators comprised 43.3% of interview respondents, their contribution to culture-related responses ranged from 50.0% to 75.0% across the five questions that elicited culture-specific data. Navigators provided 75.0% of the comments

to question six (things the learner has done in a learning activity that may have hindered learner success). Although all three learner groups exhibited similar responses and experiences related to cultural differences in the learning environment, Navigators appeared to be the learner category most affected by the influences of culture. This is likely due to the characteristics attached to these learners in that Navigators are recognized as high achievers, results-oriented individuals who place a great deal of importance on the use of planning as a learning strategy. Because Navigators prefer a highly structured learning environment, any ambiguity they encounter is likely to unduly inhibit their learning progress.

Instructor

The category, or theme, characterized as "instructor" pertains to respondents' perceptions of the role of the teacher in the learning process, in particular, those actions or behaviors exhibited by teachers in a learning situation that were deemed as facilitative to international students' learning, or as a hindrance to that learning. Of the 39 responses assigned to this category, 15 comments (38.4%) originated from interview question number four, that is, those teacher behaviors or actions perceived as facilitative to international students' learning. An

additional 15 comments (38.4%) originated from question number five, that being teacher actions or behaviors perceived as hindering students' learning. Seven comments (17.9%) were derived from question number eight, which spoke to response to barriers in the learning environment.

Of those comments which related to teacher behaviors that facilitated learning, eight comments (53.3%) pertained to the instructor's ability to facilitate group work. Multiple concepts appear to be at work here. One aspect of students' appreciation for such instructor behavior may be due to the basic human need to feel a part of something larger, to belong. Another aspect may have been more culturally motivated in that individuals from collectivistic societies value group membership as a means to self-identification. Moreover, collectivistic cultures tend to prefer group-related learning activities to individual learning activities. Finally, for most international students, a primary barrier to learning is language. English is seldom a native language for internationals and affiliation with a group, especially one comprised of many native English speakers, is certainly an advantage and may be perceived as a vital component for learning success. Student comments to this effect include:

> Group projects are very helpful. Collaboration with others is best (40 year old male, Engager, Malaysia).
>
> I guess this is the activities that involve the whole class. It helps me to talk to my classmates. I like it when the teacher encourages group work (24 year old female, Engager, Bulgaria).
>
> I really like the idea. . .I have problems when teachers ask us to get into groups because Americans tend not to get with us (internationals). It's just when teachers help with putting the groups together thinking of diversity. Also, when teachers encourage us to talk with a "neighbor", to get to know the class, that really helps to break the ice (23 year old female, Navigator, Malaysia).
>
> When teachers get me to interact, when they are interactive and get the class involved (23 year old male, Navigator, India).

Another pattern of response relating to instructor actions or behaviors that were perceived as facilitative to learning was that which recognized the student as an individual. Eight comments focused upon the positive nature of teachers who recognized internationals as valued participants in the learning environment. Such recognition not only meets a basic human need, but it further serves the purpose of incorporating internationals into a second culture. Again, for those for whom group identification and belonging were vital, recognition by a teacher resolved an essential, traditional need for association with a group - which, in this case, was an important, relevant component to international students' well-being. Having a voice in

class, and possessing the ability to participate in class-related activities, empowers the international student to share in the learning process with others and benefit from their knowledge and insight. Furthermore, the ever-present issue of language barrier is made more tolerable when students feel comfortable with seeking others' opinions and feedback. Comments reflective of responses related to instructor recognition include:

> Instructors who valued my experiences and who gave me a voice in the classroom were most helpful to me (43 year old male, Navigator, Togo).
>
> Personalizing, paying attention, making me feel valued. . .to be recognized as an individual, to be encouraging, help me to engage, speak with others. Also, very good to have consideration with language problems (28 year old male, Navigator, Turkey).
>
> By probing further, discussing, giving you "space", you know, a part in the class. I like them (teachers) to recognize me! (40 year old female, Engager, Swaziland)
>
> I think it's important that teachers should know me, call me by name, have more interaction, be more democratic (22 year old male, Problem Solver, India).

A final, major category of response related to teacher actions or behaviors was that which pertained to the matter of culture, and culture-related issues, within the learning environment. Twenty comments, 51.2% of all instructor-specific comments, dealt with some aspect of culture's influence in the learning success of international

students. This category may be broken down into three distinct subcategories, which may be described as a) proactive instructional measures, b) cultural insight, and c) non-use of culturally specific material. A key component to understanding international students' comments in these areas was recognition of the fact that for the vast majority of internationals on campus, English is not a first language, nor is it the language that most respondents speak at home or with friends outside the classroom. Moreover, sensitivity to or awareness of cultural differences on the part of teachers goes a long way towards facilitating success in the learning environment. Comments that addressed international students' needs in the area of proactive instructional measures include:

> A clear outline of all course requirements and clear instructions/examples of what will occur or be expected each day, especially to help with language barrier (36 year old female, Problem Solver, Taiwan).
>
> Some faculty who gives study guides, to help understand the concepts and focus or specific information and not all the field of the topic. You know, to help us know the different ways you need to study here (30 year old male, Problem Solver, Cameroon).
>
> A good atmosphere helps me a lot. Another thing, when you have an assignment and don't have much detail how to proceed, it helps to have clear and good outline for how to proceed (42 year old female, Navigator, South Africa).

It's very good for me when instructor makes available comprehensive notes or outlines of each class's contents. Specific instructions and examples for instructor's demands are also helpful. Best for me is lots of handouts. This affords the stability of the written word (40 year old male, Engager, Maleysia).

One professor had all he was to talk about on paper and he distributed prior to lecture! This helps to make connection and portray relationships of subject/material, helps to organize the learning (33 year old male Engager, Saudi Arabia).

Comments that related to the area of cultural insight on the teacher's part include:

Hmmm, well, issues I've talked about can't help much. They (teachers) must approach individuals individually. But, some teachers don't understand internationals and dealing with so many more issues than American students. I'm not recommending slack for internationals, but rather understanding. Many internationals don't take advantage of office hours, they are too shy. Like, kind of promote more of a cultivation of discussion and engagement. Some professors show discomfort when internationals talk and they don't understand well (27 year old male, Problem Solver, Azerbaijan).

Yes, teacher should attempt to understand me in spite of my language issues or problems. You know, with order of my words, they should make an effort to understand and not just refuse to try (33 year old female, Navigator, Thailand).

I think a teacher has to use different strategy for different students! Teachers must have more experience with internationals and expand their point of view (29 year old female, Navigator, Korea).

For me, it has to do with personality and attitude of professor. They are helpful or can close the door! Maybe they could learn to be accommodating of those from other countries or cultures (42 year old female, Navigator, South Africa).

> It is a technical as well as a cultural problem. Some (professors) who have their Ph.D. a long time ago, they don't keep up with new, present world! The cultural part is about cultural sensitivity. The professor, as a joke, made remarks that offend some members. He wasn't considerate of us, of who are different (30 year old male, Engager, India).

A final relevant pattern to emerge in the category of "instructor" had to do with international students' preference for teachers not using examples or remarks that were culturally specific. Examples of this issue included:

> For me, I don't like it when teachers do not write on blackboard, and when they are using abbreviations of words we don't know. Uh, using culturally relative analogies and metaphors that internationals don't know (24 year old female, Engager, Bulgaria).

> A lot of lecturers in my department have a farm background, but our background, our farm experiences, are different, or we have no farm background. That is culturally specific (30 year old male, Problem Solver, Cameroon).

> One thing that I really don't like is acronyms! Say you're talking about something and the instructor throws in an acronym and it is culturally specific. Once I was thinking, someone should prepare a list of the most common acronyms used in different departments, or colleges (37 year old male, Problem Solver, Kenya).

> When it comes to real-life examples, they are mostly American. In this sense, internationals cannot relate to these examples! That is, culturally specific examples! That, combined with the background specific to culture, this format doesn't work. Also, very biased, using a bonus question or a test based on, say, a (American) sporting event (28 year old male, Navigator, South Africa).

> Some teachers tend to be too casual, they digress a lot, talk about sports, about irrelevant stuff. It's better if they stick to topics (23 year old male, Navigator, India).

Clearly, teacher behavior has a significant influence upon the learning success of international graduate students. Instructors often represent the primary, and potentially the most meaningful, interface between a student's home culture and tradition and those of America in general, and the university environment in particular. Of the 39 comments linked to the category "instructor", nine, or 23.1%, originated from Problem Solvers; ten, or 25.6% originated from Engagers; and twenty, or 51.3%, issued from Navigators.

As with the category of "culture", Navigators dominated the response group that provided the most comments pertaining to "instructor". Once again, Navigators, as a learner group, due to their particular learner characteristics, appeared to be the group most adversely affected by the problems associated with ambiguity in the learning environment. When instructor behaviors reduced ambiguity in the learning environment, Navigators were those most likely to state their approval of such behavior (60.0% of affirming responses).

People

Of the 314 comments obtained from interview respondents, twenty-eight of them (8.9%) pertained to people. The importance of people was perceived as a vital aspect of learning success. Seventeen comments, 60.7% of "people" remarks, pertained to students' approaches to learning. When expressing their preference for going about a learning task, these participants indicated a clear preference for incorporating other individuals into the learning process, typically at the outset of a learning project. Comments representative of this preference included:

> Usually, I find some colleague to talk to first. I get a sense of the topic, you know, a feel for it. Then I collect resources just right on for topic (40 year old male, Engager, Malaysia).
> Hate following written instructions, prefer to ask about content, engage in discussion with people with knowledge and insight, or simply talking to others (33 year old male, Engager, Saudi Arabia).
>
> I meet with a committee, you know, people first! (40 year old female, Engager, Swaziland)
>
> Um, usually I would like to get information from a person who knows, then pick it up on my own, gather information (28 year old female, Problem Solver, India).
>
> I don't believe in reinventing the wheel. I seek an experienced person! I resort to experimentation last (34 year old female, Navigator, India).

> Well, I watch a friend, ask questions. If I don't understand. . .making sense is more important than just memorizing or copying (24 year old female, Navigator, Bulgaria).

Of those comments not directly related to students' approaches to learning, another area where people were viewed as key to learning was that pertaining to the nature of activities or strategies students preferred to employ to help themselves in learning situations. 10.7% of "people"-related comments were focused on this view. Examples included:

> Discussions, with knowledgeable resources. Also, work with groups is very helpful (36 year old female, Problem Solver, Taiwan).

> I discuss with people first. And I prefer to team-up with another person (40 year old female, Engager, Swaziland).

> Uh, I try to find as much related information as possible, like the same thing but from different people. Or, I might even talk to a professor about it. While reading, I like to take notes. When preparing for a test I prefer to read my notes and not the text. I also like to talk to people at that point (26 year old male, Navigator, Bolivia).

A third area that linked people to learning success was that which examined teacher actions or behaviors that facilitated learning in the classroom. These comments focused on working with others. Group activities appeared to be especially salient to many internationals in that learning needs entwine with specific human as well as

cultural needs to facilitate student well-being. The difficulties imposed by language barriers are reduced through group interaction. The need for acceptance by others and of belonging to a group also serve to diminish some of the social anxiety experienced by internationals in cross-cultural environments. Furthermore, for many students who hail from traditional cultures, the cooperative learning processes of group interaction serve to facilitate learning in a traditional sense. Comments reflective of this sentiment were:

> Group projects are very helpful! Collaboration with others is best (25 year old male, Engager, Malaysia).
>
> I guess this is activities that involve whole class. It helps me to talk to my classmates. I like it when the teacher encourages group work! (24 year old female, Engager, Bulgaria).
>
> I really like when teachers get students involved in the process. I dislike being passive. I prefer hands-on activities, especially discussions and applying the topic to your experience, team work. Lectures should be short, straightforward (42 year old male, Engager, Venezuela).

Perhaps, not surprisingly, the majority of comments attributable to this category came from the Engager learning group. Of the twenty-eight comments recorded, six (21.4%) were derived from Problem Solvers, seven (25.0%) originated with Navigators, and fifteen (53.6%) proceeded from Engagers.

True to their learner characteristics, Engagers sought to interact and collaborate with others as an essential component of their learning process, especially at the outset of a learning task. Navigators tended to make contact with others not out of collaborative desire, but rather as an extension of their resource gathering activities or as a source of prompt feedback. Problem Solvers reflected a need to speak with others based upon their desire to locate the best available information as quickly as possible in association with their "hands-on" proclivity.

Resources

Assembling resources--accumulating facts, data, information and insights, is an integral component to any learning activity. Knowledge, academically speaking, is power, and empowered learners attain success within the learning environment. Key to such empowerment is the acquisition of relevant information and understanding. Attainment of information and understanding occurs partially through the accumulation of resources. Resources may exist as texts, documents, graphs, charts, pictures and a mélange of other configurations of information. Resources may also be located in other people, especially when those people are particularly cognizant. People also

serve as resources when they contribute to discussions and share feelings and insights. The international graduate students who participated in this study deemed the subject of resources to be of significant value to the learning process. As a specific category, "resources" accounted for eight percent of the total comments provided by respondents. An aggregate of 25 comments comprised this theme. Contributions, by learning category, amount to three by Engagers (12.0%), ten by Problem Solvers (40.0%), and twelve from Navigators (48.0%). Respondents' remarks flowed from four specific questions: seven comments each pertained to the areas of approaches to learning and individual strategies for facilitating learning; six comments related to how students planned or organized for a learning project; and four comments focused on those things that students have done that have hindered their own learning. Interwoven among the many remarks was a thread that appeared time and again. This theme related to respondents' use of others in the process of resource accumulation. Typically, students first sought to collect "hard" data utilizing computer searches or reviewing old notes and papers. But consistently, in 52.0% of the comments, after searching for non-human resources,

respondents turned to friends, colleagues or pertinent others to facilitate their learning.

Comments relating to participants' approaches to learning, interview question number two, included:

> Research topic thoroughly (43 year old male, Navigator, Togo).
>
> First, I get all the material I can, then I read up as much as I can. Then, I might ask another person (23 year old male, Navigator, India).
>
> Look for resources, how to exploit resources? Could be people, things which can be borrowed to improve my skills (22 year old male, Problem Solver, India).
>
> Uh, the first thing, I like to get information about the thing I'm going to study. Is there a need to communicate with individuals personally? Basically, I need to get information and form an outline about how I should proceed. I spend most of my time in this way, in preparation (42 year old female, Navigator, South Africa).
>
> Well, I jump right in it! I just try to learn all about the subject in every way I can, by any means available (27 year old male, Navigator, Denmark).

Comments that reflected individual strategies for learning were typified by the following:

> First, I acquire all the information I can, as much as possible, to include resources. Once acquired, I plot my purpose and then work towards it (39 year old female, Navigator, India).
>
> For me, taking notes, summarizing, sifting what is real or important. I communicate with only a small group of people. I prefer small groups of people to work with. My new strategy is to gather all the sources as possible up front! (42 year old female, Navigator, South Africa).

> I think I like accumulating resources, analyzing them, then synthesizing them, bring them together. Then build my case. I'm not good at memorizing. If I can do it, I do it. Then I talk about it with my peers, people in the field. With comments, I refine my approach, and I continue reading, analyzing resources (37 year old male, Problem Solver, Kenya).

Questions that related to how students plan or organize for a learning project echoed similar patterns, that is, an initial, intensive effort to collect resources, determine a sense of direction, review old notes and papers, and seek relationships. Fifty percent of respondents specified that after concluding the initial effort, they sought out human resources in order to check their knowledge or discuss their findings.

Generally speaking, the process of resource collection, as detailed by interview respondents, appeared to be comprised of two components: 1) an in-depth, investigative effort to collect data and analyze discoveries and; 2) seeking out human resources for purposes of discussion, feedback and expanded awareness. For those respondents who did not indicate a preference for incorporating others into their resource collection process, their focus seemed to be fixed upon the continued analysis and revision of what they had accumulated in search of ever-greater understanding of the topic.

> I think it's like in the ATLAS, look for resource, try to find alternatives. But also, I like to make schedules first and worry about results. Most of the time I prefer to reflect and analyze! (42 year old female, Problem Solver, Namibia)

It is likely that international students have a distinctive need to incorporate others into their resource collection process. This need is perceived as a measure to offset the deficit, real or imagined, that students associate with the issue of language barrier. The increased potential for misinterpretation or inadequate understanding of data logically implies that others be integrated into the learning process in hopes of reducing errors or misconceptions attributable to reading difficulties and interpretation of meaning. Involving others in the processes of learning entails incorporating different opinions and perspectives into issues that assist with thinking through problems or studying difficulties. Often times, the support others provide may be as important as the knowledge they contribute (Fellenz & Conti, 1993).

An additional, somewhat unique motivation for international students to intensively pursue the collection of resources, to include other people, is the issue of pressure or stress related to their unique status. International students, simply put, cannot afford to fail in their academic endeavors. The cost of failure is loss

of their hard-earned student visa, expulsion from the United States, and the shame associated with returning home as a failure. With these issues in mind, internationals tend to be highly motivated, well-focused learners, who typically go about the process of collecting resources in an exhaustive fashion. Incorporating others into this procedure is both a logical and a relational component to their learning success.

In the accumulation of resources for a learning project, Navigators tended to initiate an exhaustive process of collecting non-human sources of data first and then integrating that information into a plan for proceeding with the learning task. Problem Solvers also sought to gather substantial data first, from non-human sources. Unlike Navigators, however, Problem Solvers tended to seek out other people as resources once they had conducted their initial search. Engagers, in this category, did not establish a particular strategy fro resource collection, rather, they expressed a certain inadequacy as regards the information gathering process. The implication is that Engagers may become frustrated with the technical aspects of searching for and retrieving data from non-human sources, or from amassing an over abundance of data. Such processes may run counter to their

predilection for exercising the affective domain as a principal learning component.

