

IDENTIFYING THE IMPACT OF PERSONAL COUNSELING
REGARDING LEARNING STRATEGIES OF GRADUATE
LEVEL BUSINESS STUDENTS AT WEBSTER
UNIVERSITY MCCONNELL AFB,
KANSAS

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TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
Higher Education	2
Webster University	9
Programs	9
Students	11
Faculty	12
Adult Learning	13
Andragogy	14
Self-Directed Learning	16
Learning-How-To-Learn	17
Real-Life Learning	19
Learning Strategies	19
Learning Strategies	21
Problem Statement	23
Purpose	27
Research Questions	28
Definitions	30
II. REVIEW OF LITERATURE	33
Andragogy	33
Self-Directed Learning	41
Learning-How-To-Learn	44
Real-Life Learning	45
Instrumented Learning	46
Reflective Practitioner	48
Learning Strategies	50
III. METHODOLOGY	55
Introduction	55
Design	56
Sample	61
ATLAS	63
Criterion Validity	65
Instructor's Journal	66
Student's Journal	66
Focus Group	67
Procedures	67

Chapter	Page
IV. FINDINGS	71
Participant's Learning Strategy Preference Profiles	71
Relationship between Counseling and Academic Achievement	75
Perceptions Regarding Counseling and Learning	79
Successful Learning	79
Hindrances to Learning	90
Instructor Journal Notes and Observations	92
Cross-Case Comparison	98
Similarities	99
Instructor	102
Summary	105
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	107
Summary of the Findings	107
Learning Strategy Preferences	111
Increased Learning	112
Perceptions Regarding Counseling and Learning	112
Conclusion	113
Counseling and Academic Achievement	114
Instructor Actions	116
Recommendations	126
Recommendations for Future Research	131
REFERENCES	133
APPENDIXES	
APPENDIX A - INSTITUTIONAL REVIEW BOARD APPROVAL FORM	140
APPENDIX B - ATLAS GROUP CONSENT FORM	142
APPENDIX C - NON-ATLAS GROUP CONSENT FORM	144
APPENDIX D - ATLAS INSTRUMENT	146

LIST OF TABLES

Table	Page
I. Age Distribution of Research Study Participants	72
II. Distribution of Observed/Expected ATLAS Responses .	74
III. Pretest and Posttest Scores by Group	77

CHAPTER 1

INTRODUCTION

Introduction

Individuals differ in the ways they approach learning situations just as they differ in personalities; and adult learners differ in the strategies they utilize in educational endeavors. The learning strategies of adult learners can be measured by utilizing the Assessing The Learning Strategies of Adults (ATLAS) instrument which identifies three learning strategy groups. The term "instrumented learning" has been used to describe learning which is stimulated by the use of an instrument. The ATLAS instrument becomes a measurement tool for learning strategies and begins the process of instrumented learning. Through the use of the instrument learners become aware of their particular learning strategy preferences. This knowledge and the application of it in a learning setting assist the learner in moving from "where they currently are" to "where they want to be". Instrumented learning is gaining popularity in the training field of many industries due to the efficiency and effectiveness it brings to the training effort. The more we know about learners, the easier it is to undertake the task of training them.

At the same time this study was being conducted, a similar study by D. Munday (2002) was underway. The combination of these two studies provided the opportunity for cross-case analysis and the possibility of increasing the generalizability of the study.

Higher Education

Institutions of higher education are experiencing steady enrollment increases. The National Center for Educational Statistics (2000) projects college enrollment to rise to 17.5 million by the year 2010. This represents a 20% increase over enrollment in 1998.

The competitive nature of the current global job market has forced workers to become more marketable. Because of this competition and global business capabilities, "continuing higher education has become a necessity for professional advancement and for the full enjoyment of life" (Webster University Catalog 2000-2001, p. 5). The preindustrial economy focused on human resources for economic success. During the industrial revolution, physical resources became paramount to achieve success. In the postindustrial information economy knowledge, leadership, and innovation have become the necessary elements for organizational success. In many cases an employee's marketability is achieved through an

increase in educational level. Many employees became comfortable in their organization knowing that their on-the-job experience and seniority would ensure them a constant ascent within the organizational structure. This level of comfort, however, is dissipating as the employees now find themselves in a position of having to earn a degree in order to ascend. In many cases, it is even more basic: employees must earn a degree to keep the position they currently hold and may have held for many years.

Compensation has traditionally been job-based pay which rewards people for performing specific jobs. Job-based pay enforces the link between an individual's job and organizational outcomes. It supports a culture that emphasizes bottom-line performance (Gordon, 1999). A compensation plan which is more in line with the learning organization is skill-based pay. Skill-based pay rewards people for building competencies and increasing their skills. Skill-based programs support a culture that reflects a concern for individual development and learning and an environment that requires greater flexibility from a relatively permanent workforce (p. 103). These requirements for employees instituted by their organizations are part of the organizational development process.

The field of organizational development is fairly young. The study of organizational behavior and related management practices was first recognized in 1911 with Frederick Taylor's *The Principles of Scientific Management*. Taylor's work focused on time and motion studies looking for the one best way to do each task and coined the term "soldiering" the practice of working considerably slower than one can (Moorehead & Griffin, 1998). A decade later the German sociologist Max Weber introduced the concept of bureaucracy as a model of efficiency which sparked classical organization theory. In the early 1900s Mary Parker Follet recognized the importance of individual behavior to organizations. Studies such as those conducted at Western Electric's Hawthorne plant near Chicago led to a new school of thought known as the human relations movement. Employee satisfaction became a key determinant of performance and the shift away from scientific management and classical organization theory began. For the first time in the industrialized history of the world, workers emotions, specifically motivation, were taken into consideration when examining productivity. The affective domain became part of the equation for productivity. Douglas McGregor's Theory X and Theory Y perspective and Abraham Maslow's hierarchy of needs theory also contributed

greatly to the human relations movement and furthered its acceptance and validity.

Organizational behavior began to emerge as a mature field of study in the late 1950s and early 1960s. Contemporary organizational behavior is an interdisciplinary focus which includes psychology, sociology, anthropology, political science, and economics. One obvious discipline which has been omitted from commonly used definitions is education. The role adult education plays in organizational effectiveness is paramount and should not be omitted. Many of the guiding principles of contemporary organizational behavior have evolved over the past few decades. Focusing on how organizations behave and how to best prepare an organization's resources for maximum efficiency and effectiveness are the basis of organizational development.

As organizations grow and change in response to the many pressures they feel, they must focus on their greatest resource: the human one. The one constant in the future of business will be change. People will have to be completely adaptable to new situations while maintaining productivity under the existing system (Huey, 1993). The question for organizations then becomes one of how do we prepare people to function effectively and efficiently amidst all this

change and how to ensure productivity as workers adapt in an ever-changing work environment. To the adult educator the answer is clear: education.

Organizations must be transformed into learning organizations and employees transformed into lifelong learners. The concept of the learning organization evolved by refining the Total Quality Management approach. The refinement moves the organization toward working to integrate continuous improvement with continuous employee learning and development (Moorehead & Griffin, 1998, p. 207). Peter Senge has had a tremendous impact on the field of organizational development with his widely accepted definition of and plans for successful implementation of the learning organization. He defines a learning organization as one that works to facilitate the lifelong learning and personal development of all of its employees while continually transforming itself to respond to changing demands and needs (Senge, 1993).

Lifelong learning is the process of learning that continues throughout ones lifetime based on individual needs, circumstances, interests, and learning skills (Merriam & Cunningham, 1989, p. 377). Believing that learning continues throughout a person's lifetime, the learner must acquire a variety of skills to meet their

ever-changing learning needs (Conti & Kolody, 1998b, p. 109). Although these learning needs do not necessarily have to be satisfied solely by a formal academic opportunity, the formal learning and the earning of a degree allow organizations to have a standard for assessing educational levels achieved. With each degree earned in specific disciplines, there is an expected level of knowledge.

Another catalyst leading to the increase in degree seeking individuals is the competition of those entering into the workforce. Younger employees are entering the workforce with their degrees in hand and have a strong indication of what education will be necessary for them to achieve their individual career goals.

The combination of these factors and of many other external and internal influences helps to explain the rise in enrollment. One very important barrier to education has been removed with the inception and popularity of tuition reimbursement programs. In a research study conducted by Hewitt Associates, 79% of the 619 companies surveyed pay for college courses that directly related to an employee's job (Dessler, 1994, p. 510). Some of the many factors also contributing to rising enrollment are increased educational loan providers and funding, increases in the number of single head-of-households, the increase in small and

privately held companies, the increase in minorities entering the workforce, and increased value placed on the information resource by employers.

With the increasing number of educational institutions competing for students and the rising cost of tuition, students are shopping for the best value in education. Value is defined as perceived benefits minus perceived costs (Pride & Ferrel, 2000, p. 96). Value can be determined by the individual based on many factors including: time to completion, location of the institution, reputation of the institution, and the successes of previous graduates.

Since the Industrial Revolution, people have begun to focus on efficiency in their lives. The educational endeavor is not immune from this measurement. Students are looking for efficiency in their learning as they do many other tasks in their life. The time and financial resources necessary to earn a degree are influencing students not only in their choice of institutions but also in their commitment to learning. If employers are paying for a student's education through a tuition reimbursement program, many are refusing to pay if grades below a "B" are earned. Thus, there are many pressures on students to perform well in the classroom and maximize their learning

experience as they would any other investment of time and money.

Webster University

Programs

One institution responding to the educational needs of the current workforce is Webster University. Webster University has graduate-degree programs available in 15 states in the United States. Webster's network also offers graduate-degree programs in many countries including Switzerland, Bermuda, The Netherlands, Austria, and the United Kingdom. Webster's combined domestic and international network of 79 campuses provides educational opportunities to more than 14,000 students (Webster University Catalog, 2000-2001, p. 5).

The North Central Association of Colleges and Schools accredits Webster University. The accreditation was originally awarded in 1925 and currently includes all undergraduate and graduate level programs offered at all locations throughout the Webster network.

The programs offered at the Webster University McConnell Air Force Base sight focus strictly on the graduate-degree for business students (fall 2000 Supplement to Catalog MA-1-52). Programs offered include the Master of Business Administration and the Master of Arts in

Business, Computer Resources and Information Management, Human Resources Development, Human Resources Management, and Management. The Master of Business Administration program is designed for students who want a quantitative orientation in the graduate degree program (p. 63). The Master of Arts program enables students to focus on a specific area of interest while incorporating academic studies from other areas such as behavioral and social sciences. These programs are designed and marketed for early career and midcareer professionals. The design is attractive to those students who require a strong academic program with built-in flexibility to accommodate busy schedules. In addition, these programs have been developed to build on the existing talents and skills of the individual and provide the student with the professional development and academic credentials required for advancement in a present career or a successful change of career (Fall 2000 Supplement to Catalog MA-1-52).

Webster-McConnell is a popular choice among students who are returning to school after acquiring some work experience. The program is set in 9-week blocks so that students could easily finish their graduate degree within 15 months. This is very attractive to the early and midcareer professional who might have family and job

responsibilities that cannot be put on hold while they focus on attaining their graduate degree. In addition, Webster-McConnell has arranged for direct billing of tuition to those employers who provide tuition assistance. In a local survey conducted in the spring of 2001, the convenience offered by both Webster-McConnell's location and tuition payment system were among the top five reasons the students chose Webster-McConnell. The Wichita, Kansas educational market serves an MSA of approximately 500,000 people (Census, 2000) and consists of over a dozen accredited institutions for students to choose from. In this demanding market, Webster-McConnell is a well-respected provider of educational opportunities for students seeking graduate degrees in the Business field.

Students

Students at the Webster-McConnell site come from diverse personal and professional backgrounds. A local survey in Wichita found that the student base ranges from senior management level professionals to students coming directly from a traditional undergraduate program. Applicants requesting admission to a graduate program must have earned a recognized baccalaureate degree from an accredited educational institution.

Webster's current student base, according to an in-house survey they completed in 2001, ranges in age from early 20s to late 50s. Students under the age of 25 represent 2% of the student population, students between the ages of 26 and 35 represent 65%, and those between the ages of 36 and 45 represent 31%. Students over the age of 46 represent 2%, which is the exact same percentage as those below 25. This properly reflects Webster's focus on early and mid-career professionals. Because it is located on a military installation, Webster-McConnell also attracts a large number of military personnel seeking their master's degree.

Faculty

One of the core competencies of Webster-McConnell which serves to attract many students is their practitioner-based faculty. One of the difficulties students demonstrate is transitioning from classroom and textbook learning to real-life situations. Applying techniques and theories in real-life settings can be very challenging. The use of practitioners as adult learning facilitators helps to reduce the difficulty in this transition. Additionally, the classroom setting utilizes traditional lecture styles but accompanies the material with case studies, research, literature reviews, real-life

business problem solving, and group problem solving. In a survey conducted in 2001, students cited the school's reputation and faculty's reputation for real-life learning as two of the top five reasons they chose Webster-McConnell. The average faculty member at this site has been on staff for 12 years, and 100% are practitioners.

Adult Learning

The world is rapidly changing. Security for most individuals has taken on a new meaning in many facets of society. The security people once felt has been challenged leaving them feeling vulnerable and sometimes unsafe. The security of careers and jobs has been shaken with the downturn of the economy. At the same time, technology has brought the nation into the 21st century where competition becomes global and the entire world is a marketplace. The global economy has meant stiffer competition in the market place for goods and services and also for jobs.

Competition for desirable jobs has increased dramatically as more emphasis is placed on the need for strong human intelligence within organizations and a current pool of displaced workers which is comprised of qualified employees with good educational backgrounds and experience.

Organizations are forced to make every dollar count when investing in training and development for their staff.

Individuals are redefining their own lives and realizing their own mortality. As a result, time with family and friends becomes more precious. The unique combination of these factors makes the importance of efficient and effective educational opportunities even more critical. Adults are looking for alternative ways to reach their goals so that they may enjoy the rewards of the learning without sacrificing other things which they hold dear. This journey for many adult learners is fueled by the adult learning concepts of (a) andragogy, (b) self-directed learning, (c) learning-how-to-learn, (d) real-life learning, and (e) learning strategies.

Andragogy

For much of the twentieth century adult educators relied on the traditional pedagogical model. Pedagogy is defined as the "art and science of teaching children" (Knowles, 1970, p. 40). This traditional pedagogical model was teacher-centered and the curriculum was subject-based (p. 48). Late in the twentieth century, however, adult educators found that "many of the assumptions about the characteristics of learners did not seem to fit their adult students" (p. 41). Learning was taking place in settings other than a traditional classroom and the learning was based in the real world. This change in the way adults

learn led Malcolm Knowles to introduce his model of andragogy in 1970. Andragogy refers to the way adults learn (p. 38) and was originally defined by Knowles as "the art and science of helping adults learn" (p. 43). Knowles' andragogical model was originally based on four assumptions of adult learners: (a) people move toward increasing self-directedness as they mature, (b) they accumulate increasingly rich experiences that become resources for learning, (c) people become ready to learn when they experience a need to learn, and (d) learners want to apply what they learn (pp. 43-44). After a decade of refining his assumptions and model, Knowles (1980) began to view andragogy as "simply another model of assumptions about learners" (p. 43). Knowles (1984) then added two additional principles of adult learning to his original model. The first is orientation to learning which states that adults are life-centered (or task-centered or problem-centered). The second is motivation which explains that while adults are responsive to some extrinsic motivators such as promotions and salary increases, the more potent motivators are intrinsic such as the desire for increased self-esteem, quality of life, and the like (pp. 64-68).

Self-Directed Learning

Malcolm Knowles (1998) asserts that self-directed learning is self-teaching (p. 135). Self-directed learning describes a process

In which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (Knowles, 1975, p. 18)

This description may evoke the notion that the learner is in isolation but the reality is that "self-directed learning usually takes place in association with various kinds of helpers, such as teachers, tutors, mentors, resource people and peers" (Knowles, 1975, p. 18). Knowles further suggested that educators play an integral role and that their "part in this process is that of helper, guide, encourager, consultant, and resource--not that of transmitter, disciplinarian, judge, and authority" (p. 37).

The highlighting of self-directed learning in the adult education field was accomplished primarily by the work of Tough. He asserts that as learners assume responsibility for the planning and directing of their learning course, they become more self-directed learners (Tough, 1967). Additionally, Tough (1979) found that approximately 90% of adults are involved in at least one

major learning project annually and that 70% of these projects were initiated by the learner (p. 1). Of these projects, approximately 80% are managed by the learner with only 20% of the project planning being attributed to professionals (p. 252).

Stephen Brookfield (1986) has conducted extensive research into the concept of self-directed learning and has identified specific principles to help facilitate self-directed learning. These principles include voluntary participation, collaboration and praxis, critical reflection and self-direction (pp. 9-20). Indeed, self-directed learning takes place anytime a learner has control over the learning process and decision making related to the learning experience.

Learning-How-To-Learn

A significant part of the adult learners' life is real-life learning which results in practical knowledge (Fellenz & Conti, 1989, p. 3). The field of adult education has been progressing with the acceptance and practice of andragogical concepts and the embracing of self-directed learning. In addition, the field "has witnessed a growing emphasis on learning in real-life settings" (Fellenz & Conti, 1989, p. 23).

