

LEARNING STRATEGY PREFERENCES OF
HIGH SCHOOL NONCOMPLETERS

By

CAROL BEDDOW JAMES

Bachelor of Arts
Southern Nazarene University
Bethany, Oklahoma
1994

Master of Science
Southern Nazarene University
Bethany, Oklahoma
1995

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirement for
the Degree of
DOCTOR OF EDUCATION
May, 2000

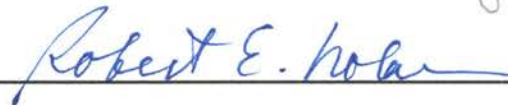
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Thesis Approved:



Thesis Adviser









Dean of the Graduate College

at OSU" and to CITGO Petroleum Corporation for its generous tuition reimbursement policy and supportive managers.

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CHAPTER I

INTRODUCTION

Noncompleters

"Dropout" is a term that was coined in the 1960s when awareness of the number of students dropping out of high school before graduation became a focus of study (Farrell, 1990). "Noncompleter" is now a commonly used term for the same population (Merriam, 1998). These terms can be used interchangeably when referring to adults who at some point left traditional schooling prior to receiving a high school diploma.

Despite the attention the dropout problem receives nationally and the programs developed for at-risk students, the United States continues to stockpile dropouts who are considered to negatively impact society. This population of noncompleters is among the least and lowest employed in the U.S. and contributes less economically than they require from society (Murnane, Willett, & Boudet, 1997; Schwartz, 1995).

Dropout definitions, reporting procedures, and calculation methods are inconsistent, confusing, and distorted, making it impossible to compile and compare

dropout data accurately. Primarily because of varied definitions, non-standardized reporting, and funding issues, researchers believe that the number of dropouts may be even greater than reported. For instance, they have questioned whether some schools and districts manipulate the reporting of noncompleter data to make the completion rate appear more favorable for them (Alspaugh, 1998; Fossey, 1996). One accepted method of inflating high school completion data is to count individuals who receive General Education Development (GED) diplomas as high school completers, thereby lowering the reported dropout rate (Fossey, 1996). While many question the exact size of the noncompleter population, none question that it remains large.

Education, labor, and social services studies regularly assess the magnitude of the dropout issue. Each year the National Center for Education Statistics (NCES) publishes studies that include information on high school graduates and noncompleters. NCES reported that over 10% of the United States population in 1995 consisted of people who had not completed and were not enrolled in high school and that one-fourth of ninth-grade students in the United States drop out of high school before graduating (Alspaugh, 1998; Fossey, 1996).

The average age in the U.S. for dropping out of school is between 16 and 17; for many this is after completion of

the ninth grade (Murnane, et al., 1997). The reasons noncompleters leave school prior to high school completion have been described as varied and complex, including social pressures, school pressure, boredom in school, family background, and personal problems (Alspaugh, 1998; Farrell, 1990). Many noncompleters are pushed out of school by a system that does not want to deal with them (Dorn, 1996, p. 123; Fine, 1991, p. 79). At the time they drop out of school, most noncompleters believe they will return to formal education (American Council on Education, 1999; Farrell, 1990; Fine, 1991).

Each year approximately one-half million high school noncompleters officially become high school completers by passing the GED tests (Fossey, 1996; Murnane, et al., 1997). The GED examination is a seven and one-half hour process that requires passage of an individual test in each of the five areas tested. The areas tested are writing skills, social studies, science, literature, and mathematics. A majority of GED-test takers indicate their intent to continue on to college; in fact, only 20% complete a year or more of college (Murnane, et al., 1997).

Adult Education

"Historically, adult and continuing education has arisen as a response to particular needs . . . Adult

education both responds to societal change and tends to feed further change" (Rachal, 1989, p. 3). The formal field of study of adult education can be traced back to the founding of the American Association for Adult Education (AAAE) in 1926 (Courtney, 1989, p. 16). The field has evolved from focusing on adult education to today's emphasis on adult learning (Fellenz & Conti, 1989, p. 1) as adult educators have worked to identify the needs of adult learners and to develop methods and techniques to assist in their learning success.

Since its earliest days, one challenge for those in the field has been to define adult education. One of the most recent definitions is that adult education is "a process whereby persons whose major social roles are characteristic of adult status undertake systematic and sustained learning activities for the purpose of bringing about changes in knowledge, attitudes, values or skills" (Darkenwald & Merriam, 1982, p. 9). Terms for the field include adult education, continuing education, lifelong learning, independent learning projects, community education, community development, adult learning, andragogy, and adult basic education (Courtney, 1989, p. 15). Courtney also noted that the lack of a clear definition and clearly defined terms has allowed some promoters of the field to

distinguish it from painful memories of traditional school and study (p. 15).

Attempts have been made to categorize the field of adult education. Distinctions have been made between adult education and the education of adults and between formal, informal, and nonformal adult education (Courtney, 1989, p. 18). The focus in adult education has historically varied ; it has emphasized: (a) the work of organizations and institutions; (b) "a special kind of relationship, as in the concept of andragogy" (p. 17); (c) a profession or scientific discipline; (d) an identification with a historical movement; and (e) an identification which is distinguishable by goals and objectives (p. 17).

One area of adult education is adult basic education (ABE) which "refers to the fundamental areas of reading, writing, listening, speaking, and mathematics....With the provision of these skills, the building of a basic education is possible" (Taylor, 1989, p. 465). ABE focuses on developing competencies with printed English, computation, and coping skills. In some communities, ABE also includes English as a second language (ESL).

One component of ABE is adult secondary education (ASE). ASE programs are designed to strengthen reading, writing, computing, and thinking skills of adults who have completed less than 12 years of formal schooling. ASE

programs offer opportunities to complete high school through (a) traditional and evening high school courses so students can work toward earning a high school diploma, (b) less traditional alternative high school diploma programs, (c) competency-based education programs, and (d) examination programs which help prepare learners for the GED tests (Martin & Fisher, 1989, p. 478). Approximately half a million adults earn their high school credentials each year by earning the GED diploma which is accepted as proof of high school completion by a majority of employers, colleges, and universities (Green, 1996).

Adult Learning

Kidd (1973) referred to "mathetics" as denoting the shift in the emphasis from teaching to learning (p. 23). It was hoped that in the science of mathetics, learning theory data could be drawn from the natural sciences, social sciences, and humanities (p. 156). Kidd considered the critical part of the teaching-learning process to be "how the learner is aided to embark on this active, growing, changing, painful, or exhilarating experience we call learning" (p. 14).

With the advancement of the concept of "andragogy" which emphasizes the learner's self-direction and

experiences, Knowles (1970) changed the adult learning field with his assumptions that:

As individuals mature: 1) their self-concept moves from one of being a dependent personality toward being a self-directed individual; 2) they accumulate a growing reservoir of experience that becomes an increasingly rich resource for learning; 3) their readiness to learn becomes oriented increasingly to the developmental tasks of their social roles; and 4) their time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly, their orientation toward learning shifts from one of subject-centeredness to one of performance-centeredness. (Knowles, 1970, p. 44)

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

Brookfield (1986) set out effective principles of practice that have been embraced by adult educators. Brookfield intended the principles to "apply chiefly to teaching-learning transactions or to curriculum development and instructional design activities that support teaching-learning encounters" (p. 9). These principles are that (a) participation in learning is voluntary; (b) mutual respect among participants for each

other's self-worth precludes belittling or abusive facilitation; (c) facilitation is collaborative in that facilitators and learners engage in continual collaboration and renegotiation of needs, objectives, activities, and priorities; (d) learners engage "in a continuous and alternating process of investigation and explorations" (p. 15) of new ideas, skills, or knowledge; (e) critical reflection is employed for the "development of a critically aware frame of mind, not with the uncritical assimilation of previously defined skills or bodies of knowledge" (p. 17); and (f) adults are self-directed learners engaged in learning how to change perspectives, shift paradigms, "and replace one way of interpreting the world with another" (p. 19).

Lifelong learning is a tenet of adult learning that "has been defined as the process of learning that continues throughout one's lifetime based on individual needs, circumstances, interests, and learning skills" (Chobot, 1989, p. 377). The concept of lifelong learning contradicts the belief that education is limited to what happens in schools and colleges. Lifelong learning implies a need for reorganization of our formal education system and for society to provide adequately for the educational needs of adults who are no longer in formal schooling (Darkenwald & Merriam, 1982, p. 3).

Real-life learning is a tenet of modern adult learning in which attention is given to the living tasks of the individual learner rather than to "those tasks considered more appropriate to formal education" (Fellenz & Conti, 1989, p. 3). Sternberg (1990) asserted that real-life learning requires adults to (a) recognize problems in the real world, (b) define those problems, (c) accept the unstructured and decontextualized nature of the problems, (d) assess the relevance of the information available, and (e) view the problems from multiple perspectives. Real-life learners also accept that solutions often require group processing and that there may be no clear feedback (Fellenz & Conti, 1993, p. 4).

Facilitating adult learning "assumes the equality of teachers and learners and the interchangeability of teaching and learning roles" (Brookfield, 1989, p. 201). While establishing a learner-centered environment, adult learning facilitators should recognize the importance of the teaching methods and styles they utilize (Conti, 1990; Knowles, 1975). "Because every group of people engaged in learning will exhibit a formidable diversity of abilities, experiences, personalities, and preferred learning styles, it follows that facilitators should be ready to try a range of different approaches" (Brookfield, 1989, p. 207).

Learning Strategies

One outcome of the evolution of adult education as a field of practice into a field of study has been the continued interest in learning how to learn which has given birth to research into learning strategies. Learning strategies are the techniques and skills that an individual elects to use in order to accomplish a specific learning task (Fellenz & Conti, 1989, p. 7). Learning strategy preferences may be given little thought or much deliberation, and they vary by individual and learning objective (Fellenz & Conti, 1989, p. 7; Lockwood, 1997, p. 30).

Learning strategies are often confused with learning styles. Learning styles are stable cognitive, affective, and physiological traits that can indicate learning environment perception, interaction, and response. Learning styles are fairly consistent and stable. These traits are not only a component of the individual's genetic constituency but are probably the manifestation of all the positive and negative experiences that have ever impacted the learner (Fellenz & Conti, 1989). In contrast, learning strategies are considered to be contextual, influenced by experience, relevant knowledge, and situational involvement of the learner. While learning styles are stable, learning strategies may be variable (Conti & Fellenz, 1991, p. 64).

The study of learning strategies has grown out of interests in study skills and learning styles. However, "learning strategies tend to focus on solving real problems involving metacognitive, memory, motivational, and critical thinking strategies" rather than on "skills in note taking, outlining, and test passing" (Fellenz & Conti, 1989, p. 4). Many of the studies of the learning strategies of adult learners have used the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) (Kolody & Conti, 1996, p. 199). SKILLS conceptualizes learning strategies as consisting of the five areas of metacognition, metamotivation, memory, critical thinking, and resource management. Metacognition is "popularly conceived of as thinking about the process of thinking" (Counter & Fellenz, 1993, p. 9). Metamotivation is "the awareness of and control over factors that energize and direct one's learning" (Kolody, 1997, p. 34). Memory is "what people know about how they remember" (Paul & Fellenz, 1993, p. 22). "Although problem-solving and decision-making skills are at times included as part of higher-order thinking processes, critical thinking has a more general and more important goal. Improvement of individual and societal learning is the final and vital goal of critical thinking" (Fellenz & Conti, 1993, p. 30). Managing learning resources involves the ability to identify

appropriate sources of information and to prioritize the use of the resources (p. 35).

Within each of these five learning areas, there are three primary strategies (Conti & Fellenz, 1991). Metacognition strategies include planning, monitoring, and adjusting. Metamotivational strategies include attention, reward and enjoyment, and confidence. Memory strategies include rehearsal, organization, use of external aids, and use of memory. Critical thinking strategies include testing assumptions, generating alternatives, and conditional acceptance. Resource management strategies include identifying resources, critical use of resources, and use of human resources.

Learning strategy studies have involved adult learners in many diverse settings. These include college students (Bighorn, 1997; Conti & Kolody, 1995; Hill, 1992; Gallagher, 1998; Kolody, 1997; Strakal, 1995; Ungricht, 1997), nursing students (Lockwood, 1997), business and non-profit leaders (Conti, Kolody, & Schneider, 1997; Courtnage, 1998; Gehring, 1997; Moretti, 1994), military personnel (Korinek, 1997; Yabui, 1993), public school administrators (McKenna, 1991), senior citizens (Quarles, 1998), and learning disabled students (Hays, 1995). These studies have concluded that "distinct groups of learners exist when they are identified by the pattern of learning strategies which they use" (Conti

& Kolody, 1998a, p. 109). The studies have also concluded that demographic variables are not useful in distinguishing learning strategy usage.

The numerous studies of learning strategies using SKILLS consistently uncovered groups of learners with distinct preferences for learning strategy usage. In order to find the general pattern of learning strategy preference, the data from 17 studies were combined. The cluster analysis of this data set revealed the three consistent learning strategy categories of Navigator, Problem Solver, and Engager. The three categories are characterized as follows:

The Navigators and Problem Solvers initiate a learning task by looking externally to themselves at the utilization of resources that will help them accomplish the learning. Engagers, on the other hand, involve themselves in the reflective process of determining internally that they will enjoy the learning task enough to finish it.... Navigators are much more concerned than Problem Solvers with identifying exactly what needs to be learned and on designing a plan for the learning. . . . Problem Solvers are more concerned with identifying a variety of solutions for the learning task. (Conti & Kolody, 1999, p. 18)

To deal with the findings from the SKILLS research, the Assessing The Learning Strategies of Adults (ATLAS) instrument has been developed. ATLAS uses a flow-chart design to reach learning strategy category designations of Navigators, Problem Solvers, and Engagers. ATLAS can be completed in approximately two minutes (see Appendix E).

Because of the development of ATLAS, it is now possible to easily identify the initial preferences for learning strategy usage of adult learners (Conti & Kolody, 1998a).

Problem Statement

The United States has an educational conscious that sets it apart from the education-for-the-elite-only pattern of some other countries. This has led to the perception of America "as a land of opportunity that would offer [learners] the possibilities and freedoms" previously denied them and creating "a readiness for learning" (Knowles, 1977, p. 3). The United States is a country founded on and made prosperous by a majority belief in individual rights and freedoms and pursuit of the American dream. Today's reality is that the gap between higher-skilled and less-skilled workers is increasing as opportunities increase for skilled workers and decrease for unskilled workers (Schwartz, 1995).

What has happened in this country since its colonization to cause society to lose its educational consciousness and readiness for learning for all of its citizens? What has led to the dropping out and pushing out of one-quarter of the high school students in this country? What can be done to assist these former students in preparing to reach for the opportunities, possibilities, and freedoms that are held to be the foundation of America? In

today's world, technology and information dominate society, and intellectual ability and education are primary factors in determining one's economic quality of life.

Not only does the absolute amount of knowledge continue to grow exponentially, but the structure of knowledge, technology, and work is becoming ever more complex and specialized...most people must continue to learn throughout their lives merely to keep up with the demands of their jobs. (Darkenwald & Merriam, 1982, p. 4)

Such conditions and expectations have even further decreased the opportunities for noncompleters, reduced the options for unskilled workers, and increased the necessity for dropouts to acquire the skills to become lifelong learners. In order for noncompleters to have a chance at the American dream, their previous negative educational experiences need to be replaced by successful learning experiences that erase the negative perceptions of learning and facilitate continued intellectual growth and self-actualization.

Understanding learning strategies may offer opportunities to develop tools and techniques that can be helpful in the noncompleter population. Since SKILLS was developed in 1991, numerous research studies have been done to identify learning strategy usage patterns of lifelong learners. Although the populations of these studies were diverse in many ways, most were conducted with education-successful populations that were predominantly high school

completers who have continued formalized learning through higher education or professional training. What has not been addressed is how the learning strategy research that has focused on identifying and describing the learning behavior patterns of traditionally successful students translates to a population that has been unsuccessful in its previous educational efforts. This is especially important since learning strategies are teachable. With a full "tool kit" of learning strategies students will be better able to deal with a variety of learning situations.

ATLAS measures a persons preference for how to initiate a learning activity. While this preferred strategy may be good for many or even most learning situations, there are other learning situations where an alternative strategy may be advantageous. Alternative strategies can be learned. With an awareness of how they learn and of alternative strategies, individuals can critically analyze how best to proceed with a specific activity.

Now that learning strategy patterns have been documented for successful student populations, it is time to assess the impact that a heightened awareness or knowledge of learning strategies can have in helping previously unsuccessful students. Before that can be accomplished, a description is needed of the learning strategy behaviors and

perceptions of learners who have been unsuccessful in traditional education.

Purpose

The purpose of this study was to identify and describe the learning strategy preferences of high school noncompleters who have returned to educational settings and to describe their perceptions of teacher actions that help and hinder the learner in the learning process. ATLAS was used in this study because it was believed that the seemingly simplistic design of ATLAS could overcome test trepidation of students who may previously have had negative experiences with educational assessments.

Research Questions

The research questions which were addressed in this study were:

1. What is the learning strategy preferences profile for noncompleters who return to educational settings?
2. How do high school noncompleter responses on ATLAS compare to the responses of those used to create ATLAS?
3. How does each learning strategy group perceive their approach to learning?

4. What teacher actions do Navigators, Problem Solvers, and Engagers perceive as aiding in their learning process?
5. What teacher actions do Navigators, Problem Solvers, and Engagers perceive as hindering their learning process?

The learning strategy preferences profiles were assessed by having participants complete ATLAS. Participant responses were compared to the data base compiled of SKILLS responses using chi square. The approaches to learning activities and perceptions of how teachers can help or hinder were discussed in group and individual interviews.

Assumptions

Basic assumptions for this study were that all adults learn, that it is possible to gather perceptions of individuals, that the perceptions are accurate, and that the way the data was gathered in this study captured that data. It was also assumed that the participants in this study had the ability to recall previously successful techniques and strategies employed for learning projects and that participants had encountered teachers that both aided and discouraged them in their learning situations. Because participants in this study were primarily high school noncompleters, it was assumed that they were familiar with

negative education and assessment experiences. All participation in the study was voluntary and the ATLAS instrument did not seek any confidential information, thus it was also assumed that participants felt free to express themselves openly and honestly.

Limitations

The level of interest in the study by the administrators and teachers directly influenced access to classes of participants and may have influenced participant attitudes and level of participation. In the classes where teachers were enthusiastic and interested in learning about this learning strategies study, more time was allowed for the learning strategies presentation and class discussions. In these classes, discussions were more active and informative.

Another possible limitation of the study was that some participants had difficulty reading and following the instructions for completing ATLAS. Participants requested examples of learning projects and identification of the color goldenrod. Some participants also had a tendency check one box in each of the learning strategy categories rather than choosing only one category.

Definitions

Adult - Someone who has left the role of full-time student (the principal 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, 1982, p. 8)

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

Andragogy - 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 developed using the international database compiled using SKILLS data. (Conti & Kolody, 1998b, p. 109)

Critical Thinking - A reasonable, reflective thinking that is focused on deciding what to believe or do. It includes identifying and challenging assumptions, challenging the importance of context, imagining and exploring alternatives, and reflective skepticism (Brookfield, 1987, p. 12).

Dropout - Students who leave school prior to graduation (Farrell, 1990). The legal definition for "school dropout"

is "any student who is under the age of 19 and has not graduated from high school" (Office of Accountability, 1998, p. 45).

Empowerment - Individuals and groups are freed from oppression and able to participate equitably. (Fellenz & Conti, 1989, p. 21)

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)

GED - General Education Development. An alternative high school credential obtained through passage of a series of tests developed by the GED Testing Service. (American Council on Education, 1999, p. 2)

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)

Learning Style - A stable component of a person's psychological makeup comprising those traits and characteristics that the individual has accumulated and developed over the course of their existence. (Fellenz & Conti, 1989, p. 6)

Lifelong Learning - The concept that education is a process that continues in one form or another throughout life and that its purposes and forms must be adapted to the needs of individuals at different stages in their development. (Darkenwald & Merriam, 1982, p. 2)

Mathetics - The science of the pupil's behavior while learning - as opposed to focusing the attention on the teacher's behavior while teaching. (Kidd, 1973, p. 23)

Memory - Storage, retention, and retrieval of knowledge. Memory strategies associated with adult real-life learning are rehearsal, organization, use of external aids, and memory application. (Paul & Fellenz, 1993, p. 18)

Metacognition - Knowing about and directing one's own thinking and learning process (Conti & Fellenz, 1991).