Personal

As a category, "personal" relates to respondents' perceptions of those aspects of learning or learning activities for which they are individually responsible, or from which they derive specific individual benefit. Of the 17 comments attributed to this category, six (35.2%) centered upon Engagers' determination of the worth of participating in a learning project; six (35.2%) derived from the interview question pertaining to things done in a learning activity that hindered learner success; and one each (5.8%) issued from questions related to: approaches to learning, other barriers to learning, response to learning barriers, and use of organization in a learning project.

52.9% of the comments in this category originated from Engagers, 23.5% came from Navigators, 23.5% issued from Problem Solvers. Engagers "seek out learning activities that provide the greatest opportunity for engagement . . .anticipating or recognizing the value to one's self of learning specific material"(Conti & Kolody, 1999, pp. 13-14). This typifies the manner in which Engagers perceived

the worth of a learning activity. This characteristic is borne out in the following comments:

> I try to take time to educate myself about the project. I have an inner dialogue and weigh benefits or future usefulness for me (40 year old female, Engager, Swaziland).
>
> How much do I stand to gain from project? Also, how will I apply outcomes afterwards? (25 year old male, Engager, Malaysia)
>
> First, I look at literature to see if this paper or project will get its way to publication. Or, that this project can be incorporated towards my degree (33 year old male, Engager, Saudi Arabia).
>
> It depends on my need, you know, academic, professional, personal, or family (47 year old male, Engager, China).

Engagers' comments dominated the issue of determination of worth of a learning project. However, responses to the question that sought to ascertain how learners hindered their own success in the course of a learning activity revealed that Problem Solvers comprised the majority (66.6%). Of the 4 Problem Solver responses, 2 participants viewed emotional issues as hindering their learning success:

> Getting angry with others, instructors. Being moody, moodiness (22 year old male, Problem Solver, India).
>
> Arguing with teachers, confrontational attitude (36 year old female, Problem Solver, Taiwan).

Two other Problem Solvers cited procrastination as a primary barrier to their learning success. One Engager and

one Navigator remarked that being tired, or sleepy, impacted their learning. A final Engager comment expressed that the stress imposed by financial issues and teachers' inability to recognize that internationals could understand the subject matter and the English language as well as others engendered difficulties in focusing on class content. Apart from this particular Engager's concerns pertaining to instructor perceptions, the comments of internationals' do not appear to be out of synch with what one might anticipate from North American students.

Timeframe

The notion of "timeframe" encompasses several aspects of the learning process. Typically, this term refers to the issue of time and its role in a learning activity. In this sense, time acts as a delimiter, a boundary setting restriction that defines the temporal borders associated with a learning task. Conscientious learners develop strategies to cope with this limitation, chief among them is the creation of deadlines and an accompanying schedule with which to monitor one's progress in meeting those deadlines. Sometimes, the concept of time is a more broadly perceived factor in the learning environment. In this sense, time alludes to expanded windows of opportunity, such as a semester, or a multi-year block

within which certain academic goals may or may not be met. Of the seventeen comments that comprise the "timeframe" category, 94.1% (16) of them pertain to time as a delimiting agent associated with a specific learning activity. Of those sixteen comments, eleven (68.7%) emanated from the question that examined approaches to learning, two (12.5%) are derived from the question that sought to know how respondents planned for a learning project, two (12.5%) originated from the question regarding use of organization in a learning project, and one (6.2%) comes from the question seeking to know how one determined worthiness for participating in a learning project. By learning category, participant responses originated as follows: eleven comments (64.7%) from Navigators, five comments (29.4%) from Problem Solvers, and one (5.9%) from Engagers.

Navigators are perhaps best characterized as "focused learners who chart a course for learning and follow it" (Conti & Kolody, 1999a, p. 9). Planning is extremely important to Navigators, hence schedules and thus, timeframes, are especially significant aspects of their learning success. Navigators' learning schedules are focused upon deadlines and attuned to final results (Conti & Kolody). As such, it is not surprising to discover that

the Navigator group constituted the majority of respondents in the "timeframe" category. Examples of respondent comments pertaining to this theme were:

> My organization is focused on deadline consciousness! I set timeframes and adhere to them for maximum productivity (34 year old female, Navigator, India).
>
> I believe in deadlines! I set deadlines for myself. This is maybe what qualifies me as a Navigator, I think. I post things in front of my desk (42 year old female, Navigator, South Africa).
>
> I use calendar to keep track, try to finish all written homework at least one week ahead so I can have it proofread. Also, I call friends if I have problems. You know, cooperative learning (28 year old male, Navigator, Turkey).

Comments from other learning category groups included:

> I will follow the syllabus or course outline closely, do work in advance, keep ahead of assignments to allow for corrections due to language problems (36 year old female, Problem Solver, Taiwan).
>
> I maintain a list or chart, with each class's schedule of commitments and deadlines. Then I work to keep up with those deadlines (36 year old female, Problem Solver, Taiwan).
>
> I make a strict plan to map out time allowable to complete course (33 year old male, Engager, Saudi Arabia).

A comment that reflected the concept of time as a more broadly perceived factor in the learning environment was reflected in these words:

> Because of time issues, I can't take some courses I want to take. Sometime too much work gets in the way (28 year old male, Navigator, Turkey).

As noted, Navigators dominated the comments in this category. This result follows this learner groups' tendency to create a plan for their learning schedule and then sticking to it. Deadlines are thus closely monitored. Problem Solvers also reflected a strong desire for heeding deadlines, but this tendency in this learner group stemmed more from their desires to facilitate their preferred strategies of generating alternatives or considering various solutions for the learning task. The sole Engager comment in this category merely suggested an individual's concern for adequately fulfilling a class's requirements.

Practical

This category of response derived from the interview question which sought to learn about participants' recent learning projects. An aggregate of 14 responses indicated that for these individuals, practicality was the key issue in selecting and undertaking a learning project. Of the 14 comments provided, 3 issued from Engagers, 5 came from Problem Solvers, and 6 originated with Navigators.

The topic of learning projects has long been a field of investigation for adult educators. Tough's inquiries (1967, 1971) in the area of adult learning projects stimulated widespread interest in self-directed learning (Merriam & Cafforella, 1999). Tough referred to this form

of learning as self-planned learning. Moreover, Tough defined a learning project as an important, purposeful endeavor in order to acquire specific knowledge or skill, or to effect a change of some sort on the part of the learner (1971). The following comments reflected international respondents' self-planned learning projects, with a specific emphasis on practical, personal, non-academic endeavors:

> Well, how to move my family and all our household belongings to Georgia! (40 year old male, Engager, Malaysia)
>
> How to send my computer home to Cameroon, West Africa? What were my options? How is the best way to send it? (30 year old male, Problem Solver, Cameroon)
>
> Improve communication skills, public speaking (22 year old male, Problem Solver, India).
>
> Learning how to cook (23 year old female, Navigator, Malaysia).
>
> Learning new software! (25 year old male, Problem Solver, Australia)
>
> Public speaking! I joined Toastmasters (30 year old male, Engager, India).

In addition to the stressful intensity of academic life, these international respondents also encountered a wide array of personal issues that demanded self-directed learning commitments. In order to meet their real-life learning needs, these students adapted their learning strategies to fit the demands of their particular

situations. In this regard, they sought practical solutions to practical issues and as such, shared a commonality of experience with all adult learners. The particular strategies adopted by these respondents are reflected in other portions of this inquiry titled "people", "big picture", "hands-on", "internet", "motivation", "resources", and "timeframe".

In this particular category, there was no distinguishing difference among the various learner groups' responses. In fact, the common feature that links all of the respondents' comments is the everyday reality of confronting unexpected demands or responding to life's necessities as they present themselves. In this regard, these learners reacted to real-life issues, practical issues, as the need arose. How the distinct learners may have proceeded with their real-life learning tasks would, undoubtedly, have led to significant differentiation in their various approaches and other aspects related to the learning process.

Language

Fourteen comments, or 4.5% of the total remarks solicited in this report, pertained to language issues. Three interview questions were responsible for the comments elicited. These questions pertained to the following

topics: teacher actions or behaviors manifested in a learning situation that students did not like or perceived as hindering to their learning ability; other barriers to learning encountered in the course of a learning environment; and suggested responses to perceived learning barriers. With these comments regarding language, a clear and powerful link to culture is once again identified. Culture and language are so interlaced that Agar (1994) proposes the use of the term languaculture instead of language and culture individually. When members of different linguistic or cultural groups communicate, "the degree of shared meaning in experiencing the reality is likely to be minimal. . .the similarity of the language systems influences the degree to which people perceive the world in similar ways" (Gudykunst & Kim, 1997, p. 195). Harkening back to the discussion regarding cultural variability, specifically, Hofstede's (1980) dimension of Individualism-Collectivism, it is worth noting that collectivistic cultures do not place the same degree of value on verbal messages as do individualistic cultures. "Unlike the United States and other individualistic cultures, the orientation of collectivistic cultures can be characterized as bordering on a mistrust of words" (Gudykunst & Kim, p. 2000). Within many collectivistic

cultures, words are viewed more as helpful tools of human expression to the extent that the speaker acknowledges their limitations and influence (Gudykunst & Kim).

> Language is a powerful and transformative part of culture. Like culture, language is learned, it is shared, and it evolves and changes over time. It is much more than a set of words and grammar rules. It is a forceful instrument for giving individuals, groups, institutions, and cultures their identity. Through language, we communicate our values, attitudes, skills, and aspirations as learners of culture and as makers of future culture. (Ovando, 2001, pp. 268-269)

Language, it may be presumed, exerts a powerful effect on learning processes for students from other cultures for whom the language of the learning environment is not their native tongue. Comments reflective of respondents' notions of teacher behaviors considered to be hindrances to their ability to learn included:

> Long lectures without breaks and no interaction with class (24 year old female, Engager, Sri Lanka).

> Reading and conversing in class, because of the language barriers (not wholly fluent yet!) were terrible issues. I was perceived as knowing less than others, damaging to my self-esteem (43 year old male, Navigator, Togo).

> When they don't pause to ask questions, to ask did everyone understand. When they don't understand that we (internationals) are there, sometime it (lecture) goes on and on, not giving students opportunity to validate information (26 year old female, Navigator, Japan).

> Well, number are thing is English. You know, problems with proficiency is major obstacle. So, note taking

is very hard, very difficult, especially when class are so many interruptions and diversions (40 year old male, Engager, Malaysia).

Comments demonstrative of students' perceptions of other barriers to learning included:

> First thing I can think of is language! Mainly, it has to do with accent, and being understood. I beg your pardon? I beg your pardon? Another thing is, I think, when the instructor does his lecture and does not allow for any questions…(42 year old female, Navigator, South Africa).

> It can be the writing process, or whole English process! At home, parents read and review students' work, but here, parents don't have that ability, cannot correct (29 year old female, Navigator, Korea).

> Language! This is number one problem! And writing skills, not so good. Very difficult (33 year old female, Navigator, Thailand).

> Sometimes understanding content, or teacher's expectation. Too much, or not enough explanation (47 year old male, Engager, China).

Responses indicative of participants' suggestions as to how to respond to perceived learning barriers when language is the obstructional issue included:

> Right now, I don't do anything directly, I prefer to reflect about it. I should learn to give feedback, share my emotions, you know? (42 year old female, Problem Solver, Namibia).

> Yes, teacher should attempt to understand me in spite of my language issues/problems. You know, with order of my words? They should make an effort to understand and not just refuse to try (33 year old female, Navigator, Thailand).

Of the fourteen comments in this category, seven (50.0%) originated from Navigators, four (28.5%) from Problem Solvers, and three (21.4%) from Engagers. Again, as with the "practical" category, there were no real distinctions between the three learner groups' responses pertaining to "language". Lack of strong language skills was not attributable to learning strategy preference and thus, all of the respondents who contributed to this category did so out of frustration or dissatisfaction stemming from the vital role language plays in the learning environment. Navigators, however, did contribute half of all comments to this category and it is likely that language is especially pertinent to them because of their distaste for ambiguity in the learning environment. Engagers do not "enjoy" ambiguity either, but with language-related problems and issues, this group seems to have a higher tolerance. Problem Solvers in this study evinced a more reserved stance toward issues and problems connected to language, more so than Navigators and Engagers. Moreover, Problem Solvers demonstrated a tendency to be more reflective in their attitudes towards language shortcomings.

Hands On

Fourteen comments, 4.5% of the 314 total responses collected, fell into the category designated "hands on". Three specific interview questions elicited this body of comments. Those questions pertained to: approaches to learning; strategies employed in a learning situation; and planning for a learning project. Eight responses (57.1%) of Hands On comments pertained to approaches to learning. Four of those responses issued from Engagers, three came from Navigators, and one was provided by a Problem Solver. Four responses (28.5%) related to those strategies that respondents employed in a learning situation. Three of these comments originated with Engagers, one came from a Navigator. Of the two responses related to planning for learning projects, both issued from Problem Solvers.

The theme "hands on", in a general sense, refers to learners' proclivity for direct, active engagement in a learning process or project. Respondents reflected a desire for independent, kinetic involvement as they engaged themselves in the learning task. It is not surprising, therefore, that 50.0% of the participants (7) who provided responses for this theme emanated from the Engager category of learner.

Examples of responses that pertained to approaches to learning included:

> Hands on activities, being involved completely, being active! Not being passive. I want something to give my attention to (42 year old male, Engager, Venezuela).

> Hands on! I really enjoy learning by doing, as opposed to reading a textbook and taking a test (24 year old female, Engager, Sri Lanka).

> Let me tell about swimming. I took a class to learn, at first, then I practice, practice what the teacher said, by myself (29 year old female, Navigator, Korea).

> Generally, I hunt for a short tutorial to get started, one with a reference manual, then I go into it blind. I tend not to ask people (25 year old male, Problem Solver, Australia).

Comments that reflected strategies students preferred to employ in a learning situation included:

> I prefer. . .trial and error, experimentation first, gather resources later (27 year old male, Navigator, Denmark).

> Like to be as independent as possible! Once initiated, prefer to go hard at it (25 year old male, Engager, Malaysia).

> Sure, I learn everything I can about the topic, become expert. This means lots of reading, and lots of hands on! (40 year old male, Engager, Malaysia).

A comment in response to the question pertaining to how students plan for a learning project typified the "hands on" perspective:

> I don't! I don't plan at all! I guess whatever I need at the time I'll hunt for, you know, a brief

> outline or tutorial. I tend to learn things from having gotten stuck (25 year old male, Problem Solver, Australia).

Engagers are recognized as being passionate about their learning. Conti and Kolody (1999a) determined that this category of learner experiences optimal learning when he/she is actively engaged with the learning task. Thus, once these learners have committed themselves, emotionally and intellectually, to the learning task, they then pursue their learning goals in vigorous, whole hearted fashion. Problem Solvers also possess a keen predilection for hands on experimentation and practical experience, and their comments on this category reflected that characteristic, but not to the extent of the Engagers or Navigators. Navigators, who typically exhibit a clear preference for a structured learning environment and a propensity for thorough planning and organization, demonstrated more passion in this category than anticipated. Perhaps the culturally distinct, individually challenging North American learning environment encourages this group of learners to become more actively engaged in their learning endeavors?

Big Picture

Twelve comments comprised this category, 3.8% of the total interview responses. Of these 12 comments, nine

(75.0%) were derived from Navigators, two (16.6%) were provided by Problem Solvers, and one (8.4%) originated from an Engager. Respondents' comments, with three exceptions, addressed those questions specifically focused upon distinct learner categories. That is, three responses addressed the issue of Navigators' use of organization in a learning project; three responses addressed the issue of Navigator preference in monitoring progress in a learning project; three comments spoke to approaches to learning; one comment addressed a Problem Solver's description regarding planning for a learning project; one comment dealt with the manner a Problem Solver identified resources for a learning project; and one comment examined how an Engager determined whether a learning project was worth doing.

The theme, "big picture", is composed of multiple elements. The notion of previous experience, when incorporated into a sense of holistic perspective, assumes the essential meaning of "big picture". Likewise, specific use of the word analysis, in reference to a wide ranging inventory of resources, time constrictions, and organizational possibilities, conforms to the meaning attributed to "big picture", and that meaning is construed as a learner's attempt to construct an expanded vision, as

well as a magnified understanding, of all the elements he or she deems are necessary to initiate, conduct, and successfully complete a learning project. Additionally, this particular category reflects a process on the part of a learner whereby understanding of a learning project is developed and expanded to the point where the learner "sees" how the many separate elements fit together and form a significantly comprehensive "picture", at which point the learner is empowered to work towards completion of the learning task. Learner comments reflective of these various perspectives included the following observations.

Navigators' use of organization in a learning project:

> Like, I look at it all, identify what is most important, and then the next most important, and so forth. Then I get resources off the internet, the computer. Then I focus my effort on the most relevant aspect (27 year old male, Navigator, Denmark).

> Make a list of objectives, things to do. If it's with a group I ask who in charge of and what we must achieve by next meeting (23 year old female, Navigator, Malaysia).

How Navigators monitor progress in learning project:

> I'm horrible at that! Because of my procrastination! With my running, I've written down every aspect of my training, everything I've done. I like to be organized, have everything in their place for when I get into the project or problem. I'm pretty good at looking at the big picture. I look at things holistically (27 year old male, Navigator, Denmark).

