LEARNING STRATEGIES OF FIRST-GENERATION COMMUNITY COLLEGE STUDENTS

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LEARNING STRATEGIES OF FIRST-GENERATION

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CHAPTER 1

INTRODUCTION

Student Attrition

Numerous research initiatives have focused on determining methods that increase student retention, as well as ascertaining factors that influence student attrition. Several elements have led to heightened awareness and scholarly investigation of these issues at community colleges. Foremost among these components is the volume of students who enter the higher education system via a community college.

The majority of all first-time students matriculate at a community college (Vaughan, 1995). Virtually half of these students fail to return for the beginning of their second year (Tinto, 1996). Additionally, only 34% of students who begin at a 2-year college will complete an associate degree (Tinto, 1996) while approximately 20% will complete a bachelor's degree (Baldridge, Kemerer, & Green, 1982).

Nearly one-third of the students enrolled in higher education in the United States are considered first-generation college students, defined as those individuals whose parents have not "experienced a college education" (Billson & Terry, 1982, p. 57). This population of

undergraduate students will continue to expand over the next 10 years (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). Despite the magnitude of this group, "surprisingly little is known specifically about first-generation students" and comparatively few research initiatives have focused on the cognitive development, college experiences, and psychosocial development of first-generation college students (Terenzini et al., 1996, p. 1).

Enrollment declines, combined with decreasing government aid to higher education, have compelled many institutions to address the issue of retention. Furthermore, growing demands for public accountability have brought retention to the forefront. Focus on the issue of student attrition has increasingly escalated thus illustrating the extensive research and analysis this topic has proliferated (Astin, 1977, 1984, 1986; Chickering, 1974; Pascarella & Terenzini, 1991; Tinto, 1975, 1987, 1996).

Tinto (1975) postulated that as a student's level of social and academic integration into college rises, commitment both to the institution and to the goal of graduation also increase, thus enhancing student persistence. Academic integration manifests itself primarily through intellectual development and grade

performance. Grade point average functions as the greatest predictor of student persistence. "Thus anything that can be done to enhance student's academic performance will also tend to reduce attrition rates" (Astin, 1977, p. 148). The importance of academic factors is also illustrated by the fact that boredom is the most common reason stated for college withdrawal (p. 148).

Community colleges serve a multitude of diverse students. Many students possess characteristics that place them in a precarious position, including first-generation college students, who tend to be more at-risk academically than "traditional" (non-first-generation) college students (Terenzini et al., 1996). Academically underprepared students include but are not limited to minority students. Native Americans, African Americans, Hispanic Americans, as well as first-generation college students, begin their higher education at a two-year institution in disproportionate numbers to the total population (Richardson, 1990). Economically disadvantaged students and women are also inordinately represented at two-year institutions (Astin, 1982).

First-generation college students' degree aspirations and self-predicted grades tend to be lower than those of their non-first-generation counterparts. First-generation

students are less likely to persist, and they are more likely to receive lower first-semester grades than their peers who are second-generation college students (Riehl, 1994). "First-generation college students do not have the benefit of parental experience to guide them, either in preparing for college or in helping them understand what will be expected of them after they enroll" (p. 15).

Over a quarter century ago, "new students" to institutions of higher learning were recognized in higher education (Cross, 1971). "New students" are comprised of those scoring in the lowest third on tests of academic ability, minorities and women, first-generation college students, and individuals who score low on traditional educational tests (pp. 13-15). Many of these students' current and future academic aspirations are negatively impacted by past struggles and failure in secondary school. "After repeated experience, he does learn something--that the result of trying is failure. The resultant personality characteristic would appear to be passivity in learning" (p. 28). A fear-of-failure personality can result; the individual may become immobilized or may severely limit risking oneself in academic endeavors. "Successful students are motivated to try; unsuccessful students are motivated to protect themselves against the threat of

failure by not trying. They seem to say, 'If I don't try very hard, I can't fail very much'" (p. 30).

Community Colleges

"Historically, higher education in the U.S. was reserved for the privileged few" (Roeuche & Roeuche, 1993, p. 22). Community colleges emanated from economic, political, and social desires to provide both equal opportunity and access to all students. This institution was developed to provide curricular, educational, financial, and geographical accessibility while reducing deterrents related to personal characteristics such as sex, socioeconomic status, and race (Cross, 1969). "A community college is defined as a publicly supported, regionally accredited institution of higher education that offers the associate's degree as its highest degree" (Vaughan, 1995, p. 2). Over 50% of all first-time students matriculate at community colleges; this translates into considerably more than 5 million students attending annually (pp. 1-2).

Community colleges espouse open admission policies and provide developmental coursework; this policy translates into academic accessibility for students. Federal, state, and local funding furnish a preponderance of the cost of attending a public community college. Additionally, a low-cost fee structure promotes financial accessibility to

students (Vaughan, 1995). Community colleges, branch campuses, distance learning, Internet courses, and telecourses all help foster students' geographic access to higher education.

> Of all the higher education institutions, the community colleges contributed most to opening the system. Established in every metropolitan area, they were available to all comers, attracting the "new students": minorities, women, people who had done poorly in high school, those who would otherwise never have considered further education. (Cohen & Brawer, 1996, pp. 27-28)

Adult Learning

Adult learning is a widespread phenomenon that is continually expanding. This trend is evidenced by increased enrollments of adult students attending community colleges. At one time, enrollment of adult students in higher education was more of an anomaly than the norm. However, currently, enrollments of students age 25 and over have become the norm. "When these students constitute the majority, as they are predicted to do by the year 2000, calling them non-traditional will be a misnomer. These older students will be the typical undergraduate" (Horn, 1997, p. 47). The 1996 National Center for Educational Statistics study found that adult students comprise approximately 40% to 45% of all undergraduates pursuing higher education (Donaldson & Graham, 1999, p. 24). This

translates into over 6 million adults that enroll in credit courses annually (Bers & Smith, 1991, p. 539). "Adults are now a powerful segment of the undergraduate population and are dramatically changing the nature of higher education today" (Donaldson & Graham, 1999, p. 24). Community colleges are among those institutions responding to the needs of this burgeoning population by providing flexibility in course formats, offerings, and programs, as well as a low cost education to adult students.

Malcolm Knowles revolutionized both the education and learning of adults through the advancement of the concept of andragogy. Andragogy was originally defined as the "art and science of helping adults learn" but can be better envisioned as a set of assumptions about learners (Knowles, 1980, p. 43). Pedagogy, the art and science of teaching children, espouses a more traditional view of the educational experience and is, therefore, more teacher-centered. In this pedagogical model, the student is assumed to be dependent, to bring limited experience to the teaching-learning transaction, and to seek primarily subject-centered educational experiences. Learning readiness, therefore, is based on chronological maturation and not on either the social roles or the developmental tasks the learner is experiencing (pp. 43-44).

Andragogy provided the impetus for numerous advances in the instruction of adult learners. Andragogy is based on the following set of assumptions about the learner: (a) the adult learner's experience is acknowledged and utilized as a rich valuable resource for learning, (b) the adult learner moves from dependency toward self-direction, (c) the adult's readiness to learn relates to both developmental tasks and to an individual's social roles, (d) the adult learner is motivated by internal factors such as self-esteem and achievement, and (e) adults maintain a problem-centered focus which lends itself toward a need for immediacy of application of new learning (Knowles, 1980, pp. 43-45).

Mezirow's transformation theory maintains a central role in adult learning. Transformation theory attempts to analyze and explain the process through which adults make meaning of their experience. Adults delineate or understand their experience by interpreting information through several filters including the educational, religious, and socialization processes. Prior learning from each of these avenues tends to constrict, distort, and limit the adult learner's acting, believing, learning, perceiving, and thinking. "It is not so much what happens to people but how they interpret and explain what happens

to them that determines their actions, their hopes, their contentment, and emotional well-being and their performance" (Mezirow, 1991, p. xiii).

Mezirow defines learning as an interpretation of information utilizing one's existing set of expectations through which meaning and ultimately one's life are constructed. "In transformative learning, however, we reinterpret an old experience (or a new one) from a new set of expectations, thus giving a new meaning and perspective to the old experience" (Mezirow, 1991, p. 11). Through this process, an individual can release oneself from flawed and inadequate reasoning to embrace a more comprehensive and flexible understanding of oneself and the world.

Stephen Brookfield (1986) outlined six principles of effective practice which enable adult educators to enhance adult student's learning opportunities. These principles include: (a) voluntary participation, (b) mutual respect, (c) collaborative learning, (d) praxis, (e) critical reflection, and (f) self-directed learning (pp. 9-11).

Adults choose to learn for a variety of emotional, personal, professional, and social reasons. "It may be that the circumstances prompting this learning are external to the learner (job loss, divorce, bereavement), but the decision to learn is the learner's" (Brookfield, 1986, pp.

9-10). This position provides the adult learner with the power to either remain in a learning environment that enriches, or to withdraw if the learning proves inadequate or unsatisfactory.

Brookfield (1986) advanced the idea of critical reflection that involves a perspective transformation Mezirow emphasized. Skepticism is viewed as a positive and fundamental aspect of adult learning. This process of examination, personal growth, and insight provides a mechanism to allow a flexibility in both roles and relationships that would not have been possible initially. "Through educational encounters, learners come to appreciate that values, beliefs, behaviors and ideologies are culturally transmitted and that they are provisional and relative" (p. 10). This newfound awareness can reduce boundaries and allow both greater freedom and self-expression for adults willing to engage in this re-evaluation process.

Learning Strategies

One way to implement adult learning principles is by addressing individual differences. Consequently, learning styles and strategies have been the subject of numerous research initiatives and much discourse (Fellenz & Conti, 1993; Conti, Kolody & Schneider, 1997; Kolb, 1984). There

are few psychological processes that have been examined with as much vigor. Early investigation centered upon teaching and teaching style as well as learning style assessment and individual differences in learning. A major shift in focus was ushered in when Kidd (1973) announced that the field of Adult Education was moving from a teacher-centered focus to a learner-centered focus. Others began to adopt a similar stance in their research of this area (Brookfield, 1986; Conti & Fellenz, 1991a; Conti, Kolody, & Schneider, 1997). "One can learn how to learn more effectively and efficiently at any age" (Smith, 1982, p. 15). Kidd (1973) skillfully summarized this emerging trend which placed utmost importance upon the learner.

> In all ages, of course wise men have recognized that learning is the active, not the passive, part of the process: the learner opens himself, he stretches himself, he reaches out, he incorporates new experience, he relates it to his previous experience, he reorganizes this experience, he expresses or unfolds what is latent within him. (p. 14)

A learner-centered approach emphasizes the learner as a critical, dynamic component of the learning process. Along with greater freedom, this role entails increased responsibility for one's own learning (Knowles, 1980, p. 48).

Current exploration and inquiry have shifted to the realm of learning strategies and their relationship to the learner in a variety of settings (Conti, Kolody, & Schneider, 1997; Gallagher, 1998; Gehring, 1997; Kolody, 1997). "Today, educators and cognitive researchers are focusing on how information is learned as opposed to what is learned" (Lefton, 1994, p. 192). This trend has led many colleges and community colleges to rethink the very nature of learning and student development. "Puzzled college administrators and faculty who work with adult undergraduate students are looking for ways to understand how adults learn" (Donaldson & Graham, 1999, pp. 24-25).

Learning strategies are the methods and techniques an individual utilizes to learn or acquire knowledge.

> Learning strategies differ from learning style in that they are techniques rather than stable traits and they are selected for a specific task. Such strategies vary by individual and by learning objective. (Conti & Fellenz, 1991a, p. 64)

Utilization of learning strategies is contingent upon both the circumstances and the current learning situation. "Learning strategies are the techniques or skills that an individual elects to use in order to accomplish a learning task" (Fellenz & Conti, 1993, p. 3).

Adult learning tends to be pragmatic and problem-centered. As a result, measurement instruments are beginning to incorporate techniques to evaluate this dimension, which has been designated as "real-life learning".

> One of the major characteristics of adult learning is that it is often undertaken for immediate application in real-life situations. Such learning usually involves problem solving, reflection on experience, or planning for one of the numerous tasks or challenges of adult life. Thus the phrase "real-life learning" has been used to distinguish typical adult learning from the academic learning of formal situations that is usually spoken of as studying or educating. (Fellenz & Conti, 1993, p. 4)

One instrument that measures "real-life learning" is the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS). SKILLS provides six different instances in which the learner must employ a variety of degrees and types of learning to real-life scenarios (Fellenz & Conti, 1993, p. 1).

SKILLS has been a vital instrument in gathering data in this burgeoning area of investigation. Five components of learning strategies are considered in this instrument that focuses on real-life learning. These areas are critical thinking, memory, metacognition, metamotivation, and resource management (Fellenz & Conti, 1993).

Studies based on the SKILLS conceptualization of learning strategies have delineated three groups of learners with distinct learning strategy preferences (Conti & Kolody, 1999a). The Assessing the Learning Strategies of AdultS (ATLAS) instrument was developed as a direct result of this research. The ATLAS allows for convenient and instantaneous identification of adults' learning strategy preference. Through cluster analysis, three categories of learners have been discovered and labeled as Navigators, Problem Solvers, and Engagers. "Navigators are focused learners who chart a course for learning and follow it" (p. 9). Planning and a strong sense of purpose personify both this group of learners and their utilization of learning strategies. Problem Solvers utilize critical thinking skills. Problem Solvers tend to both generate alternatives and test assumptions as a part of their primary learning strategy (p. 12). "The Engagers are passionate learners who love to learn, learn with feeling, and learn best when they are actively engaged in a meaningful manner with the learning task" (p. 13). Engagers enjoy the learning process and derive personal satisfaction from interaction with others.

Statement of the Problem

The plethora of literature concerning student attrition underscores the significance of this critical issue. Community colleges have experienced the highest and most sustained rates of attrition in higher education, thus validating the increased emphasis on retaining students within this population. Furthermore, the personal and financial consequences of attrition demand attention, particularly in times of decreasing enrollments and governmental assistance.

Community colleges fulfill a critical role in providing access to the "American dream" for at-risk individuals, for disadvantaged individuals, for first-generation college students, and minority students. The fact that many of these students, who are welcomed through the open door, lack the academic skills necessary for sustained success within a collegiate setting which can lead to a "revolving door".

> Today's community college student is at risk in a number of ways that complicate and make obsolete the old definition of college student. By at-risk, we are describing students who are not only underprepared for college, but who are also working 30 or more hours each week, who have little if any support from key family members, who are first-generation college attenders, who have what some have described as "failure expectations," and who have little academic

> success as they begin their post-secondary experience. (Roueche & Roueche, 1993, p. 1)

Community colleges provide an opportunity for an education for all segments of society. The institution is viewed as a vehicle by which individuals can reduce the disparity between the rich and the poor in the United States as evidenced by the fact that "more education leads to higher incomes, more highly skilled jobs, and better chances for upward mobility" (Pincus & Archer, 1989, p. 23).

Additional advantages can be realized from keeping students enrolled in higher education.

> The successful retention of students offers at least three benefits: the student will be able to reap the rewards that a college degree affords, the college or university will be able to maintain the income that derives from the student's attendance, and society will be able to utilize the skills of students in becoming more productive. Clearly, it is to everyone's benefit to come to terms with why students leave college. (Tierney, 1992, p. 604)

Student attrition has both economic and social repercussions for these individuals. A potential consequence of this condition may be that "today's undereducated adults are the parents of tomorrow's dropouts" (Roueche & Roueche, 1993, p. 15).

One group of learners in the community college who are particularly at-risk are first-generation students. These

students experience numerous barriers that constrain their pursuit of an education. The very demographic characteristics that make these students vulnerable--such as age, gender, generation status, or race--are in fact, beyond the control of the learner. However, addressing the individual differences of first-generation learners can provide an avenue to empower these students to overcome many of those obstacles. Providing students with an awareness of their own preferred learning strategy, a cognizance of other strategies, and a willingness to encompass alternative strategies may strengthen students' ability to traverse the educational landscape. Further, increasing the understanding of learning strategies embraced by first-generation college students is imperative if the door to opportunity is to remain open for this unique population. The scope of this situation necessitates further research in the realm of learning strategies in order to determine the impact of these factors upon both academic performance and student retention. Increased knowledge of learning strategies may both help clarify understanding of this area and lead to the creation of potential intervention strategies and tools to help retain first-generation college students in greater numbers.

Purpose

The purpose of this study was to describe the learning strategies of both first-generation college students and non-first-generation college students at Tulsa Community College (TCC), with particular emphasis on students that are of first-generation status. This was accomplished by (a) identifying learning strategy preferences both for adult learners who are first-generation college students and for those who are non-first-generation college students, (b) examining the relationship of these learning strategies to demographic variables, (c) exploring the relationship between learning strategies and academic performance, (d) describing instructor actions that are conducive to learning as well as those that are detrimental to learning, and (e) ascertaining the relationship between academic performance and generation status.

Research Questions

The following research questions were addressed in this study.

1. What are the learning strategy profiles of both first-generation and non-first-generation community college students?
2. How do the learning strategy profiles of first-generation community college students differ from non-first-generation students?

3. How do the responses of TCC students compare to the norms for ATLAS?
4. What is the relationship of learning strategy preferences as measured by ATLAS to demographic variables for first-generation students?
5. What is the relationship of learning strategies preferences as measured by ATLAS to academic performance (cumulative grade point average or GPA) for first-generation students and non-first-generation students?
6. What actions do instructors take that enhance or facilitate the learning process for each of the first-generation and non-first-generation learning strategy groups?
7. What actions do instructors take that are adverse or distract students from learning for each of the first-generation and non-first-generation learning strategy groups?
8. What barriers have deterred or hindered first-generation college students and non-first-generation college students from meeting their academic goals?
9. What influences led first-generation college students and non-first-generation college students to attend college?

In this study both quantitative and qualitative data were collected. ATLAS was used to measure learning strategies. The demographic variables were gathered with a data form. ATLAS was used to group the learners into three categories of Navigator, Problem Solver, and Engager. Chi-square was utilized to compare the observed learning strategies for the TCC students to the expected norms for ATLAS. Analysis of Variance was used to investigate the relationship between learning strategy groups and the various demographic variables and grade point average.

Interviews were conducted with students in each of the learning strategy groups and generational groups to describe instructor actions that facilitated learning and those that hindered learning. The students were also asked to identify what barriers deterred them and what influences instigated college attendance.