Metamotivation - Awareness of and control over factors that energize and direct (motivate) one's learning (Conti & Fellenz, 1991).

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)

Noncompleter - See Dropout.

Perspective Transformation - The process of becoming critically aware of how and why one's presuppositions have come to constrain the way one perceives, understands and feels about the world; of reformulating these assumptions to permit a more inclusive, discriminating, permeable and integrative perspective; and of making decisions or otherwise acting upon these new understandings (Mezirow, 1990, p. 14).

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 of outcomes. (Conti & Kolody, 1999a, p. 12)

Real-Life Learning - Learning that is relevant to the living tasks of the individuals in contrast to those tasks considered more appropriate to formal education. Such learning is also called "real-world" learning or learning that results in "practical" knowledge. (Fellenz & Conti, 1989, p. 3)

Resource Management - Identification of appropriate resources, the critical manner in which they are used, and

the use of human resources in learning situations (Fellenz, 1993, p. 27).

Self-Directed Learning - A learning activity that is self-planned, self-initiated, and frequently carried out alone (Knowles, 1975, p. 18)

SKILLS - The Self-Knowledge Inventory of Lifelong Learning Strategies that consists of six real-life scenarios that reveal learning strategy preferences in the areas of metacognition metamotivation, memory critical thinking, and resource management (Conti & Fellenz, 1993).

CHAPTER II

REVIEW OF THE LITERATURE

Noncompleters

Dropping out of high school has been accepted since the earliest days of this country. High school completion is a relatively new expectation for adolescents. At the beginning of the last century high school graduates were in the minority in the U.S. (Dorn, 1996, p. 11). The initial swell of concern over students who left high school came in the first decade of the twentieth century (p. 53)

"The expectation of widespread high school graduation is relatively recent . . . Only in the last fifty years has high school graduation become the norm, in any sense of the word, in the United States" (Dorn, 1996, p. 2). In recent years dropping out of school has come to national attention. "The media has addressed it, political leaders have bemoaned it and school practitioners have tried to alleviate it" (Farrell, 1990, p. 1).

The need for education and the problems created by dropping out have become more significant as the technology of the current culture has become more complex (Fine, 1991;

National Center for Education Statistics, 1997;). Today, "as much as this society lauds graduation, it fears dropping out . . . Education is the ticket to a successful life, as folk wisdom puts it. Conversely, dropping out is not only ominous for the individual but dangerous for the society" (Dorn, 1996, pp. 2-3).

The economic consequences of dropping out of school can be severe (National Center for Education Statistics, 1997). The National Center for Education Statistics reports that (a) young women who drop out of high school are more likely to become pregnant at young ages and are more likely to be single parents, (b) high school dropouts are more likely to receive public assistance than graduates who did not go on to college, and (c) dropouts comprise a disproportionate percentage of the nation's prison and death row inmates (p. 1). Oklahoma ranks 24th nationally in number of dropouts (National Center for Education Statistics, 1997). Oklahoma reports that 23% of the 15- to 19-year old females in the state are mothers without high school diplomas (Office of Accountability, 1999, p. v), and Oklahoma has "near-the-top divorce and incarceration rates" (Oklahoma Department of Education, 1999).

Whites comprise over half of the dropout population; Blacks, close to one-fifth; and Hispanics almost one-third (National Center for Education Statistics, 1997). Students

from low socio-economic households are 2.4 times more likely to drop out of school than students from middle income families, and 10.5 times more likely than are students from high income families (National Center for Education Statistics, 1994). The number of Whites and Blacks dropping out has declined during the last decade. The percentage of Hispanics dropping out has not declined; it remains higher than that of either Whites or Blacks. Males are slightly more likely to drop out than females. (National Center For Education Statistics, 1992, 1993, 1994, 1997, and 1999)

Martin and Fisher (1989) cite findings from longitudinal studies of noncompleters suggesting that noncompleters possess some similar characteristics that distinguish them from successful students. The studies cited indicate that noncompleters were more likely than completers (a) to have low academic achievement or ability demonstrated by low school attainment, low test scores, low socioeconomic status, and low grades (Wehlage and Rutter, 1986); (b) to experience significant difficulty functioning in the social context of school as demonstrated by high levels of truancy, tardiness, discipline problems, and working to generate income (Wehlage & Rutter, 1986); (c) to come from academically less stimulating home and family environments (Ekstrom, Goertz, Pollack, & Rock, 1986); and

(d) to make poor course selections and take fewer credits while in school (Weber, 1986).

The Oklahoma Department of Education (1999) is addressing students "at risk" of dropping out through a developing system of alternative education. By January 1999, this system had served 13,336 students; an average 12.5% of those students were considered to be "recovered dropouts" or at-risk students who stayed in school until high school completion. The State of Oklahoma considers the positive financial impact of the 1,640 students who graduated from high school in 1998 because of the alternative education system to be \$132,840,000. This figure consists of income and other taxes graduates will pay in their lives as well as unemployment compensation, welfare, and other government services that will not be needed by these graduates.

Although increased emphasis is now placed on the importance of high school graduation, the rate of high school completion has remained stable throughout the last decade (National Center for Education Statistics, 1997). Many people who drop out of high school later choose to complete high school following non-traditional, alternative certification paths. It should be noted that the increase in the number of high school completions via alternative certification methods has been offset by a decrease in the

number of traditional high school graduates rather than a decline in the overall dropout rate (p. 22).

Alternative high school completion methods include traditional day and evening high school classes for adults, alternative high school programs, competency-based education programs, vocational-technical high school completion programs, and passing the General Education Development (GED) tests (Martin & Fisher, 1989). The most widely used and accepted high school completion alternative is passing the GED tests (p. 484).

The first GED tests were administered in 1942 to assist returning World War II military veterans who needed to complete high school. The tests are intended to measure the skills and knowledge that students would have been expected to have acquired in high school. A second generation of GED tests was implemented in 1972 to correspond with progressive changes in high school curricula. Curriculum emphasis was placed on conceptual knowledge rather than fact recall. The second generation series added a separate reading test (American Council on Education, 1999).

A third series of GED tests was released in 1988. The changes in this series, which is in use today, included (a) the addition of a writing sample, (b) increased emphasis on critical thinking, (c) increased reflection of the diverse roles adults play in society, (d) understanding

changes in society, and (e) contextual settings relevant to adults. A fourth generation series of GED tests is anticipated in 2001. (American Council on Education, 1999)

The number of adults taking GED tests has increased in the United States during the past decade (National Center for Education Statistics, 1999). It is estimated that more than 13.6 million adults have earned GED credentials since the inception of the program in the 1940s. Over 700,000 people took the GED in 1998 with over 70% of the test takers passing it. "About one out of every seven people who receive high school diplomas each year earns that diploma by passing the GED Tests" (p. 2). The percent of the population holding an alternative high school certification increased to 9.1% in 1997 from 4.9% in 1990 (National Center For Education Statistics, 1997). The average age of those taking the GED in the United States in 1998 was 24.4 years, in Oklahoma it was 24.5 years (American Council on Education, 1999).

GED test takers range from those who have recently dropped out of school to those who have been out several years (American Council on Education, 1999). Many who take the GED indicate that their intent is to qualify for further education. The number of adults taking special editions of the GED tests, receiving additional time to complete the tests because of disabilities, and taking the Spanish-

language version of the tests has increased significantly in the past decade.

GED testing is offered nationally through 3,500 official GED test sites. There are 50 GED Testing Centers in Oklahoma (Oklahoma Department of Education, 1999). As many as 11,000 individuals pass the GED tests annually in Oklahoma and are awarded a Certificate of High School Equivalency. However, the 1990 census showed that 25.41% of Oklahoma adults 25 and older do not have a high school diploma or its equivalent (Oklahoma Department of Education, 1999). Oklahoma's stated minimum age for GED testing and credentialization is 18. In 1998, 32% of those who passed the GED in Oklahoma were 18 or under (American Council on Education, 1999, p. 12).

In 1998-99, 10% more males than females dropped out of school in Oklahoma (Office of Accountability, 2000). Almost half of those dropouts were 16 years of age or younger. Over 50% dropped out in the 9th or 10th grade. The ethnicity distribution of Oklahoma's 1998-99 dropouts was American Indians-15.4%, Asians-1%, Blacks-14.2%, Hispanics-8.5%, and Whites-61%. The Oklahoma Public School Enrollment ethnicity distribution for 1998-99 was American Indians-15%, Asians-1%, Blacks-%, Hispanics-4%, and Whites-69%. The ethnicity distribution of the general

population in Oklahoma is American Indians-8%, Asians-2.7%, Blacks-7.4%, Hispanics-2.7%, and White-82.1%.

The Adult Education Act of 1966 established a national program of adult basic education (ABE). ABE programs were intended to raise the education level of people lacking the ability to speak, read, or write the English language; to improve their ability to benefit from occupational training; and to counteract the effects of high school non-completion (Darkenwald & Merriam, 1982; Martin, 1987). ABE programs are the umbrella under which most alternative high school completion programs are included.

Over 25,000 individuals participated in State of Oklahoma ABE classes in 1998-1999. ABE classes included English as Second Language (ESL) and others in addition to GED classes. There were just 2% more females enrolled in Oklahoma ABE classes than males. The ethnicity distribution of Oklahoma's ABE participants for 1998-1999 was American Indians-9.5%, Asians-4.4%, Blacks-14.8%, Hispanics-18.9%, and Whites-52.4% (Oklahoma Department of Education, 2000).

Analysis of reports by the Office of Accountability (1998, 1999) provides additional insights. Whites represent over three-fourths of the total population of Oklahoma and over half of those enrolled in public schools, of those dropping out of public schools, and of those participating in ABE classes. Native Americans represent a larger portion

of the Oklahoma Public School enrollment than Blacks, but Blacks represent a larger percentage of Oklahoma dropout and ABE populations than do Native Americans. There is only a slight difference in Oklahoma male and female dropout frequencies and ABE participants. Oklahoma Public Schools statistics are not reported by gender.

Adult Education

Adult education encompasses a wide range of activities and agencies. Adult education is defined as:

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

There has not been universal acceptance for this or any other definition of adult education (Darkenwald & Merriam, 1982). Even the term "adult education" is not universally accepted by practitioners. Other terms used to signify education for adults include continuing education, lifelong learning or education, recurrent education, nontraditional education, and community education (p. 8).

Instruction, counseling, program development, and administration are considered the basic functions of those in the adult education field (Darkenwald & Merriam, 1982). Adult education is not limited to formal education activities and academic topics (p. 152). Important concepts

in the field of adult education from which students previously unsuccessful in traditional education can benefit are lifelong learning, andragogy, self-directed learning, participation, experiential learning, transformative learning, empowerment, and real-life learning.

Lifelong Learning

Education is considered by advocates of lifelong learning as a process that, in some form, continues throughout life (Darkenwald & Merriam, 1982). Lindeman (1995) proclaimed, "Education is life....The whole of life is learning, therefore education can have no endings" (p. 32).

Lifelong learning is "the process of learning that continues throughout one's lifetime based on individual needs, circumstances, interests, and learning skills" (Merriam & Cunningham, 1989, p. 377). Lifelong learning has been described as an international concept in which education or learning is cast "as a cradle-to-grave activity in which public schooling as well as adult and continuing education are important but not exclusive players" (Merriam & Brockett, 1996, p. 13). Tough's (1979) adult learning projects have shown that "almost everyone undertakes at least one or two major learning efforts a year, and some individuals undertake as many as 15 or 20" (p. 1).

The concept of lifelong learning contradicts the belief that education is simply what goes on in classrooms to prepare children for adulthood. Inherent in the notion of lifelong learning is the expectation that society must provide adequate resources to meet the lifelong learning demands of its members (Tough, 1979, p. 3). The concept of lifelong learning suggests that adults need to acquire a variety of skills in order to address their constantly changing learning needs (Conti & Kolody, 1998b, p. 109).

Andragogy

"Andragogy is a term that 'belongs' to adult education" (Merriam & Brockett, 1996, p. 135). The term "andragogy" can be traced to a German grammar school teacher, Alexander Kapp, who used the word in 1833 to describe Plato's educational theory (Knowles et al., 1998). The term was acknowledged by those opposing its use to portray Plato as a simple teacher. The opposition was influential, and Kapp's theory and the term andragogy disappeared for nearly a hundred years (p. 59).

The term andragogy was found again used in 1921 by German social scientist Eugen Rosenstock who until 1962 believed he invented the term (Knowles et al., 1998). Rosenstock "expressed the opinion that adult education required special teachers, special methods, and a special

philosophy" (p. 59). Rosenstock used the term on a number of occasions, but it did not receive general recognition from his work.

Knowles found several adult education publications in the 1950s in Europe which included andragogy in the titles (Merriam & Brockett, 1996). The term andragogy was used in the U.S. by Lindeman in 1926. However, "the current evolution of andragogy to refer to the primary means of teaching adults grew out of writings of Malcolm Knowles in the late 1960s and early 1970s" (p. 135).

Knowles (1970) described four assumptions of andragogy as (a) the learner progresses to become self-directing rather than dependent, (b) the learner's life experiences are valuable to the learning process, (c) learners learn best what they identify as relevant, and (d) learners want to be able to apply what they learn to their lives. To translate the assumptions into a process for planning and operating education programs, Knowles (1980) described the seven-step andragogy program development model as including the following steps. (1) The creation of a climate conducive to adult learning. (2) The creation of an organizational structure for participative planning. (3) The diagnosis of needs for learning. (4) The formulation of directions of learning (objectives). (5) The development of a design of activities. (6) The operation of

the activities. (7) The rediagnosis of needs for learning (evaluation) (p. 59).

Although generally embraced by adult educators, there have been concerns raised about andragogy. Merriam and Brockett (1996) highlighted two of the concerns. They are (a) whether there are situations in which children can also be self-directed or draw from previous experience and (b) what happens when an adult entering a learning situation has little or no experience in the area of study (pp. 135-136). Perhaps in response to the concerns expressed, a review of his writings shows that over time Knowles "clarified, expanded, and modified his ideas about andragogy" (p. 136).

Andragogy is the art and science of helping adults to learn (Knowles, 1970). The term was originally considered the antithesis of pedagogy, the art and science of teaching children. Pedagogy is teacher directed (Knowles, 1980). Pedagogical teachers make all decisions about what will be learned, when it will be learned, and if it has been learned. In pedagogy, it is the teacher's experience rather than the learner's that is valued, and learners become ready to learn what the teacher tells them to learn if they want to pass. In pedagogy, learning is subject-centered and motivation is external using methods such as grades, teacher approval, and parental pressures (pp. 42-43).

In his final work, Knowles (1998) described six assumptions of andragogy that differ from pedagogy. The first and sixth assumptions are additions to his earlier work (p. 68). The six assumptions are:

Adults need to know why they need to learn something before undertaking to learn it.
 (2) Adults have a self-concept of being responsible for their own lives and decisions. They develop a deep psychological need to be seen and treated by others as being capable of self-direction. (3) Adults come into an educational activity with both a greater volume and a different quality of experience from youths. (4) Adults become ready to learn those things they need to know to cope effectively with their real-life situations. (5) 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) While adults are responsive to some extrinsic motivators (better jobs, promotions, salary increases, and the like), the more potent motivators are internal pressures (the desire for increased self-esteem, quality of life, responsibility, job satisfaction, and the like). (pp. 64-68)

Self-Directed Learning

The notion that adults assume control of their learning became a major topic of adult education in the 1970s and 1980s. The emphasis on self-directed learning can be traced primarily to Tough's work with adult learning projects.

(Merriam & Brockett, 1996, p. 138) Tough (1971) concluded that almost everyone undertakes major learning efforts each year; that it is common for adults to spend 700 hours per year involved in learning projects; and that they may be

motivated by practical reasons, curiosity, interest, or enjoyment.

About 70% of all learning projects are planned by the learner himself, who seeks help and subject matter from a variety of acquaintances, experts, and printed resources. Other learning projects rely on a group or instructor, on private lessons or on some nonhuman resource. (Tough, 1979, p. 1)

Knowles (1975) was also a proponent of self-directed learning. He described self-directed learning as

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. (p. 18)

Self-directed learning is the best way to learn and helping students to become self-directed should be built into all teaching. Self-directed learning can take place in conjunction with various types of learning assistance from "teachers, tutors, mentors, resource people, and peers" (p. 18).

Much has been written about self-directed learning and its goals. Merriam and Caffarella (1999) report that writers often define self-direction goals according to the writer's particular philosophical position. Merriam and Caffarella group the writings on self-directed learning into three categories. Those categories are (1) to enhance the ability of adult learners to be self-directed; (2) to foster transformational learning as central to self-directed

learning; and (3) to promote emancipatory learning and social action as a part of self-directed learning (p. 290).

The first goal category is "grounded primarily in the assumptions of humanistic philosophy, which posits personal growth as the goal of adult learning" (Merriam & Caffarella, 1999, p. 291). Writers sharing this philosophy of self-directed learning include Maslow (1970), Rogers (1969, 1983), Knowles (1975, 1980) and Brockett and Heimstra (1991). Writings that fall into this category portray learners as accepting responsibility, as being proactive, as autonomous, and as having free will to make personal choices.

The second goal category of fostering transformational learning as central to self-directed learning is found in the works of Mezirow (1985) and Brookfield (1985, 1986). Mezirow (1985) suggests that self-directed learning takes place only when learners participate fully and freely in testing interests and perspectives against others and making modifications accordingly. Brookfield's (1985, 1986) writings in this category call for the merging of self-directedness and reflection (Merriam & Caffarella, 1999, p. 291).

Brookfield (1986) maintains that self-directed learning occurs when adults achieve meaning through a combination of process and reflection (Merriam & Caffarella, 1999, p. 291).

Brookfield (1986) distinguishes between two types of self-directedness. The first type uses techniques such as specifying goals, identifying resources, implementing strategies, and evaluating progress for seeking out and processing information. The second type of self-directed learning "can refer to a particular internal change of consciousness" (p. 47).

Brookfield's second type of self-directed learning would be included in Merriam and Caffarella's (1999) third goal category of promoting emancipatory learning and social action (p. 292). Writers advancing this goal have strongly criticized the first goal as too narrow. They want to broaden the definition of self-directed learning to include "not only the examination by learners of the sociopolitical assumptions under which they learn and function, but the incorporation of collective action as an outcome" (p. 292). Brookfield (1993) asserted that certain political conditions must be in place for the authentic exercise of self-directedness and that shifting to self-directed learning in a highly controlled culture such as some educational institutions would be difficult to accomplish (Merriam & Caffarella, 1999, p. 292).

Participation

Participation in adult education programs has risen continuously from 10% in 1969 to 40% in 1995 (Merriam & Caffarella, 1999, p. 48). Researchers continue to study who participates in adult education programs and why (Darkenwald & Merriam, 1982). Because adults are voluntary participants, identifying participation tendencies has been an important factor in developing adult education theory and practice. "Those who succeeded in school in their early years, who feel comfortable in the learner role, and who value education are those one would expect to participate in organized adult education" (p. 121)..

The National Center For Education Statistics (1975) found the typical adult education participant to be a White, middle class, high school graduate. Evidence indicates that gender is not a significant indicator of participation (Merriam & Caffarella, 1999). Formal adult education participation studies have indicated that age and the level of formal schooling are the best predictors of participation in adult education programs.

Adult education was defined as "any course or educational activity taken part-time and reported as adult education by respondents seventeen years old and over" (Merriam and Caffarella, 1999, p. 48). Most studies showed that the majority of participants are White and they pursue

adult education primarily for employment-related reasons. Participants generally indicate either a desire to maintain or upgrade skills to keep up with technological changes or to acquire new career advancement skills. It should be noted that adult education research has been criticized as being comprised primarily from middle-class American culture (Brookfield, 1986; Fingeret, 1983.)