Problem Solver's description of planning for a learning project:

> I usually see the big picture first. I'm a perfectionist. I always seek perfect results. I start to look around, how I get this or that, gather resources, talking with people first, then books and so on. Then I make a plan, or sketch, of what I need to do (30 year old male, Problem Solver, Cameroon).

How Problem Solvers identify resources for a learning project:

> Most of the time, I try to analyze my situation. What is before me, in terms of resources, human or books, or whatever? What is the time before me? Is there information I can gain? How do I assemble this to prepare to learn? Then I assess what is important and helpful for me to learn (37 year old male, Problem Solver, Kenya).

Comments relating to general approaches to learning included:

> Well, first of all, I try to find some kind of reference to give me a perspective of what I want to learn. I approach it from a general way, learn all the components, you know, put them in an order that will facilitate my learning, then I go into detail and evaluate my progress (26 year old male, Navigator, Bolivia).

> I search for universal issues, i.e. connections to facilitate my learning (34 year old female, Navigator, India).

A final comment, pertaining to strategies employed in a learning situation, included:

> I start with what I already know, try to make connections with what I already know. Then I reorganize the gaps in my knowledge, how do I make up for these gaps? I start to divide my plans, how to

> spend time in each area (28 year old male, Navigator, South Africa).

Reflection upon the category "big picture", generates a sense that for those learners who fell into this theme a key component for their learning success was linked to their predilection for establishing connections and then integrating those connections into a reasonably comprehensive whole. This process is analogous to undertaking a child's connect-a-dot activity in order to establish form from distortion, but this process is far from child's play. In fact, the procedures associated with gaining a holistic perspective are closely related to the scientific method which, according to Gay (1996) entails several sequential acts: "recognition and definition of the problem; formulation of hypotheses; collection of data; analysis of data; and statement of conclusions regarding confirmation or disconfirmation of the hypotheses" (p. 6). The processes utilized to arrive at a "big picture" perspective, however, tend to favor inductive over deductive processes in that the movement of the procedure is, essentially, a sequence of steps progressing from the specific (begin with what is known, analysis of situation, create a list of objectives, connect to previous experience) to the general ("big picture"). Moreover, it

is not surprising to discover a majority of Navigators in this category (75.0%) in that Conti and Kolody (1999a) determined that "Navigators liked to be presented with the 'big picture' first, so they know what is expected" (p. 9).

Motivation

According to Webster's (1993, p. 779), motive is a need or desire that impels a person to act. Thus, motivation is "the act or process of motivating", or "the condition of being motivated" (p. 779). An important component of motivation is the concept of metamotivation, which pertains to how or why an individual learner is motivated to take part in or remain in a learning project (Conti & Kolody, 1999a). Metamotivation relates to the recognition of and control over those elements that stimulate and guide one's learning (Fellenz & Conti, 1993, p. 12).

The eleven comments attributed to this category comprised 3.5% of the total study responses. By learner category, the distribution was seven Engagers (63.6%), three Problem Solvers (27.3%), and one Navigator (9.1%). Responses that fell within this category originated from a wide variety of interview questions, however, 45.4% of the comments did pertain to approaches to learning.

The category of motivation was deemed as significant to numerous respondents in that learning success, be it determination of a learning project's worth, maintenance of an individual learner's positive frame of mind, or completion of a learning endeavor, are all connected to metamotivational issues. Examples of motivation's role in learning activities are mirrored in the following comments:

> First, I must convince myself I want to do this thing, then I gather all information before I begin. . .(30 year old male, Engager, India).
>
> If the activity fascinates me, I like to start right away and get information and really know about that . . .(28 year old female, Problem Solver, India).
>
> Must have interest or needs first. Then, research material, learn more about topic, find people with expertise (47 year old male, Engager, China).
>
> First thing I must do is, am I interested in the topic or not? If yes, I'll do it and I try to finish successfully. How will it be helpful to me and for my other classes? (24 year old female, Engager, Bulgaria).
>
> I organize ideas in my mind, I say to myself, everyone else can, why can't I? I think of some way to make it fun, interesting (33 year old female, Navigator, Thailand).
>
> The nature of a course, like a course that doesn't interest me but I have to take it, I don't do good on these kinds. And some are core! (30 year old male, Engager, India)
>
> When activities in the class are not relevant or meaningful to me, I don't care to be anxious in the class or embarrassed because of some activity (40 year old female, Engager, Swaziland).

> When I am forced to do something, I don't like it (28 year old female, Problem Solver, India).

The category of "motivation", perhaps more clearly than most other categories found herein, alludes to the salience of the principles of adult learning. A fundamental component of adult learning stems from the concept of andragogy articulated by Malcolm Knowles (1970). Learner motivation is directly related to four vital assumptions about adult learners, those being: 1) adults are increasingly self-motivated; 2) adults accrue a vast reservoir of experience that facilitates the learning process for themselves and others; 3) adults' readiness to learn is increasingly related to ongoing life events; and 4) adults seek prompt application of acquired knowledge and consequently, develop a problem-centered orientation (Knowles, 1970, p. 39). Moreover, Knowles (1992) supported the position that the ultimate determination of the learning experience is dependent upon the learner. Smith (1982) expands upon the nature of adult learning by suggesting six optimum conditions for learning. "Adults learn best when these conditions are met" (p. 47): 1) adults should sense the necessity for learning and likewise be allowed input in the learning process; 2) the adult's past experience should be considered in the learning

process and potentially serve as a resource for new learning; 3) the object of a teaching/learning transaction should, ideally, be linked to learner's developmental transformation and real life obligations; 4) the learner's level of autonomy should correspond to the mode or methodology in utilization for the particular learning experience; 5) learning should occur in a climate that reduces anxiety and encourages freedom for experimentation; and 6) individual learning styles should be considered and factored into each learning project (pp. 47-49). It is likely that the healthy motivational status of international adult students is linked to the application of or failure to apply, the previously mentioned principles of adult learning or optimum conditions for adult learning. As demonstrated by respondents' comments, adults the world over deplore irrelevance in the learning environment, abhor embarrassment in the classroom, crave individual recognition, and demonstrate a problem-centered orientation towards learning activities. Failure to attend to adult learning principles directly impacts adult learners' metamotivational well-being and consequently, their success in learning situations. Smith's references to an instructor's respect for, or appreciation of, the learner's past experience and consideration of students' individual

learning styles are analogous to a teacher's sensitivity towards cultural differences and likewise, the adaptation processes associated with cross-cultural experiences and adjustment.

Engagers' domination of this particular response category (63.6%) is not surprising in that an essential characteristic of this learner group is their need to forge an emotional commitment to the learning task before they will allow themselves to proceed with the activity. As such, once they are committed, they are passionate and "energized" towards engagement with the learning process. In this sense, their metamotivational status is high and they are better able to sustain their interest in the learning task and see it through to completion. Problem Solvers do not engage in learning tasks with the same passion as Engagers, rather, this learner group relies less on the affective domain and more on rational processes which would include the testing of assumptions and generating alternatives in order to construct supplemental learning options (Conti & Kolody, 1999a). Navigators participation in this category (9.1%) is reflective of their preferred metamotivational strategy of Attention whereby interest is initiated and a focus on inquiry is prompted. This learner group works towards completion of

the learning task indifferent to external factors; emotions bear little relevance with Navigators' learning.

Notes

The strategy of note taking is an integral component for success in the learning environment, especially in tertiary education where teachers oftentime serve as the primary source of expertise and class content. For international students, it is not only the composition of in-class notes that is vital, but also the provision of pre-prepared notes, outlines, and handouts by teachers allowing students to be less anxious of their second language abilities, better able to focus upon relevant information, and more apt to discern the necessary connections to be made in order to organize their learning.

Of the ten comments in this category, five belonged to Engagers, three derived from Problem Solvers, and two issued from Navigators. These comments constituted 3.2% of the total responses obtained in the study. Examples of how international graduate students employed the use of notes in a learning situation are depicted as:

> I definitely take notes, and uh, I later refer to them and broaden them by looking at other books and information (30 year old male, Engager, India).

> I make my own study questions out of a textbook, like study cards. . .(26 year old female, Navigator, Japan).

> I take notes and highlight, go through notes. If I don't understand, I discuss with my friends (28 year old female, Problem Solver, India).
>
> I used to take notes. I still do, but I like to study from my notes. Now I use a lot of different colors of markers to highlight the readings! I find that is very handy! (24 year old female, Engager, Bulgaria).

The use of handouts, or an instructor making available comprehensive notes or outlines before class meetings, is deemed especially helpful for international students. This is especially true for those coping with the language barrier and similarly, for those in need of advanced organizers in order to obtain maximum benefit from lectures or class discussions. Comments reflective of these perspectives included:

> It's very good for me when instructor makes available comprehensive notes or outlines of each class's contents. Specific instructions and examples for instructor's demands are also helpful. Best for me is lots of handouts, this affords stability of the written word! (40 year old male, Engager, Malaysia).
>
> One professor had all he was to talk about on paper and he distributed prior to lecture! This helps to make connection and portray relationships of subject/material. Helps to organize the learning (33 year old male, Engager, Saudi Arabia).
>
> Some faculty who gives study guides, to help understand the concepts and focus, or specific information and not all the field of the topic. You know, to help us know the different ways you need to study here (30 year old male, Problem Solver, Cameroon).

> A clear outline of all course requirements and clear instructions/examples of what will occur or be expected each day, especially to help with language barrier! (36 year old female, Problem Solver, Taiwan).

The importance of taking notes in a learning environment, such as a university classroom, is a recognized component of academic success. For international students, however, receiving notes, or, more specifically, handouts or outlines pertaining to class content or forthcoming lectures, is even more vital for these students' learning achievement. Forty percent of the comments in this response category voiced the significance of receiving lecture or content information prior to class. The value inherent in these students' expressions is due to internationals' ongoing struggle with language-related issues. When international students have advance notice of subject content information they are empowered to better prepare themselves and likewise, comprehend the learning activity as it unfolds in the classroom. Comments generated by interview respondents did not reflect any significant differences between the three learner groups of Navigators, Problem Solvers, or Engagers. The language barrier is a consistently common denominator among international students and in this particular response

category, the influence of learning strategy preference does not manifest itself in any distinguishable way.

Recognition

Both Knowles (1970) and Smith (1982), in their articulation of adult learning principles and those perspectives that best facilitate learning for adults, clearly specify the need for teachers respecting the extensive repository of experience possessed by all adults and the consideration of those experiences in the learning process. International graduate students, like other adults, have accrued a wide array of experiences and experientially-gained insights. When the experiences are not recognized or are lightly considered in the learning environment, then students' sense of self and self-worth are diminished and valuable learning resources may be ignored or overlooked. Additionally, it is especially painful for international students who might be seeking acceptance or valuation as a co-learner within the North American academic environment to be ignored or under-appreciated. Similarly, for those students for whom a collectivistic orientation is dominant, exclusion from the group (classmates) is likely to be distressful. By learning category, four of the ten comments originated with Navigators, three came from Engagers, and three were

provided by Problem Solvers. Overall, the category of "recognition" received 3.2% of all respondent comments. Examples reflecting recognition's role in the learning environment included:

> I think it's most important that teachers should know me, call me by name, have more interaction, be more democratic (22 year old male, Problem Solver, India).
>
> Personalizing, paying attention, making me feel valued. To be recognized as an individual, to be encouraging, help me to engage, speak with others. Also, very good to have consideration of language problems (28 year old male, Navigator, Turkey).
>
> Instructors who valued my experiences and gave me a voice in the classroom were most helpful to me (43 year old male, Navigator, Togo).

Responses pertinent to the amelioration of learning barriers by teachers included:

> Each person must be looked at as someone equal. Begin with discussion before calling an individual's name. Eye contact is important! Also teacher should control class so that certain individuals do not dominate all discussion or participation (40 year old female, Engager, Swaziland).
>
> Teacher should stress his/her humanity and project student-centeredness attitude (34 year old female, Navigator, India).
>
> Sure, be sensitive to student! Instructor must know his student, must get to know them as people, not just faces in the classroom. And students must demonstrate some responsibility, too, must learn new rules and practice and change behavior to fit (40 year old male, Engager, Malaysia).

For this particular response category, comments from the three learner groups of Navigators, Problem Solvers,

and Engagers were more evenly distributed than for any other category. A suggested rationale for this uniformity of distribution stems from one of Hofstede's (1980) primary measures of cultural variability: collectivism. Collectivists are keenly aware of their interdependent roles and obligations to the group. For these individuals, most of the situations they encounter are perceived of as occurring between or among groups and not between individuals. The sire to be recognized within the learning environment stems from a strong traditional need to be accepted by significant ingroups. The classroom, and its attendant population of instructor and students, constitutes a meaningful ingroup and as such international students maintain an especially keen inclination to be accepted by and become part of this collection of people. All ten of the respondents were citizens of countries designated as collectivistic by Gudykunst and Kim (1989), or from countries that bore similar characteristics to those identified as collectivistic. In this regard, culture, and not learning strategy preference, was the distinguishing characteristic that served to best describe the nature of the responses gathered. Culture also served as the unifying force that drew respondents together in spite of their individual differences as learners.

Planning

Planning is an integral component to success in a learning activity and reflects an assumption of responsibility on the part of the learner. Planning efforts indicate learners have organized and identified the necessary measures for carrying out a learning task (Yussen, 1985). The ten comments that comprise this category emanated from four interview questions including: activities or strategies employed by learners to facilitate the learning situation; how learners plan or organize for a learning project; things learners have done to hinder learning success; and approaches to learning. Navigators provided 50.0% of the responses in this category, Problem Solvers yielded 30.0% of the comments, and Engagers supplied 20.0%.

Comments pertaining to those activities or strategies that respondents employed to help themselves in a learning situation included:

> Usually, I don't take notes, I trust in my memory. I don't like study groups. Sometimes I start to take notes for planning what I have to do, how to proceed, what to do at specific times. Because I'm Muslim, I have to structure activities around prayer (30 year old male, Navigator, Syria).

> Yes, first I ask questions, then write down key words of the information I get from the Web and I put in a special folder. I keep a space for that kind of stuff (42 year old male, Engager, Venezuela).

> I decide what I need to do to accomplish the assignment and then I follow that pathway (43 year old male, Navigator, Togo).

Responses that relate to how participants plan or organize for a learning project included:

> Hmmn, if I'm planning to learn something, I will first identify what it is I want to learn and what is the best way to learn it. Also, how will this help me? How will it factor into my life? After thinking through, I look at feasibility, cost, benefits, and then do it! (37 year old male, Problem Solver, Kenya).

> I plan, I write in schedule book when to study for what project or test. I make sure I plan for reading and everything, and I stick to it (20 year old female, Navigator, Japan).

Generally, the processes involved in planning for a learning task do not appear to differ greatly between cultures, except for the observation noted by the Muslim respondent who indicated that his activities must be structured around prayer. Prayer is the second of the five pillars of Islamic faith, as such, Muslims are required to pray five times a day (Schneider & Silverman, 2000). In this context, prayer structures time for devout Muslims and thus, planning for Muslim students assumes an expanded, somewhat more complicated role in the learning endeavor.

Communication

Communication issues that were deemed as pertinent to the learning process by international respondents focused

upon those occasions or instances where the category was perceived as a barrier or a hindrance to learning. This is to say that the transmission of information between teacher and student was considered vital for academic success and when teachers did not effectively communicate their expectations or attitudes, were not available to confer with students, or did not facilitate class interaction, then students' motivation was adversely affected and stress and anxiety increased. Suggestions for improving the barriers to learning imposed by poor communication practices reflected the students' need for optimum engagement in the classroom as well as clear and open diffusion of information between the teacher and themselves.

Cultural differences also influence the nature of communication between instructor and student. Communication entails the use of symbols. "One of the defining characteristics of a culture is the agreement among the people who share a culture on the general meaning of symbols" (Gudykunst & Kim, 1997, p. 6). When distinct cultures interface it is highly likely that some level of dissonance will occur in the communication process in that shared understanding at the symbolic level will not be optimal. That is to say, once again, that "messages can be

transmitted from one person to another; meanings cannot" (p. 7). This issue is further clouded when consideration is given to the issue of low-context and high-context communication. Hall (1976) advises that a high-context communication is such that "most of the information is either in the physical context or internalized in the person, while very little is in the coded, explicit, transmitted part of the message" (p. 79). A low-context message, in contrast, is one in which "the mass of information is vested in the explicit code" (p. 70). Early on in an international student's experience in North American classrooms, the issue of communication is bound to pose a hindrance to the learning process. Examples of respondents' perceptions regarding communication as a barrier encountered in the course of a learning project included:

> Ummn, sometimes when the deadlines, the deadlines, you know? The pressure, when there's no proper guidelines. You know, given a task but not boundaries, and you are laboring without a sense of scope. . .(37 year old male, Problem Solver, Kenya).
>
> Failure to seek clarification of an issue, that is, failure to pursue (with leader) questions or issues (34 year old female, Navigator, India).
>
> When the expectations of the teacher are not clear (43 year old male, Navigator, Togo).

> Poor communication with professor regarding expectations (33 year old male, Engager, Saudi Arabia).

Suggestions offered by respondents for minimizing communication barriers included:

> Good for me to confer with teachers up-front, at beginning of class (47 year old male, Engager, China).

> Incorporate more interaction in class. We should discuss completed assignments and not just forget them and go on (24 year old female, Engager, Sri Lanka).