Definitions

Adult Education - 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 changes in knowledge, attitudes, values, or skills (Darkenwald & Merriam, 1982, p. 9).

Andragogy - The word was originally defined as the "art and science of helping adults learn" but can be better envisioned as a set of assumptions about learners (Knowles, 1980, p. 43).

ATLAS - Refers to an acronym for The Assessing the Learning Strategies of AdultS which is an instrument that was developed to easily determine adults' learning strategy preferences (Conti & Kolody, 1999a, p. 16).

At-Risk - Students who are not only underprepared for college but who are also working 30 or more hours each week, who have little if any support from key family members, who are first-generation college attenders, who have what some have described as "failure expectations," and who have little academic success as they begin their post-secondary experience (Roueche & Roueche, 1993, p. 1).

Community College - A community college is a publicly supported, regionally accredited institution of higher education that offers the associate's degree as its highest degree (Vaughan, 1995, p. 2).

Engager - Individuals who are described as passionate learners who love to learn, learn with feeling, and

learn best when they are actively engaged in a meaningful manner with the learning task (Conti & Kolody, 1999a, p. 13).

First-Generation Students - Individuals attending college whose parents have not completed a baccalaureate education (Billson & Terry, 1982, p. 292).

Grade Point Average (GPA) - A mechanism to report student's academic progress that is based on a 4-point scale, with points assigned for each grade (A=4, B=3, C=2, D=1, F=0) (Gardner & Jewler, 1995, p. 397).

Learning Strategies - Learning strategies are techniques rather than stable traits that are selected for a specific task. Such strategies vary by individual and by learning objective (Conti & Fellenz, 1991a, p. 64).

Navigators - Navigators are focused learners who chart a course for learning and follow it. Planning and a strong sense of purpose personify both this learner and their utilization of learning strategies (Conti & Kolody, 1999a, p. 9)

New Students - Students who are entering higher education for the first time and are those scoring in the lowest third on tests of academic ability, minorities and women, first-generation college students, as well as individuals who score low on traditional educational tests (Cross, 1971, pp. 13-15).

Non-traditional Students - A term for students aged 25 and older who are pursuing their undergraduate degrees (Horn, 1997, p. 48).

Problem Solvers - Problem Solvers utilize critical thinking skills, which include testing assumptions, generating alternatives, and conditional acceptance (Conti & Kolody, 1999a, p. 12).

Student Attrition - Students who do not complete the courses for which they enroll in a particular term or who do not enroll for the next term (Pezzullo, 1978, p. 3).

Student Retention - All retention strategies have the common goal of keeping students at the college long enough to realize their educational or occupational goals (Beatty-Guenter, 1992, p. 5). Retention entails all the attempts to bring about changes in students, institutional characteristics, or both in order to meet the students' goals (pp. 1-2).

CHAPTER 2

LITERATURE REVIEW

First-Generation College Students

The increased numbers of first-generation college students is allowing for more specialized focus and study of this group's distinctive characteristics. Approximately 30% of the college student population is comprised of first-generation college students (Terenzini et al., 1996). Even though the precise reasons for "how and why lack of parental experience with higher education serves to make their children, at whatever age, such a highly vulnerable group," there is movement to further investigate this expanding student population (Billson & Terry, 1982, p. 59). Exploration of first-generation college students has encompassed issues including access to higher education, academic attributes, cultural barriers, demographic characteristics, economic obstacles, and institutional factors. More attention to these issues is needed because:

> Relatively little has been written about the special academic and personal characteristics of first-generation college students in the United States and how these characteristics affect their success in college. (Riehl, 1994, p. 15)

More specifically, past inquiries focused on demographic factors instead of the learning patterns of students. However, there is much to gain from "an understanding of

first-generation students [that] will allow for more... program development, retention, and graduation efforts" (Inman & Mayes, 1999, p. 3).

First-generation college students differ from their second-generation counterparts in numerous and significant ways. First-generation college students perceive less emotional support from family members, possess a greater likelihood of attrition from college, and are employed more hours per week (Billson & Terry, 1982). Furthermore, first-generation college students are more likely to originate from low-income families and have weaker cognitive skills (Terenzini et al., 1996). Yet "with few exceptions, parents' education, or the broader concept of socioeconomic status, is positively related to student persistence and degree completion" (Terenzini et al., 1996, p. 3).

First-generation college students tend to spend less time studying and more time working, and are more likely to expect to take longer amounts of time for degree completion (Terenzini et al., 1996). These educational and economical impediments of first-generation students represent a disadvantaged student population that is in need of specialized attention in order to maximize their possibilities for success in higher education.

> The picture suggests these students come less well prepared and with more nonacademic demands on them, and they enter a world where they are less likely to experience many of the conditions that other research indicates are positively related to persistence, performance, and learning. (Terrenzini et al., 1996, p. 18)

As a result, this population experiences greater role conflict than their non-first-generation counterparts, particularly in the negotiation of both family and work responsibilities. Increased pressure to work more hours combined with less family emotional and financial support tends to increase first-generation college students' dropout vulnerability (Billson & Terry, 1982).

Several studies have found that first-generation college students have lower degree or educational aspirations than non-first-generation college students (Riehl, 1994; Terenzini et al., 1996). However, results in this area are inconclusive. Other data have revealed no significant differences in degree aspirations of first-generation and non-first-generation college students (Billson & Terry, 1982).

When compared to non-first-generation students, first-generation college students also tend to be older, to have dependent children, to be less likely to perceive faculty concern in the areas of teaching and student development, and to be less likely to receive parental encouragement

related to college attendance (Terenzini et al., 1996). These risk factors place first-generation college students in a precarious position academically from the moment they arrive on campus.

> Overall, this study paints a portrait of a subgroup of students who are entering America's colleges and universities in increasing numbers, and they can be expected to continue to grow over the next decade both in number and as a proportion of the total undergraduate student population....They are also a group at risk. (Terenzini et al., 1996, pp. 19-20)

A major question that arises from examination of this data is whether higher education can effectively respond to this emerging challenge.

First-generation students not only tend to be older, but many have had previous negative educational experiences coupled with difficult and sometimes troubled life experiences that further separate them from conventional students. As a result, many "educators don't expect these students to succeed" (Rendon, 1996, p. 16). Instructors tend to start dividing students into groups: those they believe will be successful and those they believe will be unsuccessful (p. 16). At times instructors may fail to recognize the determination that these students possess. Despite the circumstances of their lives, these students "are blessed with resilience and initiative" (p. 16).

The experiences of first-generation college students can be quite atypical from students whose parents have attended college. The contrast can be drastic.

> They have survived living in environments removed from academics, survived the perils of gang life, transcended their own inability to see the value of getting an education, and turned negatives experiences into positive ones. These students view college as the means to break away from poverty and despair. (Rendon, 1996, p. 16)

These students have frequently had to place their educational desires and needs on hold while functioning in the role of primary caretaker or provider.

Cultural issues tend to manifest in confusion, fear, and turmoil for many first-generation college students.

> It is only when we see that negotiating cultural obstacles involves not just gain but loss--most of all the loss of a familiar past, including a past self--that we can begin to understand the attendant periods of confusion, conflict, isolation, and even anguish reported by first-generation students. (London, 1992, p. 10)

The growing distance between the first-generation college students and their families may seem insurmountable. "Low-income, urban, first-generation university students who attempt to become more successful than their families often have to grapple with frustration, isolation, and criticism from family members" (Piorkowski, 1983, p. 620). While college can undoubtedly provide numerous benefits to first-generation students, many times it also can "produce a

discontinuity that arouses feelings of loss, conflict, and disloyalty" (London, 1996, p. 13). Consequently, these students feel torn between their past--which includes a distinct cultural identity, family and friends--and their future--which may involve new experiences and people, as well as a possible distancing of one's cultural heritage. "The pressure from friends and family encouraging these students not to go to college is often intense" (Inman & Mayes, 1999, p. 5). Unfortunately, many times the student will yield to desires of friends and family to leave college and return to those behaviors and roles that are familiar and safe.

First-generation college students do not generally have an individual in the family whom they can utilize as a resource person or a mentor to help maneuver through both personal and college-related obstacles facing them during their college experience. "They are in alien territory and need role models, sources of survival information, and special academic support" (Roeuche & Roeuche, 1999, p. 17). As a result, many community colleges have devised mentor and peer support programs to help mitigate these barriers (p. 17).

The demand for institutional responsiveness to the needs of first-generation students is increasing (London,

1996; Rendon, 1994; Roeuche & Roeuche, 1999; Terenzini et al., 1996). Acknowledgement that existing policies, procedures, programs, and services may require major revisions in order to address the multifaceted concerns of first-generation college students must be one of the initial phases toward redesigning a more receptive campus climate for these individuals.

> Old ideas, practices, and conventions that have nothing to do with today's students die hard in the academy. But die they must. And they must be replaced with new policies and practices that are tailored to a new student majority that bears little resemblance to the student of days gone by. (Rendon, 1994, p. 45)

Addressing the new realities of student demographics and student life can make higher education more capable of recognizing and making necessary adjustments in a variety of service areas. This can be specifically so in the area of resource allocation.

Providing first-generation college students with a greater awareness of educational opportunities available at the college or university is a primary step to open channels of communication for students to interact with representatives of the institution. Due to potential reluctance from first-generation students to accept assistance, this endeavor has to be more intrusive and proactive than efforts with non-first-generation students.

> However, reaching out means more than advertising the availability of support services. It also means actively making contact with first-generation students and changing current practices or policies that impede rather than facilitate their academic and social integration and success. (Terenzini et al., 1996, p. 17)

Many of the approaches propose increased faculty, staff, and student contact with first-generation students both outside and within the classroom (London, 1996; Rendon, 1994; Terenzini et al., 1996). Increasing, opportunity for interaction "can be done by making connections between educational practices and students' external lives and identities" (London, 1996, p. 13). Affirming, validating, and valuing potential contributions of first-generation students as individuals with unique characteristics, strengths, and weaknesses will help determine "whether students experience a climate that is truly welcoming and that encourages and enables their success" (King, 1999, p. 5).

A concerted, focused approach to meeting the needs of first-generation college students must be based on a student-centered orientation that promotes learning as the core function of the institution. "Student-centered institutions organize their programs and services with the students' interests and needs as priorities" (Blimling, Whitt, & Associates, 1999, p. 172). A system ensuring

"students feel valued, connected, and special" must be initiated to enhance student learning (p. 174). Many of the interventions that help retain first-generation college students could be readily applied and transferred to the entire student population with equally positive results. However,

> One clear implication of this evidence is the need to smooth first-generation students' transitions from work or high school to college and to extend active, targeted support throughout their first year, if not beyond. (Terenzini et al., 1996, p. 17)

This can be accomplished by providing a campus climate that addresses students' individual needs, fosters a sense of belonging and community, connects students through formal and informal activities, embraces collaboration rather than competition, links students to vital campus resources, and promotes cultural diversity (Blimling, Whitt, & Associates, 1999, pp. 175-177).

Community Colleges

Community colleges are the primary access point for a multitude of individuals embarking upon the portal of higher education. Therefore, the community college has both a diverse and multifarious mission.

> Most community college missions are shaped by the following basic commitments: a commitment to serving all segments of society through an open-access admissions policy that offers equal and

> fair treatment to all students; a commitment to a comprehensive educational program; a commitment to serving its community as a community-based institution of higher education; a commitment to teaching; and a commitment to lifelong learning. (Vaughan, 1995, p. 3)

Community colleges offer a variety of curricular programs, comprised of academic transfer, vocational-technical, developmental, and community service/continuing education (Cohen & Brawer, 1996, pp. 21-24.) The academic transfer curriculum is designed to provide students with the first 2 years of a 4-year college degree. Students are awarded an associate of arts or an associate of science degree upon completion of requirements in this category. The function of the vocational-technical degree, the associate in applied science, is to either prepare students for the workforce in a particular field or to gain the specific skills necessary for advancement in an existing occupation. Applied science degrees are designed to be terminal in nature and tend to be less likely to transfer to a 4-year institution due to the technical nature of the coursework. The developmental curriculum is designed not only to provide rudimentary coursework for underprepared students but also to better equip them for college level work. Community education, which encompasses both adult and continuing education, offers non-credit courses to

fulfill cultural, educational, personal, and social objectives.

Teaching is one of the fundamental missions of the community college. "In the community college such strong value is placed on teaching that the institution is often referred to as 'the teaching college'" (O'Banion, 1999, p. 2). The teaching-learning transaction is the focal point for faculty at community colleges, who are not distracted by the publications and research required by many institutions of higher education. The teaching-learning transaction is the focal point for faculty at community colleges.

Student Services

Community colleges are recognized for embracing a student-centered focus. Low faculty-to-student ratios combined with student services personnel who concentrate on the unique and diverse needs of a dynamic student body enable community colleges to better serve students. A multifaceted approach to meeting the needs of adult, at-risk, first-generation, as well as economically and racially divergent students incorporates academic advising, career counseling, and faculty "who care as much or more about students as they do about the disciplines they champion" (Roueche & Roueche, 1999, p. 17).

Academic advising is a developmental, decision-making process through which career, educational, and life goals are clarified and established (Crockett, 1985). Effective developmental advising is positively related to student persistence (Crockett, 1985; Habley, 1981). The influence of advising is unmistakable.

> Academic advisement is a process which is fundamental to higher education. In an era of growing demands for accountability, the impact of advisement on areas such as retention, progression, employability, and even customer satisfaction must not be denied. (Stowe, 1996, p. 17)

Contact with an academic advisor is usually one of the initial connections a student makes with an institution. This interaction enhances the formation of a crucial bond between the student and the institution (Tinto, 1987). The personalized nature of the advisor-student relationship places advisors in a key position that allows them to gain an awareness of students' levels of academic and social involvement at the institution (Astin, 1984).

Essential links to campus resources are made by the advisor's introducing students to specialized learning labs in math and writing, as well as making them aware of the availability of individual tutors. Academic advisors also serve as student advocates (Sloan & Wilmes, 1989). In this role, the advisor devises strategies to enable students to

overcome barriers or obstacles that hinder attainment of academic goals. Imparting information concerning the rules, regulations, and requirements of the institution is also an integral advising function.

Research suggests that ambiguity concerning educational objectives or career goals leads to student attrition (Astin, 1977). Certainty about long-term educational or career goals is rare among entering college students. In fact, students usually change career goals several times throughout their academic career. However, prolonged periods of ambivalence can increase the likelihood of student departure (Tinto, 1987).

Community colleges have many special features that are designed to address individual needs. For example, career advisement programs offer students the opportunity to explore academic interests as well as career and vocational aspirations in an organized manner (Gordon, 1985). Career exploration programs address the students' lack of occupational information through several avenues. SIGI Plus and DISCOVER are computerized career systems which provide detailed occupational information through the use of interactive software programs. Self-assessment is also an essential component of career programs. Identification and clarification of students' values, interests, and

aptitudes assist in the formulation of specific educational and career goals.

Many programs offer the services of career advisors who guide students through the program. Career advisors interpret test results, assist with information gathering, and aid in the decision-making and goal-setting processes. The degree of certainty regarding occupational and educational goals helps create a student's sense of commitment to achieving educational goals and increases the likelihood of persistence, particularly at community colleges (Heath, Skok, & McLaughlin, 1991). Consequently, many colleges and universities have established career programs or strengthened existing programs.

The frequency and quality of contact with faculty increases the likelihood of students to persist (Tinto, 1987). Instructors many times are one of the most critical factors in student retention.

> Great teachers not only transmit information but also create the common ground of intellectual commitment. They stimulate active not passive, learning in the classroom, encourage students to be creative, not conforming, and inspire them to go on learning. (Boyer, 1990, p. 12)

The scope of faculty impact extends well beyond the classroom. Student-faculty interaction outside the classroom is also positively linked to student retention.

There are a variety of campus experiences such as debates, lectures, and social events that can provide opportunity for increased student-faculty interaction in the community college setting.

A Changing Student Population

America is one of the most heterogeneous, multi-faceted, polymorphic societies in the world. Community college enrollments manifest these widespread sociological trends. Community colleges are confronted with both voluminous change and diversity in a variety of domains.

> Today, the problem of diversity persists, fueled by a distinct change in the composition of students desiring an education beyond the high school. A burgeoning number of students of all ages from diverse countries and cultures are coming to college with learning problems, and with unique socioeconomic problems, such as the challenges facing single parents and women returning to the workplace. The pluralism we find in community colleges today has been unparalleled in the history of the American community college movement. (Roueche & Baker, 1987, pp. 7-8)

As a result, researchers must reconstruct conventional methods of addressing, contemplating, inquiring, questioning, and thinking related to research as it pertains to members of society in general and to students at community colleges in particular.

Change is perpetual and will remain a part of American society. "Change is occurring so rapidly that often little

time is available to understand it or even to react before things have changed again" (Garland, 1985, p. 18). The rate of change is accelerating, requiring greater flexibility, innovation, increased interdependence, and modification of values (Garland, 1985).

> Society is not static; it changes over time and the institutions serving society similarly change over time. Colleges and universities are facing a number of significant societal changes that challenge their mission, curricula, the needs of students, and methods of operation. (p. 11)

Technological advances spawned "dramatic changes as the beginning of a new era--the Information Age or the Knowledge Society or the Post Modern Age" was introduced (Lorenzo & LeCroy, 1994, p. 4). The transition from industrial production to an information-based, technology-driven society has impacted the economic system, the educational system, and the larger society (Merriam & Caferella, 1999). "Technology's potential for increasing access to learning for people of all ages and possibly all economic levels is unlimited" (p. 18). Community colleges have the opportunity to utilize modern technology to meet the needs of a rapidly changing, divergent population.

> When the challenges have to do with reaching an enormously diverse student population, technology is seen as providing a cluster of powerful, value-free tools capable of reaching all manner of students, particularly those who do not excel in traditional academic settings. In effect,

> when students can pick it up, check it out, turn it on, and interact with it--virtually at any time and place--traditional horizons in the learning environment expand enormously. (Lorenzo & LeCroy, 1994, pp. 18-19)

However, technology can also create a huge chasm between the technologically rich and the technologically deprived. Some individuals "are in danger of being pushed even further toward the margins of society because of their lack of access to telecommunications technologies" (Kornblum & Julian, 1995, p. 500).