Adult educators maintain an awareness of the voluntary nature of adult participation (Brookfield, 1986). Since adult participation is voluntary, it can be withdrawn if learners feel the activities do not meet their needs, do not make good sense, or are incomprehensible to the learner. Additionally, learners may withdraw when they feel humiliated or insulted (p. 12).

Participation has been an ongoing topic of study for those working in the areas Adult Basic Education (ABE) (Fingeret, 1983; Quigley, 1992) as well as in higher education (Astin, 1987; Tinto; 1987, 1997). Quigley (1992) discussed ABE research and GED research findings that cite learners' positive attitude toward education in general but negative, hostile, or traumatic experiences with school. While education and school might be interchangeable terms for educators, they have different meanings to many dropouts. The social circumstances of schools and their inability to respond to the concerns, pressures, and life

experiences of individual students may have a lifelong, negative influence on the learner's perception of school (p. 26).

The writings of Tinto (1987, 1997) and Astin (1975) relate to participation and retention of higher education students. Some of their findings and recommendations are relevant and useful for ABE and alternative education as well as to higher education. For example, Tinto (1987) argued that

the term dropout, if used at all, should be strictly limited to a very narrow range of student departures, namely, to those situations where the implied notion of failure can be reasonably applied to both the individual and the institution. (p. 5)

Both students and institutions would be better served if concern for the student's education and their social and intellectual growth were the guiding principles of institutional action (p. 5). It should be understood that students leave higher education for a variety of reasons. As with high school and ABE noncompleters, not all of the reasons for leaving higher education relate to academic difficulties (p. 6).

Participants in higher education are as likely to be female as male (Tinto, 1987). Blacks enter college at the same proportion as they graduate from high school. Blacks and Whites who enter higher education are more likely to enter a four-year rather than a two-year institution;

Hispanics are more likely to enter a two-year institution. Although students from higher social status backgrounds are more likely to enter higher education, among poorer students, Blacks are as likely as Whites to enter higher education (p. 11).

Institutions must know their students, why they enter, and why they do and do not finish (Tinto, 1987). Among the causes of student failure to persist are academic difficulty due to unwillingness or inability to meet standards resulting in the student being asked to leave. Academic difficulty accounts for 20% to 30% of student departures nationally (Gallagher, 1998, p. 17).

Most student departures from higher education occur voluntarily and are not related to academic standing (Tinto, 1987). Financial and personal reasons are most often listed by students as reasons for early departure. Students also leave when they perceive that their needs and interests are not being served at the institution or when they do not have significant connections with others.

Gallagher (1998) reported that retention studies of college freshmen found that males were more likely to take longer than four years to complete a bachelor's degree than females. Students at public institutions may take longer to finish than those at private institutions. High school grades and ACT or SAT scores were strong predictors for

higher education retention. Students with the lowest test scores and grade point averages were more than 16 times less likely to persist than students with high test scores.

Race and gender impact higher education retention. Among minority groups, Asians are more likely to persist; Blacks and American Indians had the lowest rate of persistence. Minorities are under-represented in higher education because of poverty, academic under-preparedness, and lack of parental education. Females are more likely to graduate than males. (Gallagher, 1998) However, a study by the UCLA Higher Education Research Institute reports that "38.8% of women [in higher education] feel frequently overwhelmed but only 20% of men do" (Tulsa World, 2000, p. D3).

"Though some variations have occurred over time, the observed rate of degree completion today is very nearly the same as that estimated at the turn of the century" (Tinto, 1987, p. 22). Participation researchers have made a variety of recommendations to help increase higher education retention. Gallagher (1998) recommended that institutions address the issue of academic under-preparedness. Tinto (1987) stressed that both social and academic issues must be considered and recommended that efforts focus on providing programs to help students succeed in the first year.

Experience

"Experience is the learner's living textbook"

(Lindeman, 1995, p. 32). Central to education is helping learners construe experience in a way that helps them to more clearly understand their problems and options "so that they may assume responsibility for decision making"

(Mezirow, 1995, p. 32).

In our society, at least, there is a strong tendency to store and retrieve meanings rather than exact reproductions of what we experience. What meaning a student gets depends not only upon the student's past experience and expectancies, but also upon the student's learning strategy or style. (McKeachie, 1978, p. 237)

The notion of experience as a key element in learning can be traced back to Lindeman (1926), Dewey (1938), and others (Merriam & Brockett, 1996, p. 152).

The idea of experience as a core aspect of adult learning is so pervasive in the theory and practice of adult education that it would be difficult to find examples that do not address the role of experience. (p. 153)

Central to understanding the importance of the relationship of experience to adult education is "the idea that it is not merely that the accumulation of experience makes a difference; it is how learners attach meanings to or make sense of their experience that matters" (p. 153).

Perspective Transformation

A relatively recent topic in the ongoing discussions on the purpose of teaching and learning is the notion "that it is not sufficient for adult education programs to satisfy the identified learning needs of individuals, organizations, and society" (Knowles et al., 1998, p. 105). Proponents would also have adult educators "seek to help adult learners transform their very way of thinking about themselves and their world" (p. 105). Mezirow (1990) referred to this as perspective transformation. Brookfield (1986) referred to it as developing competence in critical reflection. Mezirow (1990) defined perspective transformation as:

The process of becoming critically aware of how and why our presuppositions have come to constrain the way we perceive, understand and feel about our world; of reformulating these assumptions to permit a more inclusive, discriminating, permeable and integrative perspective; and of making decisions or otherwise acting upon these new understandings. (p. 14)

Meaning structures are transformed through reflection (Mezirow, 1994). Learners must reflect on unexamined assumptions when beliefs are not working well for them. Reflection involves a critique of assumptions to determine whether a belief which may have been acquired in childhood remains relevant in adulthood. This is done by critically examining the origins, nature, and consequences of the assumptions (p. 223). Transformative learning also includes

learners making informed decisions regarding how and when to act upon their new perspectives (Mezirow, 1995, p.124).

Brookfield (1986) contends that learning is effectively facilitated by the prompting in learners of "a sense of the culturally constructed nature of knowledge, beliefs, values, and behaviors" (p. 17). Education encourages learners to examine assumptions and consider alternatives. It should foster the development of critically aware learners with healthy skepticism (p. 17).

Mezirow (1995) assigns adult educators a crucial role in perspective transformation. "Every adult educator has a central responsibility for fostering critical reflection and transformative learning" (p. 124). Adult educators must respond to initial learner interests and self-defined needs "with the intent to move the learner to an awareness of the 'reasons' for these needs" (p. 124). Adult educators must also assist learners in understanding how their meaning perspectives may limit the way they define and attempt to satisfy their needs. Mezirow maintains that adult educators

Have a professional obligation to become skilled in the strategies and tactics of social action education and to share this expertise where we can . . . We do share a rich body of experience and a proud professional legacy from community development and social action education. These are areas of specialization within adult education, and we have much to learn from social action educators like Heaney and Horton, who devote themselves to working within oppressed groups throughout the entire process of

transformation, including taking collective political action themselves. (p. 125)

Empowerment

Adult education and social responsibility have been tied together by educators such as Freire and Horton. They used different techniques in different environments. However, Horton and Freire sought to help empower people to improve the quality of their lives by defeating oppressors (Conti, 1977).

Horton worked with poor adults in the South, and founded Highlander Folk School in Tennessee in 1932. Highlander has served as a catalyst to bring together people, ideas, and resources to fight for social, political, and economic equality. Highlander has aided in the education and empowerment of poor people to alter their plight in the labor movement, Civil Rights Movement, environmental concerns, and local poverty issues. (Conti & Fellenz, 1986)

Problem solving at Highlander involves the people themselves in group discussions using the experiences of those participating. Fundamental at Highlander is the premise that people have the potential within themselves to solve their problems. The process involves the people realizing that they share their problems with others, that problems can be solved collectively, and that individual

problems are not solved until the common problem is resolved for everyone. The Highlander approach emphasizes democracy, trust, and human dignity. (Conti & Fellenz, 1986)

Freire was a Brazilian educator eventually exiled for attempting to empower the poor through literacy. He opposed what he called the "banking" concept of education. "In the banking concept of education, knowledge is a gift bestowed by those who consider themselves knowledgeable upon those whom they consider to know nothing" (Freire, 1995, p 139). Freire believed that the oppressors project absolute ignorance onto others and negate the inquiry of education and knowledge to maintain the oppressive society (p. 139). The interests of the oppressors lie in changing the consciousness of the oppressed to adapt to the situation rather than in changing the situation that oppresses them (p. 140).

Freire (1970) contends that when the oppressed lack critical consciousness of the forces that control their lives, they are powerless to fight the oppressors. Learners become empowered when they become aware of the forces controlling their lives. Freire argues that it is empowerment that leads to action.

Real-Life Learning

Adult learning is often undertaken for immediate application to real-life situations (Conti & Fellenz, 1991, p. 64). Sternberg (1990) pointed out differences between learning for real-life and learning for academic endeavors (Conti & Fellenz, 1991, p. 64). In real-life situations learners must recognize and define the problems themselves. Real-life problems are usually very contextualized and are not usually well-structured. In addition, learners in the real world must seek their own information, which is often difficult to find, and identify what information is relevant. Solving real problems often requires examining opposing arguments. Feedback in real-life is undependable and real-life learners usually involve others in problem solving (pp. 64-65). For example, Fingeret's (1983) literacy study reported that people lacking basic skills developed social networks to help them solve problems encountered because of illiteracy.

Adult Learning

During the 1970s and 1980s, there was a shift in emphasis to adult learning from adult education. The shift indicated a move toward a field of study with the focus on the individual learner (Fellenz & Conti, 1989, p. 1). The critical part of the teaching-learning process is "how the

learner is aided to embark on this active, growing, changing, painful, or exhilarating experience we call learning" (Kidd, 1973, p. 14).

Tough (1971) had a major effect on the adult education field by providing early insights into what he described as "a major, highly deliberative effort to gain certain knowledge and skill (or to change in some other way)" (p. 1). Tough studied and interviewed adults engaged in learning projects in groups, private lessons, and self-planned learning. He attempted to answer "what and why adults learn, how they learn, and what help they obtain" (p. vii).

Tough concluded that adults learn in many ways, that they accomplish learning projects in stages or episodes, and that deciding and planning are important elements of the process. Tough's interviews with learners also included some 10-year-olds and 16-year-olds, and he concluded that their "out-of-school learning is extensive, and is similar in some ways to adult learning" (p. 4). Learning strategy research is seeking answers to describe elements of the deciding and planning processes. While the research is now focused on adults, in time it may lead to additional developments to assist all levels of learning.

One result of focusing on adult learning rather than teaching has been an increase in research "on helping

learners to expand their learning abilities through 'learning-how-to-learn' interventions" (Knowles et al., 1998, p. 166). A leader in learning-how-to-learn research, Smith (1982) acknowledged that learning how to learn had different meanings to different writers. He preferred the broad definition: "Learning how to learn involves possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters" (p. 19). The three interrelated learning-how-to-learn subconcepts are "learner's needs (what learners need to know and be able to do for success in learning), learning style (a person's highly individualized preferences and tendencies that influence his or her learning), and training (organized activity, or instruction, to increase people's competence in learning)" (p. 17). Smith outlined several illustrations of when he considered the learning how to learn concepts to be operative. Among them is "when a person decides to better organize the learning projects he or she carries out at home" (p. 20). This concept of learning how to learn is fundamental to learning strategy preference research.

Researchers have reported the effectiveness of helping individuals learn how to learn (Gallagher, 1998, p. 48). Smith (1977) outlined the following as essential to the adult in a learning situation: (a) a learner must know that learning is possible; (b) a learner must want to learn; and

(c) a learner must recognize that what is already known will assist future learning (p. 4). Smith (1982) believed that classrooms should be where you learn new skills or further develop those you have. "Learning itself involves processes, understandings, and skills that can be taught" (p. 15).

Adult education has been criticized for not having developed basic theory for the field, resulting in the failure to develop "systematic lines of inquiry with one study building on another" (Merriam, 1987, p. 188). Theory building efforts in adult learning contribute to the growing understanding of adult learning.

While one theory to explain all of adult learning may never emerge, the process does stimulate inquiry, reflection and research, all of which will eventually provide us with some of the answers to our questions about adult learning.
(p. 197)

Learning strategy research is one line of adult learning inquiry in which one study has continued to lead to other studies.

Much research has been done in the areas of intelligence, cognition, teaching theories, and learning styles. Even so, a definitive explanation for individual learning distinctions has continued to elude adult educators. Increasingly, this elusive explanation has led adult educators to the study of learning strategies as a means of exploring individual differences (Kolody, 1997).

Learning strategy research has evolved from the learner-centered theories of Lindeman (1926), Kidd (1973), and Rogers (1994). It was further advanced by the self-directed learner studies of Tough (1971) and Brookfield (1986), and the learning-how-to-learn and study skill studies of Smith (1982). Learning strategy preference studies have attempted to describe how adult learners go about organizing and carrying out their self-directed learning projects.

Knowles (1970), Tough (1979) and Brookfield (1986) contributed the learning strategies trail blazing efforts through their research and writing about adult learning. Each contributed to furthering the development of learning strategy theory through expansion of the major adult learning themes of lifelong learning, self-directed learning, and experiential learning by the documentation of the pursuit of learning by individuals.

Brookfield's critical thinking writings added important information to learning strategies research. "Brookfield's approach to critical thinking is applied to real-life situations and is composed of (a) identifying and challenging assumptions, (b) challenging the importance of concepts, (c) imaging and exploring alternatives, and (d) reflective skepticism" (Conti & Kolody, 1999, p. 7). Brookfield believed that "because every group of people

engaged in learning will exhibit a formidable diversity of abilities, experiences, personalities, and preferred learning styles, it follows that facilitators should be ready to try a range of different approaches" (Brookfield, 1989, p. 207). Learning strategy research is in keeping with the pursuit of understanding of different approaches used by and for learners.

Learning Strategies

Learning strategies are those techniques or specialized skills that a learner elects to use to accomplish a specific learning task (Conti & Fellenz, 1991a, p. 64). Many researchers have been interested in learning strategies and have concluded that learning strategies can be useful in teaching and accomplishing learning tasks (Fellenz, 1988; Fellenz & Conti, 1991; Hays, 1995; Korinek, 1997; McKeachie, et al, 1989). McKeachie (1986) stated it directly when he said "there is a need to teach students how to use learning strategies" (p. 30).

Learning strategies have been credited with improving both classroom achievement and the learning that takes place outside of formal educational institutions (Fellenz & Conti, 1993; Hill, 1992; McKeachie et al., 1986). Researchers have concluded that the learning strategy skills which produce the best results are retained by individuals and those which

have not been effective or perhaps not the most expedient are abandoned (Fellenz, 1990; McKenna 1991).

There is a growing body of research supporting the contention that one of the major differences between effective students and ineffective students is their understanding and use of successful learning strategies (Hill, 1992). This body of research supports two major themes: (a) the choice of which learning strategies to use in a given situation is affected by many factors which in turn affect the quality and end product of the learning experience; and (b) students can be taught learning strategies that will help them approach tasks more efficiently and effectively, thus improving their chances for success (p. 27).

The Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) was developed to assess the learning strategy uses and preferences of adult learners. SKILLS was developed at the Center or Adult Learning and Research at Montana State University. SKILLS is made up of a series of six scenarios depicting real-life learning situations involving various levels and types of learning. Each scenario consists of 15 questions designed to assess how likely a learner is to use specific learning skills or techniques in resolving that learning scenario.

Two versions of SKILLS are available. One version contains scenarios related to auto insurance, burial customs, local history, pet care, job regulations, and cholesterol level. Scenarios in the second version relate to putting a bike together, dental care, recruiting leaders, a letter to the editor, visiting a national park, and care for a relative. SKILLS directions ask the learner to select four of the scenarios most relevant to them. Participants are then asked to indicate which 5 of the 15 strategies depicted by the questions that they would "definitely use," "probably use," or "not likely use" to complete the project identified in the selected scenario. SKILLS conceptualizes learning strategies as consisting of the five areas of Metacognition, Metamotivation, Memory, Critical Thinking, and Resource Management (Fellenz & Conti, 1993).

Metacognition

Metacognition is a cognitive psychology concept introduced in the 1970s by Ann Brown and John Flavell. "Brown (1985) defined metacognition as the knowledge and control one has over one's thinking and learning" (Counter & Fellenz, 1993, p. 10). Metacognition is a conscious, reflective endeavor requiring the learner to analyze, assess, and manage learning activities. The development of the concept of metacognition identified the importance of

the learner's self-understanding in academic success (Conti & Kolody, 1999, p. 3). It is important that adult learners have some control over their learning processes and become "aware of oneself as a learner" (Smith, 1982, p. 57). Metacognition strategies include Planning, Monitoring, and Adjusting (Counter & Fellenz, 1993).

Planning involves an individual determining the best method for accomplishing a learning task. Learners must have an understanding of their own learning requirements, what is required by the learning task, and a general idea of how to plan. Overviewing the learning task and skimming materials are examples of Planning.

Monitoring requires maintaining an awareness of the strategies, tasks, processes, and goals of the learning task within the context of individual abilities (Counter & Fellenz, 1993). Monitoring involves the evaluation of one's progress through a learning task. Getting feedback is an important aspect of Monitoring.

Adjusting allows the learner to modify the learning process based upon the desired outcome and the learner's evaluation of the process. An Adjustment may be a modification of one's approach to a learning task. Adjustments may also be made to timing or resources.

Metamotivation

Metamotivation "deals with one's knowing and understanding how or why one is motivated to participate or remain in a learning activity" (Conti & Kolody, 1999, p. 4). The Metamotivation area of SKILLS is based on adult education and cognitive psychology theory (Fellenz & Conti, 1993). Metamotivation refers to learners having awareness and control of the factors energizing and directing their learning. The strategies within Metamotivation are Attention, Reward and Enjoyment, and Confidence.

Attention refers to the learner's focus on the information to be learned. Attention includes identifying distractions. It also includes avoiding potential distractions.

Reward and Enjoyment strategies involve a recognition by the learner of the value of the learning outcome or the personal fun, satisfaction, or enjoyment to be gained from the learning or the outcome. An example of using the Reward and Enjoyment strategy would be for the learner to see the outcome as personally useful or relevant (Fellenz & Conti, 1993).

Confidence is a critical component of motivation (Conti & Fellenz, 1993). Confidence is simply believing in one's ability to learn. "Belief that one can complete the

learning task successfully is an important factor in the motivation to learn" (Fellenz & Conti, 1993, p. 16).

Memory

Memory involves the activities which store and later use information. These activities include acquisition, storage, and retrieval processes. Unlike early memory research that was criticized for being laboratory based, memory research in the 1970s began to focus on memory as people actually use it in their daily lives (Paul & Fellenz, 1993). Memory research has focused on the physiology of memory, how relevance affects memory, and memory strategies (Gallagher, 1998, p. 54). SKILLS memory strategies include Organization, Use of External Aids, and Memory Application (Paul & Fellenz, 1993).

Organization refers to the way in which learners restructure information (Seamon cited in Paul & Fellenz, 1993). Restructuring strategies enable the learner to structure information so it can be stored, retained, or retrieved. Chunking is an Organization strategy. Chunking is organizing information into sets to reduce the number of categories to be remembered (p. 23).

Use of External Aids strategies enable learners to use the environment to assist with memory. "External memory techniques rely on the interaction of the mental processes

of the individual and the manipulation of the environment to insure recall" (Paul & Fellenz, 1993, p. 23). External aids can include lists and calendars or daily planners.

Memory application is important for the novice as well as for the expert in a learning task (Paul & Fellenz, 1993). Memory application strategies are techniques that allow the learner to make use of the knowledge stored in the individual's memory in order to plan, carry out, and evaluate learning. Memory application is used for self-improvement, problem solving, critical thinking, and a variety of other activities (p. 24).

Critical Thinking

Brookfield's (1987) critical thinking components form the basis of SKILLS critical thinking strategies (Conti & Kolody, 1999a). "Brookfield's approach to critical thinking is applied to real-life situations and is composed of (a) identifying and challenging assumptions; (b) challenging the importance of concepts; (c) imagining and exploring alternatives; and (d) reflective skepticism (p. 7).