Learning-how-to-learn and real-life learning are related concepts. Robert Smith (1976) developed a theory based on the concept that it is "as important to teach adults how to learn as it is to specify particular curricular domains for learning" (Brookfield, 1986, p. 64). Smith's original definition of learning-how-to-learn was "a matter of the adult's having (or acquiring) the knowledge and skill essential to function effectively in the various learning situations in which he finds himself" (Smith, 1976, p. 5). He later refined his definition as "possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters" (Smith, 1982, p. 19).

The learning-how-to-learn concept contains three supporting ideas (Smith, 1982, p. 17). The first is what learners "need to know about learning itself for success in learning" (p. 20). The second is the learners' learning style (pp. 23-24). These are the methods people use when they think, approach problems, and process information in learning activities (p. 23). The third supporting idea is training (p. 25). That is "deliberate efforts to help people become better at learning and more successful in the educational arena" (p. 25). Adult education is a process which involves the learner in participation in planning,

conducting, and evaluating learning activities (Smith, 1976, p. 6).

Real-Life Learning

Real-life learning takes place in everyday settings and differs from the formal learning setting. In real-life settings the learner must recognize that a problem exists and define that problem as opposed to a formal setting where these issues are identified by the instructor (Sternberg, 1990, p. 35). And, unlike formal education problems which are structured, real-life problems are unstructured and relate to the learners' lives with the possibility of multiple answers (pp. 37-39). Real-life learning tasks are "often so episodic in nature that beginnings, patterns, and outcomes are impossible to define" (Fellenz & Conti, 1989, p. 4).

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). Learning strategies differ from learning styles in that "they are techniques rather than stable traits and they are selected for a specific task" (p. 8). In the field of Adult Education, learning strategies have been conceptualized as falling into the areas of metacognition, metamotivation,

memory, critical thinking, and resource management (Conti & Kolody, 1998, p. 109). These five areas and their related strategies are the link between the concepts of learning-how-to-learn and real-life learning. In fact,

The skills or techniques selected to accomplish the task often have a great influence on the success of that learning activity. Adeptness and insight in the use of learning strategies is a significant part of one's ability to learn how to learn" (Fellenz & Conti, 1993, p. 3).

Real-life learning takes place in everyday settings and differs from the formal learning setting. In real-life settings the learner must recognize that a problem exists and define that problem as opposed to a formal setting where these issues are identified by the instructor (Sternberg, 1990, p. 35). Unlike formal education problems which are structured, real-life problems are unstructured and relate to the learners' lives with the possibility of multiple answers (pp. 37-39). Learners in real-life situations must examine the problem at hand, seek out the appropriate information, and determine the relevance of this information. The successful learner must have the knowledge and skill necessary to learn in any situation (Smith, 1982).

Learning Strategies

As the field of adult education matures so does the richness of the research base. The concept of learning-how-to-learn has led researchers to further examine learning strategies. Every learner is unique in the way they approach a learning activity. These differences have been termed learning styles and learning strategies.

Learning styles are typically established in childhood and remain steady throughout the learner's life (Fellenz & Conti, 1989, p. 8). Learning strategies in contrast are defined as "the techniques or skills that an individual elects to use in order to accomplish a task. They differ from learning styles in that they are techniques rather than stable traits and they are selected for a specific task" (Fellenz & Conti, 1989, pp. 7-8). Learning styles as an intrinsic way of processing information (Smith, 1982) and learning strategies are the methods learners must use to gain information in various learning situations (Conti & Kolody, 1995). Thus, with learning strategies, the learner chooses a behavior when attempting a learning task as opposed to relying on a strictly intrinsic process. Adult learning is practical learning for real-life situations and thus requires the learner to make choices that are appropriate for the learning task. "Learning strategies

tend to focus on solving real problems involving metacognitive, memory, motivational, and critical thinking strategies" rather than on tasks such as "skills in note taking, outlining, and test passing" (Fellenz & Conti, 1989, p. 4).

Research related to learning strategies consistently uncovered three consistent learning strategy categories (Conti & Fellenz, 1991; Fellenz & Conti, 1989). From a database using these studies, three distinct learning strategy preference groups were identified. These were named Navigators, Problem Solvers, and Engagers. 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, 1998, p. 9). Problem Solvers like to "test assumptions to evaluate the specifics and generalizability within a learning situation; they generate alternatives to create additional learning options; and they are open to conditional acceptance of learning outcomes while keeping an open mind to other learning possibilities" (p. 12). 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" (p. 13).

Problem Statement

The competitive nature of the current global job market and the rising rate of unemployment in the current economy have forced workers to become more marketable. In the aftermath of the September 11th tragedy, Wichita, Kansas was economically the hardest hit city in the country after New York City (KSNW, News at 10, October, 2001). Much of the industry in Wichita is related to the large aircraft manufacturers which suffered tremendous blows and accompanying layoffs. The smaller businesses which provided services to the plants found themselves with little or no business. In addition, the businesses which provided services to these now laid-off workers found themselves struggling to remain profitable. Because of this horribly negative situation, many employees found education their best means of remaining competitive. For those not affected by layoffs, continuing higher education has become a necessity for professional advancement and for the full enjoyment of life because of the new business world and its global business capabilities (Webster University Catalog 2000-2001, p. 5).

The preindustrial economy focused on human resources while the postindustrial information economy focuses on human intellect, creativity, and innovation to provide the

basis for a successful organization. Adults are returning to school in increasing numbers (National Center for Education Statistics, 2000). They are returning for a multitude of reasons, and thus bring with them all the experiences they have amassed through their lifetimes. In addition, they bring all the things with them which make them unique and create a truly diverse group of learners. Educational institutions are aware of the diverse nature of their student body. Students are viewed as diverse based on demographic and work experience criteria. Where higher education has failed is in viewing student diversity in even more important terms: their learning strategies.

Above average instructors may enter a classroom and assess their students based on demographics such as age, socioeconomic status, educational level achieved, occupation, and gender. From this assessment the instructor determines any modifications to the presentation of materials which may be necessary to relate to this group of students in the true spirit of real-life learning. The not-so-motivated instructors will simply relay information in the same style as they have used in the past, and presumably will in the future. The instructor who is guided by and committed to true adult education principles will assess this classroom of learners based on their

learning strategies and their goal for the learning. This instructor may even go so far as to determine the student's learning strategies and adjust the material and activities accordingly.

The stakes on learning are high, and the knowledge students garner from the educational endeavors can determine their future success and ultimately their career. Many students are not aware of their particular learning strategy. Furthermore, they may realize that a learning situation is proving unproductive for them but have no inclination of how to impact their experience. In many cases they become frustrated and lose self-confidence. In the worst case scenarios, they simply drop out or remain in the situation and learn very little. This situation and its negative consequences could be avoided by utilizing basic adult education principles. However, this is rarely examined in institutions of higher education because the highly competitive nature of education has forced educators to think like business managers. Their focus is on performance which is based on enrollment figures and income. What it is not based on is student outcomes and maximizing the learning for each and every student.

Educational institutions spend tremendous amounts of human and financial resources to recruit students. Their

marketing plans include mass media, personal selling, public relations and elaborate referral and recruitment programs which often include alumni and endowment associations. Much of this marketing message focuses on the time to completion, the location, the facility, the institution's reputation, and the success of alumni. Knowles' (1980) andragological model assumes that as adult learners mature, they move toward self-directed learning. This self-directed learning is coupled with the mature learner's ability to incorporate their experiences into their learning. Based on this, educational institutions are marketing the wrong benefit. They should be appealing to the adult learner's sense of self-directed learning and embracing the experiences brought to the classroom by the students. This, coupled with the new material presented, can then be applied to the learner's current situation as a means to make the student more successful.

Employers are investing their precious financial resources in their human resources. Because so many employers are paying for an employee's tuition, they expect a favorable return on their investment. The investment in employee education and development is no different than any other investment the organization would make. Additionally, the student is investing their valuable time

in their education. This additional pressure forces students (and organizations) to maximize their educational opportunities. By introducing students and instructors to learning strategy knowledge, the formal classroom setting and its experiences may become a more efficient investment. This learning can be transferred to real-life settings to foster learning opportunities in every step of their journey in lifelong learning.

Purpose

The purpose of this study was to describe the effect learning strategy identification and related counseling on adult learning in the graduate degree program in Business Administration at Webster University's McConnell Air Force Base campus. Assessing The Learning Strategies of Adults (ATLAS) was used to assess the learning strategy preferences of adult students in the Webster-McConnell graduate degree in Business Administration program. Learners in two separate classes of the same course participated in the study. One class completed the ATLAS instrument and received counseling regarding learning strategies (ATLAS group) and the other did not (Non-ATLAS group). ATLAS was chosen as the assessment instrument due to its ease in administering and the limited amount of time it takes to complete (Conti & Kolody, 1999, p. 16). ATLAS

was utilized during the first class meeting to help students identify their learning strategies. A counseling session was then conducted with the students to orient them to their learning strategies and heighten their awareness of particular needs they may have as learners. This group of students was assessed after eight weeks to determine if their knowledge of their learning strategies impacted their learning.

Research Questions

One of the major weaknesses of research in the field of Adult Education "is its fragmented nature; few lines of inquiry have been pursued in a systematic and cumulative fashion" (Darkenwald & Merriam, 1982, p. 27). Although the field has been criticized for not developing "systematic lines of inquiry with one study building on another" (Merriam, 1987, p. 188), learning strategy research "is one line of adult learning inquiry in which one study has continued to lead to other studies" (James, 2000, p. 55). This study is part of this line of inquiry, and in order to facilitate the cross-case comparison with a similar study by D. Munday (2002), both studies have used a similar design and a similar set of research questions. The specific research questions for this study are as follows:

1. What is the learning strategy preferences profile for graduate-level students at Webster University's McConnell Air Force Base Campus?
2. What is the relationship of counseling for learning strategy preferences and academic achievement?
3. What are the perceptions of students concerning how counseling related to learning strategy preferences affected their learning?
4. What adult learning principles support student perceptions of the impact of counseling related to learning strategy preferences on their learning?
5. What are the perceptions of the teacher related to providing counseling to students about learning strategy preferences?
6. How do the findings of this study compare to those of D. Munday (2002)?

Qualitative, quantitative, and demographic data were collected during this study. ATLAS was the instrument used to assess the individual learning strategies of the adult students in the Webster-McConnell graduate degree in Business Administration program. The learning strategy profiles of the subjects were based on a frequency distribution of the ATLAS scores. Chi-square was utilized to compare the Webster-McConnell graduate degree in Business Administration adult student to the norms of ATLAS.

A focus group activity was conducted with the ATLAS group to collect qualitative data prior to and upon completion of the study. In addition, the participants were asked to keep a weekly learning journal relating their knowledge of their learning strategies to their performance in the learning setting. This data relates to each identified group's approach to their learning activities. Also, focus group participants were asked questions pertaining to the instructor. The instructor for this study was also the researcher and one area of particular interest was the instructor's actions and their impact on the subject's learning. All responses were analyzed using the constant comparative method (Merriam, 1998) to identify particular patterns in the three identified groups.

Definitions

Adult - Someone who has left the role of full-time student (the principle social role of childhood and adolescence) and assumed the role of worker, spouse, and/or parent. An adult performs socially productive roles and has assumed primary responsibility for his or her own life (Darkenwald & Merriam, 1998, p. 8).

Accelerated Degree Completion Program - Adult students can move through up to date, progressive, and innovative, course work taught by practitioners in an expedient fashion. This accelerated format makes the adult student become knowledgeable about an educational topic quickly (Newman University catalog, 2000-2001).

Adult Learning - The process of adults gaining knowledge and expertise (Knowles, Horton & Swanson, 1998, p. 124).

Andragogy - "The art and science of helping adults learn" (Knowles, 1980, p. 43). The art of helping adults learn (Darkenwald & Merriam, 1982, p.13).

ATLAS - Assessing The Learning Strategies of Adults. An easy to administer and complete learning strategies assessment instrument (Conti & Kolody, 1998b, p.109).

Case Study - Case study methods involve systematically gathering enough information about a particular person, social setting, event, or group to permit the researcher to effectively understand how it operates or functions. It is not actually a data-gathering technique in itself, but a methodological approach that incorporates a number of data-gathering measures (Hamel, Dufour, & Fortin, 1993).

Cross Case Analysis - The researcher attempts to see "processes and outcomes that occur across many cases, to understand how they are qualified by local conditions, and thus develop more sophisticated descriptions and more powerful explanations" (Miles & Huberman, 1994, p.172).

Engager - ATLAS grouping of passionate learners who love to learn, learn with feeling, and learn best when actively engaged in a meaningful manner. Engagers seek out learning activities that provide opportunities for interaction and collaboration (Conti & Kolody, 1999a, p. 14).

Learning Strategies - The techniques and skills that an individual elects to use in order to accomplish a specific learning task. Such strategies vary by individual and by learning objective. Often, they are so customary to learners that they are given little thought; at other times much deliberation occurs before a learning strategy is selected for a specific learning task (Fellenz & Conti, 1989, p.1).

Navigator - ATLAS grouping of focused learners who chart a course for learning and follow it. Navigators rely heavily on planning, attention, identification and critical use of resources, and testing assumptions (Conti & Kolody, 1999a, p. 9).

Newman University - Newman University is an independent, coeducational Catholic university, which incorporated career-oriented disciplines within its liberal arts curriculum and focuses on educating for life. It is located in Wichita, Kansas on a 51-acre campus in the southwest part of the city (Newman University catalog, 2000-2001, p. 4).

Problem Solver - ATLAS grouping of learners who rely heavily on all the strategies in the area of critical thinking. Problem Solvers test assumptions, generate alternatives, and are open to conditional acceptance.

Webster University-McConnell Air Force Base Campus - One of Webster University's distance learning campuses located in the educational facility at McConnell Air Force Base in Wichita, Kansas. This location offers accredited graduate-level degree programs in the business field.

CHAPTER 2

REVIEW OF THE LITERATURE

Andragogy

In 1968 Malcolm Knowles began using the term andragogy to describe his theoretical framework for thinking about adult learning (Knowles, 1984, p. 6). Until this point the traditional pedagogical model was prevalent in educational thinking. Pedagogy literally means "the art and science of teaching children" (p. 6). The introduction of andragogy provided a label for the increasing interest in adult learning. Andragogy is defined as "the art and science of helping adults learn" (p. 6). Between 1960 and 1980 the learning processes of adults and the unique characteristics of this group of learners were explored in depth. Knowledge was added to the field of study through such disciplines as psychiatry, sociology, and education. Psychiatrists were studying how to help people change their behavior (Maslow, 1970). At the same time sociologists were learning how institutional procedures and policies affected learning. The body of knowledge became substantial enough to "warrant attempts to organize it into a systematic framework of assumptions, principles, and strategies. This is what andragogy sets out to do (Knowles, 1984, p. 7).

Knowles based his model on four basic assumptions about adult learners which distinguishes them from child learners (Knowles, 1970). In his final work (Knowles, et al., 1998), he added two additional assumptions. His six assumptions are:

1. The need to know. Adults need to know why they need to learn something before undertaking to learn it.
2. The learners' self-concept. Adults have a self-concept of being responsible for their own lives.
3. The role of the learners' experiences. Adults come into an educational activity with both a greater volume and a different quality of experience from youths.
4. Readiness to learn. Adults become ready to learn those things they need to know and be able to do to cope effectively with their real-life situations.
5. Orientation to learning. In contrast to children's and youth's subject-centered orientation to learning (at least in school), adults are life-centered (or task-centered or problem-centered) in their orientation to learning.
6. Motivation. While adults are responsive to some extrinsic motivators (better jobs, promotions, salary increases, and the like), the more potent motivators are intrinsic motivators (the desire for increased self-esteem, quality of life, responsibility, job satisfaction and the like). (pp. 64-68)

The pedagogical model centers around the learner's dependency on the teacher as an expert and resource. As the expert, the instructor is the primary content planner.

In the andragogical model, the reverse is true as the self-directed learner takes part in the planning and the instructor becomes a facilitator. Andragogy embraces the learner's experience as a rich source for enhancing their learning whereas pedagogy limits the value of this experience. Pedagogy assumes the learner's readiness to learn is uniform by age and curriculum while andragogy approaches the readiness to learn as a state which develops from experiences previously faced by the learner. Pedagogy is a subject-centered model, whereas andragogy is a task-centered model. Pedagogy assumes that the learner's motivation has an external source in opposition to andragogy where the learner's motivation is internal. The transfer of material is facilitated through a traditional readings and lectures medium in the pedagogical model. Experiential techniques and independent study characterize the transfer of vital information to learners in the andragogical model. This method of transfer is mirrored in the evaluation process as the pedagogical model is teacher-determined and centered, and the andragogical model revolves around evidence of the learning that is validated by experts and peers.

The seven-step program planning model consists of seven elements:

1. Climate setting. A climate which is conducive to adult learning must be provided by the andragogue. This may include, but not be limited to the physical and psychological setting. The physical setting should immediately encourage two-way communication and participation. This may be accomplished through something as simple as placing the chairs so that learners are facing each other and there is no natural focal point. The psychological climate incorporates a climate of mutual respect, collaborativeness, mutual trust, supportiveness, openness and authenticity, pleasure, and finally humanness (Knowles, 1980, p. 224-225).
2. Involving learners in mutual planning. Knowles (1984) states "There is a basic law of human nature at work here: people tend to feel committed to any decision in proportion to the extent to which they participated in making it" (p. 17). Giving learners choices is an effective way to involve them in planning.
3. Involving participants in diagnosing their own needs for learning. The key to successful involvement in this step is to find a balance between the felt needs and the ascribed needs. The facilitator and learner can negotiate these needs. Knowles (p. 17) preferred utilizing a model of competencies, which identifies gaps between where the learner currently is and where the organization needs them to be (Knowles, 1980, pp.229-232, 256-261).
4. Involving learners in formulating their learning objectives. This is often accomplished using learning contracts (Knowles, 1975, pp.25-28; 1978, pp. 127-128, 198-203; 1980 pp. 243-244, 381-389).
5. Involving learners in designing learning plans. Resource identification and strategies for using these resources to accomplish objectives are tasks the learner can perform to involve themselves in the design of a learning plan. This step may also be aided by the use of a

learning contract (Knowles, 1984, p. 18; 1980, pp. 235-239).