One of the most widespread alterations of the composition of American society is the "graying of America" (Hayflick, 1994; Merriam & Caferella, 1999). Never before has our society seen the numbers of older persons surpass that of the young. It is not surprising that "both the absolute numbers of older people and their percentage in the total population have increased dramatically" (Hayflick, 1994, p. 54). Individuals 85 and over comprise the fastest-growing sector of the population. "In the year 2010 the percentage of people over eighty-five will be twice what it is today; in forty years it will triple!" (p. 54).

The "graying of America," combined with a decline in the birth rate, has fostered a more senior-oriented focus in society (Garland, 1985). "Today, more older people

engage in educational activity than ever before" (Novak, 1997, p. 316). Implications of this variance for higher education entail an increase both in the number of non-traditional students entering and being served and in increased propensity toward lifelong learning. Additionally, an aging population will mandate the necessity "to shift resources to serve older people in the future" in all realms of society (p. 77).

In the midst of transformation, the need for lifelong learning has intensified more than ever before.

> Changes in demographic patterns, the sexual division of labour, the length of working life, hours spent at work, retirement age, and so on are all seen as relevant to the proposition that educational opportunities should be distributed in a recurring way, across the life-span. (Tennant, 1990, p. 223)

In order to meet the needs of the burgeoning elderly population, colleges and universities will need to reconceptualize the nature of the curriculum so that it is more in line with the personal goals of self-discovery. The nature of instruction for the mature student should account for the characteristics of adult learners. The nature of the delivery should accommodate or remedy any physical barriers that an older student population may face (Novak, 1997). Rapid and continuous technological change will constantly require updates both in knowledge and in

skill for the Information Age. "Thus, the need for continuing education has dramatically escalated with the increase in knowledge production" (Merriam & Caferella, 1999, p. 15).

Advances have been realized in achieving increased equality, particularly in the following areas: (1) women's increased participation in the labor force, (2) women's increased involvement in higher education, and (3) women's transformed position in the family (Lengermann & Wallace, 1985, p. 187). These changes can be partially attributed to the women's movement (pp. 187-188). Moreover, factors accounting for the divergence in women's roles include "the decline of farming, the growth of cities, shrinking family size, a rising divorce rate, and households that rely on more than one income" (Macionis, 1996, p. 246). Furthermore, sheer economic necessity mandates the essentiality for dual-income families (Lengermann & Wallace, 1985).

A majority of the women of working age are employed outside the home; of the 57% of women who work, 75% of them work full-time in the labor force. "Most sociologists agree that the movement of women out of the home and into the labor force is one of the most important social trends of the second half of the twentieth century" (Kornblum &

Julian, 1995, p. 355). The days of the male as the sole "breadwinner" are long gone. Instead of feeling dependent on men, the women who participate in the work force now possess a "sense of power" (Lengermann & Wallace, 1985, p. 189). However, "women, especially, face the realization that 'doing it all' can be extremely taxing: Our culture confers on them primary responsibility for child rearing and household chores, even if they work outside the home" (Macionis, 1996, p. 72).

Decreased role clarity and greater freedom of choice have helped some women enter into non-traditional, previously male-dominated fields such as dentistry, engineering, law, and medicine (Garland, 1985; Lengermann & Wallace, 1985). In spite of gains in gender equality, women still earn significantly less than men. "This means that, for every dollar earned by men, women earned about 71 cents" (Macionis, 1996, p. 249). This difference can be attributed to three primary factors: women accumulate less total time in the work force due to child-bearing which has a negative effect on seniority; the types of work women are currently engaged in due to societal expectations; and discrimination against women (pp. 249-250). The most prevalent occupations fall into two constraining categories, which include administrative support work and

service-related endeavors. These occupations tend to be lower paying and provide limited room for promotion (Macionis, 1996).

Greater participation in higher education has fostered an increase in gender equality (Lengermann & Wallace, 1985). Community colleges in particular have seen a sharp rise in the number and proportion of females enrolling beginning in late 1970's (Vaughan, 1983, p. 57). Women presently comprise the majority of students attending colleges and universities (Garland, 1985, p. 29). Additionally, they account for 53% of the master's degrees conferred annually (Macionis, 1996, p. 250). Nevertheless, women are still inordinately represented in the traditionally "female" fields of education and the humanities. Although gains are being realized in fields that are traditionally male, the advances are modest. According to Lengermann and Wallace (1985), Vetter discovered that a gradual increase in female enrollments in the biological sciences, engineering, math, and the physical sciences had occurred (p. 200).

Despite reports to the contrary, "the family as an institution is not dying; it is simply changing" (Schaie & Willis, 1996, p. 178). Alterations in the structure of

family life have produced divergence in both the nature and composition of families.

> Today, fewer individuals are living in "traditional" nuclear families that include a married couple and children. The traditional family now represents only a quarter of the households in the U.S. Even the "traditional" family has changed as the majority of mothers are now in the work force. With over half of recent marriages likely to end in divorce, alternative family forms are becoming normative. (p. 178)

Family size is dwindling due in part to women's increased participation in the work force and to "the control of reproduction that has made smaller family size possible" (Lengermann & Wallace, 1985, p. 205). "An increasing proportion of families are maintained by one parent who has never married, who is in-between marriages, or who has decided never to remarry" (Charon, 1993, p. 353). For those who chose to remarry, the creation of "blended families" results in families "composed of children and some combination of biological parents and stepparents" (Macionis, 1996, p. 310). Single parent families comprised nearly a fourth of all U.S. families in 1988 (Charon, 1993, p. 353). By 1994, living alone had become a growing alternative for about 25 million adults (Macionis, 1996, 314).

Nationally, racial and ethnic diversity has substantially increased. As early as the year 2030, people

that are now considered minorities will constitute the majority. Consequently, the face of America will be vastly different, and all the major social institutions will reflect this shift.

> Racial/ethnic minorities have reached critical mass in the United States and their numbers are expected to continue increasing. The rapid increase in the racial/ethnic minority population has been referred to as "the Diversification of the United States" or "the Changing Complexion of society." (Sue & Sue, 1999, p. 8)

As a result, the composition of the community college student population has mirrored this transition and in so doing has "become the educational melting pot for U.S. society" (Seidman, 1995, p. 247).

Evolving divergence of community college students consists of increased numbers of older adults, women, and minorities. Furthermore, larger numbers of academically underprepared students, international students, part-time students, and students with disabilities are entering community colleges (Garland, 1985). This deluge of at-risk students includes first-generation college students as well. Nearly one-third of the students enrolled in higher education in the United States are considered to be first-generation college students and this population of undergraduate students will continue to expand over the next 10 years (Terenzini et al., 1996).

Due to the myriad of cultural, economic, educational, familial, gender, racial, social, and technological modifications that have occurred in the U.S., society appears forever transformed. "Increased diversity in our society has a direct influence on the population of persons entering higher education institutions. The open-door community college system is a microcosm of the society in which it exists" (Windham, Search, & Jefferson, 1997, p. 161). The community college appears to be institution extremely well situated to address the changing needs of America.

Community Colleges and Democracy

There is an abundance of research supporting the community college's role as "democracy's college," the "people's college," and the "open door" institution (Cohen & Brawer, 1996; Vaughan, 1995). The very foundation and essence of the community college is based upon the following premises: (a) education is necessary for the maintenance of a democracy, (b) education is essential for the improvement of society, and (c) education helps to equalize opportunity for all people (Roeuche & Roeuche, 1993, pp. 25-26). As such, the community college became a panacea for a multitude of society's ills. In order to meet the expansive and many times contradictory roles this

position entails, community colleges "were diluting their endeavors by attempting to be all things to all people" (Roueche, 1968, p. 5). This ameliorative stance has resulted in an outgrowth of criticism, evaluation, examination, investigation, and, at times, praise for community colleges. Nevertheless, some detractors have challenged the nature of both the promise and the prospect community colleges afford students, particularly women, minorities, and individuals from lower socioeconomic groups (Brint & Karabel, 1989; Zwerling, 1976).

Detractors claim that from its inception, the community college's covert mission was to limit attendance of students at four-year institutions, thus allowing the universities to remain focused on higher learning (Birenbaum, 1986; Brint & Karabel, 1989).

> For the university sponsors of what later came to be known as the "people's colleges," the growth of the two-year institution had little to do with the democratization of higher education. On the contrary, the diffusion of the junior college was primarily a means of diverting students away from the university into an upward extension of the high school. Thus protected from those clamoring for access, the university would be free to pursue its higher tasks of research and advanced professional training. (Brint & Karabel, 1989, p. 25)

Consequently, advocates for this novel educational approach were found among the educational vanguard at many of the

preeminent institutions of higher learning, including the University of Chicago, the University of Michigan, and Stanford University (Brint & Karabel, 1989, p. 23).

The community college was confronted with competing objectives of expanding yet restricting opportunity (Brint & Karabel, 1989). In an economy where the supply of educated and professional workforce continually outpaces the demand for such individuals, a filtering mechanism to maintain economic and social equilibrium is imperative. "To assist in channeling young people to essentially the same relative positions in the social structure that their parents already occupy" is an additional surreptitious role community colleges maintain (Zwerling, 1976, p. 33). The community college was viewed as the principal device to both divert ambition and diminish aspirations of upward mobility of the populace while still offering an intimation of hope.

The reduction of transfer rates has "accentuated rather than reduced existing patterns of social inequality" (Brint & Karabel, 1989, p. 226). Maintenance of racial stratification and the perpetuation of both economic and social inequalities has led to the disillusionment and dissent of many one-time advocates of the community college

and its vision of equalization and opportunity for all who enter (Brint & Karabel, 1989).

Despite what critics maintain, community colleges are still the best, most viable mechanisms from which economic, educational, and social mobility emanate. There are numerous exemplar programs that evidence the true democratic nature of the community college (Phillips, 1991; Roeuche & Baker, 1987). The signal they convey is that regardless of naysayers the community college is alive and well and remains the very essence of America's system of higher education.

> The real benefit of the community college cannot be measured by the extent to which it contributes to the overthrow of the social-class system in America....There is a difference between social equalization and equal access, between overturning the social-class structure and allowing people to move from one stratum to another. (Cohen & Brawer, 1996, p. 408)

Many community colleges are discovering ways to make this democratic vision more than a mere illusion; they have set about making it a reality.

Native American tribal colleges are an example of the democratic potential of community colleges. Tribal colleges are responding to the outcry for an educational entity that provides hope, opportunity, and social regeneration that it pledges (Boyer, 1997, p. 26). Tribal

colleges are community colleges in tribal communities that have the dual function of being a community college and promoting the local tribal culture. These community colleges have shown continual success at meeting the educational needs and serving previously underserved as well as unserved individuals. As of 1997, 27 tribal colleges were annually serving 20,000 students from over 200 tribes in 11 states (Boyer, 1997).

The tribal colleges are succeeding in providing educational opportunities despite lack of funding, impoverished conditions, and a plight of social problems such as alcoholism and unemployment that have befallen many of the reservations. Additionally, Native Americans have the lowest retention rate of all students in higher education. In spite of conditions that exist in both the tribal colleges and in the communities and in spite of seemingly insurmountable odds, Native American students and the tribal educational system both prevail and prosper.

Educational efforts at both secondary and post-secondary levels were initially designed to assimilate Native Americans into the dominant culture and strip away both their cultural heritage and their knowledge of that culture. The "self-determination" movement of the late 1960's began to alter this philosophy. The movement

stemmed from governmental policies designed to allow Native Americans to initiate a strategy which would allow for greater independence and for the ability to constitute, control, and determine their own future. This authority entailed the federal government's providing Native Americans with the "resources needed to create their own institutions and define their own policies" (Boyer, 1997, p.20).

Tribal leaders were persuaded that higher education was the ultimate instrument needed to bring about both "self-determination" and social renewal (Boyer, 1997, pp. 1-2). Goals arising from the spirit of "self-determination" included the quest for opportunity, an educated leadership for the future, and restoration of the Native American way of life by means of higher education. For the first time, "a college degree did not have to be synonymous with assimilation. Now it could be used to strengthen reservations and tribal culture" (p. 23).

"All tribal colleges began as two-year institutions" and are both influenced and patterned after mainstream community colleges, thus offering both vocational and transfer curriculum (Boyer, 1997, p. 31). The community colleges and tribal colleges "differences lie in funding sources, jurisdiction, and cultural factors, not

educational goals" (p. 25). The focus upon tribal culture, language, and traditional ways of knowing ensure that "these colleges are, in the truest sense, community institutions" (p. 5). Furthermore, the tribal college allows both the Native American and the mainstream culture to peacefully coexist without the distressful decisions that surface when a Native American has to select among them (p. 26).

"Tribal colleges are part of a movement for fundamental social change within reservations. Their mission is to rebuild cultures and, in the end, create new and stronger nations" (Boyer, 1997, p. 57). The democratic nature of the "people's college" is illustrated in four principal areas. First, tribal colleges establish a learning environment that supports students who had come to view failure as the norm. Second, tribal colleges celebrate and help sustain Native American traditions. Third, tribal colleges provide essential services that enrich surrounding communities. Fourth, tribal colleges have become centers for research and scholarship.

Tribal colleges have taken the lead in utilizing higher education as a mechanism to transform possibilities into realities. Preliminary research has shown remarkable results in graduation, transfer, and employment rates of

tribal students, particularly when one compares these figures with mainstream community colleges (Boyer, 1997). It is evident that tribal colleges are fundamental channels of democracy that unlock destiny's door. As such, they reflect the latest example of the democratic nature of the community college movement.

Adult Learning

Malcolm Knowles held adults' experience in the highest regard and viewed it as a repository from which to draw during the learning process. This principle is considered by many as a hallmark of adult education. "The central dynamic of the learning process is thus perceived to be the experience of the learners; experience being defined as the interaction between individuals and their environment" (Knowles, 1980, p. 56). Connections, interaction, and relevancy of learning to real-world applications enhance retention in an educational program as well as produce a personally enriching process. In this form of education, experience is clearly viewed as the avenue to knowledge and is perceived as a valuable asset for learning. Adult students have the ability to make connections between current learning, prior knowledge, and life experience in order to produce a multi-faceted learning encounter.

Self-directed learning allows the adult to focus upon personally determined goals and interests as well as creates an individualized path of inquiry. The adult student ultimately controls the setting, the learning material, the manner and time frame in which learning will take place, and the assessment of the educational undertaking (Knowles, 1975). Distinctive new roles as both facilitator and resource person are strongly advocated for instructors when dealing with self-directed learners.

Adults tend to be more open to aspects of learning when they are experiencing specific developmental tasks in their lives. Adult learners can tailor their educational aims to meet compelling problems or tasks that need to be addressed. These tasks, particularly those concerning social roles, allow the adult learner to respond to changes that are occurring in one's life (Knowles, 1980, p. 45). Learning prepares adult students for change and increases their willingness to embrace any new information required to proactively meet their desired goals.

Adults have a tendency to desire immediate application of learning to meet a present need in their lives (Knowles, 1980, p. 53). Learning is focused on a particular problem or task to be accomplished. "The problem-orientation of the learners implies that the most appropriate starting

point for every learning experience is the problems and concerns that the adults have on their minds as they enter" (p. 54). A life-centered approach is then utilized as the origination of the learning process; further learning can then be determined through negotiation between the instructor and learners.

Program Planning

Knowles (1980) proposed a program-planning model for implementing these characteristics of adult learning. Its seven fundamental components involve (1) the establishment 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, and (7) the rediagnosis of needs for learning (evaluation) (Knowles, 1980, p. 59).

A learning environment conducive to both discourse and inquiry is an imperative initial step in this program-planning model (Knowles, 1980, pp. 223-234). This setting consists of the psychological surroundings and includes acceptance, being emotionally at ease, mutual support, and trust. In addition, the necessary physical surroundings are also essential; these include seating that is suitable

for adults, appropriate room temperature, visually pleasing surroundings, and an environment as distraction-free as possible. The atmosphere should convey the importance and value of people.

> I am convinced that what happens in the first hour or so of any learning activity (course, seminar, workshop, institute, tutorial, etc.) largely determines how productive the remaining hours will be. I see the setting of a climate that is conducive to learning as perhaps the single most critical thing I do as a facilitator of learning. (p. 224)

Collaboration and cooperation set the tone in this climate, which fosters reciprocity of responsibility and trust (p. 223).

Composing a participative planning structure is the second step in the program-planning model (Knowles, 1980, pp. 226-227). The primary objective at this planning stage is to provide an avenue for mutual planning, which allows as many stakeholders as possible to take an equal part in this process. This requires both compromise and negotiation among the individual learner, the instructor, and the institutional representative to ensure the program will meet each person's needs as well as one's requirements.

The process of determining needs should be one of self-diagnosis (Knowles, 1980, p. 229). At this third step

in the model, adult students measure and assess gaps in competencies that they now possess and decide what they would like to accomplish. The fourth step of the planning model goes hand in hand with step three. Learners set goals and define specific educational activities that will meet their specific, personally derived learning objectives (pp. 232-233).

The fifth step of the process involves both the development and design of sequential activities, which are centered on areas learners ascertain to be significant (Knowles, 1980, pp. 235-236). Learning experiences should coordinate with learning objectives derived in the fourth step of the model. The sixth step entails the selection of the most appropriate materials, resources, and techniques in order to attain the learning objective (p. 239). Particularly in this stage, the instructor serves as a facilitator, guide, and content resource for this process.

The final step in this planning model is a continual exchange, involving ongoing evaluation, rediagnosis, and review of learning. True assessment of the value of a learning transaction has to involve the learner as a primary participant. "The test of their achievement, then, is not whether they can learn better than someone else, but

whether they have learned what is useful to them" (Knowles, 1980, p. 171).

Self-Directed Learning

Adult learning is a pervasive aspect of the modern world. Tough (1979) found that approximately 90% of adults are involved in at least one primary learning effort each year; the typical adult carries out five learning efforts annually. Approximately 70% of those adults involved in learning endeavors engage in self-directed learning projects. Knowledge of both the universality and the nature of self-directed learning in adults have significantly altered the nature of inquiry in adult learning.