Critical Thinking involves emotion and intuition as well as the intellect (Gallagher, 1998, p. 55). SKILLS critical thinking strategies are based on Testing Assumptions, Generating Alternatives, and Conditional Acceptance.

Testing Assumptions involves identifying, examining, and challenging assumptions in the learning process (Fellenz & Conti, 1993). Testing Assumptions also involves a willingness to identify and question assumptions about a learning process that may have previously been taken for granted (Fellenz & Conti, 1993).

Generating Alternatives involves considering and searching for alternative solutions or options through such activities as brainstorming and rank ordering (Conti & Kolody, 1999a; Gallagher, 1998). Brookfield (1987) suggests the arrangement of situations in which individuals or groups of learners can envision alternative futures, develop preferred scenarios, or formulate goals as ideal situations for generating alternatives (Fellenz & Conti, 1993). He also suggests that a variety of triggers be used to spur creativity (p. 33).

Conditional Acceptance involves "advocating reflective skepticism to avoid absolutes or over simplifications" (Conti & Kolody, 1999a, p. 8). Brookfield (1987) claims that considering and imagining alternatives develops a critical mind where universal truth or validity are concerned (Fellenz & Conti, 1993). He is careful to distinguish reflective skepticism from cynicism or refusal to commit (p. 33). Examples of Conditional Acceptance

strategies are questioning simplistic answers and predicting consequences (Conti & Kolody, 1999a, p. 8).

Resource Management

Resource Management is identifying, evaluating, and using resources relevant to the learning project. Resources are sources of information and can include but are not limited to books, magazines, libraries, computers, electronic media, or individuals. With the vast quantity of potential resources, good Resource Management can be crucial for learners. Challenges for Resource Managers include changes in communication formats, modernization of communication technology, and a tendency of learners to continue using past behaviors that were successful but may no longer be optimal (Fellenz & Conti, 1993). SKILLS Resource Management strategies are Identification of Resources, Critical Use of Resources, and Use of Human Resources (Fellenz & Conti, 1993).

Identification of Resources involves identifying possible resources. It also involves using the best resources available. "The learner must judge whether obtaining the resource is equal in value to the time, energy and expense in gathering it" (Tough cited in Conti & Kolody, 1999a, p. 9).

Critical Use of Resources involves determining "the most appropriate resource rather than simply those that are readily available" (Conti & Kolody, 1999a, p. 9). Examples of SKILLS strategies used to measure the critical evaluation of resources include contacting an expert, using additional sources to verify the information, and considering possible bias (p. 9).

Use of Human Resources involves including others in learning situations (Conti & Kolody, 1999a, p 9). The information provided by others can be valuable. The support of and networking with others can also be important strategies to assist individuals in the learning process.

Learning Strategies Research

SKILLS has been the instrument used as the basis for many of the learning strategy studies of adult learners. Learning strategy preference studies have involved adult learners in many diverse settings. These major learning strategy studies by faculty and graduate students in the Adult Education program at Montana State University used a similar research design to explore the use of adult learning strategies in these diverse settings. The volume of studies and subjects provides depth and insights not previously available regarding the learning strategies of adults. These studies included college students (Bighorn, 1997;

Conti & Kolody, 1995; Hill, 1992; Gallagher, 1998; Kolody, 1997; Strakal, 1995; Ungricht, 1997), nursing students (Lockwood, 1997), business and non-profit leaders (Conti, Kolody, & Schneider, 1997; Courtnage, 1998; Gehring, 1997; Moretti, 1994), military personnel (Korinek, 1997; Yabui, 1993), public school administrators (McKenna, 1991), senior citizens (Quarles, 1998), and learning disabled students (Hays, 1995).

Some of the earlier learning strategy preference studies were those of McKenna (1991), Hill (1992) and Yabui (1992). McKenna (1991) explored learning strategy preferences in the professional and personal learning of Wyoming school administrators (McKenna, 1991; McKenna, Conti & Fellenz, 1994). McKenna found that (a) the personal or academic learning context of the learners affected the learning strategies selected for use and (b) learning strategy preferences could not be used to differentiate between learners grouped on demographic variables. Results of the study indicated that learning strategy usage is contextual and SKILLS can be adapted for specific situations (McKenna, Fellenz, & Conti, 1994).

Hill (1992) studied learning strategies in tribal students in Montana. He found that learning strategy preferences could be used to differentiate between least and most successful students as measured by grade point average.

In summarizing Hill stated that "the investigation of adult learning strategies is an innovative and dynamic area of research that can continue to enrich the field of adult learning" (p. 152.)

Yabui (1993) studied the stages of reflective judgement and the use of learning strategies by volunteer participants from Malmstrom Air Force Base in Great Falls, Montana. He found that learners' stages of reflective judgement were associated with patterns of learning strategy preferences.

Hays (1995) explored the impact of academic intervention on the learning strategy preferences of learning disabled students at Montana State University College of Technology in Great Falls, Montana. Using several assessments including SKILLS, Hays found that academic intervention did not change learning strategy preference. Hays also found learning strategy preference differences between males and females and between students with diagnosed and suspected learning disabilities. Five groups of learners were identified in this study.

Kolody's (1997) research set the standard for many subsequent learning strategy preference studies. These studies built a significant base from which discriminant analysis techniques were used to establish the extent to which demographic characteristics impacted learning strategy preferences. Kolody's study of adult learners at two-year

colleges in Alberta, Canada, expanded a previous study (Conti & Kolody, 1995) ~~which~~^{that} had been conducted at Medicine Hat College. These studies provided a basic design for later studies ~~which~~^{that} used discriminant analysis to clarify the relationship between learning strategy preferences and demographic characteristics. The studies used cluster analysis to identify groupings in the data and analysis of variance and discriminant analysis to help name and describe the clusters. The basic study design also included gathering qualitative data using individual and focus group interviews with the clusters of learners identified in the analysis.

The studies following this basic design used cluster analysis to determine clusters of similar individuals inherent in each sample. Kolody's (1997) study of adult learners found five clusters of learners in the sample of two-year college students. Learning strategy preferences did not differentiate between learners grouped by demographic characteristics in this study.

Learning strategy preferences of Montana nursing program students were studied by Lockwood (1997). Lockwood used SKILLS scenarios revised to be meaningful to nursing students. Discriminant analysis determined that learning strategies did not differentiate between groups of students either in associate and baccalaureate programs or between

students in different campus programs. Four groups of learners were identified in this study. The groups did not differ significantly when analyzed according to demographic characteristics of age, gender, or grade point average.

Bighorn (1997) studied the learning strategy preferences of adult learners at the Fort Peck Reservation in Montana. There were two groups of learners, most were Native Americans. One group was students at Fort Peck Community College; the other group was employees of various community agencies. Bighorn (1997) adapted the SKILLS scenarios to be meaningful within the tribal community. Discriminant analysis determined that when the variables of age, gender, ethnicity, tribal affiliation, traditionalism, and grades were considered, learning strategy preferences differentiated only between individuals grouped on grades. Bighorn's study identified four groups of learners that were also described using group interview data.

Gehring (1997) studied learning strategy preferences of workers in Great Falls, Montana. He found that learning strategy preferences did not differentiate between individuals grouped on the demographic variables of age, gender, post-secondary attendance, educational credential, or number of years in a particular position. Four groups of learners were identified and described using interview data.

Learning strategy preferences of United States Air Force officers were studied by Korinek (1997). He found that learning strategy preference did not differentiate between officers grouped on the demographic variables of age, gender, military rank, time in service, or attendance or performance at military education. Four groups of learners were also identified in this study.

These and other studies of learning strategy preferences consistently found four or five distinct groups or clusters of learners among the participants. Qualitative group and individual interview methods were used to gather data in an attempt to describe the clusters. Although there were some similarities among the clusters of the various studies, none of the clusters were identical (Gallagher, 1998, p. 62).

Learning strategy preferences have been found to be distributed throughout the general population and across the boundaries of most demographic variables (Conti & Kolody, 1998a). However, based on the body of research from the Adult Education program at Montana State University, it has been concluded that learning strategy preferences are generally not good discriminators between learners grouped on demographic variables (Gallagher, 1998, p. 62).

ATLAS

Results from SKILLS studies were used in the creation of the instrument titled Assessing The Learning Strategies of Adults (ATLAS). 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). ATLAS satisfied those requirements.

Three groups of learners were identified through qualitative and quantitative research methods which included cluster analysis, discriminant analysis, and analysis of variance conducted with the 15 learning strategies in SKILLS and the cluster groupings identified in the SKILLS studies (Conti & Kolody, 1999a, p. 9). The three ATLAS learning strategy preferences groups are Navigators, Problem Solvers, and Engagers. Each learning strategy preference group has a distinguishing profile.

Navigators

"Navigators are focused learners who chart a course for learning and follow it. They are conscientious, results-oriented high achievers who favor making logical connections, planning and organizing activities" (Conti & Kolody, 1999a, p. 9). Navigators rely on the learning

strategies of Planning, Attention, Identification and Critical Use of Resources, and Testing Assumptions (p. 9).

Qualitative data indicates that Navigators prefer a structured learning environment with clear objectives, expectations, schedules, deadlines, and summarization of the main points. Navigators do not like big changes and do not like a teacher to waste time. Navigators value prompt feedback. (Conti & Kolody, 1999a, p. 11).

Problem Solvers

Problem Solvers are critical thinkers. They "rely on a reflective thinking process which utilizes higher order thinking skills" (Conti & Kolody, 1999a, p. 11). Problem Solvers scored high on the Critical Thinking strategies of Testing Assumptions, Generating Alternatives, and Conditional Acceptance (p. 12).

The curious, inventive, and intuitive Problem Solvers generate alternatives to create additional learning options and keep an open mind to other learning possibilities. Their ability to consider various solutions can result in increased difficulty to make decisions. Problem Solvers are best assessed with open-ended questions and problem-solving activities rather than multiple-choice exams. Problem Solvers like deadlines and examples. They do not like long

lectures straight from the text. (Conti & Kolody, 1999a, pp. 12-13)

Engagers

"Engagers are passionate learners who love to learn, learn with feeling, and learn best when they are actively engaged in a meaningful manner" (Conti & Kolody, 1999a, p. 13). Engagers evaluate the potential outcome to determine if the learning experience is worth the effort required (p. 14). "The Engager pursues long-term learning activities that will result in self-development and will aid in a permanent personal change and growth" (p. 14).

Engagers like the interaction of group work. They respond best to teachers who take a personal interest in them. Engagers

succeed best with teachers who focus on learning rather than on formal evaluation and who encourage involvement in projects based on individual interests. Engagers consider work as an extension of themselves and are motivated by feelings of satisfaction or pride. (Conti & Kolody, 1999a, p. 15)

Often their self-worth is determined or validated by their work (p. 15). That self-worth can be easily damaged by insensitive teachers.

When identifying learning strategy preferences, it is also important to note strategies that the learners do not commonly use. Once the non- or under-utilized strategies

are identified, instruction and examples can assist learners in strengthening their individual learning strategy weaknesses. (Conti & Kolody, 1999a, p. 16)

Research is ongoing in the area of learning strategies. The relationship of learning strategy preference to personality type was recently studied using ATLAS and the Myers-Briggs Type Indicator (Conti & Kolody, 1999b). Findings indicated that overall personality type is not related to learning strategy preference. However, a positive relationship existed between three of the four personality type indicators and learning strategy preference. Current learning strategy preference studies which use ATLAS and are in various stages of completion include a study of Wichita, Kansas police officers; Tulsa Community College students; Internet learners; African American church school participants; Oklahoma Department of Human Services child welfare employees; and Oklahoma GED teachers.

CHAPTER III

METHODS AND PROCEDURES

Introduction

This was a descriptive research study undertaken as a step in determining if high school noncompleters fall predominantly into one ATLAS learning strategy preference category or evenly into the three categories as did those in the database compiled from SKILLS studies data. The study was also designed to describe teaching methods that high school noncompleters perceive as beneficial or detrimental to their learning success. A descriptive study:

Involves collecting data in order to test hypotheses or answer questions concerning the current status of the subject of the study. A descriptive study determines and reports the way things are . . . Typical descriptive studies are concerned with the assessment of attitudes, opinions, demographic information, conditions, and procedures. Descriptive data are usually collected through a questionnaire survey, interviews, or observation. Just as the historical researcher has no control over what was, the descriptive researcher has no control over what is, and can only measure what already exists. (Gay, 1987, p. 189)

In this study, the learning strategy preferences were studied of 111 ABE students who were enrolled in the Fall of

1999 in one of the selected classes. Participants completed ATLAS and were asked to participate in group discussions and individual interviews. ATLAS results were compared to the expected distribution of groupings based on the instrument norms. Data collected from the group discussions were transcribed and analyzed.

Sampling

A population is an arbitrary universe or "entire group of persons, things, or events having at least one trait in common" but which can have more than one shared trait (Sprinthall, 1990, p. 113). Since the population is often large, a sample or subset of the population can be used from which inferences are drawn about the population (Shavelson, 1996).

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 population selected for this study was ABE participants in public programs in the Tulsa MSA. The Tulsa MSA includes Creek, Osage, Rogers, Tulsa, and Wagoner counties.

The state of Oklahoma has a population of 3.3 million (U.S. Census, 1990). Approximately 25.4% of the total population in the state has less than a high school education. The average dropout rate reported for the state

of Oklahoma was 5.6% for the 1997-98 school year. (Office of Accountability, 1999)

The Tulsa MSA has a total population of around three-quarters of a million people. Approximately 24.7% of the population in this geographic area did not graduate from high school. The average dropout rate reported for the Tulsa MSA is 5.4%. (Office of Accountability, 1998b)

The Lifelong Learning Section of the Oklahoma State Department of Education provides undereducated adults with opportunities to become participating workers, parents, and citizens through Adult Basic Education and Literacy (ABE), Family Learning, Workplace Education, English as a Second Language (ESL), Temporary Assistance for Needy Families (TANF), and GED classes (Oklahoma State Department of Education, 2000). There were 25,153 participants in Oklahoma's Lifelong Learning classes in 1998-99. Almost half of the participants ranged in age from 16-24; a little more than half ranged in age from 25-44; and the remainder were over 45 years of age. There were 4,276 individuals in GED classes, and 3,194 of these obtained a GED or an adult high school diploma. Overall, there were approximately 2% more male participants than female in GED classes in Oklahoma in 1998-99. It was noted that there were almost twice as many Black male participants as Black female participants in Oklahoma GED classes in 1998-99. The ethnic distribution of

the Oklahoma GED classes was American Indian-10.2%, Asian-1.8%, Black-10.4%, Hispanic-6.0%, and White-71.7%.

In the Tulsa MSA there are several types of entities that offer ABE and GED instruction. These entities include public schools, community colleges, vocational schools, work training programs, and delinquency prevention programs. Included in the various types of entities are a variety of specific agencies and institutions that offer ABE and GED classes in the Tulsa MSA. Institutions with ABE classes included in this study were two public school districts, a community college, and a vocational school.

Sampling is the process of selecting study participants in such a way that they represent the larger group or target population (Gay, 1987). There are several techniques for selecting a representative sample. Techniques include random sampling, stratified sampling, cluster sampling, and systematic sampling. The steps used in sampling are basically the same regardless of which sampling technique is selected. Those steps are to (a) identify the population, (b) determine the required sample size, and (c) select the sample. Cluster sampling in which groups rather than individuals are selected was used for this study.

Cluster sampling is considered to be "more convenient when the population is very large or spread out over a wide geographic area" (Gay, 1987, p. 110). In cluster sampling,

all of the members of the selected groups have similar characteristics. In order to ensure the generalizability of results, a number of clusters must be selected. A disadvantage of cluster sampling is the possibility that the clusters selected may not be truly representative of the population. To ensure as much diversity as possible, it is recommended that a number of clusters be selected from a variety of locations or groupings rather than multiple clusters within one group (p. 111).

Clusters for this study included three GED classes and one workforce development class from a vocational school, a total of six GED classes from two public school districts, and two GED classes from a community college. Four of the classes were located in north Tulsa, five classes were in south Tulsa, one was in east Tulsa, one was in west Tulsa, and one was located in downtown Tulsa. All individuals in class on the day discussions were held participated in the study.

Instrumentation

According to Wiersma (1995) "a research study is only as well-done as the measurement that generates the required data" (p. 307). When educators begin making recommendations on ways to improve education, they will generalize from results of one or more studies to what is probably true for

all students like the ones observed in the studies (Shavelson, 1996, p. 209). Therefore, it is especially important for professionals to be able to trust research results in applied fields, such as education, in which practitioners intervene in people's lives (Merriam, 1998, p. 198).

The specific research problem identified is the basis for determining techniques used in a study. Keeping the identified problem in mind, research planners should ask the following questions when deciding the appropriate research technique to be employed: Is the instrument valid for use with this sample population? How easily is it administered? Are norms based upon the population available for comparison? (Merriam & Simpson, 1984, p. 127)

Research answers will come from the comparison of data collected. The data are relatively meaningless without such a comparison. Data alone cannot provide answers to research questions. (Merriam & Simpson, 1984, p. 126)

Many standardized instruments which yield a wide variety of data for a wide variety of purposes have been developed by experts who possess the necessary skills (Gay, 1987). One advantage to using a standardized instrument is the ability to compare results of different studies which use the same instrument. Major areas for which numerous measuring instruments have been developed include

achievement, personality, intelligence, and aptitude. Each of these areas can be further divided into subcategories. Personality instruments, for example, can be classified as nonprojective or projective. Nonprojective instruments include measures of attitude and interest.

"Nonprojective tests that ask individuals to respond to a series of questions or statements are frequently used in descriptive studies, for example, to describe personality structures of various groups such as high school dropouts" (Gay, 1987, p. 145). One serious problem involved with the use of nonprojective, self-report inventories is getting accurate responses. Scores are only valid to the degree that the respondent is honest and selects truly representative responses. A common phenomenon is the tendency of an individual to select the responses that he or she believes are the most socially acceptable. Nonrepresentative responses can seriously distort study findings whether they result from conscious or unconscious motivations. Results of a study are essentially meaningless if a large number of the sample did not respond honestly. It is, therefore, essential that researchers utilizing such tests make every effort to ensure that valid test results are obtained. (p. 145-146)

It was assumed that because participants in this study were primarily noncompleters, they had some previous

negative education experiences. Because of those negative experiences, it was thought that assessments might also have negative connotations for them. To ensure that participants felt no hesitancy in responding honestly rather than in what they considered the most socially acceptable manner, participants were assured that the outcomes of ATLAS were only for their individual information and for use in this study, that participation was entirely voluntary, and that the only "right" answer was the one that fit the individual as a learner. Participants were asked directly if the ATLAS category description accurately described their learning strategy preference. They were also asked in group discussions and individual interviews to describe steps undertaken by them in a recent learning project and to relate how those steps were indicative of their learning strategy preference.

Selection of an instrument for a particular research study involves identifying and selecting the best or most appropriate instrument from those available. In order to intelligently select an instrument, a researcher should be knowledgeable about the criteria which should be applied to a standardized instrument. Among the expected standards for instruments developed by experts are: (a) individual test items that have been analyzed and revised until they meet given standards; (b) directions for administering, scoring,

and interpreting are specified; (c) objectivity is ensured (an individual's score is essentially the same regardless of who is doing the scoring); (d) validity and reliability of data exists. (Gay, 1987, p. 127)

One strategy for addressing the appropriateness of using a particular instrument in a study is to conduct a pilot study. Pilot studies are recommended to ensure the quality of the study and to uncover discrepancies that may not be apparent to the researcher. Because of time and subject shortages, pilot studies are usually done using small groups of participants. Participants in pilot studies need not be selected randomly; however, participants should be familiar with and able to make judgments regarding the topic. (Gay, 1987, p. 91; Wiersma, 1995, p. 183) A small pilot test was undertaken for this learning strategies study utilizing six noncompleters. The noncompleters were asked to complete ATLAS and were asked whether they thought ATLAS was appropriate for and could be easily understood by noncompleters.