6. Helping learners carry out their learning plans. The facilitator remains a consultant and resource (Knowles, 1984, p. 19).
7. Involving learners in evaluating their learning. The evaluation of the learning has evolved from a quantitative evaluation to a process focused more on the qualitative aspect of the process (Knowles, 1980, p. 247; Guba & Lincoln, 1989).

Knowles' process and assumptions relate to this research study on three primary planes. The first is the assumption that adults need to know they need to learn something. The explanation of Assessing The Learning Strategies of Adults (ATLAS) satisfied this first assumption. The benefits are overwhelming and can be applied easily and universally by even the most challenged of learners.

The second plane is the assumption that adults have a self-concept of being responsible for their lives. The application of the counseling surrounding the ATLAS instrument gave the adult learner yet another tool to aid them in becoming more responsible for their learning and more accountable for the outcome of a learning situation.

The third assumption which can be noted is that adults come into an educational activity with both a greater volume and a different quality of experience from youths.

This study examined the effect of ATLAS and accompanying counseling on students seeking a graduate-level degree in Business Administration from Webster University's McConnell Air Force Base campus (Webster-McConnell). The researcher was also the instructor in this formal setting. While the ATLAS instrument was being administered and during the accompanying counseling, learners could be observed shaking their heads and smiling as they realized that their learning strategies had been described extremely accurately by this friendly and unassuming instrument. They were eager to tell stories of their experiences which confirm the characteristics of learners who share their learning strategy. It is interesting to note that one student in the course where the study was being conducted was unable to participate and felt very 'left out' as the others began to use terminology associated with their learning strategies identified by ATLAS. Candy (1991) supports the student's feelings of non-membership in the learning setting. Writing from a predominantly social constructivist perspective, Candy believes "teaching and learning, especially for adults, is a process of negotiation, involving the construction and exchange of personally relevant and viable meanings" (p. 275). The group became progressively cohesive as the study

progressed. The members of the identified learning strategy groups began bonding as they shared stories related to learning situations outside this formal learning setting where they were applying concepts from ATLAS. They increasingly related the information presented during the counseling to experiences they have had in their lifetimes. This confirms Dewey's (1938) postulation that "all genuine education comes about through experience" (p. 13). This sharing of information also leads to social fulfillment and enhances the learner's overall experience. Benn (1997) has revisited the notion of social participation and concludes "that the extent of one's general social activity affects learning activity" (p. 34).

The fourth parallel is the assumption that adults become ready to learn those things they need to know and be able to do to cope effectively with their real-life situations. The knowledge of their learning strategies and the accompanying counseling that they received better equipped learners to cope more effectively with real-life learning. Because the ATLAS instrument identifies learning strategies for every learning situation from formal to informal, the learner becomes a more effective learner in any situation. This brings the usefulness of the knowledge

gained into any possible real-life situation the learner may encounter.

Knowles' fifth assumption is that adults are task-centered. Many adults in the Master's of Business Administration program at Webster University-McConnell Air Force Base Campus (Webster-McConnell) are enrolled in the program as the means to an end. The end is professional growth and development. The earning of the degree is not merely for the sake of learning, but for the sake of improving their life and their sense of self-worth, self-esteem, and accomplishment. The actual learning and commitment to a structured program are simply a task to be conquered in order to reach the goal. If using their knowledge of their learning strategies makes the task of learning more pleasant and less stressful, it will be considered a useful investment of time.

The final assumption centering on adults and their tendency to be motivated intrinsically follows from the previous assumption. The intrinsic rewards which are gained from successful completion of the degree program can be strong motivators. The knowledge that ATLAS brings to learners is in itself intrinsically motivating, but is compounded by the effect it has on goal achievement such as obtaining a graduate-level degree. The degree then has an

effect on the learner's career accomplishments which increase intrinsic motivators.

Self-Directed Learning

Malcolm Knowles (1998) asserts that self-directed learning is self-teaching (p. 135). Self-directed learning describes a process

in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes (Knowles, 1975, p. 18).

This description may evoke the notion that the learner is in isolation. And, "to many practitioners, the term self-directed learning conjures up images of isolated individuals busily engaged in determining the form and content of their learning efforts and controlling the execution of these efforts in an autonomous manner" (Brookfield, 1986, p. 56). The reality of this, however, is that "self-directed learning usually takes place in association with various kinds of helpers, such as teachers, tutors, mentors, resource people and peers" (Knowles, 1975, p. 18). Knowles further suggested that educators play an integral role and that their "part in this process is that of helper, guide, encourager,

consultant, and resource--not that of transmitter, disciplinarian, judge, and authority" (p. 37).

The highlighting of self-directed learning in the adult education field was accomplished primarily by the work of Tough. He asserts that as learners assume responsibility for the planning and directing of their learning course they become more self-directed learners (Tough, 1967). Additionally, Tough (1979) found that approximately 90% of adults are involved in at least one major learning project annually and that 70% of these projects were initiated by the learner (p. 1). Of these projects, approximately 80% are managed by the learner with only 20% of the project planning being attributed to professionals (p. 252).

Stephen Brookfield (1986) has conducted extensive research into the concept of self-directed learning and has suggested six principles to help facilitate self-directed learning (pp. 9-20). These principles are an integral piece of this study utilizing the ATLAS instrument.

The first of Brookfield's principles is voluntary participation (p. 9). All learners in the study volunteered to take part in the hopes that it would assist them in the task of earning their degree. This assistance would come either in the form of increased learning and/or

decreased stress as they progressed through their degree program. The second principle is mutual respect (pp. 12-14). The participants in the study admired and respected each other for the commitment they had made to achieve their degree and to further their learning by participating in the study. The third and fourth principles are collaboration and praxis (pp. 14-16). Collaboration allows for the diagnosing of needs, goal setting and objectives, the planning of learning activities, curriculum development, determining methodologies, and evaluation (p. 14). Praxis occurs as the self-directed learner takes action, reflects on their action and takes further action during the learning event (pp. 14-15). As the study progressed, learners began asking for the tools that they considered necessary for effective learning. These tools included schedules, deadlines, a better picture of the overall goals and expectations, and options for demonstrating their level of learning in the course.

The final principles encompass critical reflection and self-direction (pp. 16-19). It becomes a matter of examining the assumptions upon which skill acquisition is based. Furthermore, self-directed learning is a matter of "learning how to change our perspectives, shift our paradigms, and replace one way of interpreting the world by

another" (p. 19). Rather than feeling as though they were failures in a learning setting, students expressed relief that it was actually just a poor match between their learning strategy and that of the learning environment. They also felt their chances for success in future learning settings were greatly increased by their ability to take charge of their learning and become truly self-directed learners.

Learning-How-to-Learn

A significant part of the adult learners' life is real-life learning which results in practical knowledge (Fellenz & Conti, 1989, p. 3). The field of adult education has been progressing with the acceptance and practice of andragogical concepts and the embracing of self-directed learning. In addition, the field "has witnessed a growing emphasis on learning in real-life settings" (Fellenz & Conti, 1989, p. 23).

Learning-how-to-learn and real-life learning are related concepts. Robert Smith (1976) developed a theory based on the concept that it is "as important to teach adults how to learn as it is to specify particular curricular domains for learning" (Brookfield, 1986, p. 64). Smith's original definition of learning-how-to-learn was "a matter of the adult's having (or acquiring) the knowledge

and skill essential to function effectively in the various learning situations in which he finds himself" (Smith, 1976, p. 5). He later refined his definition as "possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters" (Smith, 1982, p. 19).

The learning-how-to-learn concept contains three supporting ideas (Smith, 1982, p. 17). The first is what learners "need to know about learning itself for success in learning" (p. 20). The second is the learners' learning style (pp. 23-24). These are the methods people use when they think, approach problems, and process information in learning activities (p. 23). The third supporting idea is training (p. 25). That is "deliberate efforts to help people become better at learning and more successful in the educational arena" (p. 25). Adult education is a process which involves the learner in participation in planning, conducting, and evaluating learning activities (Smith, 1976, p. 6).

Real-Life Learning

Real-life learning takes place in everyday settings and differs from the formal learning setting. In real-life settings the learner must recognize that a problem exists and define that problem as opposed to a formal setting

where these issues are identified by the instructor (Sternberg, 1990, p. 35). And, unlike formal education problems which are structured, real-life problems are unstructured and relate to the learners' lives with the possibility of multiple answers (pp. 37-39). Fellenz & Conti (1989) support this concept and further it by stating that real-life learning tasks are "often so episodic in nature that beginnings, patterns, and outcomes are impossible to define" (p. 4). Learners in real-life situations must examine the problem at hand, seek out the appropriate information, and determine the relevance of this information. The key to success is defined by Smith (1982) as "possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters" (p. 19).

The identification of how adult learners at Webster-McConnell acquired and utilized strategies for real-life learning was the foundation of this study.

Instrumented Learning

This study involved using an instrument, ATLAS, as a teaching device as opposed to simply a measurement device for the categorization of people. The instrument became a triggering device which was utilized by the instructor as a

pedagogical tool. This has been termed "instrumented learning".

Even though instructors use ATLAS in the pedagogical style at the onset of the learning experience, the instructor quickly reverts back to their role of facilitator as learners take charge of their learning armed with the ATLAS counseling and knowledge. The learning takes place because the instrument triggers the learner's sense of responsibility that Knowles describes (1998) and needing what they need to effectively cope with real-life learning.

The term "instrumented learning" has been used to describe learning which is stimulated by the use of an instrument which is neither a test nor a survey. ATLAS is an instrument which measures learning strategies and attempts to place learners into one of three categories (Navigators, Problem Solvers, and Engagers) based on their learning strategies. The instrument is not a test with responses which are either right or wrong; rather it is a measurement tool. Other tools similar to ATLAS are the Myers-Briggs Personality Indicator, DiSC Personal Behavior Profile, and Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) (Fellenz & Conti, 1993).

Adult learners are able to utilize the information they gained about themselves in order to increase learning experiences. Thus, the learning becomes personal and the situation as a whole becomes a learning experience. Dewey (1938) postulates that "all genuine education comes about through experience" (p. 13). Taking control of your learning environment and learning becomes an educational experience in itself. Learners, thereafter, can use critical reflection which Brookfield (1986) explains:

significant personal learning might be defined as that learning in which adults come to reflect on their self-images, change their self-concepts, question their previously internalized norms (behavioral and moral), and reinterpret their current and past behaviors from a new perspective (pp. 213 - 214).

Reflective Practitioner

Educators can use what they are observing in the learning setting to adjust the learning process and content to better meet the needs of the learners. The ATLAS instrument allows educators to adjust the learning process to meet the varied needs of the learning strategy groups defined as Navigators, Problem Solvers, and Engagers.

Schon's (1987) interactive reflective mode is termed "reflection-in-action" (p. 26) and reshapes "what we are doing while we are doing it" (p. 26). "Thinking on your feet" and "keeping your wits about you" are commonly used

phrases to describe reflection-in-action (p. 26). As practitioners encourage reflective learning in adult education (Richards & Lockhart, 1994), they too must develop themselves as reflective practitioners (Schon, 1987).

Schon (1987) discusses "knowing-in-action" and "reflection-in-action." Knowing-in-action is the automatic response based on our existing mental schema that enables us to perform efficiently in daily action. Reflection-in-action is the process of reflecting while performing to discover when existing schema are no longer appropriate, and changing those schema when appropriate. The most effective practitioners, and learners, are those who are good at reflection-in-action and double-loop learning (Knowles, Holton, & Swanson, 1998, p.140). Knowing your learning strategy preference and adjusting a situation to meet those needs is an example of reflection-in-action. The identification of the needed adjustments is the result of the instructors learning-how-to-learn.

In laying a foundation for the idea of reflective practice, Schon (1987) has suggested that professional practice can be viewed as an art. He uses the term *professional artistry* to describe "the kinds of competence (that) practitioners sometimes display in unique,

uncertain, and conflicted situations" (p.22). Artistry, as Schon uses the term, involves the ability to perform in a situation without having to consciously think about it. Such artistry is often closely linked to what Polanyi (1967) called "tacit knowledge." Merriam and Brockett (1997) add to the work on reflection by stating it is possible to think back on one's actions to gain insights into what may have led to a particular outcome; and that this process is reflection-on-action, (p. 283). Assessing a learning situation following the use of ATLAS strategies allows a learner to reflect on the action and its impact on the learning experience.

Learning Strategies

Smith's learning-how-to-learn concept has influenced research 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). Adult learners use learning strategies in informal situations, and learning strategies "are more a matter of preference; they are developed throughout life and vary by task" (Fellenz & Conti, 1993, p. 4). As chosen approaches of adult learners, learning strategies may greatly impact the learners' success. "The skills or techniques selected to accomplish the task often have a

great influence on the success of that learning activity. Adeptness and insight in the use of learning strategies is a significant part of one's ability to learn how to learn" (Fellenz & Conti, 1993, p. 3).

In the field of Adult Education, learning strategies have been conceptualized as consisting of five related areas of learning (Fellenz & Conti, 1993). These areas are identified using SKILLS which has proven to be a valid and reliable instrument for measuring learning strategies of adult learners (Conti & Kolody, 1999, pp. 16-20). These areas are Metacognition, Metamotivation, Memory, Critical Thinking, and Resource Management (p. 109). These five areas and their related strategies are the link between the concepts of learning-how-to-learn and real-life learning. In fact,

The skills or techniques selected to accomplish the task often have a great influence on the success of that learning activity. Adeptness and insight in the use of learning strategies is a significant part of one's ability to learn how to learn" (Fellenz & Conti, 1993, p. 3).

Metacognition is a conscious, reflective endeavor requiring the learner to analyze, assess, and manage learning activities (Conti & Kolody, 1999, p. 3). Metacognitive strategies include Planning, Monitoring, and Adjusting (Conti & Fellenz, 1993). Metamotivation is a

strategy that deals with the learners knowing and understanding of how they are motivated or why they are motivated to participate or remain in a learning activity (Conti & Kolody, 1999, p. 4). The learning strategy areas of Attention, Reward and Enjoyment, and Confidence are associated with Metamotivation (Fellenz & Conti, 1993). Memory involves the activities which store, retain, and retrieve knowledge (Conti & Kolody, 1999, p. 6). Memory strategies include Organization, Use of External Aids, and Memory Application (Fellenz & Conti, 1993). Critical thinking is "a reflective thinking process utilizing higher order thinking skills in order to improve learning" (Fellenz & Conti, 1993, p. 30). Testing Assumptions, Generating Alternatives, and Conditional Acceptance are the learning strategies associated with Critical Thinking (Fellenz & Conti, 1993). Resource Management includes Identification of Resources, Critical Use of Resources, and Use of Human Resources (Fellenz & Conti, 1993). Resource Management are the strategies that lead to effective use of resources (Conti & Kolody, 1999, p. 8).

Research from the SKILLS instrument consistently uncovered three consistent learning strategy categories. From these findings the Assessing The Learning strategy of Adults (ATLAS) was developed which quickly and accurately

determines the learning strategy categories of adult learners. These groups of learners consist of the Navigators, Problem Solvers, and Engagers (Conti & Kolody, 1999).

Navigators are "focused learners who chart a course for learning and follow it" (Conti & Kolody, 1999, p. 9). They prefer to be presented with the "big picture" first so that expectations are clear. They also find planning important and reportedly become stressed when plans and schedules are disrupted.

Problem Solvers "thrive in a learning environment that promotes experimentation through practical experience and hands-on activities" (Conti & Kolody, 1999, p. 13). Many find the classroom a difficult place to learn. It has been reported that if you ask a problem solver the time, they will build you a clock. This is an excellent demonstration of the Problem Solvers ability to generate alternatives and consider various solutions.

Engagers are "passionate learners who love to learn, learn with feeling, and learn best when they are actively engaged in a meaningful manner" (p. 13). They evaluate their learning on meeting internal rather than external needs.

The field of inquiry continues with studies utilizing ATLAS completed by James (2000), Willyard, (2000), Ghostbear (2001), Birzer (2000), and Turman (2001). These studies cover a variety of educational opportunities provided in the areas of first-generation and non-first-generation college students in Oklahoma; community policing officers in Wichita, Kansas; and graduate and undergraduate students in traditional and non-traditional formal education settings.

Mastering learning strategies and achieving success in the learning environment rests on the learner knowing three basic elements:

- 1.) When to learn
- 2.) How to learn and;
- 3.) Why to learn.

CHAPTER 3

METHODOLOGY

Introduction

One of the major weaknesses of research in the field of Adult Education "is its fragmented nature; few lines of inquiry have been pursued in a systematic and cumulative fashion" (Darkenwald & Merriam, 1982, p. 27). Although the field has been criticized for not developing "systematic lines of inquiry with one study building on another" (Merriam, 1987, p. 188), learning strategy research "is one line of adult learning inquiry in which one study has continued to lead to other studies" (James, 2000, p. 55). This study is part of this line of inquiry, and in order to facilitate the cross-case comparison with a similar study by D. Munday (2002), both studies have used a similar design and a similar set of research questions.