Self-directed learning has been ushered into the forefront of educational research and programming; this is due to the increasingly brief amount of time, knowledge, information, and skills that remain applicable and relevant (Knowles, 1975, p. 15). As the number of 18-year olds declined over the 1980's and 1990's, community colleges began to heavily market and recruit older, non-traditional students in order to sustain and in some cases bolster enrollment (Cohen & Brawer, 1996, p. 41). "Adults are far more likely to enroll in community colleges than traditional-aged students; the majority of adults over 21

attend two-year colleges while the majority of traditional-aged students enroll in four-year colleges" (Cross, 1988, p. 69). By 1993 the mean age of community college students was over 31 years of age (Cohen, 1996). In an attempt to capture greater numbers of adult students as well as to better meet their needs, community colleges have broadened and expanded existing programming to include self-directed curriculum. These courses are offered via correspondence, the Internet, independent study, and telecourses. These innovative programs are not only less rigid regarding residency requirements but also provide a more individualized plan of study for adult learners (Cross, 1988).

Self-directed learning is one of the basic tenets of andragogy endorsed by Malcolm Knowles. He maintained:

> In its broadest meaning, "self-directed" learning describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (Knowles, 1975, p. 18)

Clearly, this is a departure from the customary role in which learners have been placed in the formal educational process. Self-directed learning is very potent due to the fact that motivation originating from this form of

education is generally internally derived (Knowles, 1980, p. 55). Outside entities such as educators or a learner's parents or spouse and external factors such as grades tend to have little impact on adult student's performance.

A common misconception of self-directed learning is that this type of learning takes place either in isolation or in a vacuum. However, adult educators can play an exceedingly integral role in the transaction (Knowles, 1975). "Their part in this process is that of helper, guide, encourager, consultant, and resource—not that of transmitter, disciplinarian, judge, and authority" (Knowles, 1980, p. 37). "To many practitioners, the term self-directed learning conjures up images of isolated individuals busily engaged in determining the form and content of their learning efforts and controlling the execution of these efforts in an autonomous manner" (Brookfield, 1986, p. 56).

In actuality, self-directed learning alters but does not diminish the importance of the instructor's role. Self-directed learning entails an interdependent relationship with the instructor and learner as equal partners in a collaborative learning environment.

> Self-directed learning in adulthood, therefore, is not merely learning how to apply techniques of resource location or instructional design.

> It is rather, a matter of learning how to change our perspectives, shift our paradigms, and replace one way of interpreting the world by another. (Brookfield, 1986, p. 19)

In this process the learner focuses upon personally-determined goals and interests as well as creates an individualized path of inquiry.

Self-evaluation is a central theme of self-directed learning. "At the heart of self-directedness is the adult's assumption of control over setting educational goals and generating personally meaningful evaluative criteria" (Brookfield, 1986, p. 19). The instructor, therefore, must be willing to allow adult students primary responsibility for assessing both current functioning and desired functioning in critical areas. Self-appraisal allows students both to maximize learning and to become personally and actively involved in the learning process.

Transformative Learning

Transformation theory involves meaning schemes which are "specific knowledge, beliefs, value judgements, or feelings involved in making an interpretation" (Mezirow, 1991, p. 5). Meaning schemes filter one's reality and serve as a safety valve, allowing attention to be placed on thoughts and ideas that neatly fit into one's existing system or design. This type of safeguarding prevents

unnecessary anxiety and narrows one's attention. While creating the illusion of safety, the meaning schemes are in actuality confining one's thoughts and perceptions as well as limiting one's actions.

"A meaning perspective is a habitual set of expectations that constitutes an orienting frame of reference that we use in projecting our symbolic models and that serves as a (usually tacit) belief system for interpreting and evaluating the meaning of experience" (Mezirow, 1991, p. 42). Meaning perspectives include several meaning schemes; these are utilized to judge or ascertain the virtue and suitability of all things. A person's meaning perspectives both determine the very essence of who one is and influence the manner in which one acts, comprehends, experiences, judges, and perceives the world. The effect that meaning schemes may have on adults could be likened to individuals living their lives within chains or distinct boundaries that they inadvertently create for themselves.

Emancipation begins with reflection upon one's experience. "Reflection involves a critique of assumptions to determine whether the belief, often acquired through cultural assimilation in childhood, remains functional for adults. We do this by critically examining its origins,

nature, and consequences" (Mezirow, 1994, p. 223). A "disorienting dilemma" typically initiates the transformation process through circumstances such as the death of a loved one, divorce, or failure to advance in one's profession. This occurrence highlights the inadequacy of one's ability to cope utilizing existing inelastic meaning perspectives, meaning schemes, and strategies. Consequently, the individual begins a self-evaluation and reflects upon existing beliefs, interpretations of one's experiences, and premises.

Empowerment

One major idea in the field of adult education is that of empowerment. "Empowerment involves using learning from the social environment to understand and deal with the political realities of one's social and economic situation" (Fellenz & Conti, 1989, p. 21). In the field of Adult Education, Myles Horton and Paulo Freire utilized distinct approaches and arenas to achieve empowerment and social change. "Each, however, sought to bring about the same objectives of helping people better the quality of their lives and of removing unconscious restricting shackles" (Conti, 1977, p. 37). Both Horton and Freire viewed education as the principal instrument through which social change and liberation can occur. Additionally, they viewed

dialogue as occupying a central role in the course of social change. Becoming critically aware of one's own dignity and worth is also an essential element advancing an individual toward enlightenment and ultimately social action (p. 41).

Freire worked in Latin America to empower impoverished and oppressed individuals. His efforts included endeavors aimed at both improving the plight of the poor and promoting social transformation by attempting to eradicate illiteracy (Merriam & Caffarella, 1999). Freire's "banking" concept of education views the instructional process as equivalent to a bank where informational deposits are granted or imparted to individuals. Knowledge and information advanced in this type of transaction are primarily designed to maintain both the existing social structure and the status quo. The student is a passive entity, who is a mere repository of facts, numbers, and words.

"Rejecting the banking concept, the leaders utilize problem-posing education to help the oppressed identify and reflect upon the injustices of their society. This educational process attempts to demythologize society, open men's minds, and arouse their consciousness" (Conti, 1977, p. 40). The student-teacher and teacher-student roles are

blurred in "problem-posing" education. Each become co-inquirers: dialoguing, discovering, learning, listening, and questioning in unison (Freire, 1995).

Horton founded the Highlander Folk School as a direct result of his work with impoverished adults in the southern region of the United States. Highlander embodied the triumph of human spirit while serving as an opening for ideas, individuals, and ideology to converge (Conti, 1977). Greater economic, political, and social parity resulted from the collection of empowered people committed to a common goal of social transformation (Conti & Fellenz, 1986).

Highlander utilizes education to enlighten and inspire people and to help them solve commonly conceived problems.

> Thus, Highlander is an idea and a process. It is the idea that people have within themselves the potential to solve their own problems through the process of realizing that their problems are shared by others, that problems can be solved collectively, and that their individual problems are not solved until the common problem is resolved for everyone. Clearly, this entire approach places a premium on the concepts of democracy, trust, and human dignity. (Conti & Fellenz, 1986, p. 2)

Highlander has been a nucleus for the Labor Movement, the Civil Rights Movement, and more recently movements concerned with the environment and poverty in the South (Conti & Fellenz, 1986). At the core of Highlander and

each of these struggles resides faith in mankind and belief in empowerment.

Learning Strategies

Learning strategy research is providing a critical avenue of exploration related to individual differences in learning (Conti & Kolody, 1999a, p. 2). "Learning strategies are the techniques or skills that an individual elects to use in order to accomplish a learning task" (Fellenz & Conti, 1993, p. 3). Learning strategy usage is so commonplace that:

> Little thought is given to the selection of strategies; habit, prior training, or convenience determine the strategy to be used. Yet the skills or techniques selected to accomplish the task often have a great influence on the success of that learning activity. (p. 3)

Awareness of one's learning strategies can foster the ability to survey the learning environment and allow one to make appropriate adjustments if necessary. "Self-understanding links directly to learning how to learn when learners become sensitive to, and in control of, the learning processes, in other words, more aware of themselves as learners" (Smith, 1982, p. 57). Becoming cognizant of this information related to learning strategies could be particularly important in the retention of college students.

Learning strategies and learning styles are dissimilar in several ways. Unlike learning styles, learning strategies are not fixed traits that remain the same across learning tasks. Learning strategies are more contextual and "are more a matter of preference; they are developed throughout life and vary by task" (Fellenz & Conti, 1993, p. 4).

Much of the research on learning strategies in the field of Adult Education has evolved around the use of the Self-Knowledge Inventory of Lifelong Learning (SKILLS). SKILLS was developed to address and quantify individual learning strategies of adults involved in "real-life learning." "Real-life learning" incorporates problem-solving, reflection on experience, or planning in response to situations that occur outside of academia. "'Real-life learning' has been used to distinguish typical adult learning from the academic learning of formal situations that is usually spoken of as studying or educating" (Fellenz & Conti, 1993, p. 4).

SKILLS "consists of a series of six scenarios depicting real-life learning situations which necessitate various levels and types of learning" (Fellenz & Conti, 1993, p. 1). There are two versions of SKILLS currently utilized. The first has scenarios that involve learning in

the areas of auto insurance, burial customs, local history, pet care, job regulations, and cholesterol level. The scenarios of the second set deal with assembling a bike, obtaining dental care, recruiting leaders, writing a letter to the editor, visiting a national park, and caring for a relative (Fellenz & Conti, 1993, p. 1).

Initially, the learner is directed to select four out of six possible scenarios to utilize. After reading each vignette, the learner answers 15 questions that ascertain the likelihood that the learner will utilize specific learning strategies in the resolution of the learning situation. The learner is asked to determine which strategies they would "definitely use," "probably use," and those they would "not likely use" to complete the task they selected. Once these selections are made, the choices learners indicated fall into five areas conceptualized as learning strategies: critical thinking, memory, metacognition, metamotivation, and resource management. These components each contain three learning strategies (Conti & Fellenz, 1991a).

Critical Thinking

Critical thinking is defined as "a reflective thinking process utilizing higher order thinking skills in order to

improve learning" (Conti & Kolody, 1999a, p. 7). Critical thinking is the essence of much of adult learning.

"The development of critical thinking within a wide range of activities is seen as a means of bringing about change" (Merriam & Caffarella, 1991, p. 281). Critical thinking is aimed at enhancing both individual and societal learning (Fellenz & Conti, 1993, p. 30). Brookfield's (1987) conceptualization of critical thinking is closely associated with the critical thinking component measured in SKILLS. His approach described how adults become critical thinkers. The steps include (a) identifying and challenging assumptions, (b) questioning the importance of context, (c) envisioning and exploring alternatives, and (d) maintaining a healthy skepticism concerning conclusions.

In the area of critical thinking, SKILLS targets three specific strategies for evaluation including testing assumptions, generating alternatives, and conditional acceptance. Testing assumptions entails the identification, examination, and challenge of presuppositions related to learning in real-life situations (Conti & Kolody, 1999a, p. 8). Generating alternatives entails "exploring alternatives when engaged in critical thinking or problem solving" (p. 8). Conditional

acceptance entails "advocating reflective skepticism to avoid absolutes or over simplifications" (p. 8). Conditional acceptance is measured by evaluating whether or not learners are "monitoring results and evaluating consequences" in the SKILLS instrument (p. 8).

Memory

"Memory is the ability to remember past events, images, ideas or previously learned information or skills; memory is also the storage system that allows us to retain and retrieve previously learned information" (Lefton, 1994, p. 204). Memory functions as an essential component of the learning process. Memory is constituted of:

> All of the things that define us as individuals--our feelings, beliefs, experiences, behaviors, moods, and attitudes are stored away somehow in our memories. There are few psychological processes that are as central to our sense of self and to our perception of the world as memory. (Gerow, 1992, p. 245)

Memory and learning are closely associated concepts that are not easily separated. Therefore "one who does not learn has nothing to remember and without memory there is no evidence of learning" (Long, 1983, p. 58).

SKILLS memory strategies include use of external aids, organization, and memory application. The incorporation of external aids in the memory strategy process allows the learner to utilize the environment to aid one's ability to

recall information. External aids consist of items "such as appointment books, making lists of things to do, and asking someone to remind one of something" (Fellenz & Conti, 1993, p. 26). Organization strategies relate to the way processing of information occurs "so that material will be better stored, retained, and retrieved" (Conti & Kolody, 1999a, p. 7). Techniques that are utilized to enhance organization of material include chunking of material into sets, mnemonic devices, and visualization (p. 7).

Metacognition

Metacognition involves thinking about thinking or learning and is continuing to expand as an area of study in adult learning (Fellenz & Conti, 1989, p. 9). Metacognition has also been described as "an awareness by learners of the learning process" (Wangerin, 1988, p. 475). Learning is enhanced when learners are "taught to develop understanding of their own learning processes" (p. 479). Metacognition is vital to adult learning because it provides the learner with awareness of one's own strategies as well as their relative effectiveness.

Metacognition strategies measured in SKILLS include planning, monitoring, and adjusting. Planning places responsibility and control of learning activities into the hands of the learner (Conti & Kolody, 1999a, p. 4).

Metacognitive planning involves determining the most effective and efficient manner of carrying out a learning task. "The basis for such planning is an awareness of one's most effective learning characteristics, insight into the learning task, and an understanding of the planning process" (Fellenz & Conti, 1993, p. 9). Metacognitive monitoring entails learners evaluating their efforts in learning activities (Conti & Kolody, 1999a, p. 4). This assessment is critical to the learning process, yet it is lacking in many learning endeavors. "I am absolutely convinced that there is, overall, far too little rather than enough or too much cognitive monitoring in this world" (Flavell, 1979, p. 910). Metacognitive adjusting requires that learners "be taught to monitor their learning and change their learning strategies when necessary" (Wangerin, 1988, p. 479).

Metamotivation

Metamotivation is defined as "the awareness of and influence over factors that energize and direct one's learning" (Fellenz & Conti, 1993, p. 12). It also "deals with one's knowing and understanding how or why one is motivated to participate or remain in a learning activity" (Conti & Kolody, 1999a, p. 4). Motivation is an extremely potent influence in adult learning regardless of how

individual learners vary in their motivation to learn. Previous research in adult education emphasized motivation related to participation in educational activities rather than motivation related to learning. SKILLS evaluates one's internal motivation related to real-life learning and excludes assessment of external motivation in the analysis.

Metamotivation strategies that the SKILLS instrument focuses upon include the areas of attention, confidence, and reward/enjoyment. Attention is primary to the learning process. Attention is "focusing on the material to be learned" (Conti & Kolody, 1999a, p. 5). Student interest must be established in order for learners to properly absorb information. Confidence that one has the ability to learn is particularly salient with adult learners and is a prerequisite to one's motivation to learn. Reward and enjoyment strategies involve the affective domain of learning. Learners assess whether or not learning will be fun, fulfilling, or promote one's self-esteem. If the learner believes that these results will occur as a result of the learning task, then they will be motivated to initiate the activity.

Resource Management

Adult learners are faced with a multitude of sources and resources from which to analyze and collect data.

Individual preferences relating to the identification, selection, and utilization of resources vary according to "the individual's learning style and the particular learning task" (Fellenz & Conti, 1993, p. 35). Learning resources encompass "books, magazines, newspapers, tapes, TV, computers, or of people considered as information sources" (p. 35).

Resource management comprises identification of resources, critical use of resources, and the use of human resources (Conti & Kolody, 1999a, pp. 8-9). Resource identification involves "the identification and location of the best possible source of information which may include modern information sources, print sources, people, models, professionals or agencies" (pp. 8-9). Critical use of resources entails "critical reflection about the material and selection of the most appropriate resource rather than simply those that are readily available" (p. 9). Use of human resources involves utilizing people as resources in the learning process. "Suggested strategies go beyond simple awareness and use of others in learning situations" (Fellenz & Conti, 1993, p. 37). People can be valuable resources in the learning process. However, the learner must remain open to both dialogue and the opinions of others in this strategy for gathering resources.

SKILLS has proven to be a valid and reliable instrument for measuring learning strategies of adults. SKILLS has been utilized in over 20 studies involving diverse population and settings. Most of these studies utilized similar research designs. These studies of adult learning strategies have been organized into the following categories:

> 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). (James, 2000, pp. 66-67)

Two major findings have surfaced as a result of this exploration of the learning strategies of adults. First, one of the major findings of these investigations was "that selected demographic variables are not useful in discriminating among different groups in their learning strategy usage" (Conti & Kolody, 1998a, p. 109).

Second, distinct groups of learners can be identified based on their learning strategy preferences. Because groups that had somewhat similar characteristics were uncovered in the various studies, data from several of the studies were combined and analyzed using cluster analysis;

three categories of "distinct groups of learners exist when they are identified by the pattern of the learning strategies which they use" (Conti & Kolody, 1998a, p. 109). These groups have been named Engagers, Navigators, and Problem Solvers (p. 111). The Assessing the Learning Strategies of Adults (ATLAS) instrument has been developed as a direct result of the SKILLS research. ATLAS was designed to "produce an instrument which was easy to administer, which could be completed rapidly, and which could be used immediately by both facilitators and learners" (p. 109). Each learning strategy group has a distinctive profile.

ATLAS has been utilized in several studies recently, and several other studies are currently in progress utilizing this instrument that has added valuable new insights to the field of Adult Education relating to learning strategies and individual differences. James (2000) explored the learning strategies of students in an Adult Basic Education program, and found that there were significantly more Engagers in the sample of high school noncompleters than expected when compared with the norms for SKILLS. Spencer (2000) investigated self-directed learning in the Internet and found a disproportionately large number of Problem Solvers. Likewise, Birzer (2000)

also found a large number of Problem Solvers among law enforcement officers involved in community policing. Conti and Ghost Bear (personal communication, July, 2000) have found a large number of Problem Solvers in a study of learning related to the Internet. Finally, a recent study examining the relationship of learning strategies to personality types confirms the lack of relationship between learning strategies and demographic variables (Conti & Kolody, 1999b).

Navigators

"Navigators are focused learners who chart a course for learning and follow it" (Conti & Kolody, 1999a, p. 9). Planning and a strong sense of purpose personify both these learners and their utilization of learning strategies. "Navigators like to be presented the 'big picture' first, so they know what is expected. Then they plan their learning schedule according to deadlines and the final expected result" (p. 9). Navigators depend on the learning strategies which involve the use of planning, attention, identification, critical use of resources, and testing assumptions (p. 9).