An example of a student hindering his own learning, where communication is the issue, is found in the following comment:

> Not being thorough enough, and not asking instructor for clarification when confused. When I first came here, you know, I am so reluctant to ask for clarification (40 year old male, Engager, Malaysia).

An instructor behavior perceived as hindering to the learning process, one particularly not appreciated by an interview participant, was:

> Unconscious attitude on instructor's part that reflects a sense that international students' language abilities will 'be a problem', and because of this, ignoring the student (36 year old female, Problem Solver, Taiwan).

Academic

Respondent comments linked to "academic" as a primary theme comprised 2.9% of the total comments. Four (44.4%) of the nine comments in this category were provided by

Engagers; three (33.3%) originated from Problem Solvers; and two (22.2%) were derived from Navigators. All of the responses pertained to the interview question that sought to elicit information regarding a recent learning project undertaken by interviewees. Obviously, this category reflects those learning projects that related to students' coursework. Such responses included:

> First thing that comes to mind was in the discussion of the environmental seminar that had to do with the large amount of electronic waste that society generates (42 year old female, Navigator, South Africa).
>
> Statistical project correlating data (33 year old male, Engager, Saudi Arabia).
>
> Arrange visits to companies here, for a class! (42 year old female, Problem Solver, Namibia).
>
> My thesis! Also, my job search (27 year old male, Problem Solver, Azerbaijan).

It is interesting to note that of the total responses (30) that pertained to recent learning projects, nine (30.0%) related to academic activities, while 21 (70.0%) had to do with practical or personal issues. This distribution is consistent with Tough's findings (1971)that determined that "70% of all learning projects are planned by the learner himself" (p. 1).

Differences

This category relates directly to cultural issues encountered as barriers or hindrances to international students' learning. The very term "difference" implies characteristics that distinguish one thing from another, in this case, U.S. and non-U.S. cultures. Of the seven comments in this category, four (57.0%) emanated from Engagers; two (28.6%) from Problem Solvers; and one (14.3%) from Navigators.

Examples cited by respondents that reflected barriers or hindrances to learning were captured by the following comments:

> I realize that, maybe this is cultural also, Americans are so quick to give the direct answer or act like they are ignoring me by my elaborations! (42 year old female, Problem Solver, Namibia).

> Not negotiating the academic work due to cultural differences, trying to learn first, to see things are done too fast! (40 year old female, Engager, Swaziland).

> This is a cultural difference example: you must pay attention to instruction here! Exactly! This kind of instructions, in the beginning, was hard, a barrier. But now I know how to follow, interpret directions. You gotta follow their instructions just so. In our country, they don't stick close to their instructions, you can deviate some you know? (42 year old male, Engager, Venezuela)

> When instructors take too much for granted, you know, expecting international students to know all about a course's content and other aspects of American academic culture that are most practical or observed.

> Like, it's okay to raise questions in middle of a lecture! (40 year old male, Engager, Malaysia).
>
> Yes, in America, the first year I was having a culture shock issue. I wasn't expecting the overwhelming work I had to do. I tend to shut down in these circumstances (27 year old male, Problem Solver, Azerbaijan).
>
> Cultural differences get in the way. For me, language is often a barrier (47 year old male, Engager, China).

A common theme within this category of responses is the notion of culture shock, of a certain degree of trauma associated with students' experiences in a new and different environment. In this new environment, particularly the academic environment, students must learn and cope with a profusion of unfamiliar cultural cues and expectations. Parallel to this, students are discovering that old, familiar cues and expectations do not work or fit. Oberg (1958) spoke to culture shock in this way:

> Culture shock is precipitated by the anxiety that results from losing all our familiar signs and symbols of social intercourse. These signs or cues include the thousand and one ways in which we orient ourselves to the situations of daily life: how to give orders, how to make purchases, when and when not to respond. Now these cues which may be words, gestures, facial expressions, customs, or norms are acquired by all of us in the course of growing up and are as much a part of our culture as the language we speak or the beliefs we accept. All of us depend for our peace of mind and efficiency on hundreds of those cues, most of which we are not consciously aware (Harris & Moran, 1996, p. 140).

Many people experience culture shock when they encounter strange and unexpected situations. It is likely that in the academic environment this phenomenon affects students' learning, especially early on. Yet, people tend to demonstrate resilience, and likewise, an ability to learn and adapt and thus, survive (Harris & Moran). This particular group of responses offers a hindsight perspective from individuals who have experienced some degree of trauma in the learning environment, but have learned and adapted and moved on to greater understanding and successful learning.

Reading

The category of "reading" reflects a range of responses that emanated from two specific interview questions: 1) things that study participants have done when engaged in a learning activity that may have hindered their success; and 2) activities or strategies that respondents employed to help themselves in learning situations. The seven comments that comprised this category constituted 2.2% of the study's total responses. By learning strategy category, five comments originated from Navigators, and one each from Engagers and Problem Solvers. Those comments illustrative of how reading as a learning strategy may have hindered respondents' success included:

> I used to read stuff and not get into it deep enough. I didn't read in enough detail (23 year old male, Navigator, India).
>
> Not reading enough! Not expanding my knowledge apart from human contact. You know, I so much prefer talking with other people than working alone, isolated, just reading (40 year old female, Engager, Swaziland).
>
> I spend too much time reading in detail. I don't know how to skim, I have to check with dictionary all the time. It takes forever and ever (26 year old female, Navigator, Japan).

Comments that reflected students' use of reading as a facilitative strategy in a learning situation included:

> I read my books and began to develop ways to associate information with memory (28 year old male, Navigator, Turkey).
>
> Well, I try to read as much as possible. I really like to compare and contrast, contradictory sources, you know? I prefer to read (27 year old male, Problem Solver, Azerbaijan).

Reading and study skills cannot be separated. In order to successfully negotiate college-level coursework students must develop skills in both areas (McWhorter, 1995). International students must grapple with several complex issues in order to attain the competency in these two areas that will be necessary for them to accomplish their learning objectives. One critical issue confronting most internationals is the language barrier. Gaining the requisite skills, to include vocabulary acquisition,

meaning interpretation, and mastery of slang and idioms, is a time-consuming, intensive process. Simultaneously, internationals must cope with new demands imposed by a culturally different academic environment. One salient example of this pertains to students who come from countries with a British-oriented education system whereas the bulk of student energy is expended at the end of the academic year laboring to memorize and assimilate an entire year's worth of information and material for each course's comprehensive examination. Students who are experienced and accustomed to this particular process usually undergo significant stress and reorganization of learning strategies in order to successfully effectuate the North American proclivity for quizzes, chapter exams, mid-terms and other forms of evaluation that do not wait until the end of the semester to present themselves. The act of reading, and the process of reading for understanding, occupies a great deal of effort and time on the part of international students for whom English is not a primary or secondary language.

Internet

The use of the Internet to facilitate learning is an increasingly common practice applied by students and learners the world over. Although availability to computer

technology and Internet resources varies around the globe, once in the U.S., international students are availed the same access opportunities as American students and, as identified by these interview respondents, they make computer technology an essential component of their resource gathering repertoire. The eight comments that comprised this category represent 2.5% of all comments gathered. Five of the comments were derived in response to the question regarding how Problem Solvers identified resources for a learning project. One response originated from the question that sought to determine what behaviors Engager preferred to employ in a learning project, and one comment pertained to the general question seeking to learn the kinds of things students had done in the course of a learning activity that may have hindered their success. Examples of how Problem Solvers identified resources for a learning project included:

> Another real-life situation? I had to get a new computer to replace my old one. I decided to build one myself. First, I went on-line to get data. Then, I went shopping for parts on the web. I shopped around, in town, but they were too expensive. On the web, I discovered cheaper sources…(30 year old male, Problem Solver, Cameroon).

> So far, I go to people lastly, but when I do I prefer to see my advisor. Rather, I show them what I've obtained. I usually get data from Internet (42 year old female, Problem Solver, Namibia).

> The places I find them? Typically, on the Internet. Easily accomplishable not by book. Or, I have asked my supervisor which resources are best (25 year old male, Problem Solver, Australia).

An example of how, once the opportunity becomes available, a student perceives the value of using the Internet to assemble resources is described as:

> Well, now that I have the Internet, it's my first step in any project (27 year old male, Problem Solver, Azerbaijan).

An Engager, discussing those behaviors she preferred to employ in a learning project, included this response:

> First, I do the research, usually looking on the Internet. For academic tasks, I usually talk with friends first, or a professor (24 year old female, Engager, Bulgaria).

One respondent cited the Internet as serving as both a benefit and a hindrance to his learning:

> Something that helped me and has hurt me is, when I'm working on the Internet, is getting absorbed in other areas. . .(26 year old male, Navigator, Bolivia).

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Study

Since 1965, America has experienced a marked increase in the diversity of newcomers. The Immigration and Nationality Act of 1965 eliminated immigrant preference based upon race, sex, nationality, place of birth, or place of residence, except as provided by law. Between 1966 and 1997, more than 23 million immigrants arrived in the United States (Fernandez, 2000). As a result of this ongoing demographic transformation, America has evolved from a predominantly white, European population to a society characterized by ever-increasing diversity. As such, the country's relatively new multicultural and multiethnic milieu poses unique challenges and opportunities. Education and training, at every level, are encountering the influences of unparalleled differences. The proportion of minorities in the U.S. population is expected to climb from 28 percent in 1999 to 47 percent by 2050. Cassara (1990) suggests it is imperative that all minorities, in particular the newly arrived, become fully functioning members of U.S. society while simultaneously retaining their cherished cultural distinctiveness.

A vital field engaged in the endeavor to both assimilate and empower America's burgeoning minority populations is that of adult education. Historically, adult education has assumed a crucial role in assisting new immigrants, particularly during the era of industrialization. Currently, in the context of America's expanding population of ethnically and culturally diverse immigrants and citizens, adult educators are challenged once more. Unlike the past, however, today's immigrant or minority citizen is not seeking, nor is he/she being encouraged or coerced, to expunge his/her cultural traditions and "melt" into the greater American society. Rather, the contemporary perspective values diversity and the notion of pluralism and as such, concerns with cultural issues pertain primarily to the successful integration of diverse components of the population into a harmonious framework of citizenship (Marcus, 1992). This particular concept has important learning implications.

Within the domains of North American higher education, adult learners from diverse national and ethnic backgrounds require a culturally sensitive learning environment in which to acclimate to North American classroom culture and thereby attain success in their academic endeavors.

Adult learning theory presupposes a number of vital assumptions about adult learners, all directed towards a keener understanding of the learner, with an eye toward facilitating an optimal learning experience for each individual. As the field of adult education evolved from a field of practice to a field of study, a heightened emphasis has been directed towards learning how to learn. Focus in this area generated research in the realm of learning strategies. The concept of learning strategies, in turn, has been examined as another avenue for exploring individual differences. As learners gain skill and enhanced understanding in the utilization of learning strategies they are likely to add a significant dimension to their learning how to learn abilities (Fellenz & Conti, 1993). Moreover, teachers of adults, when considering the range of learning strategy preferences, may utilize this awareness to help learners gain a better understanding of the learning process and likewise, facilitate a learning environment that takes into account the realm of individual differences.

Although significant research and writing have been undertaken in regards to learning strategies and adult learning, there remains a pressing need for expanding the scope of inquiry to take into account those adult

populations who are culturally different. This population would include recent immigrants, visiting international students and scholars, minority citizens and any other identifiable group of adult learners who are culturally, ethnically or racially diverse and require distinctive consideration on the part of educators and trainers when learning needs and instructional strategies are contemplated.

Therefore, the purpose of this study was to describe the learning strategies of international graduate students at Oklahoma State University. Specifically, this study sought to identify the learning strategy preferences profile of international graduate students enrolled at Oklahoma State University, Stillwater campus. A concomitant intent of this inquiry was to examine international students' experiences within a North American, higher education learning environment.

This study used a descriptive design in an effort to examine two aspects of learning related to international graduate students at Oklahoma State University. Moreover, this inquiry employed a multi-method approach utilizing both quantitative and qualitative research methodologies. One branch of inquiry endeavored to determine the learning strategy preferences of the target population. A second

area of inquiry focused upon an interview component which sought to learn about international students' approaches to learning, students' perceptions of instructor behaviors, barriers to learning, and culture's role in learning strategy preference. This study involved a representative sample of 126 international graduate students, comprising 13.8% of the target population. ATLAS was used to identify the learning strategy preferences of study participants. For purposes of this inquiry, the ATLAS instrument was adapted to an on-line, electronic format, allowing the target population to easily and quickly access the instrument. A total of 69 students, or 55.0% of the sample, completed the ATLAS on-line version. The remaining 57 participants, or 45.0% of the sample, completed the booklet version of ATLAS, 26.0% of whom were interview respondents.

The research questions that guided this inquiry formed seven definitive categories. The first question sought the description of the learning strategy preferences profile of international graduate students at Oklahoma State University, Stillwater campus. The second question pursued the comparative nature of the responses between those derived from the international graduate students and those obtained from the group used to create ATLAS. The third

question asked if learning strategies appeared to be similar across cultures. The fourth question asked how various learning strategy groups described their approaches to learning. The fifth question inspected instructor conduct and learners' perception of the facilitative or hindering nature of that conduct. The sixth question petitioned to know of the barriers to learning that international graduate students reported encountering at Oklahoma State University. The seventh question explored the issue of culture and how it factored into the uses of learning strategies by international graduate students.

Summary of the Findings

Those findings that responded to the seven research questions addressed in this study were:

Learning Strategy Preferences Profile

Analysis of the ATLAS data determined that there was no significant difference between the learning strategy preferences profile of international graduate students and that derived from the North American population that comprised the database for the ATLAS study.

International Graduate Student Responses

Review and analysis of interview responses provided by international graduate students yielded strong

similarities between respondent comments and those characteristics that describe the various learner categories which were derived from responses provided by North Americans who participated in the SKILLS study.

Learning Strategy Transferability Across Cultures

Based upon the quantitative and qualitative analysis of the data elicited by this study, there exists a reasonable supposition that learning strategies as characterized by ATLAS do appear to be similar across various cultures.

Approaches to Learning

The learning strategy groups of Navigators, Problem Solvers, and Engagers described their various approaches to learning in such a fashion that those descriptions provided by international graduate students closely paralleled those learner group descriptions detailed in ATLAS.

Instructor Conduct

Study respondents provided a broad view of instructor conduct that they perceived as facilitative or hindering to the learning process. In general terms, hindering behavior related to negative issues arising from cultural differences and language-related issues.

Facilitative instructor conduct pertained to cultural sensitivity, recognizing students as individuals, facilitation of class interaction, and reduction of ambiguity.

Barriers to Learning

Study respondents reported a wide range of barriers to learning experienced at Oklahoma State University. Generically speaking, those barriers consisted of culture-related issues (lack of insight in American examination approach, reluctance to address instructor), language-related issues (difficulty in reading, following lectures), stress, and culture shock.

Culture as a Factor in Learning Strategy Use

International graduate students overwhelmingly (93.0%) reported that culture factored into their use of learning strategies. Salient examples included inappropriate use of memorization strategies, insufficient interaction with instructors, superabundance of outside reading, and poor low-context communication skills (direct, overwhelmingly verbal communication style).

CONCLUSIONS

Adult Learning

Assumptions About Adult Learners

International graduate students engaged in formal higher education studies, both respond to and benefit from the application of andragogical-related principles.

The four core assumptions of andragogy developed by Knowles (1970) are entirely applicable and relevant to the facilitation of learning for international adult students in the tertiary education environment today. The core assumptions about adult learners are: 1) adults are increasingly self-directed; 2) adults accrue a vast reservoir of experience that facilitates the learning process for themselves and others; 3) adults' readiness to learn is increasingly related to ongoing life events; and 4) adults seek prompt application of acquired knowledge and consequently, develop a problem-centered orientation (p. 39). Moreover, two of Brookfield's (1986) six principles of effective practice are similarly particularly well-suited for application to international adult learners, as well as any other learners who are characterized by culturally distinct backgrounds and experiences. Those principles are: (a) an ethos of critical reflection is

encouraged so that the cultural construction of values, beliefs and ideologies may be recognized allowing participants to question pertinent issues in their own lives; and (b) the ultimate goal of facilitation is the promotion of self-directed, empowered adults, adults who have learned "how to change perspectives, shift paradigms and replace one way of interpreting the world with another" (p. 19).

International adult learners, as embodied by international graduate students in this study, have demonstrated by way of the results of their ATLAS-derived learning strategy preferences profile that culture does not appear to make a significant difference in the ways that learners perceive of learning strategy applications. This analysis reflects the power and strength of the ATLAS instrument and the efficacy of the notion of the universality of learning strategies. This understanding adds to the body of recognized commonalities among learners and consequently, should aid learners in their quest to improve their understanding of the learning process. Likewise, this understanding should provide instructors of adults with additional insights in the selection of methodologies and procedures that lead to greater learner self-awareness.

International graduate students who participated in this study demonstrated themselves to be highly self-directed learners. Their very presence in a foreign country, in an unfamiliar learning environment, surrounded by strangers, speaks to the validity of that assertion. These learners left their homes and families, and their familiar cultural surroundings, in order to accomplish a significant learning endeavor. Throughout the course of their programs of study this learning group must remain highly self-directed in order to maintain the successful prosecution of their learning goals. Incorporated into this intense self-directed process are the concomitant tasks of adjusting to cultural differences, coping with distinctive classroom environments, adopting an expanded range of learning strategies, and oftentime, struggling with an ever-present language barrier.