Research on learning strategies has been conducted and applied in a variety of disciplines including the informal learning setting, organizational training and development, governmental agencies, municipalities, institutions of higher education, and the formal classroom setting. What has not yet been studied is the actual effect the instrument has on learning in a formal situation. This study will not only continue the research in the formal

classroom setting but will also add several additional elements:

1. The usefulness of the application of learning strategies will be further explained utilizing fundamental adult education philosophies including learning-how-to-learn, real-life learning, and andragogy.
2. The instructor will be examined for both her role in the effectiveness of understanding learning strategies from both the learner's and facilitator's perspective and the effects of their efforts on the learning.
3. This study was a component of a cross-case analysis using the research conducted by D. Munday (2002) on a similar set of learners in a similar environment which will contribute to the generalizability of the findings.

Design

This research study was descriptive in nature. It identified learning strategy preferences of current adult students in the Webster University graduate degree in business administration program at the McConnell Air Force Base Campus (Webster-McConnell). 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 is 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 (Gay, 1987, p. 189).

This research study included qualitative and quantitative data. The sufficiency of the data will be assessed using triangulation. Triangulation and mixed-method evaluation require that two or more methods be used which have offsetting biases. Greene, Caracelli, & Graham (1989, p. 256) explain that when mixed-methods are used to "assess a given phenomenon, and the results of these methods converge or corroborate one another, then the validity of inquiry findings is enhanced". Greene and McClintock (1985, p. 523) note "this triangulation argument requires that the two or more methods be intentionally used to assess the same conceptual phenomenon, be therefore implemented simultaneously, and, to preserve their counteracting biases, also be implemented independently".

"Triangulation can take many forms, but its basic feature will be the combination of two or more different research strategies in the study of the same empirical units" (Denzin, 1978, p. 308).

Quantitative and qualitative methodologies were utilized to characterize the learning strategy preferences of current graduate-level business administration degree program students at Webster University. Employing the ATLAS instrument provided quantitative data. Applying the use of voluntary focus groups with all three learning strategy groups of Navigators, Engagers, and Problem Solvers and with the instructor provided qualitative data. This data was analyzed to discern any themes in relationship to the research questions.

Information obtained from the ATLAS instrument concerning learning strategies and demographics obtained from the accompanying consent form provided additional quantitative data. The data was combined and examined using various statistical techniques and triangulation to identify any themes in relationship to the research questions.

This study utilized a qualitative interview and quantitative questionnaire to assess the impact of counseling after the ATLAS instrument was completed. The search for the convergence of this data reinforced the classic intent of triangulation. This study utilized a complimentary mixed-method to measure overlapping but also different facets of a phenomenon in order to enrich

the understanding of that phenomenon by using the results from one method to seek clarification on the results from the other method. Qualitative methods can result in rich data which when combined with the quantitative results, helps to explain the entire story (Martin, 1987; Smith, 1986).

Where it was once thought that researchers had to choose between qualitative and quantitative studies, the ideas of researchers such as J. C. Greene (1985; 1989) illustrated the effectiveness of the intersection between the two methods and the richness of results which goes far beyond the reach of any single method. Researchers can now answer not only the what but also the how, where, when, and most importantly to the pedagogue--the why.

The participants in the study were students seeking a graduate degree in business administration from Webster University's McConnell Air Force Base Campus. As in many cases in educational research, (Wiersma, 2000, p. 123) intact groups are used "rather than assigning subjects at random to experimental treatments" (p. 126). For this study two groups were utilized which shared the same course and the same instructor. This natural setting, according to Campbell & Stanley (1969), allowed the researcher to

"introduce something like experimental design into his scheduling of data collection procedures (e.g., the *when* and *to whom* of measurement), even though he lacks the full control over the scheduling of experimental stimuli (*when* and *to whom* of exposure and the ability to randomize exposures) which makes a true experiment possible" (pg. 34).

When intact groups of students are used for a study, it falls into Campbell and Stanley's (1969) definition of a "quasi-experimental" design. As control groups were added for internal validity, Campbell & Stanley's (1969) "Design 4" was introduced (pg. 13). This design is termed 'The Pretest-Posttest Control Group Design' (pg. 13) "in which equivalent groups as achieved by randomization are employed, and the quasi-experimental Design 10 in which extant intact comparison groups of unassured equivalence are employed (p. 13). Utilizing the language of analysis of variance, "history, maturation, testing, etc., have been described as main effects, and as such have been controlled in Design 4, giving it internal validity" (p. 16). "For the purposes of generalizability, representativeness must be argued on a logical basis. For internal validity, the researcher must attempt to establish the degree of equivalence between groups" (Wiersma, 2000, p. 129). The pretest-posttest design aided in checking the extent of group similarity. The pretest also served to verify the incoming knowledge equivalency of the two groups and when

compared with the posttest illustrated gain scores. The instructor in this type of design can be an issue for validity. In this case, however, the researcher was the instructor for both groups and thus the instructor was a constant.

Another criticism of this type of design is that if the posttest scores of the two groups are different, the "external factors such as the teacher or school are having differing effects" (Wiersma, pg. 134). These external factors were kept constant in this study, thus reducing the possibility of criticism.

Sample

Determining the design of a study requires a framework or roadmap. Once this roadmap is determined, it becomes the research design which helps get the researcher "from here to there, where here may be defined as the initial set of questions to be answered, and there is some set of conclusions (answers) about these questions" (Yin, 1004, p. 19). Once the researcher identifies the problem for study, they must then decide what or whom to study, the sample. "Sampling in field research involves the selection of a research site, time, people and events" (Burgess, 1982, p. 76).

A population is "an entire group of persons, things, or events having at least one trait in common" (Springthall, 1990, p. 113). A target population is "that portion of the total population to which the researcher would ideally like to generalize results" (Gay, 1987, p. 102). The target of this study was graduate level students in Sedgwick County, Kansas. According to the 2000 U.S. Census Bureau report, the Sedgwick County Metropolitan Statistical Area (MSA) reveals a population of 452,869 of which 79.4% were White, 9.1% were African American, and 11.5% were other. As in many cases in educational research, intact groups were used (Wiersma, 2000, p. 123). For this study two groups were utilized which shared the same course and the same instructor. The ethnicity distribution for this study was White--69.2% and African American--30.7%. Although distribution of the sample showed a slightly lower percentage of whites and a higher percentage of African Americans than the general population, this could be attributed to the limited class size of the institution. The 13 participants had an average age of 36.2 and ranged from 23 to 61 years of age which closely mirrored the general population average of 35.2 years of age.

ATLAS

The learning strategies of adult students enrolled at Webster University were measured by utilizing 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) and can be completed in less than minutes (Conti & Kolody, 1998, p. 109). A learner who is "color-blind" may require additional assistance and time for completion.

A flow-chart design is used and items are printed on colored cards which are one-quarter sheets of a standard-sized, 8 ½" x 11" page.

"Sentence stems, which are in the top box on the page, lead to options in other boxes which complete the stem. Connecting arrows direct the respondent to the options." (Conti & Kolody, 1998, p. 16).

Each option leads the respondent to another box which either describes the respondents correct group placement or sends them to another colored card.

Although ATLAS is easy to use, its contents are based on powerful multivariate statistical procedures. One of the reasons ATLAS was chosen for this study was its unassuming appearance and ease of use.

ATLAS has proven its validity and reliability as an instrument for measuring the learning strategy preferences of adults (Conti & Kolody, 1998, p. 16). ATLAS meets the criterion for validity set forth by Gay "The degree to which a test measures what it is supposed to measure" (Gay, 1996, p. 138). It also satisfies the three most important types of validity recognized in educational research which are: construct, content, and criterion-related validity (Kerlinger, 1973, p. 457).

Construct validity "assesses the underlying theory of the test" (Conti & Kolody, 1999, p. 16). It is the extent to which the test can be shown to explain some aspect of human behavior by measuring hypothetical constructs (Borg & Gall, 1983, p. 280; Van Dalen, 1979, p. 137; Conti & Kolody, 1999 p. 16). Construct validity for ATLAS was established by synthesizing the results of the numerous research studies using SKILLS and to consolidate these results (Conti & Kolody 1999a, p. 16).

Wiersma describes content validation as establishing the representativeness of the items with respect to the domain of skills, tasks, knowledge, and so forth of whatever is being measured (2000, p. 300). Proving content validity for ATLAS was completed showing the degree to which the items are representative of learning strategy

characteristics of the three groups identified in the SKILLS research (Conti & Kolody, 1999a, p. 18). A series of discriminant analyses to determine the differences between each grouping was performed to establish content validity for ATLAS (pp. 18-19).

Criterion Validity

Criterion validation establishes validity through a comparison with some criterion external to the test (Wiersma, 2000, p. 301). The validity of the test will be judged by this criterion. Kerlinger (1973, p. 459) suggests that criterion-related validity compares an instrument score with external criteria known or believed to measure the attribute under study. The initial criterion-related validity of ATLAS was established by comparing ATLAS scores to SKILLS group placement (Conti & Kolody, 1999, p. 19).

Reliability refers to a test consistently measures what it measures (Gay, 1996, p. 145). Wiersma (2000) confirms that reliability is the "consistency of the instrument in measuring whatever it measures" (p. 297). The test-retest method has been utilized to confirm that ATLAS has proven over 87 percent reliable in determining the learning preference group of adult learners.

Instructor's Journal

The instructor for this study has utilized learning strategy knowledge in her role as facilitator for several years. She also has a strong knowledge base in regards to the ATLAS instrument and counseling. In order to keep track and develop a database as Yin (1994) suggests, the instructor kept a weekly journal of her observations regarding learner actions including both the formal classroom setting and informal settings. Additionally, the instructor's journal recorded observations of student reactions to learning strategy use in both formal and informal settings. This journal recorded events in the classroom and time spent outside the classroom but in course-related work. This included the focus group session which was conducted at the end of the course.

Student's Journals

To compliment the instructor's journal, students were also asked to keep a weekly journal of their responses and reactions to the knowledge of their learning strategy. These journals were not limited to the formal classroom setting or course-related work, but were extended to any situation in which learning strategy knowledge was utilized. These were given to the instructor at the completion of each week's class meeting.

Focus Group

A focus group was held with all participants and the instructor at the completion of the course. The research questions for this study which were specifically addressed were: (a) how did Navigators, Problem Solves, and Engagers utilize the ATLAS counseling to increase their learning; and (b) how did instructor actions help in the learning process. From this focus group came much information regarding learner's perceptions of learning strategies and their application.

Procedures

Dr. Michael Hulsizer, Chair of the Institutional Review Board in the Department of Behavioral and Social Sciences at Webster University was contacted prior to the study being conducted. He reviewed a proposal of the study, the ATLAS instrument, and the consent form. He then forwarded his approval to the director of the Webster-McConnell Air Force Base campus. This information was forwarded to the Oklahoma State University Internal Review Board for their approval, which was granted.

Two groups were selected for the study. Since the instructor was also a participant, it was necessary to choose a course taught to two separate groups of Webster-McConnell students by the same instructor. To further

reduce ambiguity and variables, two classes were selected that were the exact same course with the same instructor and the same criteria. Other than the classroom location, nearly all variables were equal. Webster University has a standing policy that no classes shall consist of more than 25 students. Because the enrollment for the chosen course was 27, the course was divided into two groups: one of 14 students which became the Non-ATLAS group, and one of 13 students which became the ATLAS group. While this is not a large group, it is acceptable for a case study of this nature.

Participants reviewed and signed the appropriate consent forms. One group was introduced to ATLAS and group members received counseling concerning their learning strategies. The other group signed a consent form, but its members were not introduced to ATLAS and did not receive any counseling on learning strategy preferences. During the first class meeting, the ATLAS group received a detailed explanation about the research study, ATLAS, and counseling. This session was videotaped so that qualitative data could later be extracted. Once students established their learning strategy preference as a Navigator, Engager, or a Problem Solver, they were then physically placed in their respective groups. Each group next identified both a

positive and negative learning experience and discussed their similarities and differences as learners. After this exercise was completed, the entire class discussed the differences relevant to their strategy.

The ATLAS and Non-ATLAS group both received an identical pretest and posttest. This was done for two reasons: (a) to establish a baseline of knowledge coming into the course and (b) to compare the posttest scores of each group to determine if there was a greater increase from pre to posttest for the ATLAS group. The pretest was given to each group their first night of class to determine incoming competencies. After eight weeks of instruction, the posttest was administered. The means of the differences of the ATLAS and Non-ATLAS groups pretest and posttest scores were compared.

A focus group session was conducted with the ATLAS group immediately following the posttest. Focus group questions followed a similar pattern used in studies by James (2000), Turman (2001), and Willyard (2000), and were identical to D. Munday (2002) for the purpose of cross-case analysis. The focus group questions were:

1. Tell me about a recent learning project.
2. How do you go about learning a specific task?

3. What kinds of things do teachers do in a learning situation that you like and that really help you learn?
4. What kinds of things do teachers do in a learning situation that you do not like and that really do not help you learn?

The instructor's journal was analyzed as were the student journals. The qualitative and quantitative data was then combined to determine the findings of the study and the cross-case analysis was completed with the study by D. Munday (2002).

CHAPTER 4

FINDINGS

Participant's Learning Strategy Preference Profiles

This descriptive study involved a total of 27 participants. The participants were predominately female, white and well-educated. Although the group was predominately white, it tended to reflect the demographic makeup of private colleges according to a 1997 survey conducted by the U.S. Department of Education National Center for Education Statistics. Wichita, Kansas, is located in Sedgwick County. According to the 2000 U.S. Census Bureau report, the Sedgwick County Metropolitan Statistical Area reveals a population of 452,869. The ethnicity distribution for 2000 was as follows: White--79.4%, African American--9.1%, Other--11.5% (U.S. Census Bureau, 2001). The distribution for this study was: White--69.2%, African American--30.7%. The ethnicity distribution of the sample showed a slightly lower percentage of whites and a higher percentage of African Americans. The small size of this study may have contributed to this variation. As in many cases in educational research, intact groups are used (Wiersma, 2000, p. 123). For this study two groups were utilized which shared the same course and the same instructor. Webster University limits its class size and

thus the ATLAS group consisted of only 13 learners. The ages of the study participants ranged from 23 to 61 years of age with an average age of 36.2 (see Table 1) which closely mirrored the general population average of 35.2 years of age.

Table 1: Age Distribution of Research Study Participants

Age	Frequency	Percent
23	1	7.7
26	4	30.8
27	1	7.7
38	2	15.4
42	1	7.7
43	1	7.7
47	1	7.7
48	1	7.7
61	1	7.7
Total	13	100

The study involved students in a master's degree program of study at Webster University. Therefore, it required previous educational attainment. Of the 27 research participants, 23 (85%) indicated they had completed a bachelor's degree and 4 (15%) had completed a master's degree.

The participants were placed in two groupings according to their class meeting time. The first group was the Non-ATLAS group, which consisted of 14 participants. This group was not provided information on their learning strategies and was not exposed to the ATLAS instrument or

counseling. They did, however, receive a pretest and posttest. The second group was the ATLAS group consisting of 13 participants. This group was exposed to the ATLAS instrument and received counseling regarding their learning strategies and applying the information in a learning setting. The students were encouraged to talk about and think about how their learning strategies applied to the course on a weekly basis. They were then asked to keep a weekly journal to document the effect ATLAS counseling had on their learning. This learning was not limited to the classroom setting. They also took a pretest and posttest to measure incoming and exiting competencies related to the course content.

The learning strategy preferences were distributed as follows for the 13 participants in the experimental group: Navigators--5 (38.46%), Problem Solvers--6 (46.15%), and Engagers--2 (15.38%) (see Table 2). The expected norms for the general population for ATLAS are Navigators--36.5%, Problem Solvers--31.7%, and Engagers--31.8% (Conti & Kolody, 1999, p. 18). The chi-square procedure, which is referred to as the "goodness-of-fit test," was used to determine if the class for this study differed from a normal distribution of learning strategy preferences. Chi-square can be used to test how well a sampling distribution

fits a hypothesized distribution (Wiersma, 2000, p. 362). This statistical procedure is used to determine whether an observed frequency distribution differs significantly from an expected frequency distribution (Roscoe, 1975, p. 247). The results observed in this study indicated that there were no significant differences between the observed and expected distribution ($\chi^2=1.97$, $df=2$, $p=.37$). Navigators were within the expected number, Problem Solvers were within one person of the expected number and Engagers were within two people of the expected number (see Table 2).

Table 2: Distribution of Observed/Expected ATLAS Responses

ATLAS Category	Observed	Percent	Expected	Differences
Navigators	5	38.46	4.7	.3
Problem Solvers	6	46.15	4.1	1.9
Engagers	2	15.38	4.1	-2.1

note: $\chi^2=1.97$, $df=2$, $p=.37$

As a criterion-related validity check on ATLAS, respondents in other studies have been asked if they perceived ATLAS to be accurate in describing their approach to learning. Studies such as Ghost Bear (2001), Turman (2001), Birzer (2001), and James (2001) found that greater than 90% of those taking ATLAS agreed that the instrument accurately described them as an adult learner. All participants (100%) in this study indicated that the ATLAS description of their learning strategy was accurate.