Analysis of qualitative data revealed that Navigators desire deadlines, distinct expectations, prompt feedback, structure, and schedules in order to learn best (Conti &

Kolody, 1999a, p. 11). "Navigators become easily frustrated and impatient with a casual approach to teaching and can perceive a relaxed atmosphere as an ill-designed timewaster which is lacking in purpose" (p. 11). Once the course is charted, Navigators want to continue on this path with minimal distractions and maximum feedback.

Problem Solvers

Problem Solvers utilize critical thinking skills, particularly in the areas of testing assumptions, generating alternatives, and conditional acceptance.

> Problem Solvers test assumptions to evaluate the specifics and generalizability within a learning situation; they generate alternatives to create additional learning options; and they are open to conditional acceptance of learning outcomes while keeping an open mind to other learning possibilities. (Conti & Kolody, 1999a, p. 12)

Problem Solvers are open to alterations and changes in their learning plans and are continually assessing their own learning process as a result (p. 12).

Problem Solvers are best served educationally in an environment that "promotes experimentation through practical experience and hands-on activities" (Conti & Kolody, 1999a, p. 13). Problem Solvers think in a divergent and innovative manner and do not respond well to rigidity or conformity in the classroom (p. 13).

Engagers

"Engagers are passionate learners who love to learn, learn with feeling, and learn best when they are actively engaged in a meaningful manner with the learning task" (Conti & Kolody, 1999a, p. 13). Engagers enjoy the learning process and derive personal satisfaction from interaction with others. The ability to collaborate with others in learning tasks is seen as advantageous and motivating to Engagers (p. 14). Engagers are influenced heavily by the affective domain when learning. They evaluate learning activities based on possible enjoyment and reward. "If Engagers have begun a learning activity that they find rewarding or enjoyable, they will completely immerse themselves in the activity to be able to fully experience the joy or satisfaction of a job well done" (p. 14).

Engagers desire instructors "who focus on learning rather than on formal evaluation and who encourage involvement in projects based on individual interests" (Conti & Kolody, 1999a, p. 15). Engagers also desire the development of a personal relationship with their instructor. The initiation of group work is particularly effective in involving Engagers in class work because it allows for greater interaction with other students (p. 15).

CHAPTER 3

METHODS AND PROCEDURES

Design

This descriptive study investigated the learning strategies of students at Tulsa Community College. It involved examining the relationship between learning strategies utilized by first-generation and non-first-generation college students and various educational and demographic variables. The study was designed to determine if first-generation college students learning strategy preferences are more predominant in any of the ATLAS learning strategy categories or equally distributed at the community college as in previous research regarding individuals in diverse settings. The study was also developed to reveal actions and teaching methods that instructors employ to enhance the learning process as well as to describe those actions and methods that distract from learning. Furthermore, the study was implemented to explore barriers that have hindered students in pursuing their academic goals and the influences that led them to attend college.

"Descriptive research involves collecting data in order to test hypotheses or answer questions concerning the current status of the subject of the study" (Gay, 1996, p.

14). Descriptive research is utilized in a large number of studies and particularly those that are educational in nature and deal with attitudinal, demographic, and opinion based inquiries (Gay, 1996, p. 249). Descriptive research:

> Describes and interprets what is. It is concerned with conditions or relationships that exist; practices that prevail; beliefs, points of view, or attitudes that are held; processes that are going on; effects that are being felt; or trends that are developing. (Best, 1970, p. 116)

Interviews, observation, and questionnaires are the three predominant methods of collecting data in descriptive research (Gay, 1996, p. 14).

In this study, the learning strategy preferences were studied of 456 Tulsa Community College Students who were enrolled in the spring of 2000. Participants were asked to complete ATLAS and a demographic data form. They were also asked if they were willing to participate in individual interviews concerning learning strategy preference. Results were compared to expected norms for ATLAS. Forty-five students were interviewed. Information collected from the individual interviews was transcribed and analyzed.

Sample

"A population consists of all members of a group of individuals who are alike on at least one specified characteristic" (Spence, Cotton, Underwood, & Duncan, 1983,

p. 4). "A sample is any number of cases less than the total number of cases in the population from which it is drawn" (p. 5). If the sample is representative of the population, then observations about it can be utilized to "make inferences about the characteristics of the population as a whole" (p. 5).

According to the U.S. census (1990), the state of Oklahoma has a population of approximately 3.3 million people (http://www.census.gov). The Tulsa MSA has a population of approximately 700,000 people which includes Creek, Osage, Rogers, Tulsa, and Wagoner counties. Tulsa Community College (TCC) is Oklahoma's largest community college with enrollment of nearly 20,000 students per semester in credit classes. Of that number, approximately 30% of students are full-time, and 70% are part-time. Associate degrees are provided both in arts and sciences for those who wish to transfer to a baccalaureate program and in applied sciences for technical-occupational purposes. TCC serves Tulsa with four campuses. Day, evening, weekend, and alternative format classes as well as non-credit adult education courses attract students of all ages and backgrounds. The average age of students at the institution is approximately 30. TCC employs an open admission policy, which allows students to enter regardless

of past academic history. This policy helps TCC fulfill its mission of serving the community of Tulsa and its needs.

The population for the study was first-generation and non-first-generation college students attending Tulsa Community College's Southeast Campus. Approximately 5,700 students attend Southeast Campus. An appropriate sample size for this population is 361 participants (Gay, 1996). This number was exceeded with a sample of 456 students enrolled in the spring of 2000 at the Southeast Campus of TCC.

There are four primary methods that can be used to select a representative sample from which results can be generalized to the population being studied. The methods include cluster, random, stratified, and systematic sampling procedures (Gay, 1996). Although there are distinct advantages and disadvantages that must be taken into account whenever selecting an appropriate methodology, each include the following steps: "identification of the population, determination of required sample size, and selection of the sample" to be considered (p. 114). Cluster sampling was used in this study. Cluster sampling is sampling in which groups and not individuals are selected (p. 119).

"Since we cannot know if a particular sample represents a population, our only source of confidence (or of doubt) lies in the procedures we use to select it" (Johnson, 1988, p. 250). One way to help guarantee the generalizability of results obtained in cluster sampling is to select a number of clusters when gathering data (Gay, 1996, p. 120). Cluster sampling consists of selecting "a group of individuals who are naturally together. These individuals constitute a cluster insofar as they are alike with respect to characteristics relevant to the variables of the study" (Ary, Jacobs, & Razavieh, 1985, p. 143).

The clusters utilized in this study were individual classrooms, which serve as distinct units. TCC Southeast Campus is comprised of four academic divisions that include Business Services, Communication, Liberal Arts, and Science and Mathematics. Approximately 100 students from each of these divisions were surveyed. Clusters selected for this study include 8 classes in the Business Division, 11 classes in the Communications Division, 10 from the Liberal Arts Division, and 8 from the Science and Math Division.

ATLAS

Learning strategies were identified with the Assessing The Learning Strategies of AdultS (ATLAS). ATLAS was developed in order to provide a quick and effective means

of identifying learning strategy preferences of adult learners. It is easily administered by facilitators and easily utilized by learners in a variety of settings. ATLAS has a flow-chart design with items printed on 5.5" x 8.5" pages of colored card stock. On each page, learners read:

> Sentence stems, which are in the top box on the page, lead to options in other boxes which complete the stem. Connecting arrows direct the respondent to the options. Each option leads the respondent to another box which either instructs the respondent to proceed to another colored card or which provides information about the respondent's correct group placement. (Conti & Kolody, 1999a, p. 16)

ATLAS was developed based on data from the valid and reliable SKILLS (Conti & Kolody, 1998a). ATLAS consists of five bound colored cards in a pamphlet format. ATLAS was chosen for this study because of its convenient and instantaneous (approximately one to three minutes) identification of adult's learning strategy preferences.

Validity

Instrument validity is the "degree to which a test measures what it is supposed to measure" (Gay, 1996, p. 138). However, "validity is not some general characteristic that a test has. Validity is specific to

the particular job that one wants a test to do. A test or scale should be constructed with only a single purpose in mind" (Ary, Jacobs, & Razavieh, 1985, p. 224). Educational research is primarily concerned with construct, content, and criterion-related validity (Kerlinger, 1973, p. 457).

Construct validity refers to the extent a test measures the underlying theoretical constructs that the test is based upon. "A construct is a nonobservable trait, such as intelligence, which explains behavior. You cannot see a construct; you can only observe its effect" (Gay, 1996, p. 140). "The process of establishing construct validity for ATLAS was to synthesize the results of the numerous research studies using SKILLS and to consolidate these results" (Conti & Kolody, 1999a, p. 16). Over 3,000 cases similar in form have been generated from SKILLS studies performed in a variety of settings. The data and review of literature of these studies in combination with the field-based testing have provided a solid basis for establishing construct validity for ATLAS (p. 18). Three categories of learners with similar learning strategy usage patterns have been discovered as a result of the utilization of cluster analysis from these studies. These learners were labeled as Navigators, Problem Solvers, and Engagers. The three groups of learners are distributed

evenly with Navigators (36.5%), Problem Solvers (31.7%), and Engagers (31.8%) (p. 18).

Content validity "is the degree to which a test measures an intended content area" (Gay, 1996, p. 139). The content validity of ATLAS refers to the extent to which items in the instruments accurately depict the actual learning strategy characteristics of the three groups of learners delineated in the SKILLS' research (Conti & Kolody, 1999a, p. 18). Discriminant analysis was utilized to determine the precise learning strategy pattern used by each group of learners in comparison to other groups (p. 19). The flow-chart format with items on separate pages prevent learners from reading about information pertaining to any other group of learners besides their own until they have completed the assessment (p. 19). This helps to guarantee that learners do not accidentally place themselves into an incorrect learning strategy preference category. The multivariate procedure of discriminant analysis has allowed ATLAS to remain a brief and yet very accurate instrument. "Instead of using an approach which 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).

Criterion-related validity is the "relationship between the scores on a measuring instrument and an independent external variable (criterion) believed to measure directly the behavior or characteristic in question" (Ary, Jacobs, & Razavieh, 1985, p. 216). Establishment of criterion-related validity was obtained by the comparison of ATLAS scores to SKILLS group placement (Conti & Kolody, 1999a, p 19). SKILLS and initial versions of ATLAS were administered to adult learners in Alberta, Montana, and Oklahoma to verify corresponding results. In this original analysis, it was found that ATLAS "places approximately 70% of the respondents in their corresponding SKILLS group" (p. 19). In follow-up studies involving nearly 1,000 participants, approximately 90% of the respondents indicated that the ATLAS classification of their learning strategy preference is an accurate description of their actual behavior (G. J. Conti, personal communication, October 6, 2000).

Reliability

Reliability is "the degree to which a test consistently measures whatever it measures" (Gay, 1996, p. 145). The reliability of ATLAS as an instrument has not yet been reported. However, on-going measures reveal test-retest results are approximately 90% accurate for placing

people in the same learning strategy preference category (G. J. Conti, personal conversation, September, 2000). A study in progress involving Internet users has discovered 90% of the respondents were in agreement that their group placement on ATLAS was an accurate description of themselves as learners (Conti, personal conversation, September, 2000). Like the findings of James (2000), those who were interviewed in this study overwhelmingly agreed that ATLAS accurately described their learning strategy preference.

Data Form

Students who chose to participate completed both the ATLAS and an additional survey instrument that contained demographic variables. Demographic variables related to age, grade point average, employment status, ethnic background, gender, educational goals, parental educational attainment, and socioeconomic status were explored. The participants used a Likert scale (see Appendix A) to rate attitudes concerning educators and family support. The form had a section that requested student volunteers who were willing to participate in interviews that would assist in further research concerning their learning strategy preference. The form included space for the students to

print their name, telephone number, and email address to allow for contact at a later time.

Initial drafts of the data form were modified in a concentrated effort to incorporate the cultural, demographic, and social changes that are occurring in society. Data collection is critical, and researchers must take great care in the formulation of categories and questions that they ask participants in order to ensure the validity of the information gathered. A review of the literature concerning methodological changes associated with gathering demographic data resulted in discovering a limited number of recent journal articles that bring the validity of demographic information into question. The literature does not yet reflect modifications in research required by demographic and social changes in society. In order to see how others are addressing this problem, an on-line search of the literature was also initiated. Searches included a variety of databases including ERIC, FirstSearch, InfoTrac, UMI ProQuest, and PsyInfo. Searches utilizing dogpile.com, google.com, and lycos.com search engines resulted in numerous articles related to the topic.

One of the primary sources discovered utilizing google.com was a research site sponsored by North Carolina State University. In the research, the university had

altered its data form to account for alterations in family structure. As a result, when questioning students concerning parental educational attainment and socioeconomic status North Carolina State University added the parental/guardian category to more accurately reflect social changes in this area. Categories of mother/female guardian and father/male guardian were incorporated into the data form to account for students in blended families.

Additionally, the U.S. Census website and a TCC application served as guidelines for the racial/ethnic categories. However, the Census categories were too complicated; therefore, categories from the two forms were blended to take into consideration the special needs of the TCC population. The racial/ethnic categories of the data form were revised to incorporate the categories utilized on the TCC application, which take into account the special needs of TCC rather than the extensive categories utilized by the U.S. Census.

Procedures

Several steps were taken to set up the study and to identify the cluster sample. Permission to conduct the study was obtained from the Southeast Campus Provost. Classes of courses in the Business, Communication, Liberal Arts, and Science and Math division were selected using the

college course schedule. Classes were randomly selected from those offered in the afternoon, evening, and morning, and on weekends. The instructors of the selected classes were contacted either by phone or in person and asked for permission to conduct the survey during class time. An overview of the study as well as information concerning the amount of time that administering the ATLAS would take was provided at that time. A total of 37 clusters were identified for use in the study. Clusters selected for this study included 8 classes in the Business Division, 11 classes in the Communications Division, 10 from the Liberal Arts Division, and 8 from the Science and Math Division. These selections produced at least 100 students from each division.

The next step in the study involved administering the ATLAS to a representative sample of students. An overview of the research relating to learning strategies was provided to students as well as the rationale for the current study. The ATLAS instrument and the data forms were passed out to learners (see Appendix C). It was announced that participation in the study was voluntary. Directions for ATLAS were read verbally by the researcher. Students were asked to complete ATLAS, the data form, and indicate if they were willing to volunteer for an

additional interview related to their learning strategy preferences. Students were allowed to ask questions concerning the instrument. Students were informed that their answers on the data form would be strictly confidential. Once the completed materials were gathered, information sheets describing each learning strategy preference group were distributed. A brief discussion concerning each learning strategy preference was conducted. Several of the individual appointments for interviews were made immediately after the discussion.

Generally, students were called to set up appointments at a time that was convenient for the student to meet. All meetings took place on the TCC campus. The private interview sessions ranged from 25 minutes to 45 minutes each. A total of 45 students were interviewed. Each student was asked to read and sign a consent form (see Appendix B). Each interview was comprised of the same questions for each group of learners (see Appendix D). The interviews were audio tape-recorded, and relevant data from them was transcribed.

Each interview was analyzed and categorized utilizing the constant comparative method or grounded theory based on the work of Glasser and Strauss as cited in Merriam (1998). In the constant comparative method:

> The researcher begins with a particular incident from an interview, field notes, or document and compares it with another incident in the same set of data or in another set. These comparisons lead to tentative categories that are then compared to each other and to other instances. Comparisons are constantly...made until a theory can be formulated. (p. 159)

The interviews allowed students to engage in in-depth discussions of barriers to learning, learning strategies, and various ways instructors improve or detract from the learning process.

Individual interviews were used because this format allows each student to share a more concentrated and personal account of their learning. Individual interviews are beneficial when subject matter concerns one's innermost thoughts, particularly "in areas where human motivation as revealed in reasons for actions, feeling, and attitudes is concerned, the interview can be most effective" (Best, 1970, p. 187).

At the end of the spring semester, data concerning students' cumulative grade point averages (GPA) and hours attempted were secured from student records in the registrar's office. Accurate information was gathered because students' academic records were linked directly to their social security numbers provided on the data form.

This information was merged with the student's learning strategy information.

CHAPTER 4

QUANTITATIVE ANALYSIS

Students

Of the 456 students surveyed for this study, 101 (22.1%) were first-generation college students, and 355 (77.9%) were non-first-generation college students based on self-reported responses. The distribution for the overall population consisted of nearly two-thirds (63%) female students and one-third (37%) male students. The gender distribution was comparable for the first-generation and non-first-generation groups.

The first-generation students in the sample were typically older than the non-first-generation students. The first-generation group consisted of 101 students with an average age of 28.15 with a range of 18 to 57 years of age (see Table 1). The non-first-generation group consisted of 355 students with an average age of 21.88 with a range of 17 to 49 years of age. The individuals in the first-generation group tended to be slightly more than 6 years older than the non-first-generation group. Nearly half (44.3%) of the first-generation college students were over 26 years of age, while only (14.3%) of the non-first-generation college students were over 26 years of age.

Table 1: Frequency Distribution of Demographic Variables

Variables	First Generation	Non-First Generation	Total
Gender			
Male	33 (32.7%)	136 (38.3%)	169 (37.1%)
Female	68 (67.3%)	219 (61.7%)	287 (62.9%)
Age			
17-19	28 (27.9%)	166 (46.8%)	194 (42.5%)
20-21	17 (16.9%)	80 (22.5%)	97 (21.3%)
22-25	11 (10.9%)	58 (16.4%)	69 (15.1%)
26-30	9 (8.9%)	26 (7.3%)	35 (7.7%)
31-35	13 (12.9%)	7 (2.0%)	20 (4.4%)
36-40	6 (5.9%)	9 (2.5%)	15 (3.3%)
41-45	7 (6.9%)	6 (1.7%)	13 (2.9%)
46-50	6 (5.9%)	3 (0.8%)	9 (2.0%)
51-55	2 (1.9%)	0 (0.0%)	2 (0.4%)
56-60	2 (1.9%)	0 (0.0%)	2 (0.4%)
Race			
African American	8 (7.9%)	24 (6.8%)	32 (7.0%)
American Indian	5 (4.9%)	28 (7.9%)	33 (7.2%)
Asian or Pacific	5 (4.9%)	8 (2.2%)	13 (2.9%)
Caucasian	74 (73.5%)	278 (78.3%)	352 (77.2%)
Hispanic	3 (2.9%)	12 (3.4%)	15 (3.3%)
Other	6 (5.9%)	5 (1.4%)	11 (2.4%)
Total	101	355	456

Nationally, public two-year colleges are more ethnically diverse than the sample at Tulsa Community College. The approximated total distribution from a national sample was as follows: African American--11.0%, American Indian or Alaskan Native--6.0%, Asian or Pacific--6.0%, Caucasian--66.0%, and Hispanic--11.0% according to a 1997 survey by the U.S. Department of Education National

Center for Education Statistics (http://nces.ed.gov /index.html).