International graduate students, like virtually all adults, bring with them an extensive accumulation of experience that should facilitate the learning process for themselves as well as others. However, due to issues of cultural sensitivity, or more specifically, to the lack thereof on the part of many instructors and advisors, international students are oftentime precluded from

integrating their prior experiences into the learning environment.

Brookfield (1986) contends that the experiences adults bring to the learning environment represent a significant resource for curriculum development and learning activities and that the critical reflection of these experiences, "along with the collaborative interpretation and exchange of such experiences, may constitute the most significant forms of adult learning in which individuals can engage" (p. 18).

The interview portion of this study provided a poignant basis for acknowledging the tremendous range and scope of experience internationals bring to the learning environment and with that acknowledgement, recognition of the fact that in most instances, these experiences are not recognized or taken into consideration by classroom instructors. As such, not only are internationals discouraged from building upon and learning from their experiential repertoire, but so are other learners not afforded the benefit and learning opportunities inherent in this sharing process.

Due to economic and social considerations, most international graduate students reflected a keen readiness to learn and lent clear confirmation that their learning

experience here was strongly related to ongoing life events. As remarked by one interviewee:

> Our attitude towards learning is more "serious". . .we know that the only way "up" is via education and our studies.

Completion of their educational programs is an extremely consequential step for the majority of international students in that upon returning to their homes of origin they will promptly enter or reenter the workforce and begin to apply their academic experiences and knowledge in ways that will directly impact their own well-being, that of their families and extended families, and quite possibly, add to the developmental progress of their respective nations. Their formal, North American, academic learning experience is, therefore, very much a "real-life", self-directed learning project.

As a result of the real-life orientation of most international student respondents, these students generally exhibit a problem-centered orientation in the learning environment.

Self-Directed Learning

International graduate students are embarked upon a long-term, self-initiated learning project.

Tough's inquiries (1967, 1971) focused on adult's efforts to learn. Knowles (1975) expanded upon the concept

of self-directed learning, stressing the need for adult educators to assist participants in becoming self-motivated, self-induced learners. Knowles perceived that common education was no longer adequate for meeting the demands of an ever-changing, information-oriented society. As a result of this perception, he emphasized that education be viewed as a lifelong process and not solely the domain of youth. Knowles, therefore, viewed self-directed learning as a process "in which individuals take the initiative, with or without the help of others" (1975, p. 18), in facilitating their learning needs. Brookfield's conception of self-directed learning (1986) is more concerned with the learner's internal change and the ways that learners can come to view knowledge as relative and contextual, and understand themselves and their behavior in light of cultural constructs. The international graduate students who participated in this study have demonstrated that they are the driving forces behind their own learning processes. They have long since taken the initiative in determining their learning needs, specifying their learning goals, and then, often painfully, culling out appropriate learning strategies that are suitable and fitting for this culturally specific learning environment. This highly adaptive, challenging process, has rewarded those

successful learners by availing them more control over their own learning than many of them have ever experienced previously. Likewise, this specific accomplishment has enhanced their understanding of and participation in an American culture that is primarily individualistic in its approach to learning.

Learning How to Learn

International graduate students who have successfully adapted to this distinctive learning environment, have mastered the essential elements inherent in the learning how to learn model.

Smith's (1982) theory of learning how to learn seeks to empower adults and others who are impelled to continuously acquire knowledge in this "new" world of incessant change and technological innovation. Smith's six observations about learning are especially poignant in light of internationals' adaptive experiences in North American culture. Those observations are: 1) learning is a lifelong endeavor; 2) learning is an intimate process; 3) inherent in the process of learning is the notion of change - each learning experience implies gain or loss, "unlearning" is often involved, especially in adulthood" (p. 36); 4) learning and human development are intrinsically bound together; 5) learning is intricately

linked to experience as one interacts with one's environment; and 6) there also exists an intuitive component to learning (pp. 35-36).

As with self-directed learning, international students have met the challenges of perceiving the issues before them, adapting to meet the circumstances, reinterpreting the nature of learning, and "unlearning" to the degree necessary to effect a positive change within themselves in order to successfully participate in this unfamiliar learning environment which they have chosen to be a part of. One student who successfully negotiated the tumultuous sea of change and difference had this to say by way of learning how to learn in his new "home":

> Cannot separate man from culture. But, one can "unlearn" some things and change to fit new situations, but change is not permanent, only used to meet new demands. In my own space, I am still doing things in my traditional way. One can be more than one way, you know?

Moreover, in order to continue their studies here, international students have had to demonstrate competency in Smith's (1976, p. 6) learning how to learn subprocesses of planning, conducting, and evaluating. The successful application of these subprocesses are typically inherent in the way students organize, plan for, and monitor their learning projects. Do to issues associated with language

barriers (time constraints, profusion of written resources, revision and editing needs) students must plan carefully and thoroughly, implement the plan in timely fashion, monitor their progress so that sufficient time exists to compensate for language difficulties, and then review the culmination of their efforts, individually and with peers. Such a process entails a holistic endeavor, one that ultimately transforms the learning process, the learner's perceptions, and the learner himself. Simply put, the adaptive process experienced by international students as they strive to accommodate themselves in this new, generally foreign, learning environment, implies that they have cognitively and intuitively internalized the learning how to learn principles and subprocesses. The individualistic nature of North American society, coupled with the contemporary reliance upon communication and information technologies, dictates that those not prepared to learn independently gain the necessary skills to do so, or suffer the consequences, and those consequences for visiting students are particularly disagreeable.

Individual Differences

ATLAS

The ATLAS instrument clearly serves the purpose for which it was created - it is easy to administer, quick

to complete, and above all, it affords instructors a supplemental tool for identifying additional techniques for helping adults to learn more effectively, thereby yielding knowledge that may serve a vital purpose in addressing the individual differences of adult learners.

As with previous studies that utilized the ATLAS instrument (James, 2000; Spencer, 2000; Willyard, 2000; Ghostbear, 2001) to determine learning strategy preferences among groups, this current study also yielded findings that consistently supported the characteristics of the ATLAS learner categories. Those distinguishing attributes associated with Engagers, Problem Solvers and Navigators held true across the findings of each of the five studies that integrated ATLAS into their inquiry design. The original ATLAS categories remain stable.

Engagers

Engagers exhibit a passion for learning, especially when they are engaged in the learning process in an active, meaningful fashion (Conti & Kolody, 1999a, p. 13). Kidd (1973, p. 26) suggested that "the key to learning is engagement - a relationship between the learner, the task or subject matter, the environment, and the teacher." This notion exemplifies Engagers' approach to learning.

Engagers typically pursue those learning activities that offer them the maximum opportunity for immersion, wherein interaction and collaboration with others are prime motivators for undertaking the learning task (Conti & Kolody). For Engagers, the affective domain is the principal component for learning, as such, it is vital for this learning group that the learning task provide an opportunity for fun, satisfaction, or self-growth (Conti & Kolody). Mezirow's (1990) concept of transformational learning appears to match up in a meaningful way with Engagers' ongoing pursuit of learning activities that augment their understanding of self and the world they live in. Because of this characteristic, Engagers prefer longitudinal learning activities that serve to facilitate individual development and personal growth (Conti & Kolody, 1999a). Consequently, Engagers evaluate their learning based upon intrinsic needs rather than external criteria.

Engagers in this study reported that they preferred to go about learning a particular task by (a) first consulting or discussing the topic with other people; (b) determining the relevance or benefit of the learning project for them personally; and (c) immersing themselves in the learning task.

Engagers overwhelmingly (100%) sought out others in their initial learning quest to assemble resources. An equally powerful consensus among interview participants was their need to determine the relevance the learning task held for them. Eight out of nine (89%) of the respondents cited that a prerequisite for them before initiating a learning task was to decide what need or benefit the accomplishment of the task would offer them.

Engager comments that depicted the groups' preference for human resources are found in the following comments:

> Usually, I find some colleague to talk to first. I get a sense of the topic, you know, a "feel" first. Then I collect (other) resources just right on for the topic (40 year old male, Malaysia).

> I hate following written directions, I prefer to ask about content, engage in discussion with people with knowledge and insight, or simply just talking to others (33 year old male, Saudi Arabia).

> I meet with a "committee", you know, people first! I discuss with other people first. And I prefer to team-up with another person. Always, I contact a friend that I trust! (40 year old female, Swaziland)

> First, I ask somebody who's had that kind of experience, how they handled it. Then I also ask friends, family, different sources. Sometimes I explore the web for assistance or directions (42 year old male, Venezuelan).

Engagers in this study clearly identified the importance for them of determining the relevance or benefit a particular learning task might hold for them. The

following comments offer an indication of this groups' powerful intrinsic need to "personalize" the learning experience:

> If a project is necessary for my degree, no problem! If learning will help in professional life, no problem! If I want to pass class, no problem! The project has to have relevance you know, that's all (40 year old male, Malaysia).

> Right now, my focus is on graduating and getting a good job. If the project doesn't go towards that end, I don't want to do it. It must conform to my goals in life (24 year old female, Sri Lanka).

> First thing I do is, am I interested in the topic or not? If yes, I'll do it and try to finish it successfully. How will it be helpful to me and for my other classes? (24 year old female, Bulgaria).

Engagers also cited a predisposition for immersion in the learning task once they had committed to it. Evidence of this is situated in the following remarks:

> Hands-on! I really enjoying learning by doing as opposed to reading a textbook and taking a test (24 year old female, Sri Lanka).

> I like to be as independent as possible! Once initiated, I prefer to go hard at it (25 year old male, Malaysia).

> Hands-on activities, being involved completely, being active! Not being passive! I want something to give attention to (42 year old male, Venezuelan).

Engagers in this study explicitly identified their tendencies for interaction and collaboration with others as paramount motivators for engaging in learning tasks. Another, perhaps even more important factor for drawing

Engagers into a learning project, was their need to find relevancy or benefit in the endeavor before committing to it. This category of learners clearly reflected the dominance of the affective domain as a learning component.

Problem Solvers

Problem Solvers tend to employ critical thinking skills in their learning endeavors. This process is reliant upon reflective thought that utilizes higher order thinking abilities (Brookfield, 1987). Problem Solvers prefer to test assumptions in the course of their evaluation of specific and generalizable aspects of learning situations; they favor generating alternatives in order to engender supplementary learning possibilities; and they are inclined to remain open to conditional acceptance of learning outcomes while remaining receptive to additional learning opportunities (Conti & Kolody, 1999a, p. 12). Problem Solvers also exhibit curiosity, intuition and inventiveness in learning situations, characteristics which occasionally detract from the decision making process (Conti & Kolody). Moreover, Problem Solvers depend substantially upon human resources and typically seek out the advice of an expert before they would refer to a manual. Practicality is essential. Problem Solvers in this study generally agreed that the ATLAS description for

their category was a fairly accurate depiction of their learning strategy preferences (83%).

Due to Problem Solvers' predilection for critical thinking, this learning group tends to modify and revise its learning plan in relationship to the learner's ongoing evaluation of his/her own learning process (Conti & Kolody). Favored instructional techniques for Problem Solvers include a learning environment that encourages experimentation through practical experience and in particular, hands-on activities. Oftentimes, working in a group context poses difficulties for Problem Solvers in that they are unable to control the pace of their learning. Additionally, Problem Solvers flourish on spontaneity and creativity, and the freedom to do things in their own particular ways (Conti & Kolody).

Problem Solvers in this study cited that they generally went about learning a particular task by (a) seeking out resources, most often through the Internet, and frequently through other people; (b) analyzing the situation and developing a clear vision of what needs to be done; and (c) devising a plan based on reflection and analysis of the learning situation.

Problem Solvers evinced an inclination to launch themselves into their learning projects. One Problem

Solver, when asked how he would describe the way he planned for a learning project, said:

> I usually see the big picture first! I'm a perfectionist. I always seek perfect results, then I start to look around, how I get this or that, gather resources, talking with people first, then books and so on. Then I make a plan, a sketch, of what I need to do (30 year old male, Cameroon, Africa).

Additional Problem Solver comments included:

> Most of the time I try to analyze my situation...What is before me, in terms of resources, human or books, or whatever. What is the time before me? Is there information I can gain? How do I assemble this to prepare to learn? Then I assess what is important and helpful for me to learn. Also, how will this help me? How will it factor into my life? After thinking through, I look at feasibility, cost, benefits, and then do it! I don't have to know it all, know exactly where I'm going (37 year old male, Kenya, Africa).

> If the activity interests me, I like to start right away and get information and really know about that. I take notes and highlight, go through notes. If I don't understand, I discuss with my friends (28 year old female, India).

> Well, now that I have the Internet, it's my first step on any project. Well, I try to read as much as possible. I really like to compare and contrast, contradictory sources, you know? Time constraints are the most important thing, and how to figure out how much time I have till deadline, break it down into manageable pieces. I tend to digest for a long time the content...(27 year old male, Azerbaijan).

Problem Solvers in this study reflected a clear tendency to employ critical thinking skills as primary components of their overall learning strategy. The acts of reflecting, analyzing and experimenting were integral elements of this

groups' learning process. Another key feature of Problem Solvers' approach to learning was their identification of numerous resources. Perhaps the single most salient attribute that manifested itself in the course of the interviews, the characteristic that most clearly defined the Problem Solver group, was their serious attitude towards learning. This is mirrored in their eagerness to engage in a learning project and their affinity for hands-on activity. This may best be exemplified by one particularly ebullient respondent who said, when asked to describe how he planned for a learning project:

> I don't! I don't plan at all! I guess, whatever I need at the time, I'll hunt for, you know, a brief outline or tutorial. I tend to learn things from having gotten stuck! (25 year old male, Australia).

Navigators

Navigators are best described as "planners", learners who are mindful and results-oriented, high achievers who place strong emphasis on establishing logical connections and organizing learning activities (Conti & Kolody, 1999a, p. 9). Due to the value Navigators attribute to planning, timelines are extremely pertinent to them. A salient characteristic of Navigators is their inclination to first see the "big picture" in order to confirm what is expected of them (Conti & Kolody). Having grasped this, they then

proceed to chart a course for learning, mindful of deadlines and focused upon final results.

Navigators thrive on structure and prefer to maintain control of their learning environment, to include groups of others with whom they may interact (Conti & Kolody). For this reason, group work may be difficult for Navigators. Unlike Engagers, Navigators rely very little on their affective domain, favoring facts over opinions (Conti & Kolody). As such, this learning group reflects keen ability in the location of resources and optimal utilization of information. This does not imply that Navigators refrain from using human resources, but rather that typically, they choose to take advantage of the best possible resources available in order to facilitate their learning.

Navigators in this study recounted that they preferred to approach learning a particular task by (a) conducting individual research and assembling a substantive quantity of resources; (b) charting a course (devising a plan) for optimal learning; and (c) following a prescribed timeline (maintaining their schedule).

A clear predilection for Navigators in this study entailed the independent acquisition of resources leading to a comprehensive planning process. Of the thirteen

respondents in this learning category, three (23%) sought out other people first, while ten (78%) preferred to assemble as many resources as possible, as quickly as possible, on their own, independent of other people. Having assembled and reviewed those resources, all Navigators set about devising a specific plan or establishing a timeline in order to best monitor their learning progress.

Navigator comments that served to illustrate this groups' approach to resource acquisition and the subsequent formulation of a learning plan may be found in the following comments:

> For me, I first look at the end results. What do I expect to get out of this? Then I assemble the resources. I always look at what's at stake, then I develop a strategy to get the results I want. I start with what I already know - try to make connections with what I already know. Then I reorganize the gaps in my knowledge: how do I make up for these gaps? I start to divide my plans, how to spend time in each area (28 year old male, South Africa).
>
> Usually, I gather lots of information, as many as possible. During that, I pick up good resources, and study that. I try to write as many things as possible to consider if it's good or not. After doing that, I will add or subtract things as necessary. If I have problems or difficulties, I seek help from my advisor. I always start out by myself. Actually, I hesitate to ask anything about my assignment, I'm not this kind of person (29 year old female, Korea).
>
> Uh, the first thing, I like to get information about the thing I'm going to study. Is there a need to communicate with individuals personally? Basically, I

> need to get information and form an outline about how I should proceed. I spend most of my time in this way, in preparation. For me, taking notes, summarizing…sifting what is real or important. What I always do, when I have a project or assignment, I plan what I'm going to do and as this happens, I make a file and summaries for each resource…(42 year old female, South Africa).

Navigators exhibit a strong tendency to monitor their learning progress. This is reflected in their use of schedules or timelines to keep track of the learning process and maintain their organizational focus. Navigators are conscientious and once they have formulated a plan they are typically uncompromising in their determination to stick to it. Comments illustrative of this characteristic are:

> My organization is focused on deadline consciousness! I set timeframes and adhere to them for maximum productivity (43 year old male, Togo, Africa).

> I will follow the syllabus or course outline closely, do the work in advance, keep ahead of assignments to allow for corrections due to language problems. I pay strict attention to the syllabus (33 year old female, Thailand).

> I plan, I write in schedule book when to study for what project or test. I make sure I plan for reading and everything, and I stick to it (26 year old female, Japan).

> I need deadlines! I keep an organizer by week. Sometimes I even write on my hand so not to forget (23 year old female, Malaysia).

> I believe in deadlines! I set deadlines for myself. This is maybe what qualifies me as a Navigator, I

think! I post things in front of my desk (42 year old female, South Africa).

Navigators in this study clearly identified themselves as focused, results-oriented learners. They also exhibited obvious abilities for critical thinking strategies as they sought to ferret out what was important for them in order to launch their learning progress and construct a meaningful sense of purpose in the learning endeavor. This particular group, more so than the two other learning categories, demonstrated a vivid predisposition for monitoring their learning task.