Relationship Between Counseling and Academic Achievement

A series of t-tests were conducted to compare the performance of the group receiving learning strategy information to the group that did not receive the information. The t-test is used to compare two groups "to see whether the differences between group means are large enough to assume that the corresponding population means are different" (Huck, Cormier, & Bounds, 1974, p. 49). The t-test procedure can be used with either one sample or with two samples. In a one-sample t-test, the mean of one group is compared to a hypothesized mean for the group (Roscoe, 1975, p. 214). There are two types of the t-tests for comparing the means of two samples (p. 52). Independent sample t-tests are used for groups that are not related to each other in any systematic way other than that they were selected from the same population (Gay, 1987, p. 390); this is often referred to as a group t-test.

The t-test for nonindependent samples "is used to determine whether there is probably a significant difference between the means of two matched, or nonindependent, samples or between the means of one sample at two different times" (Gay, 1987, p. 391); this can be referred to as a paired t-test. Both one-sample and two-

sample types of t-tests were used in this study, and both types of two-sample tests were used.

Although an analyses of covariance is often used to compare groups on a dependent variable such as a posttest after the group means have been adjusted by a relevant covariant variable such as a pretest (Huck, Cormier, & Bounds, 1974, p. 134), it was not possible to use this procedure because the Internal Review Board requirement of anonymity for members of the group not receiving counseling on their learning strategies. This requirement prevented the matching of pretest and posttest scores for members of the Non-ATLAS group.

Two group t-tests were conducted. One analysis compared the two pretest groups, and the other compared the two posttest groups. The ATLAS and Non-ATLAS groups did not differ significantly at the beginning of the instruction on the pretest (t=1.08, df=25, p=.29). The pretest mean score for the ATLAS group was 56.85 with a standard deviation of 13.95 (see Table 3). The Non-ATLAS group had a mean score of 61.79 with a standard deviation of 1.17. This data indicated that there was no difference between the subject knowledge base of both groups at the beginning of the course.

Table 3: Pretest and Posttest Scores by Group

Group	Pretest	Posttest
ATLAS	56.85	77.15
Non-ATLAS	61.79	64.78

However, the groups did differ significantly at the end of the training ($t=3.76$, $df=25$, $p=.001$). The ATLAS group had a mean of 77.15 with a standard deviation of 7.15 while the Non-ATLAS group had a mean of 64.78 with a standard deviation of 9.63 (see Table 3). Thus, the group that received counseling on learning strategies had significantly greater academic growth than the group that did not receive the counseling.

Since the anonymity requirement prevented the matching of the scores and the use of analysis of covariance to compare the two groups on the posttests, additional analyses were conducted to make comparisons of the scores on the pretest and posttest within each group. Two different types of t -tests were used to compare the pretest and posttest scores. A one-sample t -test was used to compare the scores for the Non-ATLAS group. In the one-sample t -test analysis, the mean of the posttest was

compared to the mean of the pretest. There was no significant difference ($t=1.16$, $df=13$, $p=.27$) between the mean on the posttest (64.78) and the hypothesized mean (61.79). Thus, as a group there was no difference in the academic achievement between the pretest and posttest for the Non-ATLAS group.

A paired t -test was used to compare the pretest to the posttest for the ATLAS group because it was possible to match the individual scores on the two groups. A significant difference was found between the pretest (56.85) and posttest (77.15) scores ($t=5.19$, $df=12$, $p=.0002$). Collectively these t -test analyses demonstrate that the groups were equivalent at the beginning of the study but that the group which received the counseling related to learning strategies had greater academic gains than the group that did not receive the counseling. One analysis showed that the groups were the same before instruction, but another showed they were different after the counseling. Since the posttest could not be adjusted for the variance due to the pretest, separate analyses were conducted for each group to compare the pretest and posttest scores. These analyses showed no academic improvement for the group that did not receive counseling and academic achievement for the group that did receive

counseling. Together these analyses confirm that the group receiving counseling had greater academic gains than the group not receiving training.

Perceptions Regarding Counseling and Learning

Qualitative data was compiled upon completion through a focus group which was conducted with the participants. This was a voluntary focus group; however, the majority of the learners participated. The focus group was part of multiple data collection methods that were intended to support triangulation and to enhance the richness of the data received by providing learners the opportunity to express themselves verbally and in writing. Their verbal expression was captured as they responded to questions concerning their learning experience with ATLAS. Because this study was conducted in a formal learning setting, the majority of the responses relate to this setting, but they could easily transfer to other learning experiences. Excerpts are given below.

Successful Learning

Knowles (1980) describes a seven-step program planning model for adult learners in which climate setting becomes the first priority. He views climate setting as "the qualities of an environment that facilitate learning" (p. 223). Learners expressed how much they liked being able to

choose their learning site for specific topics and areas of study. Knowles further discusses the physical arrangements and how they may contribute an "improvement in the social climate" (p. 224). Knowles asserts that the "behavior of the instructors is without a doubt the single most potent force in establishing a social climate" (pp. 225-226) and that the social climate can "be enhanced by such extra touches as...a coffee urn with auxiliary supplies" (p. 24). In this tradition, the instructor brought snacks and beverages on the first evening of class. This contributed to creating a climate that was conducive to learning, was an open setting, and was pleasant with a concern for humanness. The learners in this study found a correlation between a good learning experience and food. Whether it was the appreciation displayed for a dinner break which was long enough to actually eat or the atmosphere which was created by sharing snacks and stories. Many participants expressed that the sharing which took place around the eating was more relaxed and was more personal than at other times when the group was engaged in a discussion.

Knowles' (1970) concept of andragogy is based on six basic assumptions. His fifth assumption is that an adult's orientation to learning is "task-centered" (p. 68). The participants confirmed this by acknowledging that knowing

what the overall objective was and knowing what the expectations were was comforting. One response was that "it was good to know that we would be able to complete all the activities on the syllabus". Time lines and due dates were also appreciated as evidenced by the comment about scheduling "just give a time allotment for each activity". The combination of the above comments describes why schedules were important to many.

Control of the learning situation was important to the participants who included the content as well as the context. This preference for control is related to Knowles (1980) seven-step program planning model (pp. 224-239). They liked being able to participate in decision-making (Step 2) regarding the make-up of the course. They also enjoyed being involved in resource identification (Step 5); "I liked being able to choose who our guest speakers would be and what topics they discussed." Many of the participants were management-level employees and realized where they were in their skill levels and where they needed to be to perform at a level expected by their employers. They were fully involved in diagnosing their own needs for learning (Step 3). They also displayed Knowles (1970) fourth assumption about adult learners "becoming ready to learn those things they need to know and

be able to do to cope effectively with their real-life situations" (pp. 65).

The incubation process was important, and the participants preferred to be given an idea or concept prior to discussing it as a group. They preferred to be able to take the idea home with them and then come back the following week prepared to test assumptions and discuss alternative views. Adult education should utilize the role of the learners' experience because they come into an educational activity with both a "greater volume and different quality of experience from youths" (Knowles, 1970, p. 66). This additional time yielded the learners the opportunity to express this knowledge and share it with classmates in open and frank discussions.

Critical reflection is a process in which learners examine their assumptions and learn "to replace one way of interpreting the world by another" (Brookfield, 1986, p. 19). Discussing ideas and major concepts was a preferable method for learning new material or exploring a new concept. The more pedagogical and traditional method of lecture and teaching from the text was accepted in small doses, but the majority of participants preferred to "discuss ideas and to challenge the status quo". These students embraced andragogy with its guiding principles of

experiential techniques and independent study as a means of transferring learning.

Another positive experience for the participants was examining many aspects of the topic as opposed to simply the topic at hand. The "open sharing of differing opinions and experiences is a powerful educational tool".

Participants learned from each other's first-hand experiences; many of which came about through real-life learning in their workplace. Some participants discussed their real-life learning experience and that one of the difficulties was "finding the information I needed to examine possible answers". Sternberg (1990) points out that "unlike formal education problems which are structured, real-life problems are unstructured and relate to the learners' lives with the possibility of multiple answers" (pp. 37-39) and that often "outcomes are impossible to define" (Fellenz & Conti, 1989, p. 4). Once learners found their answers, they tested their assumptions and evaluated their choices. These experiences and the trial-and-error which was a part of reaching a solution were all shared with fellow learners. This follows the idea of praxis which occurs as the "self-directed learner takes action, reflects on their action and takes further action during the learning event" (Brookfield, 1986, pp.

14-15). In some instances, it allowed the learners to "avoid the same pitfall or mistake that our colleague already made".

The participants found the learning more applicable to real-life and practical applications when practitioners and those with expertise were utilized as instructors or guest speakers. This confirms Dewey's (1938) postulation that "all genuine education comes about through experience" (p. 13). This allowed not only for an explanation of the topic but also for a clearer understanding of the environment as a whole. Classroom discussion typically centered on information presented by practitioners with learners contributing input from their personal experiences where the same concepts were utilized. "It was more than just answering the question" according to one learner.

Enthusiastic instructors, according to another student, who were "passionate about their work and able to convey this to the learners", were considered a key element in the learning process. The instructor helps learners to carry out their learning plans by fulfilling the role of facilitator, consultant and resource (Knowles, 1984, p. 19). The enthusiasm and passion displayed by the instructor can be motivating to adult learners. Shared

passions can be a natural place for instructor and learner to find a connection.

Some of the patterns which emerged were grouped around the learning strategy preferences. Navigators are "focused learners who chart a course for learning and follow it" (Conti & Kolody, 1998, p. 9). They also rely on planning and monitoring the learning task. Their approach to learning has been described as "planning the work and working the plan" and they have been coined "Strivers" (Ghost Bear, 2001, p. 374). Because of this, providing schedules, deadlines, objectives, expectations, and the summarizing of main points are all important tasks for the instructor to complete. Learners "loved it when you put a schedule on the board" and appreciated the "take home sheets which outlined common themes from the evening's discussion". The Navigators preferred and repeatedly echoed the sentiment regarding time and schedules: "just give a time allotment for each activity" while others became "annoyed when we got off schedule". Knowing due dates and "expectations" was important to Navigators. They also preferred to listen to an expert in the field discuss their trials and tribulations as opposed to reading it in a book or hearing about it in a lecture. If the instructor failed to write a schedule on the board or failed to adhere

to the schedule, the Navigators were the first to bring it to everyone's attention. The schedule on the board turned out to be a double-edged sword: the good side was that the Navigators had a schedule to keep them grounded, but when the instructor got off schedule, the Navigators became irritated until the class was back on track. Navigators also began to offer summarizing ideas and concepts to share with the rest of the class.

Problem Solvers like to "test assumptions to evaluate the specifics and generalizability within a learning situation", and they generate alternatives while keeping an open-mind to other learning possibilities (Conti & Kolody, 1998, p. 12). This tendency to explore all aspects of a topic has led to it being said of Problem Solvers that "if you ask them what time it is, they will build you a clock", and they have been named the "Storytellers" (Ghost Bear, 2001, p. 376). Once the evening's topics had been covered, the participants preferred receiving handouts and information to take home which summarized the points covered. This is consistent with the Problem Solvers reliance on external memory aids such as to-do lists, and daily planners to reinforce their memory (Conti & Kolody, 1999, p. 12). They prefer using the incubation process and being able to "take something home to explore different

options on their own time". They also want the opportunity to "examine many aspects of the topic". If an exercise could be completed at home, they preferred that because "doing [this] in class restricted me and was a total waste of my time. I could have completed this at home". Others stated that "I was just getting started when time was up". Problem Solvers excel in "a learning environment that promotes experimentation through practical experience and hands-on activities" (p. 13). Some find it difficult to grasp a concept until they have a practical application for it. Because of this, the instructor was asked to "share your personal experiences with us and allow us to share ours with others". Problem Solvers did not like being reigned into an activity which had a specific goal and set parameters; the most annoying parameter for them was time. Problem Solvers preferred the "hands-on" approach to learning and would much rather have taken an assignment home than to have had to complete it during a specific period during class. One particular exercise involved searching the internet. Several Problem Solvers did not get the assignment completed because they were sidetracked by another interesting topic while they were completing their assignment. One student was so far away from the

original assignment that he even forgot what he was asked to do!

Problem Solvers also praised the instructor's use of their practitioner-based knowledge. They like being able to translate an abstract thought into something usable by making a connection between a real-life story and the abstract concept. If the instructor failed to offer an example, they would ask for one. If the instructor had no experience in a particular area of interest expressed by the class, members of the class would offer to help find an expert in the area and invite them into the classroom.

"Enthusiasm from the instructor" and "instructors who are passionate and able to convey this to students" were paramount to the Engagers. This was not surprising when considering that "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" (p. 13). Engagers like to have fun in a learning setting and are very concerned about relationships. This helps explain why they were the group who commented the most concerning the eating and the discussion which took place in this more relaxed setting. "It should be fun" and "show me the business" were two important comments from this group to express their attitude towards learning

situations. Engagers must be convinced that their learning outcome will outweigh the effort expended and that the outcome will be personally relevant. Moreover, they want to have fun, which is why Engagers can be viewed as "Stimulants" (Ghost Bear, 2001, p. 378).

Engagers were initially the most challenging of the groups to address. After some discussion with other's who are quite knowledgeable about ATLAS, it was determined that perhaps one individual who possessed an extremely negative attitude was influencing the remainder of the Engager group. She was absent for two of the first three weeks which allowed the Engagers some time to be free of her informal power within the group. During this time the Engagers and teacher explored what interests they had in the subject matter and how they would be able to utilize the course information. From these exploratory discussions, some specific goals for the learners were pinpointed. These goals were then incorporated into the course material in an attempt to keep them engaged. They responded very well to the group activities where they chose their own group members and were exceptionally verbal during discussions surrounding their particular areas of interest. Engagers recognized that it was important for them to feel that what they were doing was personally worth

the effort they expended. If they did not see the immediate benefit of a line of inquiry or discussion, they began to ask questions concerning their own situation looking for this benefit. Metacognition became apparent as Engagers looked for topics to cover which they found interesting or which they felt they would benefit from studying.

Hindrances to Learning

There were very few things that did not work in a learning situation that were common to all members of the class. However, several patterns emerged within the learning strategies. Some of the divergent views illustrate how difficult it can be to facilitate adult learning and meet the needs of all learners.

The Navigators were frustrated when "the expectations were not laid out ahead and were not clear". They also "hated group work because there was always a slacker in the group". Their need for managing their time and monitoring the work were inhibited when the instructor discussed an assignment which would be given to them at a later date: "don't tell me about it until you give it to me".

Problem Solvers became frustrated when the instructor lectured and gave concepts straight from the book. "I can read the book myself, give me real-life experiences and

share your knowledge as a practitioner". They also disliked completing projects in class that could be completed on their own time. They felt it a waste of class time which could have been used for activities which required their presence in the classroom. Problem Solvers also expressed frustration with exams which only had multiple-choice answers on them.

Engagers became frustrated when the effort expended did not equal the benefit derived. They disliked spending time on one individual's questions.

"Students are responsible for their own learning to a certain extent. We should not be spending time in a class on a task that a student would be able to complete on their own. That is a waste of my time and my money."

Another comment which furthered the above sentiment about individual interests impacting the entire class was "If that person is concerned enough with their own learning to take the initiative, why should the rest of us have to suffer through a useless exercise?" Engagers did not want to miss a learning opportunity:

"If I learn to speak Spanish in a class which also teaches me the culture, I'm happy. That's a double bonus for me! If this opportunity exists and we don't take advantage of it, it is frustrating."

Instructor Journal Notes and Observations

The instructor's journal reflected the use of several adult learning principles in the classroom and some of the learner's responses to those efforts. Knowles based his model of andragogy on six basic assumptions about adult learners which distinguishes them from child learners (Knowles et al., 1998). Of these six assumptions, those most observed and recited in the instructor's journal were actions related to the role of the learners' experiences, the orientation to learning, and learning related to internal motivation. Adults come into an educational activity with both a greater volume and a different quality of experience from youths, and this experience was well-utilized in the learning activity. Many exercises and discussions "focused around the learners sharing their experiences with classmates". In contrast to children's and youth's subject-centered orientation to learning in school, adults are life-centered (or task-centered or problem-centered) in their orientation to learning. This approach was demonstrated as learners were given "vague scenarios or expectations and asked to return specific outcomes". Many of the learners stated their purpose for the course as a means to complete their degree. While adults are responsive to some extrinsic motivators such as

better jobs, promotions, and salary increases, the more potent motivators are intrinsic motivators such as the desire for increased self-esteem, quality of life, responsibility, and job satisfaction.

"Students were not as motivated by grades, but by the learning which they could apply to their current positions and experience immediate results. They would come back to class the following week touting the results of experiments they had conducted at work using information garnered from a previous class meeting."

In addition, "they delighted in each other's successes and learned from each other's failures".

Knowles discusses the seven-step program planning model which includes climate setting. The psychological climate incorporates a climate of mutual respect, collaborativeness, mutual trust, supportiveness, openness and authenticity, pleasure, and humanness (Knowles, 1980, p. 224-225).

"By the end of the ATLAS counseling, students were referring to each other not by their name, but by their learning strategy group. Comments continued throughout the course such as 'Oh, just what we would expect from a Navigator'. The group displayed a new cohesiveness and the playful banter gave them an instant connection and level of comfort with each other."

This idea of cohesiveness and group membership was echoed as "one student in the study was initially unable to participate and felt very 'left out' as the others began to

use terminology associated with their learning strategies identified by ATLAS".

The level of comfort and mutual trust extended to the instructor as evidenced by the comment:

"they have me figured out. Tonight a Problem-Solver thanked me for giving an assignment from the Internet and allowing the students to either stay and finish the assignment in the lab or take it home and bring it back next week."