The U.S. Census Bureau for the State of Oklahoma reported that the approximated ethnicity statewide for 1999 was distributed as follows: African American--7.5%, American Indian or Alaskan Native--7.5%, Asian or Pacific--1.0%, Caucasian--80%, and Hispanic--4.0%. The ethnicity distribution for the city of Tulsa for 1999 was as follows: African American--10.5, American Indian or Alaskan Native--4.5%, Asian or Pacific--1.5%, Caucasian--80.0% and Hispanic--3.5% (http://www.odoc.state.ok.us). Thus, TCC is more ethnically diverse than the general population in Tulsa County and less ethnically diverse than 2-year public institutions are nationally.

While the sample at Tulsa Community College was overwhelmingly Caucasian with over three-fourths of the students in this ethnic category, the sample was still more ethnically diverse than the populations of both the State of Oklahoma and the City of Tulsa. African Americans in the TCC sample--7.0% were slightly underrepresented when compared to the distribution of African American individuals in City of Tulsa--10.5%.

The first-generation college students in the sample had lower degree aspirations than the non-first-generation

college students. The degree aspirations of the overall population revealed that a majority of respondents (51.0%) plan to pursue a 4-year bachelor's degree, that nearly one-fourth (24.1%) plan to pursue a master's degree, and that approximately one-tenth (9.9%) of the students planned to pursue a doctoral degree (see Table 2). Like the non-first-generation students, approximately 50% of the first-generation college students planned to pursue a bachelor's degree; however, slightly more than one-fifth (20.8%) planned to pursue graduate level studies. First-generation college students were twice as likely to pursue a 2-year transfer degree than non-first-generation college students. They were almost four times as likely to choose a 2-year occupational/technical degree than non-first-generation college students. First-generation college students' aspirations were equivalent to the non-first-generation in the pursuit of a 4-year bachelor's degree. While it is commonplace for non-first-generation college students to plan to acquire a graduate degree, the first-generation college students at TCC have disproportionately low aspirations for degrees beyond the bachelor's level. A non-first-generation college student is nearly four times as likely to aspire to pursue a doctoral degree than a first-generation college student (see Table 2).

The two groups differed greatly in education background of their parents/guardians. The level of

Table 2: Educational Goals and Background Information

Variables	First Generation	Non-First Generation	Total
Degree Intent			
None	1 (1.0%)	0 (0.0%)	1 (0.2%)
1-Year Cert.	1 (1.0%)	2 (0.6%)	3 (0.7%)
2-Year Transfer	23 (22.8%)	33 (9.3%)	56 (12.3%)
2-Year Tech-Prep	4 (4.0%)	4 (1.1%)	8 (1.8%)
4-Year Bachelor's	51 (50.4%)	182 (51.3%)	233 (51.0%)
Master's Degree	18 (17.8%)	92 (25.9%)	110 (24.1%)
Doctoral Degree	3 (3.0%)	42 (11.8%)	45 (9.9%)
Educational Level of Female Guardian			
No High School	31 (30.7%)	10 (2.8%)	41 (9.0%)
High School Dip.	70 (69.3%)	72 (20.3%)	142 (31.2%)
Some College	0 (0.0%)	161 (45.3%)	161 (35.3%)
Bachelor's Degree	0 (0.0%)	79 (22.3%)	79 (17.3%)
Master's Degree	0 (0.0%)	27 (7.6%)	27 (5.9%)
Doctoral Degree	0 (0.0%)	6 (1.7%)	6 (1.3%)
Educational Level of Male Guardian			
No High School	37 (36.6%)	5 (1.4%)	42 (9.2%)
High School Dip.	64 (63.4%)	38 (10.7%)	102 (22.4%)
Some College	0 (0.0%)	155 (43.6%)	155 (34.0%)
Bachelor's Degree	0 (0.0%)	90 (25.4%)	90 (19.7%)
Master's Degree	0 (0.0%)	54 (15.2%)	54 (11.8%)
Doctoral Degree	0 (0.0%)	13 (3.7%)	13 (2.9%)
Credit Hours Enrolled			
3	14 (13.9%)	28 (7.9%)	42 (9.2%)
4-6	21 (20.8%)	57 (16.1%)	78 (17.1%)
7-9	8 (7.9%)	62 (17.5%)	70 (15.4%)
10-11	6 (5.9%)	16 (4.5%)	22 (4.8%)
12	31 (30.6%)	100 (28.1%)	131 (28.7%)
13-15	18 (17.9%)	71 (20.0%)	89 (19.5%)
16 and Above	3 (3.0%)	21 (5.9%)	24 (5.3%)
Expected GPA			
A	31 (30.7%)	85 (23.9%)	116 (25.4%)
B	56 (55.4%)	232 (65.4%)	288 (63.2%)
C	14 (13.9%)	37 (10.4%)	51 (11.2%)
D	0 (0.0%)	0 (0.0%)	0 (0.0%)
F	0 (0.0%)	1 (0.3%)	1 (0.2%)

parental/guardian educational attainment was much higher for non-first-generation students at TCC than for first-generation students. The lack of any college work by the parents or guardians indicates that the self-reporting of the first-generation college students as to their generational status is accurate. Moreover, these educational figures show that not only did the first-generation college students' parents/guardians not attend college, but many came from homes in which almost one-third of their parents/guardians had not completed high school.

The percentage of students in each generation status group was very similar when looking at the part-time (11 hours or less) and full-time (12 hours or more) enrollment status for the spring semester. The number of credit hours currently enrolled for the total population were as follows: slightly over one-fourth (26.3%) were enrolled in 6 hours or less, one-fifth (20.2%) were enrolled in between 7 to 11 hours, slightly more than one-fourth (28.7%) were enrolled full-time or 12 hours, almost one-fourth (24.8%) were enrolled in 13-16 or more hours. Almost twice as many first-generation college students were enrolled in only 3 hours (see Table 2). Non-first-generation students had a slightly greater percentage (54.0%) attending full-time than the first-generation group (51.5%).

First-generation students maintain similar grade expectations as those of the non-first-generation students. However, slightly more first-generation college students expected to earn A's than did non-first-generation college students. This difference contradicts the literature. It also suggests that first-generation college students anticipate that they can perform well academically in the community college environment.

Family income of first-generation students was less than that of non-first-generation students at TCC. Family income was reported for 1999 by 427 of the 456 students surveyed. Of the 427 students responding, almost one-third (30.6%) reported $30,000 or less, slightly more than one-fourth (27.6%) reported between $30,001 and $50,000, slightly more than one-fourth (29.0%) reported between $50,001 and $100,000, and slightly more than one-tenth (12.8%) reported greater than $100,001. Family income of the first-generation students were as follows: slightly more than half (52.1%) reported $35,000 or less, slightly more than one-third (34.9%) reported between $35,001 and $75,000, and slightly more than one-tenth (13.0%) reported a family income between $75,001 and $150,000. None of the first-generation college students reported a family income of greater than $150,000 (see Table 3). The family income

of non-first-generation college students was as follows: slightly more than one-third (35.3%) of their family income was reported as $35,000 or less, slightly more than one-third (38.4%) reported family income between $35,001 and $75,000, slightly more than one-fourth (26.3%) reported a family income between $75,001 and $200,001 or greater. The major differences were in three income brackets of $10,001

Table 3: Financial Background of Students

Variables	First Generation	Non-First Generation	Total
Family Income 1999			
$ 10,000 or Less	6 (6.5%)	12 (3.6%)	18 (4.2%)
$ 10,001-$ 15,000	11 (11.9%)	23 (6.9%)	34 (8.0%)
$ 15,001-$ 20,000	7 (7.6%)	15 (4.5%)	22 (5.2%)
$ 20,001-$ 25,000	9 (9.8%)	22 (6.6%)	31 (7.3%)
$ 25,001-$ 30,000	7 (7.6%)	18 (5.3%)	25 (5.9%)
$ 30,001-$ 35,000	8 (8.7%)	28 (8.4%)	36 (8.4%)
$ 35,001-$ 40,000	8 (8.7%)	24 (7.2%)	32 (7.5%)
$ 40,001-$ 50,000	7 (7.6%)	43 (12.8%)	50 (11.7%)
$ 50,001-$ 60,000	7 (7.6%)	31 (9.2%)	38 (8.9%)
$ 60,001-$ 75,000	10 (11.0%)	31 (9.2%)	41 (9.6%)
$ 75,001-$100,000	7 (7.6%)	38 (11.3%)	45 (10.5%)
$100,001-$150,000	5 (5.4%)	30 (9.0%)	35 (8.2%)
$150,001-$200,000	0 (0.0%)	10 (3.0%)	10 (2.3%)
$200,001-Plus	0 (0.0%)	10 (3.0%)	10 (2.3%)
Total	92	335	427
Hours Employed Per Week			
Not Working	23 (22.8%)	39 (11.0%)	62 (13.6%)
20 or Less	13 (12.9%)	80 (22.5%)	93 (20.4%)
21-25	9 (8.9%)	57 (16.1%)	66 (14.4%)
26-39	11 (10.8%)	79 (22.3%)	90 (19.8%)
40	37 (36.6%)	83 (23.4%)	120 (26.3%)
41 Plus	8 (8.0%)	17 (4.7%)	25 (5.5%)
Total	101	355	456

to $15,000, $40,001 to 50,000, and $75,001 to $100,000.

The employment patterns for jobs outside of school were different for first-generation college students and non-first-generation students. A greater percentage of the first-generation college students worked full-time or greater hours per week than did non-first-generation students. Consequently, these students have less time to devote to their academic endeavors. Hours employed per week for the total participants were as follows: almost one-half (48.4%) worked 25 hours or less, slightly over one-fifth (19.8%) worked between 26 and 39 hours, and almost one-third (31.8%) worked 40 or more hours per week. The hours employed by first-generation college students were as follows: almost one-half (44.6%) worked 25 hours or less, slightly more than one-tenth (10.8%) worked between 26 to 39 hours per week, and almost half (44.6%) worked 40 hours or more per week. The hours employed by non-first-generation college students were as follows: one-half (49.6%) worked 25 or less hours, slightly more than one-fifth (22.3%) worked between 26 and 39 hours, and almost one-third (28.1%) worked 40 or more hours per week (see Table 3).

Both the first-generation and non-first-generation groups in this study overwhelmingly agreed that they have family support. Participants were asked if their family

would be supportive of them and their decision to attend college. Students responded on a five-point Likert scale: Strongly Disagree--1, Disagree--2, Neutral--3, Agree--4, Strongly Agree--5. Students overwhelmingly (91.6%) agreed or strongly agreed that their family would be supportive of them (see Table 4). Very few students responded that their family would not be supportive of them.

Table 4: Support Variables

Variables	First Generation	Non-First Generation	Total
Family Support			
Strongly Disagree	6 (5.9%)	10 (2.8%)	16 (3.5%)
Disagree	3 (3.0%)	0 (0.0%)	3 (0.7%)
Neutral	4 (4.0%)	15 (4.2%)	19 (4.2%)
Agree	17 (16.8%)	44 (12.4%)	61 (13.4%)
Strongly Agree	71 (70.3%)	286 (80.6%)	357 (78.2%)
Total	101	355	456
Faculty Concern			
Strongly Disagree	4 (4.0%)	11 (3.1%)	15 (3.3%)
Disagree	0 (0.0%)	13 (3.7%)	13 (2.9%)
Neutral	29 (29.3%)	139 (39.4%)	168 (37.2%)
Agree	49 (49.5%)	153 (43.3%)	202 (44.7%)
Strongly Agree	17 (17.2%)	37 (10.5%)	54 (11.9%)
Total	99	353	452

Both the first-generation and non-first-generation groups see the faculty as concerned. Indeed, the first-generation students see the faculty as a little more concerned than their non-first-generation counterparts. Participants were asked if their instructors were concerned about them and their future. Students responded on a five-point Likert scale: Strongly Disagree--1, Disagree--2,

Neutral--3, Agree--4, Strongly Agree--5. Two-thirds of the first-generation college students perceived faculty as concerned (66.7%) compared to the non-first-generation group in which slightly more than half (53.8%) perceived the faculty as concerned (see Table 4).

Students' grade point averages (GPA) and hours attempted were secured from student records in the registrar's office. In the process only 427 of the 456 students' social security numbers were readable and retrievable for analysis. The grade distribution indicates that almost one-fifth (19.4%) of the total population surveyed experienced academic difficulty (GPA < 2.00) and more than three-fourths (80.6%) experienced academic success (GPA ≥2.00). Overall, more than three-fourths of the students are doing well enough to maintain good academic standing and stay off probation (see Table 5). The mean GPA for the overall population was a 2.64 with a median of 2.73, a mode of 3.0, and a standard deviation of .87. The mean GPA for the first-generation college students was 2.83 with a median of 3.0, a mode of 4.0, and a standard deviation of .95. The mean GPA for the non-first-generation-college student was 2.58 with a median of 2.62, a mode of 2.0, and a standard deviation of .84. The

first-generation group in this study had a higher average GPA than the non-first-generation group.

Table 5: GPA's and Hours Attempted

Variables	First Generation	Non-First Generation	Total
GPA			
0	4 (4.2%)	1 (0.3%)	6 (1.4%)
.1-.5	1 (1.1%)	5 (1.5%)	6 (1.4%)
.6-1.0	0 (0.0%)	9 (2.7%)	9 (2.1%)
1.1-1.5	6 (6.3%)	20 (6.0%)	26 (6.1%)
1.6-1.9	1 (1.1%)	35 (10.5%)	36 (8.4%)
2.0-2.5	17 (17.9%)	82 (24.7%)	98 (23.0%)
2.6-3.0	24 (25.2%)	70 (21.1%)	94 (22.0%)
3.1-3.5	19 (20.0%)	63 (19.0%)	82 (19.2%)
3.6-4.0	23 (24.2%)	47 (14.2%)	70 (16.4%)
Total	95	332	427
Hours Attempted			
0-15	24 (25.2%)	63 (19.0%)	87 (20.4%)
16-30	27 (28.5%)	104 (31.3%)	131 (30.7%)
31-45	19 (20.0%)	74 (22.3%)	93 (21.8%)
46-60	14 (14.7%)	39 (11.8%)	53 (12.4%)
61-75	5 (5.2%)	33 (9.9%)	38 (8.9%)
76-90	3 (3.2%)	10 (3.0%)	13 (3.0%)
90 Plus	3 (3.2%)	9 (2.7%)	12 (2.8%)
Total	95	332	427

Hours attempted are credit hours that a student enrolls in each semester and attempts to earn credit in by making at least a grade of "D." The hours attempted and the grade earned in the class are needed to calculate a student's overall grade point averages. The percentages of students in each generation status were comparable in the area of hours attempted (see Table 5). The mean hours attempted for the total population was 35.15 with a median

of 30.00, a mode of 12, and a standard deviation of 23.09. The mean for the first-generation college students was 32.97 with a median of 26.00, a mode of 3, and a standard deviation of 24.13. The mean hours attempted for the non-first-generation college students was 35.15 with a median of 30.00, a mode of 12, and a standard deviation of 22.78. Thus, both groups attempted equivalent amounts of credit hours.

Relationships with Generation Status

Analysis of variance (ANOVA) was utilized to investigate the relationships between first-generation status and various academic and demographic variables. Analysis of variance is:

> A standard set of techniques used to analyze relationships between interval-or ratio-scale dependent variables and nominal-or ordinal-scale independent variables. Its purpose is to explain variance in the dependent variable using several different independent variables at once, to identify the relative contribution of each independent variable, and to make statistical inferences about the results. (Johnson, 1988, p. 361)

Once groups are separated into categories, the difference or variance is analyzed by assessing the differences between and within groups (Ary, Jacobs, & Razavieh, 1985, p. 165). In this study a one-way analysis of variance was "used to determine whether there is a significant

difference between two or more means at a selected probability level" (Gay, 1996, p. 479). The amount of variance is conveyed through the F-ratio. "As variance between groups increases, the F-ratio increases. As variance within increases, the F-ratio decreases" (Ary, Jacobs, Razavieh, 1985, p. 165).

The ANOVA indicated a statistically significant difference between the grade point averages of first-generation college students and non-first-generation college students (see Table 6). First-generation college students in this study had a higher grade point average than that of the non-first-generation college students. The mean GPA for the first-generation college students was 2.83. The mean GPA for the non-first-generation students was 2.58.

Table 6: ANOVA for GPA by Generation Status

Groups	SS	df	MS	F	p
Between	4.29	1	4.29	5.68	.018
Within	320.55	425	.75		

A significant difference was found between the grade point average of first-generation and non-first-generation students, which is in sharp contrast to the literature. However, the first-generation students in this study tended to be older than non-first-generation students. Therefore,

this aspect was further explored. An analysis of covariance was utilized to control for age. Analysis of covariance (ANCOVA) is a statistical technique that can be used for equating groups on one or more variables (Gay, 1996, p. 360).

> The logic behind the control feature of ANCOVA is simple. The comparison groups involved in a study are likely to differ from one another with respect to one or more variables that the researcher may wish to "hold constant." In an attempt to accomplish this objective, the researcher could use subjects who have identical scores on the variable(s) where control is desired. (Huck, 2000, p. 537)

This is accomplished by the procedure adjusting the mean for each group on the dependent variable (p. 538).

"In order for a covariate variable to be conceptually relevant within a given study, it must be related to the study's dependent variable" (Huck, 2000, p. 543). Age is conceptually related because adult learners tend to be more focused and goal-oriented (Knowles, 1980). Statistically, there was a slight significant correlation between age and grade point average (r =.24). As a result of both the conceptual and statistical correlations, this procedure was utilized with age as the covariant. When the analysis was controlled for age, no

significant differences were found (see Table 7). The adjusted mean for the first-generation group (2.69) was virtually the same as for the non-first-generation group (2.62) when age was used as a covariant.