Culture

Analysis of this study's qualitative data determined that coping with the effects of cultural differences posed the greatest challenges faced by international graduate students at Oklahoma State University.

Like learning strategy categories, culture is an additional marker of individual difference. As instructors seek to recognize and accommodate individual learning styles and learning strategies, so must they take into account individual cultural differences. Failure to do so assures a less-than-optimal learning environment. It is equally vital that each learner gain useful insights about his or her own cultural biases and characteristics so they

may enhance their own understanding of themselves as learners and co-learners. There seems little doubt that culture influences the ways people learn and thus their preferences for learning environments (Sandhu, 1995, p. 159).

Culture's presence and influence was, in a word, ubiquitous, and impacted respondents continuously as they sought to achieve learning success in the formal academic environment. With one exception, interview participants cited culture as a significant factor in their selection and use of learning strategies. However, true to the notion of learning strategies as techniques or skills that the learner has developed to use in both formal and informal learning situations (McKeachie, 1988), as external behaviors developed by individuals through experience with learning which the learner "elects to use in order to accomplish a learning task" (Conti & Fellenz, 1987, p. 7), learning strategy use reflected preference based upon the nature of the learning task and as such, these international students abandoned ineffective or inappropriate strategies and adopted new, contextual strategies dependent upon the present learning situation in order to achieve success. As students gained an improved understanding of their expanded learning strategy options,

the more empowered they became to enhance their personal learning.

Learning Style

> *For visiting international students acknowledgement and understanding of their individual learning styles may be desirable and quite likely helpful in enhancing their understanding of the learning process, but in the short term, what may afford the greatest benefit is recognition of specific skills and techniques for approaching particular learning situations.*

This study viewed learning style as a broad term that included cognitive style. Keefe (182, p. 4) defined learning style as the cognitive, affective, and physiological factors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment. Swanson (1995), upon review of previous studies, concluded that culture did, in general, play a part in learning style development. And Sandhu (1995, p. 159) suggests that those students from European cultures maintain different preferences for learning environments than do those from minority cultures. However, though the relationship between culture and learning style is pertinent, it is also somewhat polemic in that generalization about a group of people may also lead

to ingenuous assumptions about individuals within that group. A commonly perceived notion in this regard is that there are as many differences or variations within a group among individuals as there are commonalities, and possibly more. Learning styles relate to the innate feelings and tendencies people are born with and through culture and environment plays a significant role in learner development. Learning styles are not fixed at birth. Individual learners are capable of modifying their learning styles and adapting them to different environments. This modification process however, is dependent upon the nature of the environment and the length of time the learner spends there. Still, according to Rule and Grippen (1988), learning styles are not easily changed or are slow to change.

In short, the identification of individual learner's preferred learning styles is advantageous in that teachers can provide instruction and examples that may aid learners to better understand how they relate to the outside world, and more specifically, their preferred learning modalities, in order to facilitate individual learning. However, international students, whose period of residency in the United States may be limited to a relatively brief period of time, may not receive the full benefit of learning style

awareness in that they generally anticipate returning to their home culture and learning environment and thereby may not have the time or inclination to allow a shift in the ways they have come to organize and process information. For this particular population, what may be more beneficial is that which offers immediate, applicable input towards meeting the demands of a new and typically foreign learning environment. In essence, international students require specialized skills and techniques to facilitate their immediate success in an unfamiliar learning situation. Such specialized skills and techniques, adaptable to specific learning situations, comprise the essence of learning strategies.

Learning Strategies

> *While the effectiveness of a particular style relates to the individual, the success of strategies depends more on the situation (Fellenz & Conti, 1993, p. 4).*

Learning strategy research has evolved as adult educators seek alternative avenues for the exploration of individual differences. Smith's (1982) notion of learning how to learn surmised that:

> A central task of learning how to learn is developing awareness of oneself as a learner. . .Self-understanding links directly to learning how to learn when learners become sensitive to, and, more aware of themselves as learners (p. 57).

A component of the process of gaining learner self-awareness is that of attaining recognition of specific learning strategies that relate to individual learning patterns and behaviors (Conti & Kolody, 1999a, p. 2).

International graduate students who took part in the interview portion of this study offered rich and substantive input regarding the relevance of learning strategy awareness and the impact of both inappropriate and appropriate use of external behaviors in their new learning environment. To a great extent, in order to achieve success in this North American learning situation it became necessary for international students to reinterpret the nature of learning, to "unlearn" certain traditional strategies and techniques, and then to adapt to the new demands confronting them. Successful learners navigated this processes naturally and intuitively, and admittedly, not without some degree of stress and anxiety. Adaptation to their new learning environment did not occur overnight. In fact, numerous respondents expressed frustration that the process was, in essence, experiential. This indicates that they would have welcomed some variety of forewarning, a "heads up" session as it were. Examples of respondent comments reflective of confronting a foreign learning

situation, unlearning ineffective strategies, and adapting new strategies for achieving learning success included:

> Forcing one to get into discussions. In Thailand, no talking or discussion is expected in class. Just listen and write!
>
> At home, memorization was vital. Final exams were all of the grade!
>
> Here, it was initially overwhelming not to be in an all or nothing grade environment!
>
> You know, there is the orality of Arab culture. For us, memorization is a tradition, you know? And we check our memorization with others' memorization. It is custom from reciting the Koran.
>
> When choosing a learning strategy, I feel cultural background and personality. I am traditional, I learn collectively and share things. But, in my culture girls should not stand up in front of men...so I have to force myself to go against my traditions. This is a real challenge, to overcome cultural.
>
> Uh, you have to learn everything new, new terms, ideas we don't bring with us, Western ways, no? Learning new teaching methods, as in critical reflection, we don't have this so we don't get to contribute or get involved like this, you know, until we learn concepts.
>
> For sure, it's the environment of freedom, freedom to talk, interact, go to restroom. They try to motivate you, to think, to ask questions. They let you do the work. It's my responsibility to learn. Here, they ask questions and expect us to go figure. At home we are not given the responsibility. Here, we are given it, but we don't know how to bear this right away.
>
> You must pay attention to instructors here! Exactly! This kind of instructions, in the beginning, was hard, a barrier, but now I know how to follow, interpret directions...

> In America, the first year I was having a culture shock issue. I wasn't expecting the overwhelming work I had to do.

Eventually, in order to remain in the country on their student visas, students find ways to attain success in this new, oftentimes frighteningly foreign learning environment. Each step implies adaptation and expanded awareness not only of the specific elements inherent in the learning situation and the social realm, but also of themselves as learners and individuals. Upon analysis of the study's data, it was apparent that the stressful process students underwent in learning to learn a new culture, and the new learning demands placed upon them, might be greatly reduced in both scope and intensity if the nature of their orientation program were to include learning strategy insights grounded in cultural differences and learning how to learn concepts.

As with acquiring insight of individual learning styles, gaining awareness of learning strategy concepts, uses, and preferences may be viewed as a vital tool for creating awareness of how individuals differ and may serve as a meaningful launching point for a student's personal investigation of him or herself as a learner. A particularly auspicious aspect of learning strategy awareness is that learners may incorporate their insights

relatively quickly and easily into their personal learning processes.

Metacognition

> *The great benefit of metacognitive abilities and processes is that one may attain a state of praxis and thereby achieve improvement in matters under consideration.*

The concept of metacognition, first introduced by Flavell (1979), speaks to one's ability "to know about one's own knowing, to think and reflect on how one will react or has reacted to a problem or task" (Nisbet & Shucksmith, 1986, p. 30). It is, in essence, thinking about thinking. It is this sort of awareness that ultimately leads to one's ability to plan, monitor, and adjust one's learning in the course of a learning situation. The subprocess of planning acknowledges the learner's acceptance of responsibility and control of the learning experience (Conti & Kolody, 1999a, p. 4). The subprocess of monitoring implies that the learner constantly evaluates his or her progress in the course of a learning task (p. 4). The subprocess of adjusting describes the learner's facility at modification and revision of the learning plan as it pertains to the evaluation of learning progress (p. 4). Metacognitive

awareness and practice are vital to the ways in which learners orchestrate their learning strategies. Knowledge and understanding of one's learning patterns is a significant component in the learning how to learn model and a valuable accomplishment in the task of enhancing personal learning.

International graduate students who contributed to this study's body of qualitative data demonstrated that acquisition and implementation of metacognitive ability was directly proportional to their success and well-being in the new learning environment of the North American higher education classroom. Reflective of this notion are two comments made by respondents who exhibited keen awareness of their own need to restructure their thought processes within the contextual limits of this culturally distinct, current learning environment:

> Culture conditions human beings physically, it is always working on you. People should only try to be themselves, not change their being. Adaptation, not permanent change, that is the key!

> For sure, culture plays a big role. Everything we do, how we do it, how we think, what things mean, all is culture. But, one can "unlearn" some things and change to fit new situations. But change is not permanent, only used to meet new demands. In my own space, I am still doing things in my traditional way. One can be more than one way, you know?

Metaphorically speaking, these students have learned to "play the game", they have reflected about their own thought processes and have implemented change in the prosecution of their personal learning strategies. Apart from the academic environment, they remain true to themselves and their cultural traditions and modes of thought. These students know themselves. Like intellectual chameleons, they have adapted to their new learning surroundings. "One can be more than one way, you know?" (male, Engager, Malaysia, 2001).

Social Solidarity

Analysis of both the ATLAS data and the interview data depicted a remarkable similarity among international respondents and the North American participants in the SKILLS study in relation to their approaches to learning and their various perspectives of the learning environment, a recognizable solidarity, so to speak.

Durkheim's (1978) notion of social solidarity stemmed from his conceptual position that sociology's distinctive characteristic was its adoption of a group perspective (p. 9). From this position, Durkheim insisted that:

> Truly social behavior occurs only when an individual or group acts with a subjective sense, whether or not

> conscious or willing, of solidarity with others (Traugott, 1978, p. 9).

As such, Durkheim perceived sociology's unique task to be the determination of "how individual behavior is itself the product of social forces" (p. 10). Later, Durkheim introduced the terms "mechanical" and "organic" in relation to his theory of social solidarity. "Mechanical" refers to the cohesion produced in a social group based upon similarities among its members (p. 11). "Organic" pertains to group cohesion as well, but one attained through the interpendencies induced by individual differences (p. 11). Moreover, these two terms represent principles of organization related to primitive and modern societies, respectively. As such, they are, of course, ideal types. The effects of a mechanical organization, or society, is to instill upon its members a similarity of consciousness and a community of ideas and emotions. An organic organization, or society, is oppositional to the other in that solidarity is achieved as a product of differentiation of members' roles, the result being that the mutual dependence engendered as a function of substantive diversity generates a separate sphere of behaviors for its members while simultaneously binding them to everyone else

(p. 205). Traugott (1978), in his interpretation of Durkheim's theory, remarks that:

> We find mechanical solidarity in a state of almost absolute purity in those primitive societies in which consciousness and even organisms resemble each other to the point of being indiscernible; in which the individual is totally absorbed by the group; in which tradition and custom rule the most minute details of private affairs. On the other hand, in the great modern societies we can best observe that higher form of solidarity. . .which maintains the independence of the parts as it reinforces the unity of the whole (p. 206).

Reference to Durkheim's theory is salient to this study in that, as the researcher speculated upon the noteworthy similarities among individuals from disparate backgrounds and traditions with those learner characteristics and behaviors reflective of North American culture, it begged the question: "Why?" Why does such similarity, in terms of approaches to learning and learner characteristics, manifest itself in the midst of so much diversity?

One response to this question relates to Durkheim's concept of social solidarity and the associated forms of organic and mechanical solidarity. By way of extending these notions to an institutional structure it may be suggested that a university, in this case a North American university, represents an "organic" institution and as such, a modern, diverse, densely populated society wherein,

based upon a complex division of labor and purposes, the mutual dependence of the parts reinforces the unity of the whole. In pursuit of this line of reasoning, while still retaining a focus on individual differences, it seems highly plausible that the similarities encountered in learning category preferences and approaches to learning are manifested in great part because the same forces that impel complex modern societies to identify themselves as such (while retaining the singular perspective that that society is comprised of millions of individuals and not an amorphous grouping of like citizens) also compel complex institutions to generate an analogous response from their membership. This is to say that, as an organic institution, a university "demands" a certain homogeneity of behavior, norms and tradition, while simultaneously bestowing individual domains of action to each member. Thus, international students adopt specific characteristics of North American learners because it is "demanded" of them. Concurrently, they are thus "permitted" to remain themselves. Proceeding from this line of thought, one may envision that it is the recognition of individual differences that unifies a community of learners. Put another way, the commonality of learning strategy preferences and approaches to learning observed in this

study may in fact be guideposts advising us that the necessary degree of academic solidarity has been achieved in order for us to exercise our common purpose which is, in fact, the pursuit of our individual learning goals.

Summary of Qualitative Conclusions

The analysis of the interview data yielded keen insights into the ways in which culture influences and interacts with the learning environment. Specifically, the study's findings demonstrated numerous effects resulting from the interface of diverse cultural traditions and experiences with a North American higher education learning milieu. Although international students tended to approach learning in ways that were generally comparable to North American students, the dissimilitude associated with atypical cultural traditions manifested themselves in the "mechanical" processes of the classroom.

- A major obstacle that many international students confronted was the language barrier. Lack of ability or confidence in language skills inhibited participation in classroom activities for numerous internationals, especially early on in their programs. The phenomenon of culture shock was prolonged as a

result of this and student learning, as well as individual well-being, was adversely affected.

- Unfamiliarity with North American classroom norms and procedures offered yet another barrier to learning for internationals. Many students, particularly those from traditional cultures, were not experienced at voicing their opinions or posing questions during class time, nor were they experienced or comfortable engaging the instructor in discussion at any point in the learning activity.
- International students who come from academic traditions where final, comprehensive exams are the norm, encountered difficulty adjusting to the North American predilection for frequent quizzes, exams, and papers.
- Culturally specific/relevant examples and analogies in the classroom were hindrances to learning for international students.
- Culturally insensitive instructors and instructional methodologies hindered learning for international students.

- Unfamiliarity with communication technology, specifically the computer and word processing, and resource-gathering skills, hindered learning for many international students.
- Failure of instructors to recognize internationals as individuals and failure to integrate internationals into the classroom community of learners, constituted additional hindrances to learning for foreign students.
- Instructors' preparation and dissemination of class notes prior to class meetings served as a tremendous facilitative learning device for many internationals, as did the distribution of content outlines and topic-related handouts. Instructor feedback, discussion of returned projects, and daily reminders of course activities and deadlines were also helpful towards enhanced learning and understanding of the academic environment for internationals.
- Ambiguity associated with instructor behavior that evolved from unclear or unexpressed expectations, or from assumptions that internationals understood the ways of the

"system", served as an additional source for learner frustration.

- Instructors' failure to attempt to understand internationals' less-than-perfect English language skills, to include pronunciation, syntax, and weak vocabulary repertoire, served to hinder learning as well as exacerbate the assimilation process.
- Instructor failure to pause and ask for clarification or understanding of lecture or instructional topics detracted from internationals' learning success.
- Learning to assume responsibility for their own learning was frequently a difficult chore for international students. Keeping up with deadlines, knowing how to study, discriminating which material was relevant or important, all were initial hindrances to learning for internationals.
- Overwhelmingly, international graduate students expected classes to be challenging and problem-centered.

- Instructors who stereotyped international students reflected prejudice and contaminated the learning environment for internationals.
- Generally speaking, international students welcomed significant class interaction. Talking, sharing, learning from and with others, all served to satisfy cooperative learning needs and collectivistic tendencies for group association. Moreover, language barriers may have been reduced by way of informal discussion with peers.
- Instructor use of acronyms and abbreviations diminished learning success for international students.
- Some internationals perceived Americans' (instructors) quick, direct verbal responses to questions as a sign of impatience or reluctance to thoughtfully address a student's query.
- Some internationals felt as if they were punished for pursuing outside reading when information obtained from outside (non-required texts) sources was ignored or evaluated as

incorrect when incorporated into assignments or exams.

- Culture "factors" into learning strategy use. It does so not in relation to students' lack of awareness of available strategies, but rather, due to inappropriate application of strategies predicated upon misinterpretation of context or purpose. Memorizing the Koran, for example, is a traditional, valued, lifelong pursuit for many Muslims. Memorizing a textbook for a class that concludes at semester's end is not a practical nor particularly useful strategy.

Recommendations

Adult Learning

Second to the category of culture, more respondent comments designated the instructor's conduct as that factor which most served to either facilitate or hinder their learning success than any other element associated with the learning environment. Of those remarks that described instructor action or behavior that enhanced the learning process for this population, analysis revealed that students were, in effect, defining core andragogical assumptions and their preference for those and related principles of adult learning. International students

conclusively affirmed their appreciation of and preference for learning environments wherein the atmosphere was non-threatening, their experiences were acknowledged and valued, they were recognized as individuals, their participation and interaction in class was encouraged, and a problem-centered orientation was manifested in instructional methodology. Practitioners and researchers in the field of adult education should further investigate the application of adult learning principles and concepts as they apply to culturally distinct learners. For immediate purposes, it is suggested that higher education instructional faculty who interact with international students have the opportunity to receive training in regards to adult education theory, philosophy, and practice.