Another Problem-Solver asked me to not let them pick their own dates for a presentation, but to assign them a date. Otherwise, they knew they would procrastinate and end up giving the presentation the last night of class which would really cramp their schedule.

Comfort with the instructor was enhanced

"one military student who was in several classes I taught previously had always called me by Mrs. Munday, even though we all agreed that it was acceptable for both instructor and student to be called by their first names. After ATLAS and the frank discussions which followed, this student began calling me by my first name."

"Many of the students who are a part of this study make an effort to come and speak to me in the hallway on the other evenings they have class. Although nearly all students will take the time to say hello in passing, the participants in the study make an effort and spend more time just visiting." Another interesting observation was that "on the first evening of class students sat with

others whom they knew. After the ATLAS, many of the students sat together based on their learning strategy preference."

Real-life learning takes place in everyday settings and differs from the formal learning setting. In real-life settings, the learner must recognize that a problem exists and define that problem as opposed to a formal setting where these issues are identified by the instructor (Sternberg, 1990, p. 35). Learners began making connections between their difficulties and failures in the workplace and differences in learning strategies.

"They started bringing up examples from their work settings and sharing experiences which had been unexplainable to this point. One learner discussed their situation with a new employee and their inability to train this employee. They said the employee 'just didn't get it'. After examining the situation more closely, they realized that the employee must have had a completely different learning style than the person training them. This learner was going to go back to work the next day and give ATLAS to this employee and see if they could alter the training approach to meet the needs of the employee."

The results of this would have been interesting, but what is important is the real-life learning that took place as the learner recognized the problem and took a new solution from the classroom to the real world.

"Many students took ATLAS home to their spouses or to their workplace to determine the learning

strategies of those they worked closely with on a regular basis. It is interesting that after only a few weeks, learners are predicting the learning strategies of those close to them with incredible accuracy."

Other learners asked the instructor to come to their workplace and conduct an ATLAS counseling session. The invitation included a wide range of industries including a major aircraft manufacturer, a very large hospital, a group of student nurses, and trainers in the military.

Other real-life learning was demonstrated as

"one student came back to class this evening with their recent evaluation from their employer. This evaluation had been conducted by their immediate supervisor. Some of the evaluation had been not as favorable as the student had perceived their performance. They asked 'I wonder if my boss, who has a completely different learning style, rated me on her standard?' Further discussion revealed that the subordinate (student) was an Engager and that the boss was most likely a Navigator."

This raised the question of whether learners consider learning strategies other than their own as inferior.

Students demonstrated their ability to learn-how-to-learn. Participants demonstrated this skill mid-way through the course when they had to choose a group for a two-week long project:

"Several of the Problem-Solvers worked together in a squadron on base. They decided to do the project together because of their geographical proximity to each other. They also sought out a Navigator to be in their group because 'we have

to have someone to keep us on track'. I found this fascinating, rewarding, amusing, and very accurate."

Students "began asking for what they needed in order to maximize their learning. They asked me to give them more concrete expectations, to provide summary sheets, to give them deadlines, and to allow them more than one way to demonstrate their learning". The students embraced ATLAS and the knowledge they gained by asking for what they needed to succeed and by using their new knowledge in real-life settings.

"As an instructor with an Adult Education background and a practitioner, I make every attempt to include the learners in the planning of the course." This practice followed the step in Knowles' (1984) seven-step programming planning model which encourages involving the learners in mutual planning (p. 17). Although this was done with the group at the beginning of the course, "they began wanting to negotiate the syllabus, this was particularly so with the way their learning was verified." This also allowed for the step in Knowles' program planning model which involves participants in diagnosing their own needs for learning. The key to successful involvement in this step is to find a balance between the felt needs of the students and the ascribed needs. The facilitator and learner can

negotiate these needs. Knowles (1980) preferred utilizing a model of competencies, which identifies gaps between where the learner currently is and where the organization needs them to be (pp. 229-232, 256-261, 369, 371). Another step of the model was implemented as the facilitator remained a consultant and resource (Knowles, 1984, p. 19). The final step of the model was followed as the instructor involved learners in evaluating their learning. In this stage "the evaluation of the learning has evolved from a quantitative evaluation to a process focused more on the qualitative aspect of the process" (Knowles, 1980, p. 247; Guba & Lincoln, 1989).

Cross-Case Comparison

This study investigated whether students can adjust their behavior in a learning situation to garner the maximum possible value offered after they have correctly identified their learning strategy preference and received counseling regarding their strengths, weaknesses, and specific needs as learners. It was conducted in the field of Adult Education where one of the major weaknesses of research "is its fragmented nature; few lines of inquiry have been pursued in a systematic and cumulative fashion" (Darkenwald & Merriam, 1982, p. 27). Although the field has been criticized for not developing "systematic lines of

inquiry with one study building on another" (Merriam, 1987, p. 188), learning strategy research "is one line of adult learning inquiry in which one study has continued to lead to other studies" (James, 2000, p. 55). This study is part of this line of inquiry and utilized cross-case comparison with a similar study by D. Munday (2002) which had both a similar design and a similar set of research questions. This level of analysis will result in themes and in building "substantive theory offering an integrated framework covering multiple cases" (Merriam, 1998, p. 195).

Similarities

Both studies utilized degree seeking college students in a formal classroom setting. All were seeking a degree in the field of Business Administration from an accredited higher education institution in the city of Wichita, Kansas. Both studies included (a) a group which was exposed to the concept of learning strategy preferences which is identified by ATLAS and to counseling and (b) a group which was not. The distribution of learning strategy preferences was similar in the other study. Age ranges were quite similar, but the educational levels achieved by the participants in the other study were slightly lower; however, this would be expected because the other study focused on undergraduate students and this study focused on

graduate students who are required to have achieved a bachelor's degree.

Participants in both studies expressed an increased understanding of themselves as learners and the specific needs they have in learning situations. They expressed confidence in their ability to perform better in learning situations now that they are aware of what they need and know how to ask for it. They also expressed an increased understanding of those around them whether it was a co-worker, subordinate, or spouse. They were able to review a situation which had been frustrating or confusing in the past and attribute the problems to different learning strategies as opposed to personality conflict or communication problems. Much of the learning which took place was expressed in terms of understanding where others were coming from based on their personal orientation to learning. Learners felt they were better equipped to get along with others now that they had a new way to analyze a situation which changes a conflict from something personal to simply a difference in learning strategies. This appeared to be comforting to many that had viewed these conflicts as a source of failure on their part or a source of uncontrollable stress. Many expressed their dislike of procrastinators, but they now understand that this is a

Problem Solver trait. If they knew what to expect, they did not tend to get as upset about the action because the reason for it was legitimate. This legitimacy was provided by the understanding of the ATLAS instrument.

Some similarities were observed that were characteristic of learners with the same learning strategy grouping. Navigators showed the same frustration when course expectations were not clearly laid out. They preferred a classroom which was structured and activities which flowed along a schedule embedded within the syllabus. They preferred knowing what was expected of them on a weekly basis.

Problem Solvers expressed frustration with instructors who lecture from the book and use strict pedagogical styles in the classroom. They prefer instructors who share real-life experiences and group discussions which center on the experiences of their colleagues. Many Problem Solvers also acknowledged that they are perceived as procrastinators.

Engagers became frustrated when class time was taken for the interest of one student and did not find this a good use of their time. Engagers preferred working on projects with others, discussing cases, and sharing personal experiences.

Instructor

The knowledge of learning strategies and ATLAS benefited the instructors. Because of this knowledge, instructors were able to identify and fulfill the particular needs of learning strategy groups. Furthermore, if a particular student appeared to be unengaged the instructor could refer back to that student's learning strategy preference and try to engage them in a manner that would be effective for their needs. This allowed the instructor to keep the majority of the class participating in the course to the greatest extent possible and increased student interaction.

Instructors were aware of the specific needs of each learning strategy group and were able to structure the content in a manner that was effective for all learners. Although the instructors began the course with a syllabus, learners were quickly involved in mutual planning (Knowles, 1984, p. 17) and the course syllabus was adjusted.

Exams were changed from the norm of all multiple-choice (a Problem Solvers challenge) to an exam which afforded learners the opportunity to demonstrate knowledge in a variety of ways including essay. Students were also involved in evaluating their learning, an important step in Knowles (1980, p. 247) program-planning model. Learners

were given a choice of ways they could demonstrate their learning.

The instructor in the other study had no previous knowledge of learning strategy preferences or ATLAS, but quickly adjusted their role from instructor to facilitator which then matched the instructor style in this study. Knowles' (1984, p. 19) philosophy of an instructor as a facilitator who remains a consultant and resource was evident in the classrooms.

Andragogy embraces the learner-centered learning environment, as did both instructors. The learners came into the educational activity with previous experiences (Knowles, 1970, pp. 64-68) and a sense of their felt needs. On an individual basis, the instructors negotiated learner needs by finding a balance between their felt needs and ascribed needs (Knowles, 1980, pp. 229-232, 256-261). Fortunately for the instructors, many of the learners were at approximately the same level of professional achievement and the needs of the individuals easily translated into the needs of the group as a whole. The sharing of the ATLAS experience forged a connection within the class and with the instructors. The climate of the classroom was comfortable and open, which fulfills Knowles (1980, pp. 224-225) climate setting step in program planning. The

atmosphere was conducive to learning and the instructors found it an improvement over previous learning settings.

Both studies demonstrated cognitive growth in the learners. Cognitive styles are a consistent way for learners to process information that develop under the influence of personality traits (Merriam & Cafarella, 1999, p. 208). The knowledge of learning strategies allowed the learners to gather and process information in a way that was meaningful to them and appropriate for their identified learning strategy. The knowledge of the learner's various strategies afforded the instructors the ability to present material in ways that were meaningful and useful for a variety of learners.

Instructors observed growth in the students in several areas including academic and non-academic. The quantitative data confirmed that learners exposed to learning strategy information and counseling had greater increases in academic achievement than those learners who did not receive counseling regarding learning strategies. Learners also experienced growth as individuals. Many expressed their ability to better understand the perspectives of others in regards to the way they approach a situation. They understand that different learning strategies require different forms of learning and

approaches in order to be effective. This enhanced understanding prepares the learners to be more effective members of groups, teams, and relationships both within a working environment and a social environment. This experience with learning strategies in the classroom and the observed outcomes have constituted a transformational learning situation as learners change their frame of reference or "meaning perspective" (Mezirow, 2000, p. 16).

The instructor in this study continues to enhance her knowledge of ATLAS and learning strategy preferences and each use of its strategies enforces her belief in its accuracy and value. The instructor in the other study "definitely plans to continue using ATLAS principles" in his teaching after observing the positive impact it had on the learners' academic and personal growth.

Summary

This study and that of D. Munday (2002) confirmed the positive impact the knowledge of learning strategies had on academic achievement. It further demonstrated the additional growth that both students and instructors (as adult learners) experienced because of the effect of the ATLAS counseling. The experience of participating in these studies has had the effect of transforming the perspectives that the learners and instructors once held and providing

them with a new way of looking at learning situations and adult learners. The similarities between studies were numerous and there were no significant differences observed. Both studies demonstrated that learning strategy counseling and the ATLAS instrument had a positive impact on the academic achievement of adult learners.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of Findings

The competitive nature of the current global job market and the low rate of unemployment in the current economy have forced workers to become more marketable. Because of this new world and its global business capabilities, continuing higher education has become a necessity for professional advancement. The preindustrial economy focused on human resources for economic success, and the current postindustrial information economy relies on knowledge. Compensation is skill-based pay and rewards people for building competencies and increasing their skills. Skill-based programs support a culture that reflects a concern for individual development and learning, and an environment that requires greater flexibility from a relatively permanent workforce (Gordon, 1999, p. 103).

As organizations grow and change in response to the many pressures they feel, they must focus on their greatest resource: the human one. The one constant in the future of business is change. People will have to be completely adaptable to new situations while maintaining productivity under the existing system (Huey, 1993). The question for

organizations then becomes, "How do we prepare our people to function effectively and efficiently amidst all this change?" Organizations must be transformed into learning organizations and employees transformed into life-long learners. Peter Senge has had a tremendous impact on the field of organizational development with his widely accepted definition of and plans for successful implementation of the learning organization. He defines a learning organization as one that works to facilitate the lifelong learning and personal development of all of its employees while continually transforming itself to respond to changing demands and needs (1993).

Lifelong learning is supported by educators as a process that continues, in many diverse forms, throughout life (Darkenwald & Merriam, 1982), and that the learner must acquire a variety of skills to meet their ever-changing learning needs (Conti & Kolody, 1998b, p. 109). Although these learning needs do not need to be satisfied solely by a formal academic opportunity, the formal learning and the earning of a degree allow organizations to have a standard for assessing educational levels achieved, levels of knowledge, and competencies. Many colleges such as Webster University have a mission "to help students clearly achieve their educational objectives and equip them

to be lifelong learners" (Webster University Catalog, 2000-2001, p. 5).

While institutions of higher education set a goal of producing lifelong learners, what specifically can they do to prepare students to be lifelong learners? One area of adult learning which has received much attention and been the focus of many research studies is learning strategies. Turman (2001) described the learning strategies of adult students in a graduate business program. He found the distribution of learning strategy preferences "of students in the Southern Nazarene University program is similar to the distribution of learning strategies in the general population" (p. 102). While much is known about the concept of learning strategies the impact of counseling regarding learning strategies on adult learners and educational outcomes has not been explored. It is not known if the knowledge of learning strategies discovered through the use of the ATLAS instrument and accompanying counseling regarding those strategies assist adult learners in increasing their learning in a formal setting. Therefore, the purpose of this study was to determine the effect learning strategy identification and related counseling had on adult, specifically graduate-level, students in the graduate degree program in Business

Administration at Webster University's McConnell Air Force Base campus. The chosen evaluation instrument for this study was Assessing The Learning Strategies of Adults (ATLAS). ATLAS was used to assess the learning strategy preferences of adult students in the Webster-McConnell graduate degree in Business Administration program. ATLAS was chosen as the assessment instrument due to its ease in administering and the limited amount of time it takes to complete (Conti & Kolody, 1999, p. 16). ATLAS was utilized during the first class meeting to help students identify their learning strategies. A counseling session was then conducted with the students to orient them to their learning strategies and heighten their awareness of particular needs they may have as learners. This group of students was assessed after eight weeks which was the conclusion of the nine-week term to determine if their knowledge of their learning strategies impacted their learning. The study of the adult students in the Webster-McConnell graduate degree in Business Administration program will also contribute to the field of study concerning adult learning strategies, instrumented learning; and in particular the use of the ATLAS instrument.

This was a descriptive study. It included qualitative and quantitative data. Quantitative and qualitative methodologies were utilized to characterize the learning strategy preferences of current graduate students at Webster-McConnell. Quantitative data was collected by using the ATLAS instrument and demographic information questionnaire, and by administering a pretest and posttest to determine academic competencies. Qualitative data was collected from the students and the teacher. Focus groups were conducted with the three learning strategy groups and the instructor. This data was analyzed to discern any themes in relationship to the research questions. Learning journals from the students and instructor were also used and supplemented with the instructor's observations to complete the qualitative data. Participants included all students attending the course taught by the researcher with one group serving as the ATLAS group and the other as the Non-ATLAS group.

Learning Strategy Preferences

The distribution of learning strategy preferences for students in the Webster-McConnell program was similar to that of the general population. The learning strategy preferences in this study were comprised of 42.9% (5) Navigators, 35.8% (6) Problem Solvers, and 21.4% (2)

Engagers. The Chi-square procedure was utilized to test how well the sampling distribution fit the hypothesized distribution. The results observed in this study indicated that there were no significant differences between the observed and expected distribution. Each group was approximately within one person of the expected number determined by the frequencies observed in the database used to develop ATLAS.

Increased Learning

A series of t-tests were conducted to compare the performance of the group receiving counseling on learning strategy information (ATLAS) to the group that did not receive the information (Non-ATLAS). Both one-sample and two-sample types of t-tests were used in this study, and both types of two-sample tests were used.

Two group t-tests were conducted. One analysis compared the two pretest groups, and the other compared the two posttest groups. The ATLAS and Non-ATLAS groups did not differ significantly at the beginning of the instruction on the pretest. However, the groups did differ significantly at the end of the training.

Perceptions Regarding Counseling and Learning

The qualitative data from the focus groups, student journals, and teacher observation indicate that by

learning-how-to-learn and applying metacognition, these students increased their learning in this formal setting. As they progressed through the class, they began to ask for the things they needed to succeed. They began to recognize the absence of tools which they were learning would make them successful. This was demonstrated throughout all the learning strategy preference groups.

Conclusions

Awareness of and counseling concerning learning strategy preferences provides a more efficient and effective learning situation for both the learner and the instructor. The effectiveness of the instrument is due in part to its user-friendly nature. Not only is the instrument quick and easy to use, but it is also non-threatening. Furthermore, the language used to describe the categories of learning strategy preferences is easy to associate with the names given the group.

Counseling for learning strategy preferences can promote academic achievement, and instructors can assist or hinder learners by the teaching methods they utilize in the classroom.

Instrumented learning is at the heart of the success in this study.

Counseling and Academic Achievement

Webster University-McConnell Air Force Base Campus students illustrate a normal distribution of learning strategies similar to the general population. This is in contrast to earlier findings (Ghost Bear, 2001, James, 2000; Willyard, 2000; and Birzer, 2000) that found significant differences in their participant's learning strategy preference groupings compared to the norm. Each of these studies identified one learning strategy preference which was dominant. This identification led to the conclusion that particular types of learners are attracted to particular types of learning situations.