Table 7: ANCOVA for GPA by Generation Status with Age

Groups	SS	df	MS	F	p
Age	18.13	1	18.13	25.09	.001
Between	3.19	1	3.19	.44	.507
Within	306.37	424	.72		

The age of 25 is commonly used to classify adult learners. Therefore, the age variable was further explored by grouping the sample into those 25 years of age and older and those under 25 years of age. When students where grouped using the standard age of 25, there was a significant difference. The mean for the group 25 and older (2.97) was higher than for those under 25 (2.54) (see Table 8).

Table 8: ANOVA of GPA by Age

Groups	SS	df	MS	F	p
Between	14.33	1	14.33	19.61	.001
Within	310.51	425	.73		

ANOVA was utilized to investigate the relationships between first-generation status and various demographic variables including age, degree aspirations, faculty concern, family support, gender, income, and race.

Statistically significant differences were found between first-generation college students and non-first-generation college students in several areas (see Table 9). First-generation college students were more likely to be older with an average age of 28.15 versus the non-first-generation students' average age of 21.88.

First-generation and non-first-generation also differ in the area of degree aspirations. In this descriptive, exploratory study, degree aspirations were investigated by treating student responses as intervals on a continuum. Each interval was considered as the next logical step in the educational process. The points on the continuum were as follows: none--1, 1-year certificate--2, 2-year transferable associate degree--3, 2-year technical career prep degree--4, 4-year bachelor's degree--5, master's degree--6 and doctorate degree--7. A majority of the first-generation students were in the 2-year and 4-year categories, while the majority of the non-first-generation students were in the bachelor's degree and master's degree categories (see Table 9).

First-generation and non-first generation college students also differed on family income. Even though income was not indicated at equal intervals, the data was treated as interval data for different degrees of wealth

status for this study in order to determine if there were any differences between the two groups. First-generation college students were more likely to belong to families that earned less family income than non-first-generation college students. The first-generation college students reported an average family income that is in the upper levels of the $25,001-$30,000 range. The non-first-generation college students reported an average family income slightly above the $35,001-$40,000 dollar range.

Table 9: ANOVA for Variables with Significant Differences

Groups	SS	df	MS	F	p
Age					
Between	3088.02	1	3088.02	62.43	0.001
Within	22455.80	454	49.46		
Degree					
Between	32.59	1	32.59	25.72	0.001
Within	575.28	454	1.27		
Income					
Between	195.23	1	195.23	13.62	0.001
Within	6506.34	454	14.33		
Support					
Between	5.04	1	5.04	6.53	0.001
Within	350.08	454	0.77		

Family support was another area in which clear differences were found between first-generation college students and non-first-generation college students. Participants were asked if their family would be supportive of them and their decision to attend college. Students responded on a five-point Likert scale: Strongly Disagree--

1, Disagree--2, Neutral--3, Agree--4, Strongly Agree--5. First-generation college students reported a mean of 4.43 on family support in the pursuit of a college education while non-first-generation college students reported a mean of 4.68 in the area of family support. However, since both groups scored so high, the difference has no practical significance.

The first-generation group and non-first-generation group did not significantly differ on several components (see Table 10). These factors dealt with academic, demographic, and employment variables. No significant differences were found between the groups in the areas of credit hours enrolled, expected GPA, faculty concern, gender, or hours employed (see Table 10).

Table 10: ANOVA for Variables with Non-Significant Differences

Groups	SS	df	MS	F	p
Credits Enrolled					
Between	36.42	1	36.42	2.46	0.117
Within	6716.42	454	14.79		
Faculty Concern					
Between	1.99	1	1.99	2.37	0.115
Within	382.41	454	0.84		
Gender					
Between	0.25	1	0.25	1.07	0.302
Within	106.12	454	0.23		
Expected GPA					
Between	0.10	1	0.10	0.27	0.604
Within	170.92	454	0.38		
Hours Employed					
Between	22.31	1	22.31	0.11	0.743
Within	94294.14	454	207.70		

Learning Strategy Differences

Learning strategies were measured in this study with ATLAS. This instrument places people in the three categories of Navigator, Problem Solver, and Engager. In order to ascertain if meaningful differences existed in the categorical placement by ATLAS, the participants' responses were analyzed using chi-square goodness-of-fit tests. Chi-square "goodness-of-fit test is used to test the hypothesis that an observed frequency fits (or conforms to) some claimed theoretical distribution" (Triola, 1995, p. 537). The distribution of learning strategy preferences for the present sample was compared to the norms established for ATLAS. Thus, the expected dispersion of scores on ATLAS was compared to the actual observed distribution in this study. Learning strategy preference for the total sample was as follows: almost one-fourth (23.9%)--Navigators, slightly more than one-fifth (21.9%)--Problem Solvers, and over half (54.2%)--Engagers. Learning strategy preference of the 101 first-generation college students was as follows: almost one-fifth (19.8%)--Navigators, slightly over one-fifth (22.8%)--Problem Solvers and over half (57.4%)--Engagers. The 355 non-first-generation college students were comprised of one-fourth (25.1%)--Navigators,

slightly over one-fifth (21.7%)--Problem Solvers, and over half (53.2%)--Engagers (see Table 11).

Chi-square analysis was employed to compare ATLAS results to expected norms for ATLAS. There was a significant difference between the frequency observed and what was expected based on the norms for the total group (X^2=105.29, df=2, p=.001). There was a disproportionately large number of Engagers discovered in the total sample of this study. Further analysis was performed to see if differences existed in each group. Significant differences were found in the first-generation group (X^2=31.11, df=2, p=.001) and for the non-first-generation group (X^2=75.24, df=2, p=.001). There were no significant differences between the first-generation students and the non-first-generation students on ATLAS (X^2=1.21, df=2, p=.55). Expected distribution among the groups should have shown approximately (36.5%) Navigators, (31.7%) Problem Solvers, and (31.8%) Engagers. However, the observed results reveal that Navigators were under-represented in this study by (11.4%), Problem Solvers are under-represented by (9.8%) and the Engagers were over-represented by (22.4%)(see Table 11).

Table 11: Chi-Square Test Frequencies for Learning Strategy Preferences and Generation Status

Learning Strategy Preference	Observed N	Expected N	Residual
First Generation			
Navigator	20 (19.8%)	36.9 (36.5%)	-16.9
Problem Solver	23 (22.8%)	32.0 (31.7%)	-9.0
Engager	58 (57.4%)	32.1 (31.8%)	25.9
Total	101		
Non-First Generation			
Navigator	89 (25.1%)	129.6 (36.5%)	-40.6
Problem Solver	77 (21.7%)	112.5 (31.7%)	-35.5
Engager	189 (53.2%)	112.9 (31.8%)	76.1
Total	355		
All Students			
Navigator	109 (25.1%)	166.4 (36.5%)	-57.4
Problem Solver	100 (21.9%)	144.6 (31.7%)	-44.6
Engager	247 (54.2%)	145.0 (31.8%)	102.0
Total	456		

ANOVA was utilized to investigate the relationship between students' learning strategy preferences on ATLAS and students' cumulative grade point averages (GPA). Three separate analyses were conducted, with one for each of the following parts of the sample: the first-generation college students, the non-first-generation college students, and the total population of the study. These analyses indicated that learning strategy grouping on ATLAS did not significantly influence cumulative grade point average for any segments of the sample (see Table 12).

Table 12: ANOVA for GPA by Learning Strategies

Source	SS	df	MS	F	p
Non-First Gen.					
Between	3.06	2	1.53	2.18	0.11
Within	231.11	329	0.70		
All Students					
Between	2.15	2	1.08	1.41	0.24
Within	322.68	424	0.76		
First Generation					
Between	0.15	2	0.07	0.08	0.92
Within	86.23	92	0.94		

CHAPTER 5

INFLUENCES ON LEARNING

Personal Interviews

In-depth individual interviews were initiated to further explore first-generation and non-first-generation college students. The interviews were analyzed to discern emerging themes. As in the James (2000) study, most of the people interviewed felt that ATLAS correctly identified them. The student voices both illuminated many issues of concern to college students and provided insight into the lives of students. Of the 45 who volunteered, 24 were first-generation college students, with 8 coming from each learning strategy category of Engagers, Navigators, and Problem Solvers and 21 were non-first-generation college students with 7 coming from each learning strategy category. A total of 16 males and 29 females were interviewed. The students who were interviewed ranged in age from 18-56. The ethnicity of the students was as follows: African American--10, American Indian--4, Asian--3, Caucasian--26, and Hispanic--2. Navigators, Problem Solvers, and Engagers provided insight into their learning strategies. These groups of learners also provided their perceptions related to instructor actions that aid or deter their efforts in the learning process.

Learning Approach

Navigators

Navigators "are conscientious, results-oriented high achievers who favor making logical connections" (Conti & Kolody, 1999a, p. 9). Navigators in this study overwhelmingly agreed that the ATLAS description was an accurate depiction of their preferential learning strategy. They tend to concentrate quite heavily upon planning and organization of the material to be learned. An overall plan or strategy is essential in order to provide the structure that Navigators utilize in carrying out the task at hand. Typical Navigator comments concerning planning were:

> I like to compile information and set it up and work from that to see whatever goal I need to reach. I try to follow the plan as much as possible. (48-year-old African American; female; non-first-generation)

> I am concerned with material that fits into meaningful patterns. I section it out and make outlines and do lists. All of the description [of a Navigator in the ATLAS booklet] matches me to a "T". (21-year-old; Caucasian; female; non-first-generation)

> I like to put information into meaningful patterns and try to assimilate what the assignment is asking for and project to the final goal. If I'm not that familiar with it, I will tackle every area to give me the bottom line results. I like to sit back and absorb it. (47-year-old; Caucasian; female; first-generation)

These sentiments were reiterated numerous times by Navigators surveyed who match the Navigator profile of desiring deadlines, schedules, and structure to maximize their learning (Conti & Kolody, 1999a).

The utilization of a variety of organizers aids the Navigator in methodically planning learning activities. Organizers come in many forms. Some are external aids such as calendars, lists, note cards, post-it notes, or schedules. Internal aids such as methods of associating new learning with prior learning are also sometimes utilized to help integrate information and make meaningful connections with novel material. Several Navigators shared their perceptions on this issue of arranging learning activities. For example,

> Lists are good for me. They are a framework for what I'm trying to accomplish. It has a time sequence and schedule. (39-year-old; Caucasian; male; non-first-generation)

> I have sticky notes everywhere. It helps me keep up with the main focus. I focus on this one thing here and write key words on them. I make a lot of outlines. (27-year-old; African American; female; first-generation)

> When I am doing homework, I have a certain day scheduled and get my work done ahead of time. Scheduling is really big to me. I am very organized. Everything is in date order. I write inside my notebook assignment #1 and the grades, for the test etc. Everything is listed. (21-year-old; Caucasian; female; first-generation)

Navigators tend to be driven and very focused learners who when learning "do it to the best of their ability" (Conti & Kolody, 1999a, p. 11). As a result, Navigators tend to focus on grades and evaluation. They are constantly striving to improve their academic performance and to exceed their own expectations as well as those of others.

> I am really determined to reach a goal. It bothers me not to be able to accomplish something. I need to know exactly what is required to set my goals. (48-year-old; African American; female; non-first-generation)

> I am a high achiever so much so it gets on everyone's [her friends'] nerves. For example I am in school now. When my friends ask me to go somewhere, I can't go because I have homework. I'm very focused. I am willing to give up things to get to my goal. I am a high achiever; less than an A is not good enough, an A or I'm mad. I work hard until 1, 2, or 3:00a.m to do homework. If I'm going to do it, I do it to the best of my ability. (36-year-old; Caucasian; female; non-first-generation)

Navigators are so preoccupied with achievement and success that in some cases they can tend to be overcritical of themselves. Being so goal focused can be a double-edged sword of sorts. The advantage is that this behavior promotes achievement, which many times may lead to accolades and accomplishment. Conversely, the disadvantage can be a lack of satisfaction with results and the failure

to enjoy the fruits of one's academic labor. Typical responses that express Navigators' perceptions on this include:

> I am very hard on myself. I am never happy with myself or within myself. I am a perfectionist at times. (27-year-old; African American; female; first-generation)

> Maybe Navigators have a problem with self-esteem, because I am always saying I could have done this better or feel inadequate. Even though we are high achievers, there is always someone better. It is all about wanting to exceed my potential. I want to excel. I don't want to be average. All my life I have been that way. I would go crazy sitting at home, but expectations seem so far out there. After I achieve a goal there is a letdown. I am still focused on the small part I could have done better. (19-year-old; Caucasian; female; non-first-generation)

> I try to be and do what I can do to the best my abilities. Sometimes I go beyond that and do more than I should have to especially in school. My husband says you're only one person. (28-year-old; Caucasian; female; non-first-generation)

Navigators are self-reliant and prefer to work at academic tasks alone. Many times they assert this by declaring, "Sometimes people can assist us best by simply getting out of our way and letting us do our thing" (Conti & Kolody, 1999a, p. 11). Navigators in this study indicated similar thoughts on this issue when they commented:

> I would rather do a project myself because I know the quality. I am critical of others doing a

> half job and not giving 100%. It aggravates me, especially group work where others won't do their part. Group work is OK. I'm learning to take what I can get from it. (36-year-old; Caucasian; female; non-first-generation)
>
> I absolutely don't like group work, but if placed in the situation, I will tackle it and give no less than 110%. I like doing work alone to soak it in and decide what avenue to take. I want to obtain my goals singularly rather than collectively. I like to do work alone without outside interference. (47-year-old; Caucasian; female; first-generation)

Navigators need to be in control of their learning. This is why most of the Navigators in this study indicated that they did not prefer group work and tend to be reluctant to participate in this learning format.

Navigators in this study tended to utilize monitoring as a primary learning strategy. They assess their own progress and also look to the instructor for direction and feedback. This process of gauging their learning is central to maneuvering or navigating their way through a class or an entire educational system. A typical Navigator comment concerning monitoring was:

> I ask the instructor how she thinks I am doing and to check my progress. I don't want to be surprised. It helps to get feedback. (42-year-old; Caucasian; female; non-first-generation)
>
> Prompt feedback; once the test is completed, I want to know immediately. I can't stand to wait. I see what I need to do. (36-year-old; Caucasian; female; non-first-generation)

This technique allows Navigators to adjust their learning plan and concentrate on certain aspects that need attention as well as re-evaluate learning objectives if necessary.

Problem Solvers

Problem Solvers rely heavily upon critical thinking strategies, particularly upon testing assumptions, generating alternatives, and conditional acceptance (Conti & Kolody, 1999a, p. 12). Problem Solvers in this study generally agreed that the ATLAS description of their preferential learning strategy was accurate and typically reflective of them. "Problem Solvers do not generally do well on multiple-choice exams and are better assessed with open-ended questions and problem-solving activities" (Conti & Kolody, 1999a, p. 12). However, one-third (5) of the Problem Solvers disagreed on the issue of performance on multiple choice exams. These Problem Solvers believed that they performed well on this type of format but still preferred essay examinations to allow for a more thorough answer to questions on a test.

> I don't do well on multiple choice tests. They are the worst for me. I look at them and feel like I'm under the gun. Afterwards, I feel like I should have chosen A or B. (23-year-old; Caucasian; male; non-first-generation)

> I don't do well on multiple choice. I like to put things in my own words. I like to interpret and write in my own words. I prefer essay. (18-year-old; African American; male; first-generation)

> It depends on the multiple choices. It is a process of elimination. Multiple choice does bother me. I like essay. I can give a better answer than what is listed. (31-year-old; American Indian; female; non-first-generation)

Problem Solvers frequently commented about the utilization of visualization in learning. Imagination is a large part of the Problem Solvers' repertoire of tools available to skillfully assess and evaluate both learning and the solution of problems. "These learners are vivacious and thrive on spontaneity and creativity" (Conti & Kolody, 1999a, p. 13). Clearly, it is this ability to think in a divergent, innovative manner that makes Problem Solvers' learning invigorating. This trait was emphasized by Problem Solvers and reflected in the following comments:

> It is easier to understand if I can visualize it. If I can see myself doing it then I can pretty much obtain it. If I cannot remotely imagine it or trying it, then I have no success being there. (24-year-old; American Indian; female; first-generation)

> Most of the time, I will see with my mind how to do it. If I see it, I write it down and then follow the steps. When I see a problem, I see the answer. I've already solved it in my mind, and it's up to me to get to the answer. The answer lies within me. There are many voices, thoughts, words flying by, and you have to pick

> the right one. (54-year-old; African American; female; first-generation)

Problem Solvers like to generate alternative solutions and tend to attempt to find the "best" solution through a trial-and-error process. This component relies heavily upon creative thinking. "Keeping an open mind to other learning possibilities" is a key feature of the learning strategy of Problem Solvers (Conti & Kolody, 1999a, p. 12). The utilization of brainstorming is also common by this group of learners. For example,

> I like finding different kinds of ways of learning something. Getting straight to the point and finding the way that is most accurate and easiest. If I see I can solve it that way, I'm going to take that route. (19-year-old; African American; male; non-first-generation)

> I like finding ways around to get what you are trying to get to—finding other routes to get to it. (25-year-old; Caucasian; male; non-first-generation)

> I use brainstorming. I try to see the outcome in my head or mind and try to solve problems. I like it in groups so I can see other perspectives. (19-year-old; Asian; male; first-generation)

> When I try to solve a problem, there is an easier way. There are many tactics to use in solving a problem besides one way. Then I come up with how I will do it. Don't set your mind on one spot--use thinking abilities in other areas. Go beyond that and beyond what sitting in now. (54-year-old; African American; female; first-generation)

This ability to continuously search through a variety of solutions in order to ascertain the simplest answer or most direct route in the learning process is characteristic of Problem Solvers in this study. This differs from Navigators in that Problem Solvers are involved in an invigorating quest for the outcome whereas Navigators tend to "look at learning or an assignment simply as a job to do" or an answer to find (Conti & Kolody, 1999a, p. 11).