"The purpose of any measurement procedure is to produce trustworthy evidence relevant to the research question being asked" (Merriam & Simpson, 1984, p. 126). Reliability and validity are essential measurement characteristics that must be considered in establishing the appropriateness and usefulness of measurement instruments. Reliability means

consistency of the instrument in measuring whatever it measures. It is the degree to which an instrument provides similar results at different times for the same individuals. (Wiersma, 1995, p. 309)

Reliability is the degree to which a test consistently measures whatever it is said to measure. It is the dependability, trustworthiness, or consistency in measuring whatever the test is supposed to measure. No test is perfectly reliable because of errors of measurement that can have a variety of causes. These causes may include characteristics of the test itself, conditions of test administration, current status of the person taking the test, or any combination of the above. An instrument that is unreliable is basically useless. (Gay, 1987; Wiersma, 1995)

Validity should answer whether the instrument measures the characteristic, trait, or whatever it was intended to measure. Validity also refers to the appropriateness of the interpretation of the results of a test or inventory and that it is specific to the intended use. (Wiersma, 1995)

"Validity is the most important quality of any test" (Gay, 1987, p. 127). Validity is:

The degree to which a test measures what it is supposed to measure. A common misconception is that a test is, or is not, valid. A test is not valid per se; it is valid for a particular purpose and for a particular group. The question is not

"valid or invalid" but rather "valid for what and for whom?" (Gay, 1987, p. 128)

Three important types of validity for education are content validity, construct validity, and criterion validity. Content validity refers to the representativeness of the items with respect to an intended content area. Construct validity refers to the degree to which a test measures the intended theoretical constructs or traits. Criterion validity establishes validity through a comparison of an instrument's scores against external criteria believed to be valid for the test. (Gay, 1987, p. 128; Wiersma, 1995)

Reliability errors are random errors; validity errors are systematic or constant errors. While a valid test is always reliable, a reliable test is not necessarily valid. A reliable test will measure what it is supposed to be measuring every time, but it may be consistently measuring the wrong thing thereby making it invalid. For example, suppose a test that purported to measure social studies concepts really measured facts. It would not be a valid measure of concepts, but it could certainly measure the facts very consistently. (Gay, 1987, p. 136)

ATLAS

ATLAS is an easy to administer, easy to complete instrument that enables learners and facilitators to rapidly identify learning strategy usage patterns (Conti & Kolody, 1998a, p. 109). ATLAS uses a flow-chart design with printed items on half-sheets of standard-sized, 8.5" x 11" colored paper, bound together in a booklet format. Learners follow sentence stems in the top box of the first colored card to other boxes with options that complete the stems. Respondents continue following arrows that lead to options in another box or to another colored card, eventually concluding with the respondent's learning strategy group placement. ATLAS was used in this study because it was believed that the seemingly simplistic design of ATLAS could overcome test trepidation of students who may previously have had negative experiences with educational assessments.

With the development of ATLAS, it is now possible to easily identify the learning strategy preferences of adult learners. ATLAS is a relatively new instrument that is based on the research findings of the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS). Because of this direct relationship, the validity of ATLAS is grounded in the validity of SKILLS.

SKILLS content validity (the representativeness of the items with respect to learning strategies used by adults in

real-life situations) and construct validity (the degree to which a test measures the intended theoretical constructs or traits) were determined through a multi-step process. Validity was judged by educational psychology and adult education experts, including Robert Sternberg and Wilbert McKeachie. Extensive literature reviews were conducted on each of the five constructs that make up the instrument. The five constructs are the areas of metacognition, metamotivation, memory, critical thinking, and resource management. Small groups of adult educators critiqued the instrument and agreed that it addressed the five theoretical constructs and that the scenarios used in the instrument represented real-life situations. (Conti & Fellenz, 1991)

Content validity was further assessed through field testing SKILLS in a variety of adult learning situations throughout the United States (Conti & Fellenz, 1991). Field testing results confirmed the validity assessment of the experts. In addition, field testing brought about modification of the answer sheet and the instructions. No information was available on SKILLS criterion validity comparing SKILL's scores against external criteria believed to be valid for the test.

SKILLS reliability was checked by grouping 130 field test respondents into two similar categories. Correlation of the two categories was assessed using both Spearman-Brown

and Guttman split-half tests. The tests determined SKILLS to be a reliable instrument for assessing adult learning strategies in real-life situations. (Conti & Fellenz, 1991)

The ATLAS instrument was developed to deal with the findings from the SKILLS studies (Conti & Kolody, 1998a). ATLAS uses a flow-chart design to identify learning strategy category designation and can be completed in approximately two minutes. Using SKILLS data and cluster analysis as the conceptual basis for ATLAS, the three learning strategy categories of Navigators, Problem Solvers, and Engagers can be identified.

Establishing construct validity for ATLAS involved assessing the underlying theory of the instrument by synthesizing and consolidating SKILLS research study results. The literature of studies using SKILLS in field-based research was reviewed and similar data from many of the SKILLS studies was consolidated. This resulted in identification of three groups with similar learning strategy usage patterns. The three groups were similar to groups in the SKILLS studies and were named Navigators, Problem Solvers, and Engagers. There was relatively equal distribution of the respondents among the three groups: Navigator-36.5%, Engagers-31.8%, and Problem Solvers-31.7%. (Conti & Kolody, 1999a, p. 16-18)

Content validity, the sampling adequacy of the content of the instrument, for ATLAS was established using discriminant analysis to determine the exact learning strategies pattern used by each group when compared to the other groups. Since the three groups were originally identified by a multivariate process, the items were arranged so that the respondents follow a track of questions. Qualitative data collected during field-testing to determine the best wording for items revealed that respondents might find options for distinguishing between other groups appealing to them if they saw them. Therefore, the tracks were divided and placed on smaller sheets so that the respondent could only see one item at a time. All cards were kept face down until used. Through this procedure, the respondents did not have access to the items that did not apply to them because they had identified themselves as belonging in another track. While ATLAS has only a few items, each item was based on the powerful multivariate procedure of discriminant analysis. Instead of using an approach that involves summing multiple attempts to identify a characteristic, ATLAS uses discriminant analysis to precisely describe the content for each item. (Conti & Kolody, 1999a, p. 19)

Finally, criterion-related validity, which compares scores of an instrument with external criteria known or

believed to measure the attribute which is under study, was corroborated by comparing ATLAS scores with SKILLS group placement (Conti & Kolody, 1999a). Groups of adult learners in Alberta, Montana, and Oklahoma were administered both SKILLS and draft versions of ATLAS. After completing the instruments, comments concerning ATLAS were gathered by means of individual interviews and group discussions. Suggestions were taken into consideration in improving ATLAS. The current version of ATLAS correctly places approximately 70% of the respondents in their corresponding SKILLS group. Focus groups were conducted with each group of learners in order to gather qualitative data to describe the exact ways members of each group go about learning, the barriers they face in the learning process, and the things that facilitators do to help and hinder them in the learning process. Based upon this information, the wording of each item will be reviewed and adjusted to be extremely compatible with the comments of the group members. Once this process is completed, a criterion-related validity check will be made on the final form of the instrument (p. 19-20).

The reliability of ATLAS has not yet been reported, but on-going tests indicate that the test-retest results indicate about 65% accuracy in consistently placing people in the same group. (Conti, personal conversation, January,

1999). In a current study involving Internet users, approximately 90% confirmed that the description of their group placement on ATLAS accurately described them (Conti, personal conversation, January, 2000). Participants in this study of noncompleters consistently indicated their agreement with the ATLAS description of their learning strategies. Several students even expressed surprise at the accuracy of the ATLAS description of their preferred learning strategy. Two teachers indicated that they could fall into multiple groups depending on the project.

Data Collection

The first step in compiling data for this descriptive study was to identify the State of Oklahoma regional ABE offices. Next, the population size and dropout rates in public school districts in the Tulsa MSA were identified to assist in determining which areas should be targeted by the study. The ABE regional offices in the Tulsa MSA are located in Drumright, Pawhuska, Poteau, and four offices are in Tulsa County (Oklahoma Department of Education, 1998).

Public school districts reporting dropouts in Creek county are Allen-Bowden, Bristow, Depew, Drumright, Gypsy, Kellyville, Kiefer, Lone Star, Mannford, Milfay, Mounds, Oilton, Olive, Pretty Water, and Sapulpa. Creek county

school districts reported a 5.2% average dropout rate in 1997-98 (Office of Accountability, 1999).

Public school districts reporting dropouts in Osage county are Anderson, Avant, Barnsdall, Bowring, Burbank, Hominy, McCord, Osage, Pawhuska, Prue, Shidler, Woodland, and Wynona. Osage county school districts reported a 4.5% average dropout rate in 1997-98 (Office of Accountability, 1999).

Public school districts reporting dropouts in Rogers county are Catoosa, Chelsea, Claremore, Foyil, Inola, Oologah-Talala, Sequoya, and Verdigris. Rogers county school districts reported a 3.8% average dropout rate in 1997-98 (Office of Accountability, 1999).

Public school districts reporting dropouts in Tulsa county are Berryhill, Bixby, Broken Arrow, Collinsville, Glenpool, Jenks, Liberty, Owasso, Sand Springs, Skiatook, Sperry, Tulsa, and Union. Tulsa county school districts reported a 4.7% average dropout rate in 1997-98 (Office of Accountability, 1999). Tulsa Public Schools had a 9.3% dropout rate in 1998-99 (Office of Accountability, 2000).

Public school districts reporting dropouts in Wagoner county are Coweta, Okay, Porter, and Wagoner. Wagoner country school districts reported a 4.7% average dropout rate in 1997-98 (Office of Accountability, 1999).

The next steps in this study were to contact the ABE regional offices, determine the appropriate office or individual responsible for adult basic education, and contact that individual by telephone. Since the population of Tulsa County represents 77.5% of the total Tulsa MSA population (Office of Accountability, 1998), the sample for the study was restricted to Tulsa county. The ABE administrators contacted were with two public school districts, a vocational school, and a community college. Since these programs represented almost half of the Tulsa MSA population and almost two-thirds of the Tulsa County population they were judged to be representative of the total population.

The purpose of the initial telephone call to the individual program directors was to provide an overview of the study and to obtain permission to include that district's GED programs in the study and to contact the classroom teachers. All program administrators contacted eventually granted permission to include their students in the study. All GED classes affiliated with the sites were included in the study if the individual classroom teacher agreed to participate. A total of 12 clusters were identified for use in the study. There were a total of 111 participants in the clusters.

The next step in the study was to visit GED classrooms and provide an overall explanation of learning strategies and the current study, both verbally and in writing, to teachers and students. Teachers and students were offered the opportunity to comment and ask questions. They were then asked to complete ATLAS and a demographic questionnaire. Teachers were offered the opportunity to complete ATLAS; however teacher outcomes were not included in the 111 total participants.

After all students completed ATLAS and a demographic questionnaire, in 11 of the clusters the researcher led 5-25 minute discussions with students and classroom facilitators about learning strategies in general, about the students' individual learning strategy preferences, and about how they carry out a learning project. Students were also asked for their perceptions about how teachers and teaching methods can increase or decrease learning. The 84 participants in the small discussion groups were distributed in clusters that ranged in size from 2-15 participants. Six clusters involved 5 or fewer participants, three had 8 to 9 participants, and three had 11 to 15 participants. The length of the discussions varied according to the size of the group, to the amount of time allotted by administrators, to teacher agreement and interest, and to how near the end of class the discussions were allowed to begin.

Each of the discussion groups was asked questions that were general in nature and some that were specific to a particular learning strategy group. The following are general questions that were asked of all groups.

1. Tell me about a recent learning project in which you were involved.
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?
5. What kinds of things do you do to help yourself in a learning situation?
6. What kinds of things have you done that have hindered you in a learning situation?
7. What are other barriers to learning that you have encountered?
8. What do you think either you or the teacher can do about these barriers?

Navigators rely on planning and focusing strategies. Therefore, they were also asked the following additional questions.

1. How do you use organization in a learning project?

2. How do you check your progress in a learning project?

Engagers involve other people in learning activities and want assurance that the learning activity is worthwhile. Therefore, they were be asked the following additional questions.

1. What process do you go through in determining if a learning project is worth doing?
2. What types of activities do you like to use in a learning project?

Problem Solvers rely on critical thinking and generating alternatives. Therefore, they were asked the following additional questions.

1. How do you plan for a learning project?
2. How do you identify resources for a learning project?

In response to requests by the administrator, teacher, and several students, a second group discussion session was held with three of the small GED classes to further discuss learning strategy preferences and teacher impact. In these group discussions, GED participants identified recent projects and commented on strategies they have used or believe they would use in a variety of learning projects. They also discussed how teachers have helped or hindered them during their education. Participants in these group

discussions ranged in age from 17-20. These sessions lasted approximately 45 minutes each and were tape recorded.

In addition to the 11 small group discussions with GED participants, a twelfth session was held. This session was a large group meeting with workforce development participants and was scheduled in response to a request from the program administrator. The administrator made the request after reportedly hearing positive remarks about the small group sessions held on a separate campus of the same institution. The large group was comprised of 27 participants ranging in age from 20-45. Fourteen of the participants in this session were high school noncompleters; 13 indicated that they had completed high school but had no additional formal education.

This large discussion group session lasted 2-hours with lunch provided by the researcher. Participants in this session were asked to take ATLAS, to complete the demographic sheet, and to participate in large and small group discussions. Small groups were formed according to ATLAS learning strategy preference outcomes with no more than 5 participants per group. Groups were asked to discuss the above discussion group questions according to learning strategy preference group. Small group spokespersons then reported discussion highlights to the combined group.

Additional discussion followed with input requested from all participants.

The small groups in this session were asked to describe several steps they would take in completing one of the SKILLS scenarios. The steps identified by each learning strategy preference group were then described and discussed with the combined group. A discussion followed about the differences in approaches to scenarios used by each learning strategy preference group and the implications of those differences.

Individual interviews were conducted with six male high school noncompleters. Four female noncompleters agreed to be interviewed individually but repeatedly canceled or failed to keep the interview appointments. Following are individual interview beginning questions.

1. Did you find ATLAS to be an accurate assessment of your learning strategy preferences?
2. What influenced your dropping out of high school?
3. Discuss teaching methods that positively or negatively impacted your learning?

The final steps in the study were to (a) analyze ATLAS results, (b) compare those results to the database of previous learning strategy studies which used SKILLS, and (c) compile data from the discussion groups and individual interviews.

Interview and Discussion Group

Data Analysis

This study employed both quantitative and qualitative research methodologies to describe the learning strategy preferences of this sample of noncompleters. Quantitative and qualitative research methodologies are not mutually exclusive (Patton, 1990). "Both qualitative and quantitative data can be collected in the same study" (p. 14). They have different strengths and weaknesses; they offer alternative research strategies (p. 14).

Quantitative research studies are based on the scientific method. "Educational research is the formal, systematic application of the scientific method to the study of educational problems" (Gay, 1987, p. 4). The scientific method is very controlled and orderly. It involves stating a problem, forming a hypothesis, collection and analysis of data, and formation of conclusions supporting or disproving the hypothesis. Unlike the scientific arena, educational researchers find it difficult to explain, predict, or control research situations because the situations studied involve human beings. In educational research it is difficult to generalize or replicate findings. (p. 4)

Quantitative methodologies allow measurement of the reactions of many to a limited set of data (Gay, 1987). Quantitative studies usually involve deductive rather than

inductive reasoning. Deductive reasoning is forming conclusions based on generalizations. Inductive reasoning involves generalizing from specific events and is often used in qualitative studies. The value of both deductive and inductive reasoning is expanded when both approaches are utilized.

Chi square can be used effectively to compare frequencies occurring in different groups or categories. A chi square test compares actually observed proportions in a study with expected proportions to determine if they are significantly different. The chi square value increases as the difference between observed and expected frequencies increases (Gay, 1987, p. 397). Chi square was used to examine the difference between the observed ATLAS scores and the expected ATLAS scores based on the norm groups for creating ATLAS.

Qualitative research allows researchers to study details of selected issues in depth (Patton, 1990). Qualitative methods begin "with the assumption that the perspective of others is meaningful, knowable, and able to be made explicit" (p. 279). Qualitative research is based on the philosophical assumption that "the view of reality is constructed by individuals interacting with their social worlds . . . Qualitative research can reveal how all the parts work together to form a whole" in contrast to

quantitative research "which takes apart a phenomenon to examine component parts" (Merriam, 1998, p. 6). Qualitative researchers are interested in understanding how people make sense of their world and the experiences they have in that world. "The key concern is understanding the phenomenon of interest from the participants' perspectives, not the researcher's" (p. 6). One focus of this study of noncompleters was to gain a better understanding of how these noncompleters perceived their experiences with teachers and their assistance with learning and education.

In qualitative studies, the researcher is the primary instrument for data collection and analysis. Understanding, description, discovery, and meaning are primary goals of qualitative research. Throughout qualitative research methodology is the premise of continuous data comparisons to form groups and patterns (Merriam, 1998). Data collection for a particular category is stopped when "theoretical saturation" is achieved or when continuing collection of data yields no new information (Darkenwald, 1982, p. 63). Interview data in this study were continuously compared to other data collected to detect groupings and patterns in the data. The resulting patterns formed the basis for some the conclusions and recommendations of this study.

CHAPTER IV

FINDINGS

Frequency Data

Of the 111 participants in this descriptive study, 68 (61.3%) were females, 36 (32.7%) were males; and 6 (5.5%) did not specify their gender. There was a higher percentage of females in the Tulsa MSA clusters included in this study than in the combined State of Oklahoma Lifelong Learning programs or in the Adult High School and GED programs. Male participants in the combined State of Oklahoma Lifelong Learning Programs outnumbered female participants by 2% in 1998-99; female participants in the Adult High School and GED classes outnumbered males by 2% in 1998-99 (Oklahoma Department of Education, 2000). Almost 10% more males dropped out of school in Oklahoma in 1998-99 than did females (Office of Accountability, 2000).

The median age of participants in this study who indicated their age was 18; the average age was 21.5 with a standard deviation of 10.0. Over 72% of the participants in this study ranged in age from 16-24; 26% ranged in age from 25-44; and only 2% of the participants were 45 or older. Of

those noncompleters who took the GED in Oklahoma in 1998, 66% were 24-years-old or younger, 26% were 25-29, and 8% were over 40; nationally, 67% of those taking the GED were 24 or younger, 25% were 25-29, and 8% were over 40 (American Council on Education, 1999). In the combined Oklahoma Lifelong Learning programs in 1998-99, 46% of the participants ranged in age from 16-24; 43% ranged in age from 25-44; and 12% were 45 years of age or older (Oklahoma Department of Education, 2000). The youngest age range had the largest representation in all groups. The percentage of representation by the 16-24 year-old-age group was much larger in this study than in the State of Oklahoma Lifelong Learning programs overall (Oklahoma Department of Education, 2000); but it was consistent with those taking the GED in Oklahoma as well as with national averages. The large numbers of younger participants in these programs are in line with comments indicating that a recent trend encountered by ABE instructors is an increasing number of younger participants in ABE programs than previously experienced (Personal conversation, Jan. 2000). The age breakdown for State of Oklahoma Adult High School and GED participants was not reported.

The ethnic distribution of participants in this study was American Indians-14%, Asians-4%, Blacks-21%, Hispanics-9%, and Whites-41%. Ethnicity was undeclared by

11.7% of participants in this study. The ethnic distribution of participants in the combined State of Oklahoma Lifelong Learning programs in 1998-99 was American Indians-10%, Asians-4%, Blacks-15%, Hispanics-19%, and Whites-52%. The ethnic distribution of participants in the Adult High School and GED programs in 1998-99 was American Indians-10%, Asians-1%, Blacks-10%, Hispanics-6%, and Whites-72% (Oklahoma Department of Education, 2000). While Whites had the largest representation in all groups, the percentage of representation by Whites was much larger in the Adult High School and GED classes than in the combined State of Oklahoma Lifelong Learning programs or than in this study. The ethnic distribution in this study is comparable to the National Center for Education Statistics (1997) reports of Whites comprising about half of the dropout population and blacks comprising close to one-fifth of the dropout population. There were 20% fewer White participants in this study than the reported 61% that Whites represented in the total number of dropouts in Oklahoma in 1998-99.