Self-Directed Learning

This study interpreted international graduate students' academic experience at Oklahoma State University as representative of a self-directed learning project, albeit on a grander scale than such projects are typically envisioned. In line with Brookfield's (1986) concern with learner's internal change and self-understanding, it is suggested that future research in the adult education field incorporate investigation of self-directed learning

undertaken by international students and scholars. In amplification of this proposal it is further recommended that self-directed learning inquiry incorporate other culturally distinct populations in North America to include immigrant populations, foreign born citizens, and those primary minority populations traditionally recognized as such. As voiced by Brookfield (1995), "the cross-cultural dimension of the concept has been almost completely ignored. More longitudinal and life history research is needed to understand how periods of self-directedness alternate with more traditional forms of educational participation in adults' autobiographies as learners".

Learning How to Learn

Learning how to learn should be viewed as a lifelong endeavor. International students who participated in this inquiry have demonstrated that they, too, continuously adapt, reinterpret, and "unlearn" in order to successfully participate in new learning environments. An obvious key component to these students' success was their acquisition of relevant, effective learning strategies. However, recognition and acquisition of these skills and techniques was not a simple process. Gaining awareness of individual differences, to include learning strategies, learning styles and other aspects of individuality as learners

should be an immediate priority for newly enrolled international students. Orientation seminars for students and faculty development opportunities for instructors should include awareness of individual differences as significant components for abetting the learning how to learn process and specifically, should acknowledge the role of learning strategies in facilitating individual learner success. Researchers in the adult education field should focus special effort in understanding "learning how to learn" processes and the needs of culturally different populations. The changing demographic profile of the United States and Canada, and the reality that North American institutions of higher learning attract significant numbers of international students and scholars, provides an obvious rationale for increased research in this area and with culturally diverse populations.

ATLAS

As with two previous studies (Spencer, 2000 and Ghostbear, 2001), ATLAS has demonstrated that it easily lends itself to on-line, electronic application. Its use in booklet format has already been established as an easy-to-administer, quick—to-complete tool for aiding adults and their instructors to promptly identify specific individual differences and gain meaningful insights into additional

techniques for enhancing the learning process. ATLAS does, in fact, adapt well to most learning situations. It is strongly suggested that the ATLAS instrument receive careful consideration among adult learning researchers in the course of their inquiries. Again, for the immediate purpose of enhancing the learning environment for international students at Oklahoma State University and those instructors who seek to improve the learning environment for these culturally diverse populations, it is recommended that ATLAS be utilized in orientation sessions and staff development offerings.

Culture

As a component of individual difference, culture is a major determinant of the ways people learn and their preferences for learning milieus. In a word, culture's presence is ubiquitous, within and without the learning environment. International graduate students who participated in the interview component of this study cited emphatically and consistently (86.6% of respondents) that culture played a decisive role in their adaptive capabilities upon entering the classroom at Oklahoma State University.

Culture is man-made and its effects may be mitigated, altered, and even transformed, especially when the effort

is purposive and necessary. Within each learning environment there is a particular culture, a system of knowledge and procedure that informs learners how they should communicate and interact with others, how they should interpret others' behavior.

A pertinent suggestion for immediate implementation at any institution of higher learning in North America is the provision of learning environment seminars for both internationals and concerned faculty and staff. Such seminars should be focused on culture's influence in the learning environment, to include issues which hinder as well as facilitate learning for non-North Americans, the nature of instructor-student and student-student interaction, learning strategy and study skill applicability, difficulties with language barriers, and insight into issues related to culture shock, communication patterns, classroom procedures, and self-directed/learning how to learn concepts.

A focus for instructors should also include what Banks and Banks (1995) describe as equity pedagogy wherein "teachers modify their teaching in ways that will facilitate the academic achievement of students from diverse racial, cultural, gender, and social-class groups" (p. 21). Moreover, adult education researchers should

expand their inquiries in the areas of cultural and cross-cultural dimensions of adult learning.

Epilogue

> *We are on our way to becoming the first country in history that is literally made up of every part of the world (Kenneth Prewitt, former director of the U.S. Census Bureau).*

At the dawning of the 21st century, the world is characterized by motion and change. People, ideas, commerce, technological innovation, all are moving about the globe in unprecedented fashion. Typically, the flow of this movement is outward, from the developed, industrialized societies to one another and on to the rest of Earth's nation-states. The flow of people, however, provides a contrary motion in that worldwide immigration patterns reflect a movement of people from poor, less-developed countries, to those nations that are faring better, in particular, industrialized states. Each passing day brings unparalleled flux, new knowledge and information, increasing diversity, ambiguity, opportunity, and a host of troublesome issues. Linked to the dual phenomena of motion and change is the concept of learning. In order to cope in this constantly evolving environment without falling victim to a fragmented sense of reality,

people must strive to stay abreast, to remain informed, to "keep up", to learn of the myriad permutations that now characterize the human state of affairs. For teachers, there is a vital implication inherent in the new global order. Rather than maintaining their sole focus on the products of learning, today's teachers must also look to the processes of learning, that is, their goals must currently include teaching students how to learn as well as what to learn (Weinstein & Mayer, 1983). Adult educators have responded to this challenge in various ways. Chief among them has been the facilitation of learner awareness, to include helping learners to know more about their preferred learning styles and learning strategies. A central task of learning how to learn is developing awareness of oneself as a learner (Smith, 1982). With the identification of these styles and strategies, teachers can offer instruction and examples to assist learners in the use of alternative learning methods (Conti & Kolody, 1999a, p. 16). In the process of helping students learn more effectively, teachers accomplish an integral element in addressing individual differences.

With the United States currently boasting a foreign born population in excess of 2,800,000 (10.0% of the nation's population), and the arrival of approximately a

million new immigrants each year, the notion of learning interfaced with cultural differences bears momentous implications for the continued vitality and well-being of the nation. The successful relationships with learners that teachers and facilitators of culturally diverse adults are able to establish, maintain, and expand upon depend in great part upon the degree of cultural sensitivity built into the educational programming. The incorporation of the concept of learning strategies into any adult learning environment, as elaborated in and elicited from ATLAS, clearly represents a learning tool that may be used with all populations to enhance learner awareness and ultimately the promotion of more effective learning. Understanding the transcultural nature of learning categories as established by ATLAS, coupled with the knowledge that ATLAS content relates to real-life learning situations, offers adult educators an additional opportunity for incorporating learning strategies into the learning environment and thereby augmenting students' learning-to-learn skills.

All Americans experience the sensation that life's pace and unpredictability have increased. Due to the ongoing revolution in the realm of communication technologies and the incessant expansion of, coupled with the ensuing encroachment from, globalizing processes,

people anticipate change. The ways people react to continuous flux is oftentimes directly proportional to their personal well-being.

A specific need generated by the current state of global and societal reordering is that of ongoing education, more accurately referred to as lifelong learning. Smith (1982) introduced the theory of learning how to learn and earlier Knowles (1970) offered premonitory advice relating to the current Age of Information: "In an era of breathtaking change, it is truly impossible to acquire early in life the knowledge that adulthood will require" (p. 15). Today, this is true for all Americans as we endeavor to keep up with new knowledge, technological innovation, professional development, training and retraining requirements, and issues pertinent to globalization processes.

Learning and learning how to learn are especially vital, real-life, present-time necessities for newcomers to this country who find themselves challenged by issues pertaining to tertiary education, second language acquisition, adult basic education, cultural transition, and preparation for employment. Key to all of these challenges is the newcomers' ability to learn successfully. The diffusion of learning how to learn concepts and

methodologies and the implementation of learning strategy research, to include ATLAS and the theoretical constructs associated with the instrument, are bound to enhance the teaching-learning transaction and in particular, learner self-awareness and empowerment.

REFERENCES

Agar, M. (1994). Language shock. New York: Morrow.

Apps, J. (1986). Prospects for and challenges to the professionalization of adult and continuing education toward the year 2000. Paper presented at the Commission of Professors of Adult Education Conference, Hollywood, FL, October 1986.

Armstrong, D. G., Hensen, K. T. & Savage, T. V. (2001). Teaching today: An introduction to education. Columbus, OH: Merrill-Prentice Hall.

Banks, J. A. & Banks, G. A. (2000). Multicultural education: Issues and perspectives (pp. 31-33). New York: John Hiley and Sons, Inc.

Banks, J. A. & Banks, C. A. M. (1995). (Eds.) Handbook of research on multicultural education. New York: Macmillian.

Barron, M. L. 2001. Minorities. Encyclopedia Americana Online (Grolier, Inc.). [Online] Available http://ea.grolier.com, August 24, 2000.

Belenger, P. (1996). Trends in adult education policy. Adult education and development, 47, 19-29.

Bogdan, R. C. & Biklen, S. K. (1998). Qualitative research for education: An introduction to theory and methods. Needham Heights, MA: Allyn and Bacon.

Boyd, R. D. & Myers, J. G. (1988, October-December). Transformative education. International Journal of Lifelong Education, 7(4), 261-284.

Briscoe, D. B. & Ross, J. M. (1989). Racial and ethnic minorities and adult education. In S.B. Merriam and P.M. Cunningham (Eds.), Handbook of adult and continuing education (pp. 583-598). San Francisco, CA: Jossey-Bass.

Brookfield, S. (1995). In A.J. Tuinjman (Ed.), International encyclopedia of education. Oxford: Pergamon Press. (Forthcoming)

Brookfield, S. (1995). Adult learning: An overview. In A. Tuinjman (Ed.), International Encyclopedia of Education. Oxford: Pergamon Press.

Brookfield, S. D. (1987). Developing critical thinkers. San Francisco: Jossey-Bass.

Brookfield, S. D. (1986). Understanding and facilitating adult learning. San Francisco, CA: Jossey-Bass.

Brown, A. L. (1985). Knowing when, where and how to remember: A problem of metacognition. In Conti and Kolody, Guide for using ATLAS, Stillwater, OK: Oklahoma State University.

Brown, A. L. (1982, March-April). Learning and development: The problems of compatibility, access, and induction. Human Development, 25(2), 89-115. (ERIC No. EJ 262 061).

Burciaga, J. A. (1983). 45 percent of Latinos don't complete school. In S. Farkas (Ed.), Changes and challenges: City schools in America. Washington, DC: Institution for Educational Leadership Publications.

Camarota, S. A. (2001, January). Immigrants in the United States - 2000 : A snapshot of America's foreign-born population. Center for Immigration Studies, Backgrounder.

Cassara, B. B. (1990). Introduction. In B.B. Cassara (Ed.) Adult education is a multicultural society (p. 1). New York, NY: Routledge.

Center for Immigration Studies (2000). Current numbers. [On-line] Available http://www.cis.org/topics/Current numbers.htm.

Chinese Culture Connection (1987). Chinese values and the search for culture-free dimensions of culture. Journal of Cross-Cultural Psychology, 18, pp. 143-164.

Conti, G. J. (1977). Rebels with a cause : Myles Horton and Paulo Freire. Community College Review, 5(1).

Conti, G. J. & Fellenz, R. A. (1991). Assessing adult learning strategies. Proceedings of the 32nd annual Adult

Education Research Conference. Norman, OK: University of Oklahoma.

Conti, G. J. & Kolody, R. C. (1999a). Guide for using ATLAS. Stillwater, OK: Oklahoma State University.

Conti, G. J. & Kolody, R. C. (1999b). The relationship of learning strategy preference and personality type. Proceedings of the 40th annual adult education research conference (pp. 86-90). DeKalb, IL: Northern Illinois University.

Conti, G. J. & Kolody, R. C. (1998a). Guidelines for selecting methods and techniques. In M.W. Galbraith (Ed.), Adult learning methods: A guide for effective instruction, 2nd edition. Malabar, FL: Krieger Publishing Company.

Conti, G. J. & Kolody, R. C. (1998b). Development of an instrument for identifying groups of learners. Proceedings of the 39th annual adult education research conference (pp. 109-114). San Antonio, TX: Sacred Heart University.

Conti, G. J. & Fellenz, R. A. (1986). Myles Horton: Ideas that have stood the test of time. Adult Literacy and Basic Education, 10(1).

Coombs, P. H., Prosser, R. C. & Ahmed, M. (1973). New paths to learning: For rural children and youth. In S.B. Merriam and P.M. Cunningham (Eds.), Handbook of adult and continuing education (p. 21). San Francisco, CA: Jossey-Bass.

Counter, J. & Fellenz, R. A. (1993). Metacognition and learning strategies. In R. Fellenz & G. Conti (Eds.), Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS): Manual. Bozeman, MT: Center for Adult Learning Research.

Courtney, S. (1989). Defining adult and continuing education. In S.B. Merriam and P.M. Cunningham (Eds.), Handbook of adult and continuing education. San Francisco, CA: Jossey-Bass.

Cranton, P. (1994). Understanding and promoting transformative learning: A guide for educators and adults. San Francisco, CA: Jossey-Bass.

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

Darkenwald, G. G. (1982). Field research and grounded theory. In H.B. Long, R. Hiemstra and Associates, Changing approaches to studying adult education. San Francisco: Jossey-Bass Publishers.

Darkenwald, G. G., & Merriam, S. B. (1982a). Adult education: Foundations of practice (p. 9). New York: Harper and Row.

Dawson, J. L. M. (1967). Cultural and physiological influences upon spatial-perceptual processes in West Africa. Parts I and II. International Journal of Psychology, 2, pp. 115-28, pp. 171-85.

Dunn, R. and Dunn, K. (1992). Teaching elementary students through their individual learning styles: Practical approaches for grades 3-6. Boston, MA: Allyn and Bacon.

Durkheim, E. (1978). Emile Durkheim: On institutional analysis. Edited, translated, and with an introduction by Mark Traugott. Chicago: The University of Chicago Press.

Fellenz, R. & Conti, G. (1993). Self-knowledge Inventory of Lifelong Learning Strategies (SKILLS): Manual. Bozeman, MT: Center for Adult Learning Research.

Fellenz, R. A. & Conti, G. J. (1989). Learning and reality : Reflections on tends in adult learning. Columbus, OH: The Ohio State University. (ERIC Clearinghouse on Adult, Career, and Vocational Education, Information Series No. 336).

Fernandez, R. (2000). America's banquet of cultures: Harnessing ethnicity, race, and immigration in the 21st century. Westport, CT: Praeger.

Fierro, D. (1997). Is there a difference in learning styles among cultures? ERIC Document Reproduction Service No. ED 415 974.

Flavell, J.M. (1979). Metacognition and cognitive monitoring : A new area of cognitive-developmental inquiry. American Psychologist, 34(10), (pp. 906-911).

Flavell, J. M. (1976). Metacognitive aspects of problem solving. In L.B. Resnick (Ed.), The nature of intelligence. New York: John Wiley.

Freire, P. (1970). Pedagogy of the oppressed. New York, NY: Seabury Press.

Ghostbear, A. (2001). Adult learning on the internet: Engaging the eBay auction process. Unpublished doctoral dissertation. Stillwater, OK: Oklahoma State University.

Griggs, S. A. (1991). Learning styles counseling. Ann Arbor, MI: ERIC counseling and personnel services clearinghouse.

Hall, E. T. (1976). Hall, E. T. (1976). Beyond culture (p. 79). New York : Doubleday.

Hofstede, G. (1980). Culture's consequences. Beverly Hills, CA : Sage.

Hofstede, G. & Bond, M. H. (1988). Confucius and economic growth: New trends in culture's consequences. Organizational Dynamics, 16(4), 4-21.

Harvis, P. (1987). Adult learning in the social context (p. 11). London: Croom Helms.

Heaney, T. (1995). Issues in Freirian pedagogy. [On-line] Available http://nhi.nl.edu/ace/Resources/Documents/FreireIssues.html.

Hill, M. (1992). Learning strategies used in real life and achievement of adult Native American tribal college students. Unpublished doctoral dissertation. Bozeman, MT: Montana State University.

Huber, K. L. (1993). Memory is not only about storage. In D.D. Flannery (Ed.), Applying cognitive theory to adult learning. New Directions for Adult and Continuing Education, no. 59. San Francisco, CA: Jossey-Bass.

Imel, S. (1998). Transformative learning in adulthood. Digest No. 200, ERIC Clearinghouse on Adult, Career, and Vocational Education, College of Education, the Ohio State University.

Institute of International Education (1999). [On-line] Available http://www.opendoorsweb.org/lead%stories/International_studs.htm.

James, C. B. (2001). Learning strategy preferences of high school noncompleters. Unpublished doctoral dissertation. Stillwater, OK: Oklahoma State University.

James, C. B. (2000). In personal conversation with G. J. Conti. Learning strategy preferences of high school noncompleters, p. 88. Unpublished doctoral dissertation, Oklahoma State University.

Joughin, G. (1992). Cognitive style and adult learning principles. International Journal of Lifelong Education, 11(1), pp. 3-14.

Keesing, R. (1974). Theories of culture. Annual Review of Anthropology, 3, 73-97.

Kidd, J. R. (1983). Learning and libraries: Competencies for full participation. Library Trends, 31(4), Spring, 525-542. ERIC No. EJ 304 530.

Kidd, J. R. (1973). How adults learn. In G.J. Conti & R.C. Kolody, Guide for using ATLAS: Assessing the learning strategy of adults: Manual, p. 13. Stillwater, OK: Oklahoma State University.

Kidd, J. R. (1973). How adults learn. New York: Cambridge.

Kirby, P. (1979). Cognitive style, learning style, and transfer skill acquisition. Information Series No. 195. Colombus, OH: Ohio State University, National Center for Research in Vocational Education.

Kluckhohn, F. & Strodtbeck, F. (1961). Variations in value orientations. New York: Row, Peterson.

Knowles, M. S. (1989). The making of an adult educator (p. 112). San Francisco, CA: Jossey-Bass.