Given that Webster is a private institution offering only graduate-level business degrees and is located on a military installation, it is surprising that it draws a student base comparable to that of the general population and shows no tendency to attract any particular learning strategy preference.

Learners who became aware of and received counseling regarding learning strategies increased their performance on the pretest by 20.3% versus a gain of 3.0% for those who were not made aware of or given counseling regarding learning strategies. However, it would not be prudent to simply investigate the quantitative gain in scores without

exploring the qualitative gains. The ATLAS was the catalyst for instrumented learning. The students used the information from the learning strategy counseling and immediately applied it to their learning setting. They did not, however, do this without the support of the instructor who was also making an effort to meet their needs based on the knowledge of learning strategies. The utilization of adult education principles in the classroom by the instructor provided an atmosphere where learners were able to take control of their learning in many facets of Knowles' program-planning model and to embrace his assumptions behind andragogy. The students achieved higher academic achievement than those not receiving the counseling because they were given tools which allowed them to be more successful and provided an environment that embraced them as adult learners; particularly the experiences they brought to the classroom. Not only did they learn about the course subject matter, but they also learned things about themselves that they can use their entire life. In addition, they learned-how-to-learn and realized the value of real-life learning. Critical reflection became a normal part of the learning which took place in the classroom setting as learners evaluated their outcomes in different situations. They were truly more

prepared lifelong learners than they were prior to their exposure to and counseling about learning strategies.

Instructor Actions

The instructor in this study was a practitioner and utilized the knowledge of learning strategy principles in her classrooms consistently to best meet the needs of the diverse student population. She found that she too was learning much from this experience and played the role of facilitator and learner. Dewey (1938) suggests that education comes about "from experience" but that all "experience does not educate". In this study, the experience was educational.

This group was consistent with other adult learners in that they appreciated the appropriate climate. Knowles (1980) stresses the importance of building a climate which is conducive to learning. The instructor brought refreshments the first evening of class, found a comfortable lounge in which to meet, and set the tone of a relaxed environment filled with colleagues. She also expressed immediately that she saw her role as that of facilitator and learner and that everyone in the group would learn from everyone else. This included the instructor. From this point, ground rules were agreed upon by the group for classroom conduct (especially when

opinions differed), and a schedule for taking a dinner break was set. It was important to the instructor to develop a feeling of mutual trust among the learners.

What she found was that as students became more aware of what they needed, they would ask for it if it was not offered. Furthermore, they took more and more control of their learning as the course continued illustrating Knowles' (1980) concept of participative planning which is a step in his program planning model. With this increased control came increased ownership.

Learners also knew why they took the course; for most of them, it was because it was required to earn their degree. However, after diagnosing their current performance and realizing the gaps between that and their desired performance, learners began diagnosing their own needs. Knowles (1980) recommends that to achieve the greatest level of individual motivation, specific learning needs should be self-diagnosed (p. 227). From this recognition of needs, a list of topics to be discussed was created. This list was agreed upon by the instructor and students. The students then designed the activities they thought appropriate to achieve their learning objectives, thus following Knowles' (1980) program planning steps of involving learners in designing learning plans, and helping

learners carry out their learning plans (pp. 235-239). This was an excellent example of Shuell's (1986) concept which states "what the student does is actually more important in determining what is learned than what the teacher does" (p. 426).

It was a unique situation for the instructor, and she felt as though her teaching methods were being critiqued on a continual basis. She also felt a strong sense of pressure to meet the needs of all groups on a continual basis. This feeling led to Schon's (1987) reflection-in-action. If the instructor had prepared an activity for the group and that activity did not appear to be working for everyone, she would alter the plan so that all learners could be engaged. As she got to know the group better, these adjustments became easier and responses became more anticipated.

The instructor also experienced real-life learning in its purest form. The demands being placed upon her by this ever-strengthening group of learners led to a real-life problem in her role as a professor. This was "unstructured" and led the instructor who had become the adult learner "to seek out resources to assist in solving these problems" (Conti & Fellenz, 1991, pp. 64-65). The instructor displayed her Navigator learning strategy

preference and went to her doctoral advisor and colleagues to gain information which would help her to maximize the learning in this setting with this unique group of learners. Although she was thrilled with the results of the new knowledge the learners had acquired and their ability to utilize it immediately, she will be more prepared in the future as she arms her students with tools to make them more effective learners and more commanding customers.

When asked about the influence the instructor had on their learning, Navigators appreciated when the instructor made her expectations clear. They also appreciated prompt feedback on their efforts so that they could adjust their learning efforts accordingly. This addresses the monitoring phase of metacognition.

Problem Solvers appreciated when the instructor allowed them some freedom in choosing their learning activities. They preferred taking assignments home as opposed to utilizing class time to do complete assignments. They also appreciated when the instructor shared her personal experiences. This assisted the Problem Solvers in understanding abstract concepts and kept them involved in class discussion.

Engagers really enjoyed teamwork and group project work. They found their time well spent if they had fun, and they were even happier if they actually learned something they considered useful. Their knowledge of the instructor's use of ATLAS and learning strategies made the Engager group more aware of the instructor's efforts to engage them in the learning process. This led one Engager to thank the instructor for her efforts in the learning situation.

Instructor efforts can hinder or help the adult learner. Simply exposing adult educators to instruments such as ATLAS and learning strategy awareness will not necessarily make them better instructors. As with any adult education endeavor, the learner must have buy-in to the process. In the instructor's case, they become the learner and must know why they need to learn something in order to make an effort. Presumably, once the instructors see the impact their efforts have on learning, they will embrace the strategies and strive to better their skills as facilitators. The use of learning strategies in the classroom setting allows the practitioner to reflect-in-action and to keep the learning at a maximum. Without this reflection, the instructor would lose some learners during the meeting and would have to wait to adjust their delivery

until the following meeting. They would then have to try out the new method and hope that it worked. If not, changes would have to be made the following week. This slow change to the climate in a classroom leads to losing students quickly. Furthermore, the climate change may only be temporary and the learners may need something different by the following class meeting.

Teaching to learning strategies and paying close attention to the content of the learning experience can be more effective than simply teaching concepts from a book. Adult educators should not overlook the rich experience that adults bring to the educational setting and will achieve better success with a flexible format which allows the adults to participate in choosing their climate and the material covered.

The adult education concepts utilized in this study included Knowles' program planning model, andragogy, and self-directed learning; Smith's learning-how-to-learn; Brookfield's praxis; instrumented learning; Conti and Kolody's learning strategy preferences; Conti and Fellenz's SKILLS work; and Schon's reflective practitioner. While these concepts remain critical to the student's academic achievement in this study, they are abstract concepts. The catalyst for increasing academic performance in this study

and accomplishing it in such a short period was the knowledge of learning strategies and the counseling of learning strategies. These are the concrete elements that made the abstract principles extremely effective over a very short period in this adult learning situation.

This study has major implications for the adult educator; this is particularly so in a formal educational setting for graduate-level students. As the marketplace becomes more competitive for workers, so does the marketplace for educational institutions. So how do students go about choosing the institution that is right for their particular set of needs and one which help them achieve their personal goals?

Learning strategy research has been conducted in a variety of institutions and on a variety of subjects attempting to identify learning strategy preferences in specific situations. These include: occupational settings, business and non-profit organization leaders, Military personnel, and internet users. In addition, learning strategy studies have been conducted in educational settings including: high school noncompleters, first generation college students, undergraduate and graduate students. These studies concluded that specific institutions and settings will draw students with a

particular learning strategy. In contrast, this study and a similar study (D. Munday, 2002) revealed that this is not always the case as the student distribution of learning strategies matched that of the general population. In addition, this study revealed a method for improving student's academic achievement through knowledge and counseling about learning strategies. This knowledge gives educational institutions a strong marketing advantage in a highly competitive marketplace as it gives learners an advantage in learning settings.

Although the study proves that academic achievement is improved because of the learning strategy knowledge, it is important for educators to realize this learning does not come about simply because of the counseling. It is, rather, a combination of applying abstract adult education concepts to a concrete knowledge of learning strategies. The combination of these factors led the learners to ask for what they needed in the classroom. Knowles' concept of andragogy is based on six basic assumptions: (a) the need to know; (b) the learners' self-concept; (c) the role of the learners' experiences; (d) readiness to learn; (e) orientation to learning; and (f) motivation (Knowles et. al., 1998, pp. 64-68). These assumptions became recognizable as the learners progressed through the course.

The learners knew they needed to learn the material in order to progress through the program and receive the degree. They were responsible for their own lives and shared their life experiences with the other learners. They were ready to learn those things they needed to be successful; whether that success was measured in terms of effectiveness in the workplace or an earned degree. Their learning was life-centered and was apparent in the individual goals and the experiences they shared. The intrinsic motivators were present and obvious as learners shared their reasons for participating in the learning. Andragogy was practiced as the learner's experiences were embraced as a rich source for enhancing their learning and the evidence of this learning was validated by experts and peers.

Another contribution to the success of these students was in utilizing Knowles' seven-step program planning model which consists of (a) climate setting; (b) involving learners in mutual planning; (c) involving participant in diagnosing their own needs for learning; (d) involving learners in formulating their learning objectives; and (e) involving learners in designing learning plans.

The cross-case analyses with D. Munday (2002) demonstrated that these results are not unusual, and that

they can be generalized to other studies. The adult education literature speaks to Knowles' principles of andragogy, to Knowles' and Brookfield's self-directed learning, to Sternberg and real-life learning, to Smith's learning-how-to-learn, and to Brookfield's critical reflection and praxis. All these principles have brought the field of adult education to the place is today. The students in this study utilized all the principles described throughout this work and achieved increased learning that was meaningful.

The instructor was also an adult learner in this setting along with the role of facilitator. The instructor discovered the meaning of Schon's interactive reflective mode when she practiced "reflection in action" and observed immediate results from the learners. The study also demonstrated the theory of instrumented learning as the ATLAS tool became a pedagogical tool for learners. The learning strategy counseling made a strong impact on learning and the ATLAS tool became the instrument to allow learners to focus on their learning at a personal level and to stimulate the adult learning principles. This instrumented learning can stimulate the adult learning process. This instrument combined with the student's

ability to learn-how-to-learn and metacognitive skills gave them the tools to succeed in an adult learning setting.

Employers are investing their precious financial resource in human resources. Because so many employers are paying for an employee's tuition, they expect a favorable return on their investment. Employee education and development is no different than any other investment the organization would make. Additionally, the student is investing valuable time in education. This additional pressure forces students and organizations to maximize their educational opportunities. By introducing the concept of learning strategy preferences and the benefits to students and instructors of having this knowledge, the formal classroom setting and its experiences become a more efficient investment. Another benefit of utilizing ATLAS and instruments like it is the student's ability to increase their learning opportunities in every step of their journey in lifelong learning.

Recommendations

Organizations are looking for increased efficiency and effectiveness from their resources. The current economy is forcing organizations to run themselves as leanly as possible while still remaining competitive. Technology has impacted the world in a way that no other catalyst has.

With this technology and increasing competition comes the need for employees who are adaptable, flexible, and able to learn new methods of doing business in a short amount of time. What businesses also need is a way to increase the efficiency of their professional development budget. Much professional development money is spent on tuition reimbursement for employees who are completing their formal education and earning degrees. It is the responsibility of educators who are competing for these students to increase the effectiveness of education as much as possible. Whether adult educators view this as a competitive advantage or a professional responsibility, the outcome can be the same.

Tools and techniques that educators can give adult learners to increase the success of a learning endeavor can greatly enhance the effectiveness of any learner. ATLAS and its associated counseling are tools and can be used for instrumented learning. In this case, the ATLAS instrument ignites the learning process. This quickly becomes the tool of the andragogue.

Knowles (1970) bases andragogy on six basic assumptions which distinguishes adult learners from children. The ATLAS tool becomes an instrument by which adults become aware of their readiness to learn. The

learner's self-concept and responsibility for one's own life impact the learning experience. With the acceptance of the instrument and its ability to assist them in their success throughout many facets of their lives, they become more intrinsically motivated. Once learners are convinced of the benefits of understanding their learning strategies, they know why they need to learn to utilize these strategies in various aspects of their life.

Once they know why they need to learn, the adult educator becomes a facilitator and embraces Smith's (1976) concept that it is "as important to teach adults how to learn as it is to specify particular curricular domains for learning" (Brookfield, 1986, p. 64). It also includes the supporting idea of training that is "deliberate efforts to help people become better at learning and more successful in the educational arena" (p. 25). This learning can then be transferred by the adult to other real-life settings. As learners test these new assumptions about learning and the tools they have been provided, they have the chance to reflect on their experiences. Although most people are life-long learners, adult learners become more self-directed. Self-directed learning is a matter of "learning how to change our perspectives, shift our paradigms, and replace one way of interpreting the world by another"

(Brookfield, 1986, p.19). As learners take action on their new knowledge, reflect on their action and take further action during a learning event, they are experiencing praxis (pp. 14-15). Praxis becomes an important part of self-directed learning and progressing as a life-long learner. As learners realize the reasons for some of their failures in learning settings, they feel their chances for success in future learning are increased by their ability to take charge of their learning and even to become a self-directed learner.

In the field of adult education, learning strategies have been conceptualized as consisting of five related areas of learning (Fellenz & Conti, 1993) which serve to link the concepts of learning-how-to-learn and real-life learning. In fact, "adeptness and insight in the use of learning strategies is a significant part of one's ability to learn how to learn" (p. 3). Metacognition is one of these areas and is a "conscious, reflective endeavor requiring the learner to analyze assess, and manage learning activities" (Conti & Kolody, 1999, p. 3). By combining the concepts and actions surrounding metacognition, learning-how-to-learn, real-life learning, praxis, self-directed learning, andragogy, and knowledge of

learning strategies, the adult learner is poised for success.

This study proved that the above is true and was confirmed by the participants of this study and that of D. Munday (2002). Adult educators and institutions attempting to provide the best possible outcomes for adult learners need to embrace the ATLAS instrument and the identification of learning strategies. Adults who know how to help themselves to learn better are given a tool they can use for life. And, this tool is applicable in any learning situation from formal degree seeking institutions to personal hobbies. Institutions that are committed to assisting the adult learner in their educational endeavors and want to help ensure a greater probability of success need to begin instructing students on learning strategies. At the same time, all instructors should be exposed to learning strategy preferences and the impact instructor's teaching methods have on those learners. This study and that of D. Munday (2002) clearly demonstrated the impact an instructor has on adult learners. By embracing the learning strategy concepts and making an effort to meet the needs of all learners, the instructor has the ability to affect the learning outcome in a very positive way. The bonus to the instructor is that they, too, become better

adult learners. The win for the institution, whether it is one of higher learning or a business organization, is that they are maximizing the effort adults are making to learn. And that, in turn, makes them more effective and efficient which is the goal of every organization.

Recommendations for Future Research

Although much has been learned in regard to learning strategies, more research needs to be completed with respect to the learners, the instructor, and the settings.

Some of the questions which are still unanswered include: When learning strategies are known, is there a difference in learning outcomes between organizational education and higher education? Does the learner choosing to undertake the educational endeavor as opposed to being required, affect the outcome of the learning? Do learners with particular learning strategies gravitate to particular institutional settings? Does the setting or the ability to choose the institution affect the learning? Which combination of learning strategies makes the most efficient learners as a whole? Can a learner's effectiveness in a learning setting be improved by increasing their awareness of other personal factors relating to learning? Can the use of multiple instruments such as ATLAS and the process of instrumented learning increase the learner's

effectiveness in learning situations? Are there particular combinations of instruments which are more useful for specific types of learners or in particular settings?

While there are many exciting areas of study still left to conquer, the basic premise of learning strategy knowledge and application remains that it is highly effective and should be embraced by adult learners in every possible situation.

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APPENDIXES

APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL FORM

Oklahoma State University
Institutional Review Board

Protocol Expires: 4/10/03

Date: Thursday, April 11, 2002

IRB Application No ED0239

Proposal Title: IDENTIFYING THE IMPACT OF PERSONAL COUNSELING ABOUT LEARNING
STRATEGIES ON ADULT STUDENT PERFORMANCE

Principal
Investigator(s):

Wendy Munday
2341 N. Sandplum Lane
Wichita, KS 67205

Gary Conti
206 Willard
Stillwater, OK 74078

Reviewed and
Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

Dear PI :

Your IRB application referenced above has been approved for one calendar year. Please make note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved projects are subject to monitoring by the IRB. If you have questions about the IRB procedures or need any assistance from the Board, please contact Sharon Bacher, the Executive Secretary to the IRB, in 203 Whitehurst (phone: 405-744-5700, sbacher@okstate.edu).

Sincerely,


Carol Olson, Chair
Institutional Review Board

APPENDIX B

ATLAS GROUP CONSENT FORM

Learning Strategies at Webster University

The purpose of this research is to describe the learning strategies of business students at Webster University-McConnell AFB, Kansas. To do this, we need your help in completing the Assessing The Learning Strategies of Adults (ATLAS). It is very important that you realize that: (1) your participation in this study is voluntary, (2) you will not be penalized in any way if you choose not to participate, and (3) you are free to withdraw your consent to participate in this study at any time. The information you provide will remain confidential and will not be available to anyone other than the researcher.