Of those participating in this study, 77% of the participants dropped out of high school in Oklahoma, 47% of the participants dropped out of school in Tulsa county, 69% of participants currently reside in Tulsa county, and 4% of the participants currently reside in a Tulsa MSA county other than Tulsa. Approximately 5% of the participants

dropped out of school in one of the other counties in the Tulsa MSA. A vast majority, 95%, of the participants indicated that they intend to go to college after passing the GED.

Analysis of variance was used to analyze the relationship between ATLAS and the demographic variables of gender, current age, and dropout age. Participants were grouped according to their learning strategy preference category on ATLAS. The demographic variables of gender, current age, and dropout age were not significantly related to learning strategy preference (see Table 1). These findings are congruent with the findings related to demographic variables for SKILLS studies.

Chi square was used to examine distribution to determine if the respondents were equally distributed among the various ethnic groupings across the three ATLAS categories. This analysis revealed that ethnicity did not significantly influence learning strategy category preference ($\chi^2 = 8.0$, $df = 12$, $p = .78$).

ATLAS results indicated that 52.9% of the participants were Engagers, 29.8% were Navigators; and 17.3% were Problem Solvers. These results were compared using chi square against data compiled from previous SKILLS studies and used to create ATLAS. The frequency observed in this study was found to be significantly different from the frequency

TABLE 1
ANALYSIS OF VARIANCE FOR DEMOGRAPHIC
VARIABLES

Demographic Variable	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Gender					
Between Groups	.35	2	.17	.50	.61
Within Groups	34.99	100	.35		
Current Age					
Between Groups	431.31	2	215.65	2.39	.10
Within Groups	9131.58	101	90.41		
Dropout Age					
Between Groups	139.83	2	69.92	1.54	.22
Within Groups	4575.52	101	45.30		

expected based on the database to which it was compared ($\chi^2 = 22.6$, $df = 2$, $p = .001$). It was logical to expect the results to show 36.5% Navigators, 31.8% Engagers, and 31.7% Problem Solvers among this group of participants (Conti & Kolody, 1999a). The results observed in this study indicate that (a) Engagers were over-represented by 17.7%, (b) Navigators were under-represented in this sample by 8.6%, and (c) Problem Solvers were under-represented by 15.5%.

Interview and Discussion Group

Data Analysis

Discussions were held in all of the classes and those individuals that volunteered to provide additional information were interviewed. Individual interview and discussion group data were analyzed to identify emerging patterns. The intent of the analysis was to discern general patterns in the participants' perspectives on helpful and harmful teacher actions in learning situations and in the learner's observations of their personal learning strategies employed in learning project endeavors. Patterns emerged as the data were repeatedly winnowed.

Although the expected distribution for the three learning strategy preference groups is approximately equal in the general population (Conti & Kolody, 1999a, p. 18), the Navigators constituted only 29.8% of the participants in this study, and Problem Solvers accounted for only 17.3% of the group. Because there was less participation by these two learning strategy groups, there were fewer comments from those groups than from the more predominantly represented group of Engagers. Engagers comprised 52.9% of the participants in this study and therefore contributed more comments for the analysis. The following are the collective individual interview and group discussion responses of the

representatives of the three learning strategy preference groups that describe each group's approach to learning.

Approach to Learning

Navigators

Navigators generally are focused, results-oriented, high achievers who like logical connections, planning, and organizing (Conti & Kolody, 1999a, p. 9). Navigators in this study agreed that the ATLAS description for the Navigator category was generally a fair assessment of their learning strategy preferences. Navigators in this study indicated that they help themselves with learning projects by (a) managing their time, (b) setting goals and staying on task, and (c) gathering enough information to complete the project.

Navigators referred to techniques that assisted them in finding time outside of class to study as time management activities. They indicated a need to know or closely estimate how much time a project would require. They talked about making either mental or written lists of everything they needed to accomplish, about how much time each item on the list required, and about creating written or mental schedules and timelines to assist them with staying on schedule. Some learners mentioned prioritizing or putting their lists in order of importance so that if time elapsed

it would be the least important items on the list that were left undone. Although these Navigators stressed that they always try and complete everything on their lists. Family and work responsibilities were priorities that often required the majority of their time. They also indicated that working in groups takes more time than working individually; therefore, they tended to prefer working individually. A typical Navigator comment about time management was, "When I start something, I like to stay with it until I finish. Otherwise it may have something left out of it" (24-year-old Black female).

When Navigators talked about setting goals and staying on task, they indicated a desire to always know the expected outcome. If they were talking about a school assignment, they indicated a need to have a clear understanding of exactly what the teacher expected of them. Navigators indicated that they had trouble staying focused when they were not given adequate information to complete a project. A typical Navigator comment about goal setting and staying on task was, "Once I know how to do it, I just do it and get it over with" (21-year-old Black female).

Once they know what they are going to do and what the expected outcome is, these Navigators indicated a need to identify the necessary resources. They wanted to know before they started a project that they had everything

necessary to complete the project. A typical Navigator comment about gathering enough information was, "I have to check out whatever resources I need to enable myself to do a learning project before I can get into it" (18-year-old Black female).

Problem Solvers

Problem Solvers are critical thinkers who generally like to test assumptions and generate alternatives; are curious, inventive, and intuitive; and are open to all possible alternatives (Conti & Kolody, 1999a, p. 12). Problem Solvers in this study agreed that the ATLAS description for the Problem Solver category was generally a fair assessment of their learning strategy preferences. During several discussions with Problem Solvers in this study, learners mentioned brainstorming activities and needing time to think through how best to go about an activity. Generally, Problem Solvers in this study indicated that they (a) liked hands-on activities and (b) did not like to be interrupted during learning projects. Even though they had the lowest percentage of representation in this study, Problem Solvers tended to ask more questions during group discussions than did Navigators or Engagers. Problem Solvers indicated a desire to do things for themselves. For example, when discussing their preferred

way to learn something new on a computer, Problem Solvers expressed a need to have their hands on the keyboard and work through the process by trial and error. Typical Problem Solver comments included:

I like a hands-on project. I don't want to watch someone else do something. I want to get my hands on it (19-year-old White male).

I don't like to read directions. I just want to get started on something (20-year-old Black female).

Problem Solvers said that they wanted a quiet atmosphere in which to complete a learning project. They commented that loud noises or people talking to or around them were distractions that caused them to lose focus. They also indicated difficulty returning to a project after an interruption. A typical Problem Solver comment about interruptions was, "Noise, my kids, or teachers and other people talking while I'm working-they all get in the way of me accomplishing any project" (20-year-old Black female).

Questions from Problem Solvers did not always relate directly to the topic under discussion. A series of questions was often posed by Problem Solvers rather than a more typical scenario where a question is asked, a response given, and a follow-up question is asked if necessary. It seemed at times as though the question itself and not necessarily the answer sparked other questions for the Problem Solvers. Following is a typical series of questions

from a 18-year-old White, female Problem Solver: "Are you going to write a book? What are you going to do with this information? Why don't you become a teacher?"

Engagers

Engagers learn best when actively engaged in something in which they are interested or in which they can find meaning (Conti & Kolody, 1999a, p. 13). Engagers pursue learning activities that result in self-development, personal change, and growth (p. 14). Most Engagers in this study agreed that the ATLAS description for the Engager category was generally a fair assessment of their learning strategy preferences. Engager participants in this study repeatedly indicated (a) that they did not waste their time and energy doing projects that they did not see as beneficial to them in some way; (b) that they resisted starting something that they did not believe they had adequate time or resources to complete; and (c) that to accomplish a learning activity, they needed to have a goal, stay focused, and have all necessary resources readily available.

Engagers indicated that they did not like to waste their time on projects that were not enjoyable, interesting, or in some way necessary to them personally. Comments from Engagers often contained the words "like" or "want."

Engagers indicated a need to determine what they considered to be the best method for obtaining information that they wanted. Engagers also indicated a very strong dislike for and avoidance of being bored. They expressed a need to interact with people and a tendency to look to other people as the first source of information. Some Engagers also expressed interest in classes that relate to people. One example given was a geography class that focuses on the heritage of people. Typical Engager comments about wasting time were:

I like to read the paper or an article or something that I'm interested in, not stuff that doesn't mean anything (18-year-old White female).

Say I was going to paint a car. I would not be thinking about how I was going to paint the car. I would be thinking about the resources it was going to take for me to paint the car and who I knew that had done it before that I could talk to. I'd ask my dad (18-year-old Hispanic male).

High school didn't relate to where I thought I was going to be, and consequently it had no value and didn't make any difference. I was going in the military. I didn't see where high school was relevant. It was very relevant, but I didn't realize it at the time (50-year-old White male).

I want to go to college, but I don't want to take a bunch of classes that don't relate to what I want to do. Like grammar. That is just not relevant to computers (20-year-old White male).

Engagers indicated an inclination to avoid starting something that they did not believe they had adequate time or resources to complete. They also indicated that if they had too many projects from which to choose, they had

difficulty starting any of the projects. Typical Engager comments concerning the completing a learning project were:

There's no point in starting something if you can't finish it (23-year-old Black female).

Having more than two or three projects to do-it's just too much (18-year-old White female).

Engagers indicated that they need to have a goal to work toward and that there must be nothing to distract them from that goal. They indicated that until a learning project became a goal and time was allocated to complete it, they allowed distractions to keep them from accomplishing a project. They indicated that a common distraction is interaction with other people. Engagers also indicated that they generally will not begin a project until they have all of the resources needed to complete it. Typical Engager comments were:

When I wanted to learn how to use a computer, I had a goal in mind. What steps does it take to get it? As you take steps, you cross them off the list (30-year-old White female).

I must be serious about what I want to do (20-year-old White male).

There's like a hurdle you have to get over . . . It's the ignorance hurdle . . . It's where you don't know enough to know where to start. It's a struggle, but once you get over that you can go on to something else (48-year-old White male).

I used to work for this old carpenter. He told me that I was the kind of guy who needed to be able to see what work I had done, that that was the satisfaction that I got from it. That I would do something and then back off and look at it. I

didn't know that about me, but it's true (50-year-old White male).

Positive Teacher Actions and Attributes

Navigators

Navigators prefer a structured learning environment with clear objectives, expectations, schedules, and deadlines (Conti & Kolody, 1999a, p. 11). Navigators in this study indicated that teachers who have been the most helpful (a) repeated things until students understood, (b) were organized, (c) did not waste student's time, (d) did not require group work, and (e) enjoyed teaching. Navigators were the only participants in this study who indicated what they believe are necessary components of a good school. They considered that good schools have sufficient equipment, are organized, and eliminate distractions as much as possible.

Navigators stressed that helpful teachers repeat instructions and expectations until all students have a clear understanding of what is required. They indicated a belief that helpful teachers continued to answer learner questions without appearing impatient and without embarrassing the learner. However, these Navigators also indicated that they were only interested in the teacher

providing answers to their questions; that they became impatient when other students were still using class time to ask questions after the Navigators were ready to begin a project. The following is a typical Navigator comment about teachers that Navigators considered to be helpful.

They really show how to do the work and don't get mad if I ask questions when I'm trying to understand better what I'm supposed to do. (17-year-old Hispanic male)

Navigators indicated that it is helpful to them when teachers are organized. Organization in both the teaching format and the overall classroom atmosphere seemed to be equally important. The terms "organization" and "structure" were used interchangeably. A typical Navigator comment was,

I like lectures, overhead presentations, individual assignments, and to know what is going to happen, and where I'm going to be sitting in a classroom. (23-year-old Black female)

Navigators preferred teachers that they believed did not waste a learner's time by asking them to participate in things that the learner believed delayed the completion of an activity. These Navigators indicated that they had found it to be helpful when teachers allowed them work at their own pace and to leave when they had completed the activities. They also indicated that teachers that have been the most helpful have not required them to work in groups. A typical Navigator comment was, "They let me go at my own pace but are there when I get stuck" (32-year-old

White female). Navigators also indicated a preference for working with teachers who enjoyed teaching and working with students. They indicated a belief that when teachers like what they do, they make learning more fun. For example, they mentioned helpful teachers who made games out of learning.

Problem Solvers

Problem Solvers prefer open-ended questions, examples, and problem-solving activities rather than multiple-choice exams (Conti & Kolody, 1999a, pp. 12-13). Problem Solvers in this study indicated that teachers that they had found to be helpful (a) offered personal attention and (b) provided alternative learning formats, options, and illustrations. Problem Solvers indicated that helpful teachers were those who allowed time with students either before or after class to provide additional assistance or further explanation for individual learners. They described helpful teachers as providing encouragement as well as individual attention. A typical Problem Solver comment was,

My teacher took time out with me to help me in areas that I was having problems, whether it was before or after school. That was truly helpful to me. (27-year-old Black female)

Problem Solvers also described helpful teachers as those who provided alternatives and options. Problem Solvers were most comfortable in classes where alternatives were either

presented by the teacher or learners were encouraged to propose alternatives. One Problem Solver commented that helpful teachers will

illustrate, write down examples of how a problem is done, hand out books or pamphlets on a subject, or show a film about a subject. (20-year-old White female)

Engagers

Engagers tend to like the interaction of group work and are more interested in what is to be learned than on formal evaluation (Conti & Kolody, 1999a, p. 13). Once involved, Engagers take learning personally. Their self-worth can be validated or easily damaged by others (p. 15). Responses of Engagers in this study regarding what constitutes a helpful teacher for them fall into five basic categories. Engagers describe helpful teachers as those that (a) cared about the success and well being of the individual students, (b) were friendly and respectful to students, (c) were fair to all students, (d) explained things repeatedly or in alternative formats until the student had a good understanding, and (e) showed that they enjoyed working with students.

Engagers discussed helpful teachers as showing that they cared about the individual students. It was important to these Engagers to have teachers who offered encouragement, who were approachable, and who followed up to determine how a student was doing. Typical of Engager

comments was that "Good teachers are there for the students and they push me to do my best" (25-year-old Black female).

Engagers described good teachers as friendly and respectful of students. Engagers considered friendly teachers to be those who smiled and greeted them and who talked to them about things other than assignments. Respectful teachers did not raise their voices to or talk down to students. Engagers also considered it helpful when teachers assisted learners with looking toward the future and in making career plans. Typical Engager comments included:

She wasn't an "I'm the teacher, you're the student" kind of teacher. She was interested in what she was doing and talked to us on our level (24-year-old White male).

They were friendly and pleasant and enjoyed what they were doing. Consequently, I enjoyed what I was doing (22-year-old White male).

Engagers considered fairness to be an important attribute for helpful teachers. Fairness for these Engagers was a serious subject that almost always brought even the most hesitant participants into the discussion. Fairness involved teachers allowing equal opportunities for all students to succeed and not prejudging a student based on records or opinions of others. Fairness also included ensuring that even the least successful students were

treated with respect by everyone in the class. Typical Engager comments on the subject of fairness were:

The good teachers didn't have pets. They treated all of us like we could do something good (30-year-old White female).

The best teachers listened to everyone. And they wouldn't let other kids put us down in class (20-year-old Black female).

Engagers also described helpful teachers as those who were willing to explain things multiple times and in a variety of ways until students understood what they needed to know or to do. Engagers indicated that it was helpful for them when teachers talked about why a project or assignment was important and provided detailed examples, descriptions, and demonstrations. Typical Engager comments included:

Good teachers explain things more than once. They give more time on projects (19-year-old Black male).

A first grade teacher I know compares teaching reading to doing magic. She said that you keep trying and doing things and suddenly one day they can read. It seems like magic. That's what good teachers do; they keep trying different things with different kids until something works (50-year-old White male).

I learned a lot in GED class. The teachers were really good. They would help people. And we laughed; we had fun. We didn't have to just stay in our seat. It was never just boring, boring, boring (23-year-old White male).

[Helpful teachers] pushed me to do my best and gave me extra activities (20-year-old White female).

I like younger teachers; they understand us better. They don't go strictly by the book but go with the flow (17-year-old White male).

I like older teachers. They're calm and nicer (18-year-old White male).

Engagers indicated that they found teachers who seemed to like teaching to be the most helpful. Engagers indicated that they were most successful in classes led by teachers who somehow conveyed that they enjoyed working with students. Typical Engager comments included:

And I had a nun who loved teaching math. She loved students and wanted to help students find the beauty in math that she found (53-year-old White male).

Negative Teacher Actions and

Attributes

Navigators

Navigators do not like big changes, do not like teachers to waste their time, and do not like to work in groups (Conti & Kolody, 1999a, p. 11). The Navigators in this study expressed frustration with classroom confusion or lack of structure, as well as with teachers and learners that Navigators thought were ill prepared for class. The following comments exemplify the feelings expressed by Navigators about things teachers have done that hindered their learning success.

When they have to explain things more than twice, make me work in a group (22-year-old Black female).

Slowed my pace down by having group activities (20-year-old Black female).

They weren't organized or strayed from the subject (24-year-old Black female).

Problem Solvers

Problem Solvers do not like long lectures straight from the book (Conti & Kolody, 1999a, p. 12). Problem Solvers indicated that they were more successful with teachers who allowed interaction and an exchange of ideas. Problem Solvers indicated that they found it helpful when teachers allowed time in class to discuss different ways to approach projects or assignments. The following comments are indicative of the feelings expressed by Problem Solvers in this study about teacher actions that hindered learner success:

Not giving very lengthy explanation on how to do something (19-year-old White female).

I had a few teachers that felt like, if they explained something to the whole class and 1 or 2 people didn't get it, then, oh well, that's their [the learner's] fault. This would frustrate me, and I'd never get it (19-year-old Black female).

[My teacher] wanted everything done her way or no way at all.

Engagers

The discussions of what teachers do to hinder Engager's success generally grew from the discussions of how teachers can assist in successful learning experiences. When the discussion changed from what teachers do that helps learners to what teachers have done that hindered students' success, the participants became more passionate. For example, voices were raised, participants rose from their seats when relaying examples, facial expressions changed to anger, and arms were waved.

Engager comments concerning things teachers do to hinder learning included the following:

Bad teachers embarrass kids--and it's the kid's perception that determines if something is embarrassing, not the teacher's or the parent's perception (18-year-old White female).

I think the thing I would tell high school teachers is that if you [the teacher] don't want to be there, get out. It's not just a matter of them not contributing; they are destructive in that role (50-year-old White male).

I used to be good in math--algebra and geometry, even. Then I had this math teacher who used to be a Marine, and he yelled at me all the time. I got to where I couldn't do math anymore. Then I just dropped out (18-year-old Hispanic male).

So much of your success in high school is social and is controlled by your social standing and social skills. One thing I've tried to teach my son in high school was how to handle the social part of it. I told him to figure out how to dress to be accepted and let me know what he needed. If it was important to him, then that's what we'd do. And I tried to teach him how to handle the hard

situations that I didn't handle well, and that Jesus was right about how to do it. It's like we expect kids to figure this stuff out for themselves. We say, "Aw, they're just in high school, they'll work it out." They don't work it out sometimes. Sometimes they make bad decisions and do bad things, or they do things that embarrass them. Do you know what my son's greatest fear is? Embarrassment. That's right. You embarrass him—and I was the same way—you embarrass me, and I just wanted to run (50-year-old White male).

When the news reports started coming out after the Columbine shootings, I thought "I know where those shooters are coming from." Even after 35 years, I remember how bad I felt in high school before I dropped out. (White male)

Kids are notoriously cruel to other kids and to some degree that is tolerated in schools. The popular kid on the football team and the cheerleaders, those kinds of kids can treat other people like they want to and walk away from it, and nobody does anything. A boy got off of the school bus a couple of weeks ago. He was 13-years old, and there was a 15-year old on the school bus that had been hassling him and bullying him for a couple of weeks. When they stepped off the school bus, the 15-year old hit the 13-year old in the back of the head with his fist and killed him. He died. Went into a coma and died. There was another kid who was laughed at and made fun of for so long that he took himself out and shot himself. And how many broken hearts are there in this country over the young man who was beat to death in Wyoming because he was gay? How about the Black guy in Jasper, Texas, that was dragged to death? Those kinds of things start in high school; they start before high school. That behavior was not stopped early in their lives. You can look at those kids earlier in their lives, and you'll find instances where they've thought they were better than other people, had more rights (50-year-old White male).