Knowles, M. S., Molton, E. F. III, & Swanson, R. A. (1988). The Adult Learner. Houston, TX: Gulf Publishing Company.

Kolh, D. (1984). Experiential learning. Englewood Cliffs, NJ: Prentice Hall, Inc.

Lindeman, E. C. (1976). The meaning of adult education, (pp. 6, 166). New York, NY: New Republic.

Lollock, L. (2000, March). The foreign-born population in the United States. Current Population Reports, Economics and Statistics Administration, U.S. Census Bureau, Washington, DC.

Marcus, G. (2000). Culture, Encyclopedia Americana Online (Grolier, Inc.). [Online] Available http://ea.grolier.com, May 26, 2000.

Martin, P. & Midgley, E. (1999). Immigration to the United States: Journey to an uncertain destination. [Online] Available http://migration.ucdavis.edu/mda/mb.htm.

Mayer, R. E. (1987). Learning strategies: An overview. In C. Heinstein, E. Goetz, & P. Alexander (Eds.), Learning and study strategies: Issues in assessment, instruction, and evaluation. San Diego, CA: Academic Press.

Merriam, S. B. (1998). Qualitative research and case study applications in education (2^{nd} edition). San Francisco: Jossey-Bass Publishers.

Merriam, S. B. & Brockett, R. G. (1997). The profession and practice of adult education: An introduction. San Francisco, CA: Jossey-Bass.

Merriam, S. B. & Cafarella, R. S. (1999). Learning in adulthood: A comprehensive guide. San Francisco, CA: Jossey-Bass.

McKeachie, W. J. (1978). Teaching tips: A guidebook for the beginning college teacher. Toronto: D.C. Heath and Company.

McWhorter, K. (1995). College reading and study skills. New York: Harper Collins Publishers.

Mezirow, J. (1997). Transformative learning: Theory to practice. In P. Cranton (Ed.), Transformative learning in action: Insights from practice, New Directions for Adult and Continuing Education, no. 74. San Francisco, CA: Jossey-Bass.

Mezirow, J. (1996). Contemporary paradigms of learning. Adult Education Quarterly, 46(3), 158-172.

Mezirow, J. (1995). Transformational theory of adult learning. In M.R. Welton (Ed.), In defense of the lifeworld, pp. 39-70. New York, NY: SUNY Press.

Mezirow, J. (1991). Transformative dimensions of adult learning. San Francisco, CA: Jossey-Bass.

Mezirow, J. (1990). Conclusion: Toward transformative learning and emanicipatory education. In J. Mezirow and Associates, Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning. San Francisco, CA: Jossey-Bass.

Miller, E. W. & Miller, R. M. (1996). United States immigration: A reference handbook. Santa Barbara, CA: ABC-CLLO, Inc.

Miller, J. (1998). The unmaking of Americans: How multiculturalism has undermined the assimilation ethnic. New York, NY: The Free Press.

Mosel, J. (1973). Status and role analysis. Lecture to Japan and East Asia Across Studies Course, Foreign Service Institute, May 17, Washington, DC.

Naisbitt, J. & Aburdene, P. (1990). Megatrends 2000: Ten new directions for the 1990s. New York, NY: Morrow.

Neisser, U. (1982). Memory observed. San Francisco, CA: W.H. Freeman and Company.

Nisbet, J. & Shucksmith, J. (1986). Learning strategies. Boston, MA: Routledge and Kegan Paul.

Oberg, K. (1958). Culture shock and the problem of adjustment to new cultural environments. In P.R. Harris and R.T. Moran (1996), Managing cultural differences (p. 140) (4th ed.). Houston: Gulf Publishing Company.

Office of International Students and Scholars (2001). International students statistics report: Spring 2001. Stillwater, OK: Oklahoma State University.

Olsen, M. (1978). The process of social organization (2nd ed.). New York: Holt, Rinehart and Winston.

Orfield, G., Eaton, S. E., & The Darrand Project on School Desegregation (1996). Dismantling desegregation: The quiet reversal of Brown v. Board of Education. New York, NY: The New Press.

Ovando, C. J. (2001). Language diversity and education. In J.A. Banks and C.A. McGee Banks (Eds.), Multicultural education: Issues and perspectives (pp. 268-269). New York: John Wiley and Sons, Inc.

Patton, M. Q. (1990). Qualitative evaluation and research methods. Sage Publications: Newbury Park, CA.

Patton, M. Q. (1990). Qualitative evaluation methods (2nd ed.). In S.B. Merriam, Qualitative research and case study applications in education (2nd ed.) (p. 71). San Francisco: Jossey-Bass Publishers.

Paul, L. & Fellenz, R. (1993). Memory. In R. Fellenz and G. Conti (Eds), Self-knowledge inventory of lifelong learning strategies (SKILLS): Manual. Bozeman, MT: Center for adult learning research.

Pelto, P. (1968). The difference between "tight" and "loose" societies. Transaction, pp. 37-40.

Phillips, H. (1965). Thai peasant personality. Berkeley: University of California Press.

Pollard, K. M. & O'Hare, W. P. (1999). America's racial and ethnic minorities. Population Bulletin, Washington, DC.

Pratt, R. (Ed.) (1998). High school dropouts and completions by race/ethnicity and recency of migrations.

The conditions of education, 1998. [Online] Available http://nces.ed.gov/pubs98/conditions98/c9824a01.html.

Prewitt, K. (2001). In Joel L. Swerdlow's Changing America, National Geographic, September (pp. 41-46).

Ramirez, M. (1991). Psycholherapy and counseling with minorities: A cognitive approach to individual and cultural differences. New York: Pergamon Press.

Ramirez, M. (1973). Cognitive styles and cultural democracy in education. Social Science Quarterly, 53, pp. 895-904.

Reder, S. (1985). Giving literacy away: Alternative strategies for increasing adult literacy development. Washington, DC: National Institute of Education (ED 253 775).

Riche, M. F. (2000). America's diversity and growth: Sign posts for the 21st century. Population Bulletin, June, 2000. Washington: DC.

Sandhu, D. S. (1994). Culturally specific learning styles: Some suggestions for teachers. (ERIC Document Reproduction Service No. ED 370 910, p. 13)

Schneider, L. & Silverman, A. (2000). Global sociology: Introducing five contemporary societies. New York: McGraw Hill.

Scott, F. D. (2000). Immigration, Encyclopedia American Online (Grolier, Inc.). [Online] Available http://uea.grolier.com, August 22, 2000.

Smith, R. M. (1982). Learning how to learn. Chicago, IL: Follett Publishing Company.

Spencer, R. G. (2000). Self-directed learning on the information superhighway. Unpublished doctoral dissertation. Stillwater, OK: Oklahoma State University.

Sternberg, R. J. (1990). Real life vs. academic problem solving. In R.A. Fellenz and G.J. Conti (Eds.), Intelligence and adult learning. Bozeman, MT: Center for Adult Learning, Montana State University.

Strauss, A., Schatzman, L., Bucher, R., & Sabstrin, M. (1981). Psychiatric ideologies and institutions (2nd ed.). In S.B. Merriam (1998), Qualitative research and case study applications in education (p. 76). San Francisco: Jossey-Bass Publishers.

Swanson, L. J. (1995). Learning styles : A review of the literature. U.S. Department of Education, ERIC.

Taylor, E. W. (1998). The theory and practice of transformational learning: A critical review. Columbus, OH: The Ohio State University. (ERIC Clearinghouse on Adult, Career, and Vocational Education, Center in Education and Training for Employment, information series no. 374).

Tough, A. (1971). The adult's learning project. In G. Conti & R. Kolody (1999), Guide for using ATLAS: Assessing the learning strategy of adults: Manual, p. 9. Stillwater, OK: Oklahoma State University.

Traugott, M. (1978). Emile Durkhaim: On institutional analysis (Ed., translator). Chicago: The University of Chicago Press.

Triandis, H. C. (1995). Individualism and collectivism. Boulder, CO: Westview Press.

Triandis, H. C. (1994). Culture and social behavior. New York: McGraw-Hill.

U. S. Bureau of the Census (1995). Population profile of the United States: 1995. Current population reports, series P23-189. Washington, DC: U.S. Government Printing Office.

U. S. Census Bureau (2000). [Online] Available http://www.census.gov/population/estimates/nation/nativity/fbta001.txt, January 20, 2000.

U.S. Census Bureau (2000). [Online] Available http://www.census.gov/population/estimates/nation/nativity/fbtab003.txt, January 20, 2000.

U.S. Department of Commerce (2000, August). Coming to America: A profile of the nation's foreign born. Census

Brief, Economics and Statistics Administration, U.S. Census Bureau, Washington, DC.

U. S. Department of Education (1999). Digest of Education Statistics, 1998. Washington, DC: U.S. Government Printing Office.

United States Information Agency (1997). One from many: U.S. immigration patterns and ethnic composition. [Online]. Available http://usinfo.state.gov/journals/Itsv/0699/ijse/portrait.html.

Weinstein, C.E. & Mayer, R.E. (1983). The teaching of learning strategies. Innovation Abstracts, v(32), 1983. National Institute for Staff and Organizational Development.

Williams, W. H. A. (1998). Immigration as a pattern in American culture. In D. Davidson (Ed.), The immigration reader: America in a multidisciplinary perspective (p. 20). Oxford, UK: Blackwell publishers, Inc.

Willyard, P. (2000). Learning strategies of first generation community college students. Unpublished doctoral dissertation. Stillwater, OK: Oklahoma State University.

Wingfield, A. & Brynes, D. (1981). The psychology of human memory. New York, NY: Academic Press.

Yussen, S. R. (1985). The role of metacognition in contemporary theories of cognitive development. In D.L. Forrest-Pressley, G.A. MacKinnon, and T.G. Waller (Eds.). Metacognition, cognition, and human performance, 1. Orlando, FL: Academic Press.

Zechmeister, E. & Nyberg, S. (1982). Human memory : An introduction to research and theory. Monterey, CA: Brooks/Cole.

APPENDIXES

APPENDIX A

PERMISSION TO CONDUCT RESEARCH

Oklahoma State University
Institutional Review Board

Protocol Expires: 12/7/2001

Date : Friday, December 08, 2000 IRB Application No ED0146

Proposal Title: LEARNING STRATEGIES OF INTERNATIONAL STUDENTS

Principal
Investigator(s) :

Neill Armstrong
206 Willard
Stillwater, OK 74078

Gary Conti
206 Willard
Stillwater, OK 74078

Reviewed and
Processed as: Exempt

Approval Status Recommended by Reviewer(s) : Approved

Signature :

Carol Olson, Director of University Research Compliance

Friday, December 08, 2000
Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modifications to the research project approved by the IRB must be submitted for approval with the advisor's signature. The IRB office MUST be notified in writing when a project is complete. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

APPENDIX B

PARTICIPANT PERMISSION AGREEMENT

Learning Strategies
of
International Students and Scholars

This study is being conducted by the International Students and Scholars program and the Adult Education program at Oklahoma State University in order to better understand the learning strategies used by students in the International Students and Scholars program. To accomplish this, your help is needed. The interview in which you have volunteered to participate will explore your perceptions of the learning strategies that you use for your college program and other learning projects in your life. You do not have to answer any questions that you do not want to. This interview will take approximately 45-60 minutes. You will be interviewed by Neill Armstrong of the Adult Education program here at Oklahoma State University.

Participants in this study is completely voluntary, and your responses will remain confidential. Your name will not be associated with your responses in any form. While the results of this study will be shared with the staff of the International Students and Scholars program, your identity will not be associated with any of the responses. For additional information about this research project, you may contact:

Researcher: Neill Armstrong, Adult Education, School of Educational Studies, 206 Willard Hall, 744-9192.

IRB Office: Sharon Bacher, IRB Executive Secretary, Oklahoma State University, 203 Whitehurst, Stillwater, OK 74078, Phone: (405) 744-5700.

Voluntary Participation

I understand that participation in this research project is voluntary and that I will not be penalized if I choose not to participate. I also understand that I am free to withdraw my consent and end my participation in this project at any time without penalty by contacting Neill Armstrong.

_____
Print Name

_____
Signature

APPENDIX C

BIOGRAPHICAL DATA SHEET

No. _____

Interview Participant Information

The biographical data compliments the research project being conducted to describe learning strategies used by international graduate students of Oklahoma State University. Your responses are strictly confidential. Thank you for your participation.

---

1. Please indicate your ATLAS grouping:
   - Navigator Subgroup 1 _____
   - Navigator Subgroup 2 _____
   - Engager Subgroup 1 _____
   - Engager Subgroup 2 _____
   - Problem Solver Subgroup 1 _____
   - Problem Solver Subgroup 2 _____

2. Name: _____ Phone Number: (_____)_____

3. Gender: Males _____ Female _____

4. Current Age: _____

5. Nationality: _____

6. Years at Oklahoma State University: _____

7. Years in the United States: _____

8. How would you describe your home culture:
   - _____ Individualistic _____ Collectivistic
   - _____ Western _____ Non-Western
   - _____ Contemporary _____ Traditional
   - _____ Other: _____

APPENDIX D

ATLAS INSTRUMENT

ATLAS

Assessing The Learning Strategies of AdultS

Gary C. Conti
Oklahoma State University

Rita C. Kolody
Medicine Hat College

Discover Your Learning Strategy Preferences

Recent research on adult learning has revealed that adults have preferred learning strategies for approaching learning tasks. By responding to the following statements, you can **quickly** find out your learning strategy preferences and find out the name of your group on **A**ssessing **T**he **L**earning Strategies of **A**dult**S** (**ATLAS**). The three groups of learners are Navigators, Problem Solvers, and Engagers. Each group has two subgroups. Find out which group you are like.

Directions: The following statements relate to learning in real-life situations in which you control the learning situation. These are situations that are not in a formal school. Instead, these are situations like learning things related to eBay. For each statement, select the one answer that best fits you. Continue the process until you learn your group name and the description of your group.

ATLAS Question One

When considering a new learning activity such as learning a new craft, hobby, or skill for use in my personal life:

I like to identify the best possible resources such as manuals, books, modern information sources, or experts for the learning project.
Click here if this is my preference.

OR

I usually will not begin the learning activity until I am convinced that I will enjoy it enough to finish it.
Click here if this is my preference.

ATLAS Question Two

It is important for me to:

Focus on the end result and then set up a plan with such things as schedules and deadlines for learning it.
Click here if this is my preference.

OR

Think of a variety of ways of learning the material. Click here if this is my preference.

ATLAS Question Three

I like to:

Involve other people who know about the topic in my learning activity. You are an Engager Subgroup 1.

Is this description of an Engager fairly accurate in describing you as a learner? _____ Yes _____ No

--*--*--*--*--*--*--*--

Thank you for helping us better understand the adult learning process.

If you would like to read the description of the other learning strategy groups, please do so **Before** you click on the Submit button to send your responses.

OR

Determine the best way to proceed with a learning task by evaluating the result that I have already obtained during the learning task. You are an Engager Subgroup 2.

Is this description of an Engager fairly accurate in describing you as a learner? _____ Yes _____ No

ATLAS Question Three

I like to:

Set up a plan for the best way to proceed with a specific learning task. You are a Problem Solver Subgroup 1.

Is this description of an Problem Solver fairly accurate in describing you as a learner? _____ Yes _____ No

--*--*--*--*--*--*--*--

Thank you for helping us better understand the adult learning process.

If you would like to read the description of the other learning strategy groups, please do so **Before** you click on the Submit button to send your responses.

OR

Check out the resources that I am going to use to make sure that they are the best ones for the learning task. You are a Problem Solver Subgroup 2.

Is this description of a Problem Solver fairly accurate in describing you as a learner? _____ Yes _____ No

ATLAS Question Three

I like to:

Involve other people who know about the topic in my learning activity. You are a Navigator Subgroup 1.

Is this description of an Navigator fairly accurate in describing you as a learner? _____ Yes _____ No

--*--*--*--*--*--*--*--

Thank you for helping us better understand the adult learning process.

If you would like to read the description of the other learning strategy groups, please do so **Before** you click on the Submit button to send your responses.

OR

Structure the information to be learned to help remind me that I can successfully complete the learning activity. You are a Navigator Subgroup 2.

Is this description of a Navigator fairly accurate in describing you as a learner?
_____ Yes _____ No

VITA

Neill Ford Armstrong

Candidate for the Degree of

Doctor of Education

Thesis: LEARNING STRATEGY PREFERENCES OF INTERNATIONAL GRADUATE STUDENTS AT OKLAHOMA STATE UNIVERSITY

Major Field: Occupational and Adult Education

Biographical:

Education: Graduate from Memorial High School, Spring Branch, Texas, 1965; received Bachelor of Arts degree in Spanish from Oklahoma State University, Stillwater, Oklahoma, 1978; received Master of Science degree in Outdoor Recreation from Oklahoma State University, Stillwater, Oklahoma, 1980; completed the requirements for the Doctor of Education degree in Occupational and Adult Education at Oklahoma State University in December, 2001.

Experience: Teacher, Spanish, Stillwater Junior High School, Stillwater, Oklahoma, 1989-1991; Teacher, Spanish, Mountain View High School, Tucson, Arizona, 1991-1998; Graduate Teaching Assistant, School of Educational Studies, Oklahoma State University, 1998-2001; Graduate Assistant, Education Extension, College of Education, Oklahoma State University, 1999-2001; Curriculum Consultant, United States Agency for International Development and Oklahoma State University, Tegucigalpa, Honduras, 2000-2001; Adjunct Instructor, School of Educational Studies, Oklahoma State University, 2001-present.