This project has been approved by the Institutional Review Board at Webster University and information on Webster University policy and procedure for research involving humans can be obtained from:

Dr. Michael Hulsizer, Chair of the Institutional Review Board
 Department of Behavioral and Social Sciences
 Webster University
 470 E. Lockwood Ave.
 St. Louis, MO 63119
 Phone: (314) 968-5912 Fax: (314) 963-6094 Email – hulsizer@webster.edu

If you have any questions about this project, you may contact Wendy Munday, Webster University Adjunct Faculty Member, Phone: (316) 721-8718, Michael Hulsizer, Ph.D., or Sharon Bacher, IRB Executive Secretary, Oklahoma State University, 203 Whitehurst Hall, Stillwater, OK 74087, Phone: (405) 744-5700.

 Print Name

 Signature

ATLAS

Directions: Follow the directions for completing ATLAS (orange booklet). Then place **ONE** check mark next to your learning strategies subgroup that indicates your overall group and subgroup as indicated on ATLAS.

Navigator	Problem Solver	Engager
__ Subgroup 1 __ Subgroup 2	__ Subgroup 1 __ Subgroup 2	__ Subgroup 1 __ Subgroup 2

- Accuracy:** Is the description of your learning strategy group from the Groups of Learners page of ATLAS fairly accurate in describing you as a learner? **Yes** **No**
- Age:** _____
- Gender:** Male Female
- Race:** African American Hispanic Native American White
 Other
- Education:** Please check your highest level of formal education.
 Less than High School Diploma Bachelors Degree
 High School Diploma Masters Degree
 Associates Degree Doctoral Degree

APPENDIX C

NON-ATLAS GROUP CONSENT FORM

Learning Strategies at Webster University

The purpose of this research is to describe the learning strategies of business students at Webster University-McConnell AFB, Kansas. It is very important that you realize that: (1) your participation in this study is voluntary, (2) you will not be penalized in any way if you choose not to participate, and (3) you are free to withdraw your consent to participate in this study at any time. The information you provide will remain confidential and will not be available to anyone other than the researcher.

This project has been approved by the Institutional Review Board at Webster University and information on Webster University policy and procedure for research involving humans can be obtained from:

Dr. Michael Hulsizer, Chair of the Institutional Review Board
Department of Behavioral and Social Sciences
Webster University
470 E. Lockwood Ave.
St. Louis, MO 63119
Phone: (314) 968-5912 Fax: (314) 963-6094 Email – hulsizer@webster.edu

If you have any questions about this project, you may contact Wendy Munday, Webster University Adjunct Faculty Member, Phone: (316) 721-8718, Michael Hulsizer, Ph.D., or Sharon Bacher, IRB Executive Secretary, Oklahoma State University, 203 Whitehurst Hall, Stillwater, OK 74087, Phone: (405) 744-5700.

Print Name

Signature

APPENDIX D

ATLAS INSTRUMENT

Assessing *The Learning Strategies of Adults*



Gary J. Conti
Oklahoma State University

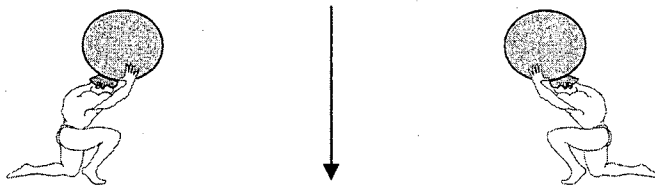
Rita C. Kolody
Medicine Hat College

(<http://coetechnology.okstate.edu/HRAE/atlas.htm>)

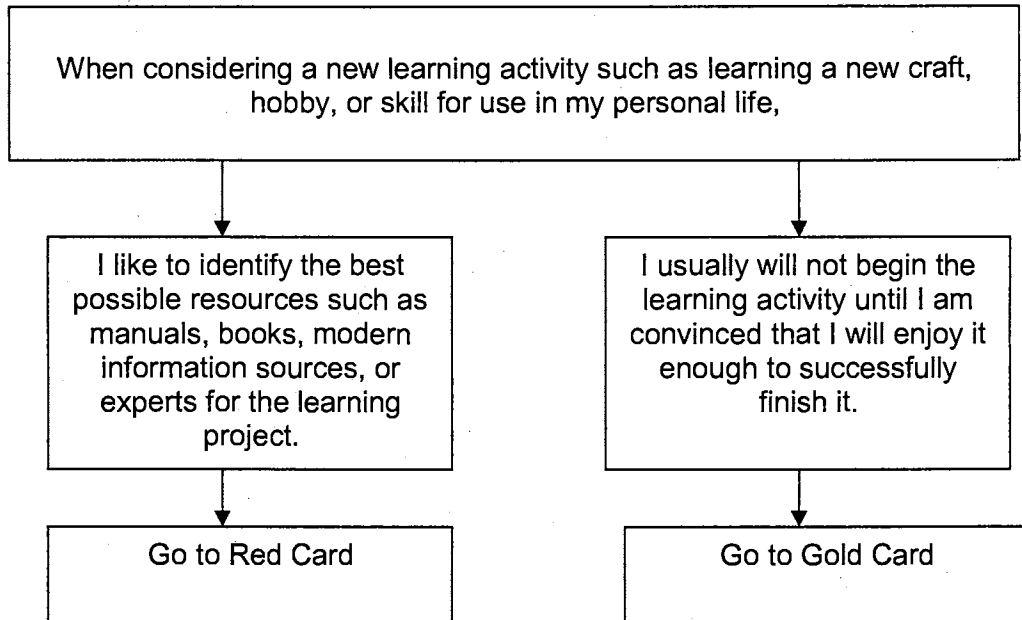
ATLAS

(Assessing The Learning Strategies of Adults)

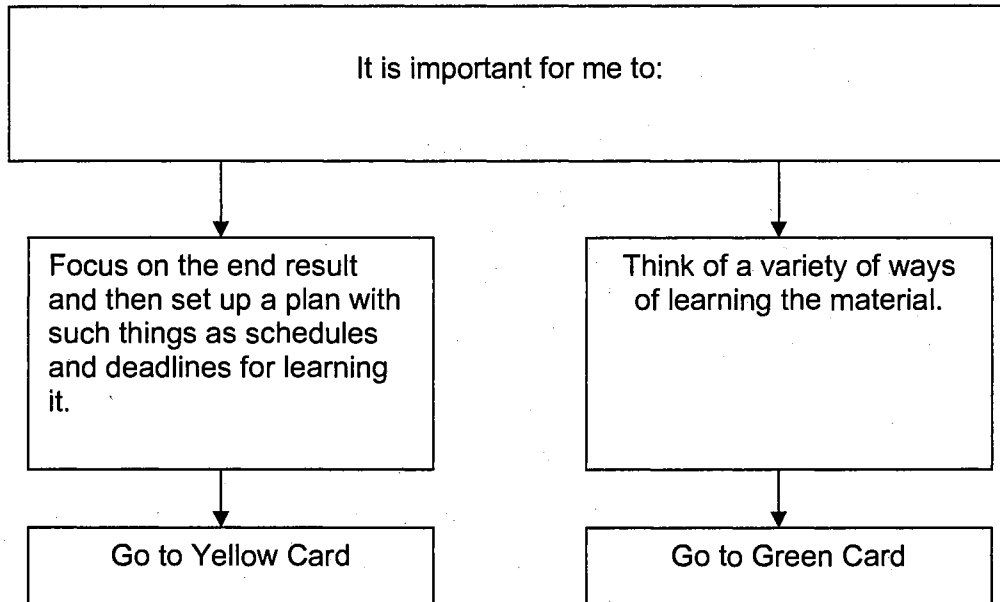
Directions: The following colored cards have statements on them related to learning in real-life situations in which you control the learning situation. These are situations that are **not** in a formal school. For each one, select the response that best fits you, and follow the arrows to the next colored card that you should use. Only read the cards to which you are sent. Continue this process until you come to the Groups of Learners sheet. Along the way, you will learn about the group in which you belong. Start with the **BLUE** card.



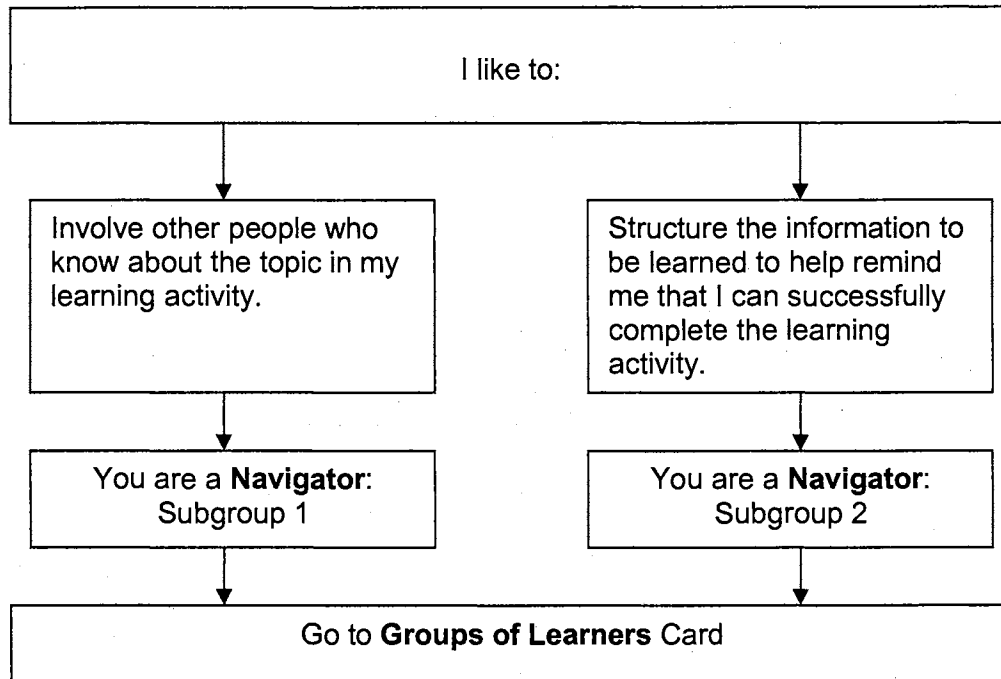
Cool BLUE card stock



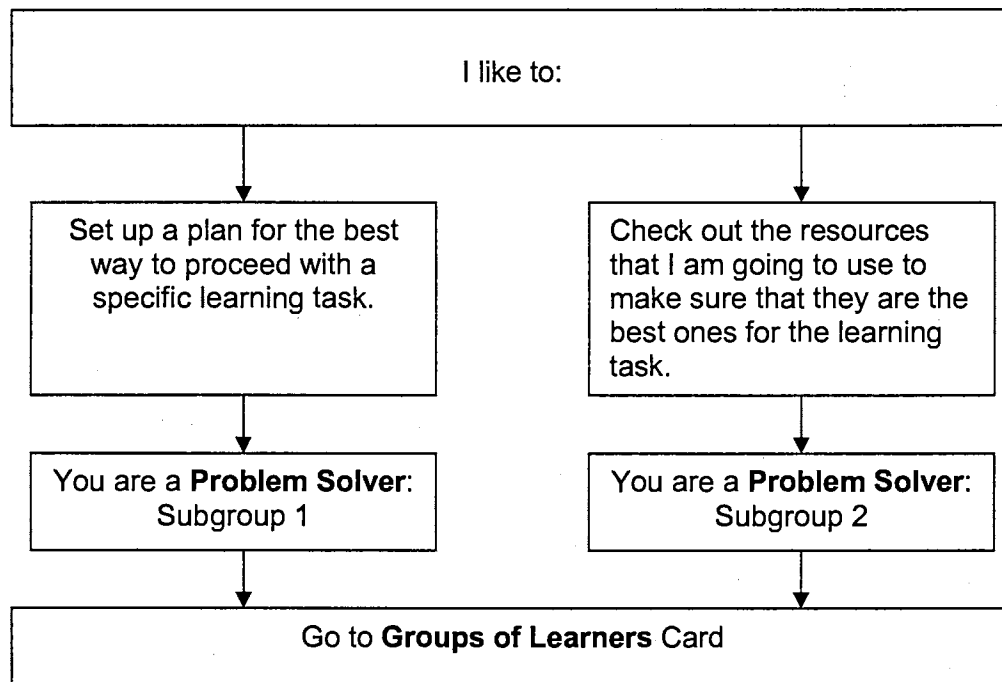
Red card stock



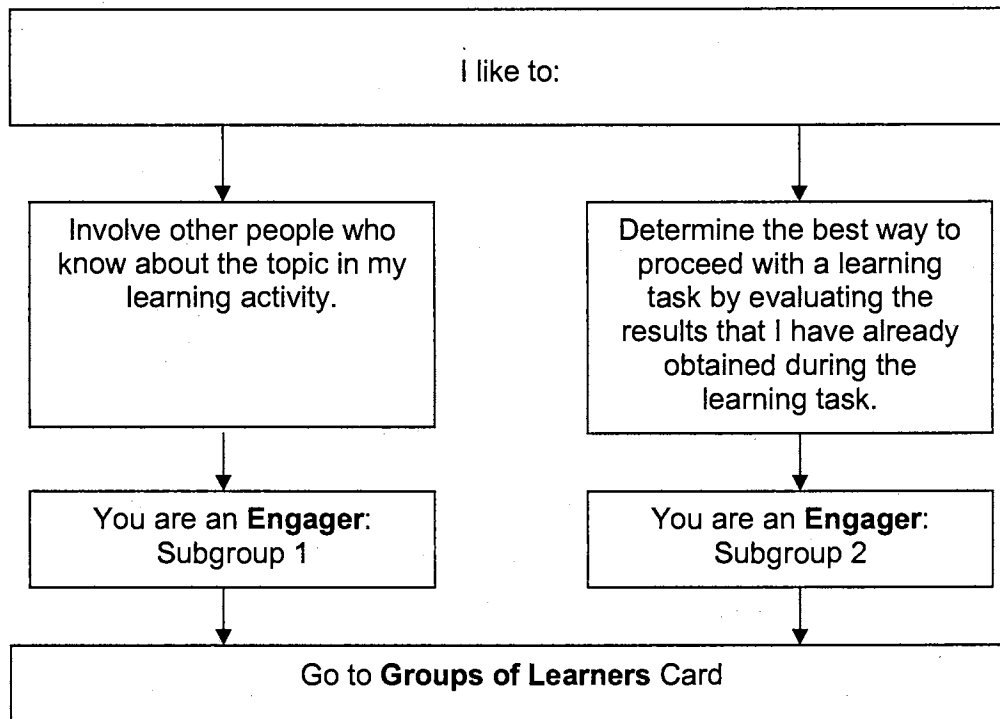
YELLOW card stock



Gamma GREEN card stock



GOLDEN ROD card stock



Navigators

Description: Focused learners who chart a course for learning and follow it. Subgroup 1 likes to use human resources while Subgroup 2 is more concerned with the organization of the material into meaningful patterns.

Characteristics: Focus on the learning process that is external to them by relying heavily on planning and monitoring the learning task, on identifying resources, and on the critical use of resources.

Instructor: Schedules and deadlines helpful. Outlining objectives and expectations, summarizing main points, giving prompt feedback, and preparing instructional situation for subsequent lessons.



Problem Solvers



Description: Learners who rely heavily on all the strategies in the area of critical thinking. Subgroup 1 likes to plan for the best way to proceed with the learning task while Subgroup 2 is more concerned with assuring that they use the most appropriate resources for the learning task.

Characteristics: Test assumptions, generate alternatives, practice conditional acceptance, as well as adjusting their learning process, use many external aids, and identify many of resources. Like to use human resources and usually do not do well on multiple-choice tests.

Instructor: Provide an environment of practical experimentation, give examples from personal experience, and assess learning with open-ended questions and problem-solving activities.

Engagers

Description: Passionate learners who love to learn, learn with feeling, and learn best when actively engaged in a meaningful manner. Subgroup 1 likes to use human resources while Subgroup 2 favors reflecting upon the results of the learning and planning for the best way to learn.

Characteristics: Must have an internal sense of the importance of the learning to them personally before getting involved in the learning. Once confident of the value of the learning, likes to maintain a focus on the material to be learned. Operates out of the Affective Domain related to learning.

Instructor: Provide an atmosphere that creates a relationship between the learner, the task, and the teacher. Focus on learning rather than evaluation and encourage personal exploration for learning. Group work also helps to create a positive environment.



Groups of Learners

2
VITA

Wendy S. Munday

Candidate for the Degree of
Doctor of Education

Thesis: IDENTIFYING THE IMPACT OF PERSONAL COUNSELING
REGARDING LEARNING STRATEGIES OF GRADUATE-LEVEL
BUSINESS STUDENTS AT WEBSTER UNIVERSITY MCCONNELL
AFB, KANSAS

Major Field: Occupational and Adult Education

Biographical:

Education: Graduated from Maize High School, Maize,
Kansas in May 1983; received Bachelor of Business
Administration degree in Marketing and Master of
Business Administration degree from Wichita State
University, Wichita, Kansas in May 1989 and May
1992, respectively. Completed the requirements for
the Doctor of Education degree with a major in
Adult Education at Oklahoma State University in
May, 2002.

Experience:

Currently an Assistant Professor of Business
Administration at Newman University in Wichita,
Kansas. Adjunct Faculty Member at Webster
University-McConnell AFB, Wichita, Kansas 1998-
2001; Owner Management & Marketing Innovations, LLC
Consulting Firm.

Professional Memberships:

American Marketing Association, Phi Kappa Phi Honor
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