Additional Observations

There were several major differences in classroom settings and cultures in the classes studied. Some classrooms were quite large while others were small; some were well lighted, while others were not. The size and lighting did not seem to be indicative of the overall culture of the group.

Teacher attitudes toward participation in this study and toward the students varied considerably. Some teachers were interested in the learning strategies presentation, participated in group discussions, and requested copies of study results when available. One teacher's comment summarized the overall feeling the researcher observed in some classes when the teacher stated that she was "interested in offering everything of value" to her students. The students in that type of atmosphere were generally more involved in the group discussions and interested in improving their learning opportunities. The teachers appeared to be more energetic and enthusiastic. The relationships between students and teachers seemed to be mutually respectful and satisfactory.

In one GED preparation class, the teacher ordered a young man to change seats when he "objected" to taking the learning styles test (as she described it). She demanded that he participate even though it meant he would be late

for work. She insisted repeatedly that he move to the chair next to the researcher. He did not change seats but he did remain in class. The teacher left the room to attend to another group. At that time, students were reminded by the researcher that participation in the study was voluntary. They were given an overview of learning strategies and of the current study, and were advised how the study or an awareness of learning strategies might be beneficial to their learning process. The young man who had objected to participating completed ATLAS and was one of the most vocal participants in the group discussion. He was an Engager.

When the group discussion was completed in ^{the above} ~~this~~ class, the researcher located the teacher in another classroom and advised that the presentation and discussion had ended. The teacher asked how soon the students would be notified of their learning style scores. The teacher was informed that the students already knew their respective learning strategies category. The teacher was then given another set of information sheets on learning strategies and this study, and another attempt was made to further describe learning strategies and research in the area. The teacher handed the information to an aid without looking at it and walked away. The aid put the information under some other papers in a large stack on a table.

One student in a late evening class stayed later than the other students. She re-read the ATLAS booklet and demographic sheet several times. When asked if she needed assistance, she said she just wanted to read through it again. After everyone left, she asked why the questions about Attention Deficit Disorder (A.D.D.) were on the demographic sheet and shared that she had gone through school not fitting in and not knowing why. As an adult she was diagnosed with Attention Deficit Hyperactivity Disorder (A.D.H.D.). She was an Engager and felt strongly that ATLAS was accurate for her. Half of the participants in that class responded positively to the A.D.D. questions.

Attitudes of program administrators and teachers toward participation in the study varied. Some were very eager for their students to participate while others were somewhat resistant. The attitudes conveyed by the teachers were generally consistent with the attitude conveyed by their administrator. The eagerness with which the students participated was often consistent with that conveyed by the teachers. Two instructors who expressed little interest in participating in the study commented that only about one-half of those who attend the first session of their multi-session program return for additional sessions. These were instructors at different locations of the same institution

with small classes and little observed teacher or administrator enthusiasm for participating in the study.

Several instructors expressed a desire for a forum where teachers from the various local GED programs could get together and share information about what works, what does not work well, and how things are done differently in the different programs. This interest was expressed by a variety of instructors, some who were eager participants and others who seemed resistant to participation in the study. Similar comments came from teachers at several institutions and with a variety of class sizes. It was expressed by teachers who seemed very involved with their students as well as some who had exhibited no enthusiasm for what they were doing.

The workforce development discussion group was larger and lasted longer than the others. In this session, learners had the opportunity to work together in smaller groups with others in the same learning strategy category. The researcher observed that Navigators and Problem Solvers wanted detailed clarification of the assignment which was to discuss a learning project. Engagers simply started the group discussion without asking for clarification. Once the Navigators were clear on the project, they immediately began working and developed a step-by-step outline for starting a new business. Problem Solvers could not agree on one,

single project; they discussed a variety of alternatives. Engagers had a lengthy discussion but did not realize they were to agree on a project to discuss with the larger group. All of the Navigators, some of the Problem Solvers, and some of the Engagers outlined individual projects in addition to the group project.

At one point in the larger group discussion of the small group projects, a very heated discourse erupted between a Navigator and an Engager. The Navigator indicated a lack of patience with what she perceived as the Engager group's lack of focus and wasting of her time by requiring additional time to complete their discussion. The Engager was offended by the comments and became angry and defensive. The teacher interceded and told them they had to learn to respect each other and their differences. She added that some of them had not had parents to teach them to be respectful, that some had never been taught to be nice, and that even though they had been let down by a lot of people in their lives they needed to be nice and respectful in order to teach that to their children. The session ended soon after due to the lack of continued participation in the group discussion.

In one discussion group, a Navigator asked why she would want to use an Engager or Problem Solver strategy. To her, they sounded like "goof offs" and procrastinators. The

group came to the understanding that Navigators may be "workaholics" who could benefit from learning to investigate alternative ways of doing things or by taking time to assess whether a project is really something they want to do or has any value. Another Navigator offered the opinion that Navigators need to learn to work in groups and on teams.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

One-fourth of the high school students in the United States drop out or are pushed out of high school prior to completion. In today's world, technology and information dominate society, and intellectual ability and education are primary factors in determining one's economic quality of life. Along with the continued growth in the volume of knowledge and the complexity of technology, comes the necessity for noncompleters to acquire the skills necessary for lifelong learning. To help make the acquisition of those skills possible, the previous negative educational experiences of noncompleters must be replaced by successful learning experiences that facilitate continued intellectual growth and self-actualization.

Understanding learning strategies may offer opportunities for education stakeholders to develop tools and techniques that can be helpful in the noncompleter population. Numerous research studies have been undertaken to identify learning strategy usage patterns of lifelong

learners. What had not been addressed was whether the learning strategy research, that had been focused on identifying and describing the learning behavior patterns of primarily traditionally successful students, applies to a population that has been unsuccessful in its previous educational efforts.

Now that learning strategy patterns have been documented for successful student populations, it is time to evaluate the impact that a knowledge of learning strategies may have in helping previously unsuccessful students. Before that can be accomplished, a description is needed of the learning strategy behaviors and perceptions of learners who have been unsuccessful in traditional education. Therefore, the purpose of this study was to identify and describe the learning strategy preferences of high school noncompleters who have returned to educational settings and to describe the noncompleter perceptions of the actions of teachers that noncompleters believe help and hinder learners in the learning process.

Assessing The Learning Strategies of Adults (ATLAS) was the assessment instrument used in this study. ATLAS measures initial learning strategy preferences and can be completed quickly and easily. It was selected because of the belief that the seemingly simplistic design of ATLAS could overcome test trepidation of students who may

previously have had negative experiences with educational assessments.

Participants in this study were Adult Basic Education (ABE) students at 12 locations in the Tulsa Metropolitan Statistical Area. Participants ranged in age from 16 to 48. Almost two-thirds of the participants were female. Over 40% of the participants were White and almost 50% were minorities. Each participant took ATLAS and completed a demographic information sheet. ATLAS outcomes were compared to those in the database used to develop the instrument. Participants also took part in individual interviews or group discussions. The topics in the interviews and discussion groups related to the participants' perspectives on how they undertake a learning activity and on how teachers have helped and hindered them in their educational endeavors.

The study found that 52.9% of the participants categorized themselves in the ATLAS category of Engagers; 29.8% categorized themselves Navigators; and 17.3% categorized themselves Problem Solvers. Chi square was used to compare the frequencies observed in this study with the frequencies in the database used to develop ATLAS. It was determined that there was a significant difference in the findings observed in this study when compared with the

database in which participants were almost equally divided in the three learning strategy preference categories.

When asked how they describe their approach to learning, Navigators indicated that they help themselves by managing their time, setting goals, and staying on task. They prefer to gather enough information to complete the project. Problem Solvers indicated that they like hands-on projects and do not like to be interrupted during projects. Engagers indicated that they need to have a goal, cannot have distractions, and need to have resources readily available.

In response to what teacher actions they perceived as helpful, Navigators indicated that the most helpful teachers will repeat things until students understand, are organized, do not waste students' time, do not require group work, and enjoy being teachers. Problem Solvers indicated that the most helpful teachers offered personal attention and provided alternative formats, options, and illustrations. Engagers described their perceptions of the most helpful teachers as those who showed that they cared about the success and well-being of the individual students. The helpful teachers were also described by Engagers as friendly and respectful to students, as fair to all students, as willing to explain things repeatedly or in alternative

formats until the student had a good understanding, and as showing that they enjoyed teaching.

In describing teacher actions and attitudes that they perceived as hindering their learning, Navigators indicated that they do not like teachers to waste the student's time. Navigators also do not like to work in groups because they believed they can complete the work faster working individually. Problem Solvers indicated that teachers who hinder learner success do not explain things thoroughly and want everything done strictly the teacher's way. Engagers felt strongly that teachers who hinder learner success embarrass learners, speak harshly to learners, and tolerate disrespectful behavior by successful students toward less successful or less popular students.

Learning Strategy Conclusions

1. ATLAS is an effective measurement tool for use in GED classes for assessing learning strategies of noncompleters.
2. Noncompleters fit the learning strategy profiles described in ATLAS.
3. Noncompleters in each learning strategy preference group can improve their education experience by becoming aware of their preferred learning

strategies and by learning to use strategies from other categories.

4. Problem Solvers may find alternatives that allow them to complete high school or to pass the GED tests without formal classes.
5. Engagers may be the majority dropping out or being pushed out of high school.
6. When noncompleter Engagers decide to re-engage in education, they do so via ABE/GED classes.
7. Engagers are relationship and connection focused. This may explain their dropping out because they do not see a connection between school and real life.
8. Interruptions and distractions hinder learning for noncompleters.

"A central task of learning how to learn is developing awareness of oneself as a learner" (Smith, 1982, p. 30). The first step in teaching learners to be more successful by using learning strategies and techniques is to heighten their awareness of how they currently proceed with a learning project and of alternative strategies. The ability to consciously analyze and reflect on oneself as a learner and to capitalize on personal strengths and minimize weaknesses can be a powerful technique for successfully completing learning projects. ATLAS is a good tool for

heightening the awareness of learners and teachers in almost any situation because it is a simple, self-explanatory instrument that takes just a few minutes to complete. It is not an overwhelming instrument whose results are delayed while the data is analyzed by experts. ATLAS provides instant basic feedback that provides a basic awareness of learning strategies, personal preferences, and potential options. Like those involved in the study of learning on the Internet, most of the noncompleters in this study felt that ATLAS accurately described them.

Learning Strategy Recommendations

1. Methods for teaching learning strategies concepts and techniques should be developed.
2. Instruction in learning strategy concepts and techniques should be included in training programs for those working with noncompleters and at-risk students. This should be a priority for those working with at-risk students and noncompleters returning to education.
3. Instruction in learning strategy concepts and techniques should be offered to all students.
4. Students should be given ATLAS and an explanation of the learning strategy groups when they begin a GED program.

Just as there is not one single reason why individuals leave school prior to completion, there will not be one single answer for helping them to remain. However, the progress being made in the development of learning strategies concepts and techniques offers hope that more students can learn techniques for succeeding in their education and learning endeavors. Much work has been done to understand learning strategy concepts; that understanding needs to be offered to struggling learners and to educators who can make a difference in the educational success of learners.

Specific methods for teaching learning strategies need to be developed and made available for teachers, trainers, and learners. Learning strategies concepts have long been a focus for writers and researchers in education. Over 20 years ago McKeachie (1978) advocated teaching learning strategies to students.

In addition to teaching students to identify their own most effective learning strategies, can instructors teach students to learn to use a larger repertoire of strategies? If this were achieved, instead of adapting teaching methods to students, students could adopt the learning strategy most effective for whatever teaching method they encountered. (p. 241)

Half of the participants in this study of high school noncompleters returning to education were Engagers. With the indication that Engagers might be the predominant learning strategies group in GED programs, it would be

beneficial to begin developing methods for teaching alternative learning strategies to Engagers. It would also be beneficial for teachers of Engagers to understand Engager learning strategies. Once confidence has grown in learning strategy research, it is hoped that the methodologies and results can be used to assist children in becoming more successful in school and ultimately help to reduce the dropout rate.

Each academic year approximately one-half million students dropout or are pushed out of high school and at least that many decide not to complete college. There is no way to really measure just how many of those decisions could be changed if the student experiences learning success. However, it is not an overstatement to say that learning strategies concepts and techniques can be helpful in keeping students in school by providing tools which give learners a better chance at achieving success by understanding themselves and how they learn. The ability to consciously analyze and reflect on oneself as a learner in order to capitalize on personal strengths and minimize weaknesses can empower a learner.

Basic learning strategy techniques should be taught and utilized throughout education. Research supports the assertion that the use of learning strategies aids student efficiency and effectiveness and that learning strategy

skills can be taught (Hill, 1992). Several learning strategies studies have recommended that learning strategies courses be designed and offered to teachers and learners (Kolody, 1997; Lockhart, 1998). To get the process started, learning strategy workshops should be offered to potential teachers and as staff development for experienced educators. Annual staff development workshop on learning strategies would ensure that new teachers are familiar with the concepts and would provide an opportunity for experienced teachers to share expertise and examples.

Once the learning strategy concepts are understood by educators, instructors can provide an overview of each learning strategy category to their students and lead a discussion of the preferred techniques used by class members in each category. They could then lead the learners in making each learning strategy category the primary focus for a specified period of time. Projects that are planned within the specified time period could be discussed according to how best to accomplish each project using techniques from the primary focus category. After each of the three categories has been a primary focus, brief discussions of techniques could take place in conjunction with all future project discussions. Using these suggested beginning methods, learners would utilize each strategy and gain a better understanding of the strengths, weaknesses,

and techniques of each learning strategy category. In addition, all learners would have the opportunity to become familiar and perhaps comfortable with all learning strategies. This expands the potential for learners to choose from the entire spectrum of strategies what they believe to be the best strategy to ensure success in a given learning situation. Utilizing each learning strategy could also aid in building respect and understanding for other individuals and how they proceed with projects. Thus, while each group of learners may still have a preference for how they undertake a learning project, they would then be equipped with a full, portable "tool kit" of learning strategies for addressing specific situations.

ATLAS is a quick, easy introduction to learning strategies. It can be used to introduce new educators to the concept of learning strategies. It should also be used to introduce learners to learning strategy concepts and to heighten their awareness of their own preferences and choices available.

Approach to Learning Conclusions

1. Noncompleters must choose to engage in learning before educators can assist them.
2. Negative education experiences are influencing the self-esteem and personal growth of noncompleters.

3. Noncompleters do not seem to be aware that individuals learn in different ways.

Whether in high school or college, students who decide to leave school should be aware that they are making a life-changing decision. Prior to making the decision to leave school, students should have assessed all of the available resources in an effort to fairly evaluate the decision. If a lack of academic success is a factor in the decision, these learners may not have acquired the skills to fairly evaluate that decision.

The Engager group was the largest represented in this study. Some of the characteristics of Engagers ensure that without a heightened awareness of alternative strategies, they will likely choose not to participate in an environment where they are unsuccessful or do not feel good about themselves. Whatever their age and knowledge level, these Engagers are assuming control of their education and their future. Their participation in education has become voluntary and self-directed. However, lacking sufficient tools to succeed, large numbers are choosing to leave education creating hardships for themselves and for society.

Engagers are relationship focused; they look for connections. Traditional education has an objective orientation with such things as standardized testing of objective facts not readily connected with Engager

realities. These noncompleter Engagers felt like they were misfits in traditional education. Some Engagers may be angry about having to deal in a system that they think is unfair. When Engagers can see a connection between their personal goals and learning they can force themselves, if necessary, to roll up their sleeves and dig into learning activities.

Approach to Learning Recommendations

1. Engagers must understand how school or learning is relevant to their personal goals.
2. Learners need to clearly identify their goals.
3. Learners need to overcome distractions to stay focused on learning projects.
4. Learners should pursue an understanding of all learning strategies and techniques.
5. Learners should be tolerant of different learning strategy preferences of other individuals.
6. Engagers can form study groups to utilize their strengths and assist in ensuring their success in learning activities.
7. Noncompleters need to understand other people's approach to learning so they can work together to help create or enhance a learning environment in which the less academically and socially successful students can be successful.

Traditional educational environments can be oppressive for the least social and academic achievers. These learners and their advocates cannot count on traditional educators to change the system so that it works for everyone. Even in an ABE environment, federal funding is structured in such a way that limited funding is available for GED classes. Former noncompleters and advocates for learners who are unsuccessful in traditional education should utilize some of Horton's Highlander methods to heighten awareness of struggling students and to assist them in identifying problems and solutions. For example, group discussions focused on defining problems and discussing positive and negative experiences could provide valuable insights for learners and facilitators. Freire's (1970) argument that learners become empowered when they become aware of the forces controlling them and that their empowerment can lead to action may be applicable for nonsuccessful learners in traditional education.

When students reach the point that they are choosing whether or not to stay in school, they must accept responsibility for those decisions. When a struggling student chooses to stay in school or to return to school after leaving, that student is choosing to be a part of that education community. As a part of that community, the student assumes responsibility for his or her own education.

Having an awareness of how they learn and of alternative strategies for accomplishing projects increases the potential for a successful learning experience.

Struggling students would do well to work together to identify resources to help ensure their own success. Pulling out of an educational environment without attempting to initiate positive changes ensures the perpetuation of a negative system not only for themselves but for others facing the same issues. Unfortunately, students dropping out of school have had little experience with leadership or success and may not have the skills or power to help themselves or others. With an awareness of learning strategies and familiarity with learning strategy methods and techniques, noncompleters could be better equipped and more empowered to help themselves.

Engagers can be more successful even in a traditionally unsuccessful learning environment by working together to assist themselves and each other in learning activities. Engagers generally are most successful when they have input from and interaction with other individuals. If it is not possible to work in groups within the formal class environment, Engagers should take the initiative to form informal groups or discussion sessions.

Educator Action Conclusions

1. The assumptions of andragogy rather than pedagogy are better suited for learners who have been unsuccessful in traditional education.
2. Teachers and administrators who are friendly, respectful, and fair to all students are the best selections for positions dealing with noncompleters and at-risk students.
3. Learners perceive that they are more successful when taught by teachers who like teaching and like students.
4. The attitude conveyed by a GED program administrator sets the tone for GED classes within a program.
5. The teacher's attitude is perceived as having a great impact on noncompleter learning success.
6. Most noncompleters do not consider lecturing to be the best method for teaching them.
7. Educators should help Engagers understand how school is relevant to their personal goals.
8. It is critical to continued participation by Engagers that the first day of class include some focus on reasons why they should commit to continuing their participation.

9. It is important for learners to perceive that teachers care about the success of the individual student.

Basic principles of adult learning based on student-centeredness and self-direction can enhance learning for learners returning to education and possibly for students at-risk of dropping out of school. Knowles' (1980) first assumption of andragogy is that adults need to know why it is important to them to learn something. Since this group of participants is largely comprised of Engagers, this assumption is particularly important. Engagers do not participate until they understand how their participation is relevant to their lives. They are interested in their personal growth and have a need to be treated as capable of assuming responsibility for their education. One consensus that crossed all learning strategy categories in this study was that noncompleters do not want teachers to waste the students' time.

Noncompleters do not fit the profile of those who participate in general adult education programs. Noncompleters do not fit the profile of those who succeeded in school in their early years and feel comfortable in the learner role. This concept may be important in understanding why noncompleters register for classes and fail to return after the first session. Because

participation is voluntary, adult learners simply withdraw or fail to return if they do not feel the program meets their needs. Educators would do well to remember that the ABE and GED participants may have had negative, hostile, or traumatic experiences in school (Quigley, 1992). If the first session is too reminiscent of their previous negative experiences, the painful memories may be stronger than their motivation to return to a formal learning environment.

Participants in this study perceived the best or the most helpful teachers to be those who liked students and liked teaching. This study confirms findings in Conti and Fellenz's (1988) study of Native American student assessments of good and bad teachers. Good teachers "create a caring atmosphere with individual attention where learning is fun . . . Bad teachers erect barriers between themselves and the students and thwart questioning and personal development" (p. 96).

Noncompleters from all three learning strategy preference categories perceived helpful teachers as willing to work with students as long as it takes for the students to understand what is expected of them. This population does not believe it can be successful with teachers who, as one noncompleter said, "want to say it once and move on." This is because flexibility and variability of approaches is likely to be more effective than a single

method. Any given method is likely to be effective for some students and ineffective for others. (McKeachie, 1978, p. 240)

Being treated with respect is very important to all learners, but it may be especially so for learners with previously negative education experiences. Learners in this study affirmed Conti and Fellenz's (1988) finding that good teachers show respect for their students and they always allow students to maintain their dignity. In addition, noncompleters in this study perceived good teachers as those that show they are interested in the students by talking with and listening to students both inside and outside of class. Teachers perceived as bad or the least helpful, particularly for less successful students, are the ones that students do not believe they can interact with even to gain understanding or to have questions answered.

In addition to the above characteristics, learners want teachers who will help them grow and help them be successful. They want teachers who will push them and expect them to do their best. They value teachers who are knowledgeable and who willingly impart that knowledge. (Conti & Fellenz, 1988, p. 105)

Educator Action Recommendations

1. Teachers need to learn to teach learning strategy components.

2. Teaching colleges need to include learning strategies and adult learning concepts in their curriculum for potential teachers.
3. Program administrators and teachers should be receptive to and involved in research to improve learning.
4. Teachers should undergo some kind of periodic burnout or attitude assessment and career counseling if indicated.

This is an area in which at least one of Tinto's (1987) recommendations for higher education is relevant to all educational institutions. He proposed that institutions and students would be better served if the student's growth was what guided the institution. To be of real value, programs or institutions need to focus on identifying what the learner perceives as necessary to reach the learner's goals. If the learner's needs are not being met, the learner will leave. Noncompleters, by definition, have already demonstrated that predisposition.

The experiences of a learner may play a key role in educational success. Helping the learner to understand experiences and to critically reflect on experiences and learning may expand the learning experience. It seems highly likely that noncompleters have made many assumptions

based on past experiences that could benefit from reflection and consideration of alternatives.

People tend to go where the pain is least. For noncompleters, the pain of leaving school was less than the pain of staying in school. It is important for learners to experience some successes in their school and learning endeavors. "Knowles feels . . . that adults who have experienced failure in earlier schooling and who have little confidence in their ability to learn will find their negative self-concept a barrier to success in adult education" (Elias & Merriam, 1995, p. 132). Educators can increase the likelihood of creating successful educational experiences by accepting that "learning is enhanced when teaching strategies and learning environments are congruent with preferred learning strategies" (Kolody, 1997, p. 150).

The teaching-learning transaction includes the teacher, the learner, the content, and the situation (Conti & Kolody, 1998a, p. 131). How these components interact should determine the methods, techniques, and strategies selected for a given situation. It is necessary to give attention to each of the components when planning for a successful teaching-learning experience. Educators should also keep Smith's (1977) learning-how-to-learn subconcepts in mind when planning methods, techniques, and strategies. They should involve a variety of organized activities that

revolve around what the learners need to know to be successful in learning as well as the learners' individualized preferences and tendencies. It is also essential that educators remember Smith's (1977) advice that learners must want to learn, must know that learning is possible, and that the learners' experiences are valuable in the learning process.

Unsuccessful as well as successful students bring a variety of experiences to a learning situation. As Brookfield (1989) acknowledged, every group of students, both those previously unsuccessful and those previously successful, will present a diversity of experiences, abilities, personalities, and preferences. To ensure that each learner has an equal opportunity to succeed, facilitators must respect and value the diversity of their learners and must be prepared to try different approaches to engage the learners. Whatever method a teacher selects for presenting material, it is imperative that basic kindness and humanity are a part of the learning experience; this is especially true with the least successful students.

Learning Strategy Research

Recommendations

It is important for researchers to be aware when initiating a research project that many seemingly

indifferent or uninvolved aspects of an environment can effect a study. The structure of a system or institution and the attitude of administrators can influence a qualitative data gathering process. It could be in the researcher's best interest to do preliminary groundwork with administrators to gain their support prior to data gathering. Introductory preparations should include thoroughly communicating to the administrators the implications of the study, its importance, and what is necessary to gather quality data. A supportive program administrator can be a tremendous asset to a researcher.

Although much has been accomplished in the understanding of learning strategies, more research needs to be done to understand the impacts of learning strategy preferences. Questions to be answered by further research fall into three areas. Those areas include (a) learning strategies, (b) learners, and (c) facilitators.

Some of the questions still to be answered regarding learning strategies include: Does knowledge of learning strategies improve success rates? Do learning strategy discussions facilitate learner and instructor changes in attitudes and behaviors? Can an appreciation of learning strategies be helpful in teaching team building skills? Will an enhanced appreciation of diversity result from teaching learning strategies to all stakeholders? Is there

a correlation between learning strategy preference and self-esteem? Is there a correlation between learning strategy preference and risk taking? Is there any correlation between learning strategy preference and a belief in "one truth" vs. multiple truths?

In the area of the learner, questions include: Can using learning strategy methods and techniques developed for each category enable noncompleters to be more successful learners? Can Navigators and Engagers peacefully co-exist? Are they opposites? Do both have an internal locus of control?

Facilitators include teachers, administrators, institutions, parents, and others who might be of assistance to learners. Questions in this area include: What attracts Engagers to GED programs? Can GED programs be developed to attract Navigators or Problem Solvers? What is the learning strategy preference distribution of those graduating from high school? Are Navigators and Problem Solvers succeeding in high school at a higher rate than Engagers? Are high school teachers and administrators predominantly Navigators? Does basic teaching philosophy impact the ability or willingness of teachers to teach learning strategies? Are student's perceptions of teacher attitudes toward students congruent with teachers'

feelings? Can parents influence learning strategy preferences?

Epilogue

Learning strategy research has evolved from adult education, adult learning, learning how to learn, and identification of learning strategy preference categories. It seems logical to assume that the trend will continue toward a better understanding of the strategies themselves and how they are perceived by individuals in each learning strategy category. With the focus in adult learning on the individual learner, the evolution of learning strategy study appears headed toward assisting the learner and facilitator to understand the individual's learning strategy preferences and how the learner can optimize the utilization of those strategies.

Identifying groups of learners that will be encountered in the instructional setting can be beneficial to the selection of appropriate methods and techniques when they are used to focus understanding, discussion, and reflective thought about the learner (Conti & Kolody, 1998a). However, it can be detrimental if used to avoid critical thinking about the learners. General learning strategies of the learners should be considered with reference to general adult learning characteristics in order to provide a more

complete conceptual basis for understanding the individual learner (p. 137).

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APPENDIXES

APPENDIX A

INSTITUTIONAL REVIEW BOARD

APPROVAL FORM

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

Date: June 9, 1999 IRB #: ED-99-132

Proposal Title: "LEARNING STRATEGY PREFERENCES OF HIGH SCHOOL
NONCOMPLETERS"

Principal Investigator(s): Gary Conti
Carol James

Reviewed and
Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

Signature:



Carol Olson, Director of University Research Compliance

June 9, 1999

Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modification to the research project approved by the IRB must be submitted for approval. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

APPENDIX B

PARTICIPANT PERMISSION AGREEMENT

Consent Form

I, _____, hereby authorize Carol James to interview me as part of her research into learning strategies of high school noncompleters in the Tulsa metropolitan statistical area.

I understand that:

- My participation is voluntary.
- There is no penalty for refusal to participate.
- I am free to withdraw my consent and participation in the project at any time without penalty.
- My participation in this study will consist of completing ATLAS and participating in a group interview. Typically, these interviews will last less than one hour.
- The group interview will be tape recorded.
- My name will not appear on the tape or transcript of the interview.
- I will not be identified by name as an interviewee in any description or report of this research. However, portions of my interview may be presented as quotations.

I may contact Carol James at telephone number 918/495-5212, or Gay Clarkson, IRB Executive Secretary, 203 Whitehurst, Oklahoma State University, Stillwater, OK 74078; telephone number: (405) 744-5700.

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: _____ Time: _____ (a.m./p.m.)

Signed: _____
Signature of Subject

I personally explained all elements of this form to the participant before he/she signed it.

Signed: _____
Carol James

APPENDIX C

BIOGRAPHICAL DATA SHEET

No. _____

Participant Information

The biographical data complements the research project currently being conducted to describe learning strategies used by high school noncompleters. Your answers are strictly confidential. Thank you for your assistance.

1. Please indicate your ATLAS grouping:

Navigator Subgroup 1 _____
 Navigator Subgroup 2 _____
 Engager Subgroup 1 _____
 Engager Subgroup 2 _____
 Problem Solver Subgroup 1 _____
 Problem Solver Subgroup 2 _____

2. If you are willing to participate in a group discussion with others from your same ATLAS subgroup, please print your name and telephone number below.

Name: _____ Phone Number: _____

3. Gender: Male _____ Female _____

4. Current Age: _____

5. Age when you dropped out of school: _____

6. Grade you were in when you dropped out of school: _____

7. Type of school you were attending when you dropped out: Public _____ Private _____

8. Do you plan to go to college or other professional training? Yes _____ No _____

9. State and county you lived in when you dropped out of school.

State _____ County _____

10. County you live in now. _____

11. Ethnic Background: African American _____ Caucasian _____ Hispanic _____
 Native American _____ Asian _____ Other _____

12. Has there ever been an indication that you have Attention Deficit Disorder?
 _____ Yes _____ No _____ No response

APPENDIX D

STUDY OVERVIEW FOR EDUCATORS

Learning Strategy Preferences of High School Noncompleters
Study Overview

Purpose of the Study: to identify and describe the learning strategy preferences of high school noncompleters who have returned to educational settings and to describe teacher actions that participants say aid them in the learning process.

Learning Strategies: Learning strategies focus on solving real problems involving metacognitive, memory, motivational, and critical thinking strategies (not on skills such as note taking, outlining, and test passing).

Previous studies of learning strategies using the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) consistently uncovered groups of learners with distinct preferences for learning strategy usage. To deal with the findings from the SKILLS research, the Assessing The Learning Strategies of Adults (ATLAS) instrument has been developed. ATLAS uses a flow-chart design to reach learning strategy category designation and can be completed in approximately two minutes.

Because of the development of ATLAS, it is now possible to easily identify the preferences for learning strategy usage of adult learners. Using SKILLS data and cluster analysis as the conceptual basis for ATLAS, the three learning strategy categories of Navigators, Problem Solvers, and Engagers can be identified. The three categories are characterized as follows:

The Navigators and Problem Solvers initiate a learning task by looking externally to themselves at the utilization of resources that will help them accomplish the learning. Engagers, on the other hand, involve themselves in the reflective process of determining internally that they will enjoy the learning task enough to finish it. . . . Navigators are much more concerned than Problem Solvers with identifying exactly what needs to be learned and on designing a plan for the learning. . . . Problem Solvers are more concerned with identifying a variety of solutions for the learning task.

How will the study be carried out? GED students will complete ATLAS and will be asked to participate in a brief group discussion of learning strategies. ATLAS results will be compared with previously studied groups and data collected from the focus groups will be described.

What's in it for you? Researcher is available for learning strategy presentations and results of the study will be available upon request.

For more information, contact:

Carol B. James

phone: 918/495-5212

fax: 918/497-2532

e-mail: cjames@citgo.com

APPENDIX E

ATLAS INSTRUMENT

ATLAS

Assessing *The Learning Strategies of Adults*



Gary J. Conti

Rita C. Kolody

Oklahoma State University

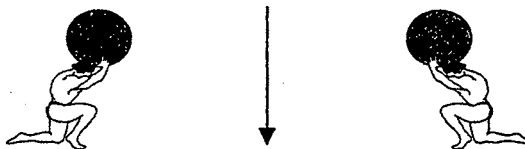
Medicine Hat College

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

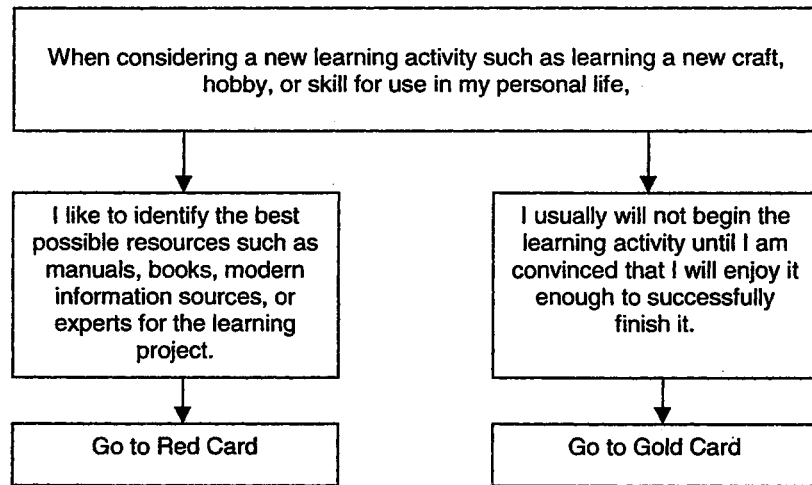
ATLAS

(Assessing The Learning Strategies of AdultS)

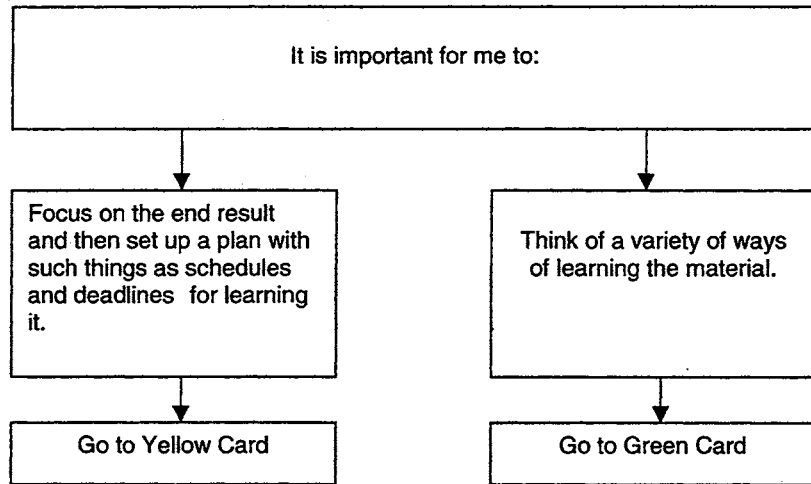
Directions: The following colored cards have statements on them related to learning in real-life situations in which you control the learning situation. These are situations that are **not** in a formal school. For each one, select the response that best fits you, and follow the arrows to the next colored 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.



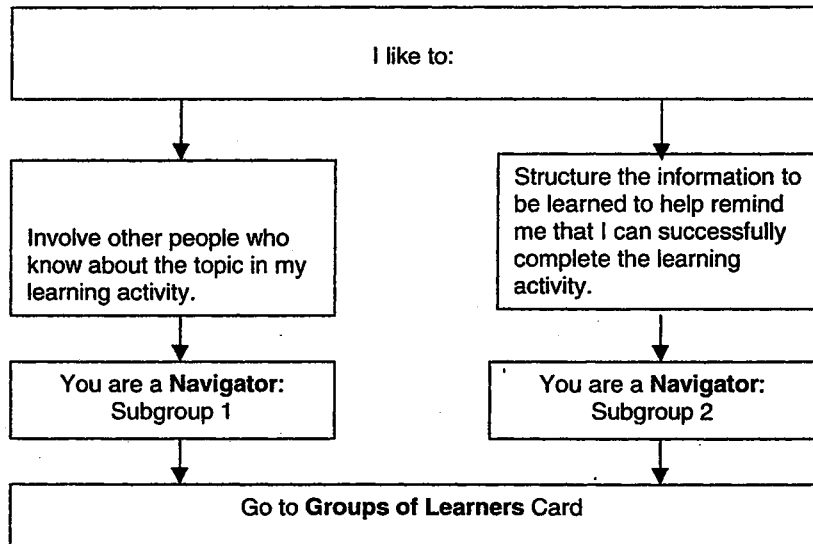
Print on Cool BLUE card stock



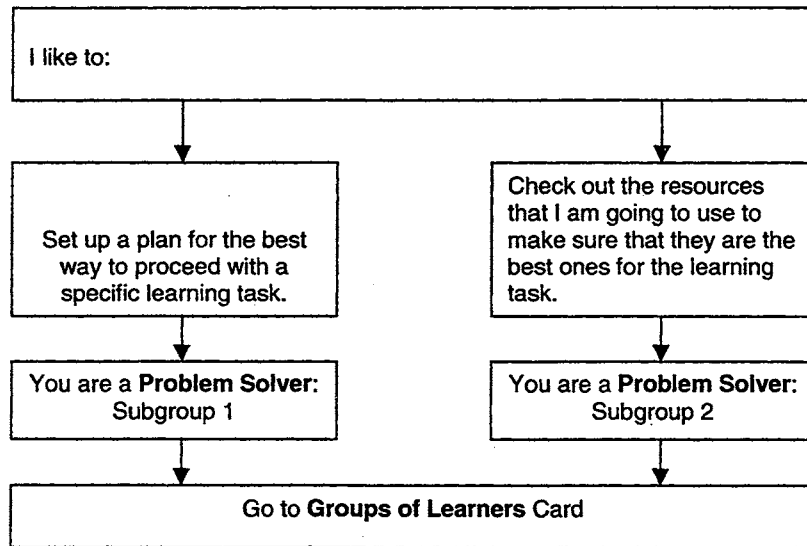
Print on Red card stock



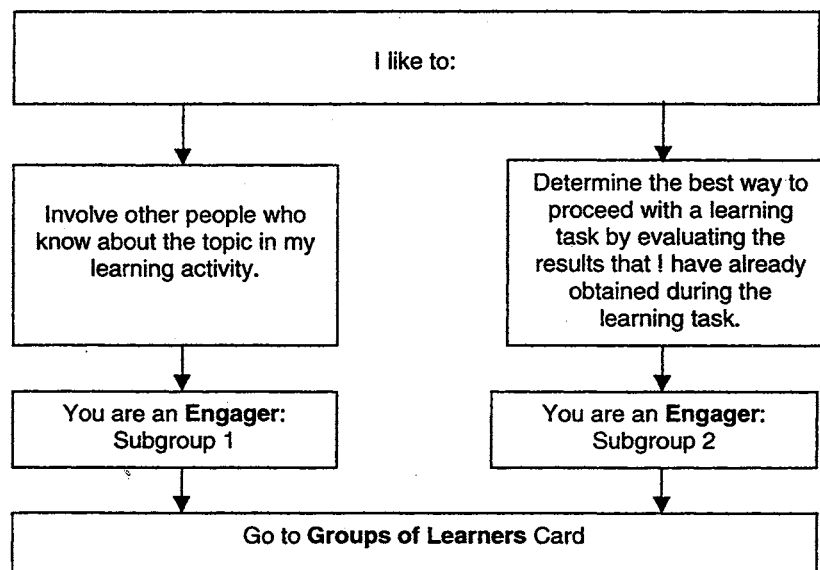
Print on YELLOW card stock



Print on Gamma GREEN card stock



Print on GOLDEN ROD card stock



ORANGE card stock



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

VITA

Carol Beddow James

Candidate for the Degree of

Doctor of Education

Thesis: LEARNING STRATEGY PREFERENCES OF HIGH SCHOOL
NONCOMPLETERS

Major Field: Occupational and Adult Education

Biographical:

Education: Graduated from James Madison High School, Houston, Texas; received Bachelor of Arts degree in Management of Human Resources from Southern Nazarene University, Bethany, Oklahoma, in August 1994; received Master of Science in Management degree from Southern Nazarene University, Bethany, Oklahoma, in December 1995. Completed the requirements for the Doctor of Education degree with a major in Occupational and Adult Education at Oklahoma State University, Stillwater, Oklahoma, in May 2000.

Experience: Employed by CITGO Petroleum Corporation as Corporate Foreign Trade Zone and Customs Compliance Coordinator. Adjunct Professor at Southern Nazarene University.

Professional Memberships: American Association for Adult & Continuing Education, American Society for Training and Development, Association for Human Resources Development, International Society of Performance Improvement, American Petroleum Institute, and National Association of Foreign Trade Zones.