Problem Solvers are drawn to an environment that promotes practical experimentation. This milieu allows them to become an active participant in the learning process. Problem Solvers experience the greatest satisfaction and grasp of concepts when they can practically apply learning (Conti & Kolody, 1999a, p. 13). Typical responses reflecting this hands-on aspect of learning include:

> I learn better by doing. I usually have to hear it, see it, and do it. If you tell me, I don't understand all the way. (23-year-old; Caucasian; male; non-first-generation)

> I like hands-on activities like in Biology, for example, the labs. I can picture it and I like to touch them. It helps me to remember it better. (20-year-old; Caucasian; female; non-first-generation)

> I need to touch and see it. It is hard to take notes, visualize, and touch it. I know what I need. (22-year-old; Asian; male; first-generation)

> I like the hands-on aspect with computers and actually working the program. I am taking a course right now off CDs, but there is no practical experience. I can see it, but I'm not able to touch and feel it. (24-year-old; Caucasian; male; non-first-generation)

Problem Solvers are adamant about the importance of questioning in the learning process. This is not only for their own benefit but also for others in the classroom who may not be as willing to ask questions or to help promote their classmates learning. Problem Solvers see learning as a community or group activity where all involved should be making equivalent progress. If this is not occurring, then Problem Solvers believe that the instructor or fellow students should intervene to assist the student in need. For Problem Solvers, questioning is instrumental in their learning process.

> I question a lot, on everything. I feel like I'm the overquestioner to other people afraid to raise their hand and ask a question. If you're thinking it, other people are too but maybe they are afraid or shy and won't ask. (31-year-old; American Indian; female; non-first-generation)

> Not everybody in the class knows. They are sitting there waiting for somebody to ask questions. (54-year-old; African American; female; first-generation)

> I ask a lot of questions. If I don't understand, I ask questions. Until I'm satisfied with the answer, I'm going to keep on asking questions. (24-year-old; Caucasian; male; non-first-generation)

> I learned the only stupid question is the one you don't ask. I encourage others to ask questions and not be afraid and ask if you are doing something wrong. (28-year-old; Caucasian; male; first-generation)

Engagers

Engagers derive the most satisfaction out of learning situations that allow them to interact and relate to others. Engagers are primarily motivated by collaborative learning environments. Engagers generally agreed with the ATLAS description of their preferential learning strategy. They tend to focus on confidence and issues of reward/enjoyment when deciding to initiate a learning activity (Conti & Kolody, 1999a, p. 14). Emotional involvement is usually a vital component that drives their learning. Engager comments concerning their perceptions of the intense and personally derived value of learning were:

> I won't engage if I'm not interested. If I have to do it, I will go through the motions, but once I get started getting into it, it becomes interesting because it is something I don't know. (39-year-old; Caucasian; female; non-first-generation)

> When I learn, I feel it. I don't care for algebra. I have no passion for it. I love history and humanities. I jump in there with both feet. I do it well because I like it. (28-year-old; African American; male, first-generation)

> I get off on computers. I had a phobia. On a whim I bought one. It was like having a new

> girlfriend I was so interested. It was a feeling like I never had before. I was so interested in computers. I got fired up about things, and this usually doesn't last long. It is an infatuation of the moment and then it passes. I know my interest in computers will last. It has been 3 years and I am still interested. (35-year-old; Caucasian; male; first-generation)
>
> I love to learn and love to read anything and everything. I am very excited about school. When I want to learn, I go full-speed ahead. (42-year-old; Caucasian; female; non-first-generation)
>
> I don't start something or read something I don't have an interest in because it is a waste of time. (41-year-old; Hispanic; female; first-generation)

Metamotivation is a primary tool utilized by Engagers that allows them to focalize their attention and energy upon learning activities. They are stimulated to learn by an internal desire toward personal growth and learning. Learning has to have utilitarian value before Engagers will become "engaged." The knowledge gained must be linked with an immediate or future need in order to really draw an Engager into the learning process. Several Engagers exemplified this point when they stated the following:

> I look forward to coming to school. I think, "What are we going to do today?" and I get psyched up. I like to learn. It may take me a while, but once I get it, I got it. (30-year-old; African American; female; non-first-generation)

> First, I see how it would be useful to me or what can I do with the skill once I get it. I won't stick with stuff if it won't get me where I want to go or if it doesn't seem worth my time. I am passionate as long as I am interested. Once I latch on to something, I love learning, and I need to know everything about everything. (18-year-old; American Indian; male; non-first-generation)

Engagers learn for the sake of learning. Grades are generally seen as secondary and are not particularly vital to most Engagers. Many feel cheated if they receive a grade that does not reflect what they perceive as satisfactory progress in a class. An example of the focus on learning rather than evaluation was illustrated by representative Engager comments:

> I feel like I am cheating myself if I am doing something but not doing it as good as I could have. I'd rather do something and know I genuinely did it well versus just getting a good grade. I'm fine with a B or C because I did the best I could and knew I challenged myself. (23-year-old; American Indian; female; non-first-generation)

> It bothers me if I don't feel like I've earned the grade I've got. If I should have a high B and the instructor curves the test, then to me that is what I have earned; I feel funny about that. (35-year-old; Caucasian; male; first-generation)

> I focus on learning not evaluation. Everything I do I give it my all and expect to come out on top. If I'm not learning and I'm not interested, I'm not going to learn. I have to be interested. It has to appeal to me. (41-year-old; Hispanic; female; first-generation)

Facilitation of Learning by the Instructor

Navigators

Interviewees in this study were asked what instructors do to enhance or facilitate their learning process. Many Navigators responded that they learn best when expectations are clear and specific. Structure provides the preeminent foundation that allows Navigators to flourish. They indicated that instructor best practices included: (a) they were approachable and willing to provide feedback, (b) they maintained standards that were challenging but not rigid, and (c) they provided distinct expectations.

Navigators indicated approachability and attentiveness as effective teaching practices. A willingness to provide feedback was viewed as a positive instructor action that was closely related with instructor accessibility. "These learners also value prompt feedback. It helps them to 'keep on track' and to know that they are not wasting their time performing a certain process incorrectly" (Conti & Kolody, 1999a, p. 11). Navigators utilize the instructor as a guide that allows them to focus their learning.

> The perfect teacher is one who shows interest in students and cares if students make it through the class. One who is willing to give one-on-one attention and shows he cares and is there if you have questions. They explain things in detail so

> you can understand. (27-year-old; African American; female; first-generation)
>
> The teacher was attentive. She listened, asked for feedback and let the class express itself. Everybody doesn't think the same way, but it opened up opportunity for expression. She made sure you have an understanding of what you are doing. You need leeway for discussion to make sure everyone understands what is required. My favorite teacher offers you something more—a totally different perspective. It is good when you can have variety. (52-year-old; African American; female; first-generation)
>
> The best teachers are approachable, and you are able to talk to them. (36-year-old; Caucasian; female; non-first-generation)

Navigators preferred instructors that challenged them and helped them exceed their potential. They often use the terms such as "fair" and "firm" to refer to instructors that they most preferred in the classroom. Navigators tend to be more motivated when an instructor has very high standards, and they seek to meet and exceed them. Some Navigator responses that exemplified instructors who inspired students to excel were as follows:

> The ones that were hard and nobody liked. I rise to the expectations of these teachers. I love the hard ones. The best teachers are hard noses, no excuses, get it done. (36-year-old; Caucasian; female; non-first-generation)
>
> I liked the teacher because he was interested in the subject and he didn't just read out of the book. He pushed you quite a bit and made everybody get involved. He didn't just let you get by. He insisted you talk even in a bigger group. He was more demanding. I did really well

> in his class due to the fact that he made it interesting and he demanded. He did more than his job. He wanted results more than just a paycheck. (31-year-old; Caucasian; male; non-first-generation)

> My teacher has given me quiet encouragement. She sees that I am trying to improve myself as a writer. I take the assignment and go beyond what she asks. She's thorough, probably a Navigator. She understands I want to do the very best. She makes you stretch as a person, but it's up to the student whether they want to do that or not. She gives complex essays and pushes you. (47-year-old; Caucasian; female; first-generation)

Navigators favored instructors that were clear and exact concerning both individual assignments and specific course requirements. "Navigators like to be presented with the 'big picture' first, so they know what is expected" (Conti & Kolody, 1999a, p. 9). They did not like instructors that altered the syllabus or appeared disorganized. Typical Navigator responses concerning instructor clarity include:

> He was excellent. He made it so you could understand Shakespeare. He would put it in plain English and apply it to present day. He was straightforward. You knew what you had to do. (28-year-old; Caucasian; female; non-first-generation)

> I want to know what is expected of me. It bothers me if the instructor is not real specific. If nobody tells me what is required then I don't know. (38-year-old; Caucasian; female; first-generation)

Problem Solvers

Problem Solvers utilize all three strategies in the area of critical thinking (Conti & Kolody, 1999a, p. 12). They like to generate alternatives, test assumptions, and utilize questioning as a significant aspect of their learning strategy. Problem Solvers in this study maximized learning when instructors: (a) allowed them to question and discuss learning in an open forum, (b) were thorough and utilized a step-by-step process in teaching, (c) provided an environment that encouraged hands-on learning derived from practical experience, and (d) promoted the learning of all students in the classroom.

Problem Solvers learn best in an atmosphere that is centered upon questioning and allows for discussion of ideas and theory. This questioning not only aids Problem Solvers' own learning but provides a mechanism to assist others in the classroom. They like an instructor that sanctions open-ended questioning that helps them learn in a more comprehensive manner. They prefer essay questions or at least a format were they can thoroughly answer questions in an unrestricted manner.

> Class is best if it is an open forum to really interact with instructors and classmates and debate the topic or subject. I like open-ended questions that give you leeway to answer the way you want and instructors who give personal

> examples. (23-year-old; Caucasian; male; non-first-generation)
>
> I like instructors who had an open forum for talking so everybody understands. They make sure everybody is on the same page. (18-year-old; African American; male; first-generation)

Problem Solvers like real-world examples from instructors and want to be able to apply the material that is learned. "Problem Solvers thrive in a learning environment that promotes experimentation through practical experience and hands-on activities" (Conti & Kolody, 1999a, p. 13). This allows Problem Solvers to both personalize and visualize material to be learned.

> One that uses real-life experiences not just the book. He took topics from the book and gave real life examples. It is easier to picture and understand terms. (25-year-old; Caucasian; male; non-first-generation)
>
> She seemed credible. I don't like ones who pass stuff out and read from the notes and don't go into explanation. I like teachers that relate material to the real world. I like them to be organized and go through the outline and touch every subject but in their own words. (21-year-old; Hispanic; female; non-first-generation)

Problem Solvers prefer instructors who were logical and methodical in the delivery of class material. Problem Solvers desire incremental progress in the teaching-learning transaction. They like to begin by learning the rudimentary aspects and build a strong foundation before attempting to learn more complex

elements. Responses indicative of this instructional preference include the following:

> He breaks it down so it is simple. It is step-by-step and thorough. (20-year-old; Caucasian; female; non-first-generation)

> I like when the teacher explains your precepts and concepts by starting with the basics and teaches you like they are teaching a child. Then they come on and bring you up to higher levels of learning. It is best if they don't assume the person knows the answer right away and then brings them back up to the higher level. They get up there and explain what we are learning from beginning to end. If I don't understand it, then let me know now. If I don't, talk to me after class. (54-year-old; African American; female; first-generation)

Problem Solvers flourish in a cooperative learning environment. They prefer an atmosphere where all students in the class are given enough attention to be on equal ground. Problem Solvers see learning as a group effort and as a result they expect the instructor and other students to provide personal attention to assist classmates in need.

> Class is like a team. Everybody is in there to get as much information from the class as they can. If one student is not catching on, well, the other students need to pitch in. It is the other students' and partly the teacher's responsibility to help. (28-year-old; Caucasian; male; first-generation)

> They make sure everybody is on the same page. (18-year-old; African American; male; first-generation)

Engagers

Engagers like to be actively involved in the learning process and are motivated by measuring the level of enjoyment and reward the learning activity provides. "In this strategy, the affective domain is the dominant factor in learning" (Conti & Kolody, 1999a, p. 14). Engagers in this study described instructor behavior that is beneficial to their learning process as those who: (a) place learning above evaluation, (b) develop a personal relationship with their students, (c) make learning fun, and (d) are passionate about learning themselves.

Most Engagers strongly desire a personal relationship with their instructor in order to maximize learning. Engagers will not get involved in learning without this crucial component. They tend to take on the instructor's attitude concerning the course or material and become enthralled if the teacher is enthusiastic and withdrawn if the teacher is apathetic toward learning. Typical Engager responses concerning the issue of personal relationships with the instructor include the following:

> I feel closer to my teacher when I have a good relationship. It gives me good motivation to attend class and go to all classes and study. (34-year-old; Caucasian; Iran; female; first-generation)

> It is hard for me to respect someone who obviously doesn't care. They affect so many people's lives, and if they don't care then why should I care about my assignment. (39-year-old; Caucasian; female; non-first-generation)

> It matters a lot if they don't care and don't have a passion; I don't learn or do as well. If it is not important to him then it's not going to be important to me. (43-year-old; Caucasian; male; first-generation)

> It matters if the teachers care. You can tell if they are putting effort into the class. It makes you work harder. (18-year-old; American Indian; male; non-first-generation)

Engagers have a strong desire to gain reward or enjoyment out of the learning process. "If the learning activity is not perceived or expected to be a worthwhile or enjoyable experience, the Engager will seek out another activity that they will find more meaningful" (Conti & Kolody, 1999a, p. 14). Instructors who incorporate entertainment or games into their repertoire of learning activities will both gain and maintain the attention of Engagers in their classroom. Specific examples of instructors utilizing rewarding activities in the educational setting include:

> If I'm not learning anything, it is a waste of time. They make it interesting and make the learning fun. We played jeopardy-like games in anatomy class. We knew the answers to the questions but we had fun. (39-year-old; Caucasian; female; non-first-generation)

> It was fun the way he [the football coach] taught. He would do class work out of plays up on the board like for football. It was very fun, and I learned a lot that way it helped me remember terms. (30-year-old; African American; female; non-first-generation)

> He taught in a way that kept me aware, entertained, and into the subject. (18-year-old; American Indian; male; non-first-generation)

Engagers are definitely drawn to instructors who show enthusiasm and a passion for the subject they teach. This zest for learning and the subject matter at hand tends to inspire Engagers. They will attend class regularly and will tend to work harder for this type of instructor. Typical responses concerning ways that instructors' enthusiasm feeds that of Engagers are as follows:

> He was qualified to teach at the college level and had a passion for his work. That is what teaching is about. He brought it to life and made it more interesting. He was interested in the subject. It was not just what he had to do. (30-year-old; African American; male; non-first-generation)

> My Spanish teacher just loved what she did and drew everyone into it. An instructor can make a class or subject interesting depending on how passionate they are. I was dreading chemistry, but once I got in there, the teacher drew me into it. (23-year-old; American Indian; female; non-first-generation)

> She has a passion for it. You can see it when she is talking. The first day she gets you instantly just like that and you are hooked. (39-year-old; Caucasian; female; non-first-generation)

> She was so excited about teaching, I still remember her she made you enthused about learning because she loved teaching. (42-year-old; Caucasian; female; non-first-generation)

> The computer teacher has excellent knowledge of subject matter, seems to care, and has interest in the class. It makes it easier to learn from them when they have a passion. You can tell he's interested. You can tell and do well in the class. (43-year-old; Caucasian; male; first-generation)

> I like instructors that love their job. It makes me like it. The instructor makes it more interesting. Even in a difficult subject if the teacher is enthused and enjoys it, then I am, and I learn. (28-year-old; African American; male, first-generation)

Instructor Actions that Detract From Learning

Navigators

Interviewees in this study were asked what instructors do that detracts from or interferes with their learning. Generally students in this study were not eager to discuss negative instructor actions and instead preferred to focus most of their comments on positive instructor actions. As a result, students did not identify many distractions to learning. Students' reluctance to discuss the negative actions follows a pattern established in a previous study utilizing ATLAS (James, 2000).

Navigators thrived on structure and strongly desired direction from their instructors especially in the initial stages of a learning task. They wanted instructors to give

them attention and guidance for both specific assignments and in the classroom in general. Navigators did not like instructors who would not answer questions, provide feedback, or thoroughly explain class assignments. Many Navigators expressed frustration that arose from instructors who failed to provide these elements that they believe are critical to their success in college.

> The teacher wouldn't answer questions or show how to work problems on the board. They just said, "Here it is. The answers are in the back of the book." They gave no direction. They are not doing what they are supposed to do, which is to teach me. I'm here to learn. I'm here, and the teacher is just here to do whatever. I want involvement. I want someone who will tell you this is how things are; this is expected. I don't want someone who sits back. (28-year-old; Caucasian; female; non-first-generation)

> They tell students to do something but don't give enough explanation or mention why we need to do it. Some just think teaching is his or her job, and that's it. (32-year-old; Asian; male; first-generation)

> I don't like an instructor who gives an assignment and says, "OK, do it" with no explanation and who is available only during class hours. It doesn't make you feel comfort if they are just there for a paycheck and go home. (27-year-old; African American; female; first-generation)

Navigators do not necessarily need to have a personal relationship with their instructor in order for them to have a successful learning experience. Generally they have the ability to filter out emotions and external factors and

focus upon the task at hand (Conti & Kolody, 1999a, p. 10). However, Navigators were adamant about the issues of concern and respect from the instructor. These students desired an egalitarian relationship with their instructor and did not want to be treated as anything less than an equal partner in the learning process. Typical Navigator comments concerning this issue included:

> I don't like teachers that treat you like you are in grade school or high school. I need to be treated with respect. It is a respect issue. (48-year-old; Caucasian; female; first-generation)

> If I'm having a problem and the teacher continues no matter what, people get behind. I do not like it if the teacher yells at you in front of the whole class and humiliates you. (36-year-old; Caucasian; female; non-first-generation)

Problem Solvers

Problem Solvers desired teaching methods where instructors utilize questioning as a technique to promote understanding. Conversely, Problem Solvers indicated when instructors fail to provide an avenue that allows for and encourages inquiry and investigation, it is a major hindrance to their learning process. This aspect of critical thinking is highly indicative of Problem Solvers in this study. Instructors who fail to provide an arena for these higher-order-thinking skills will have a difficult time keeping Problem Solvers involved in the

classroom. Typical Problem Solver comments concerning this issue included:

> One that reads out of the book and doesn't let us ask questions. (23-year-old; Caucasian; male; non-first-generation)

> The worst thing a teacher can do is not being able to take time to explain something, even outside of class. (25-year-old; Caucasian; male; non-first-generation)

Problem Solvers "want the space to be able to do things in a way that makes sense to them" (Conti & Kolody, 1999a, p. 13). Similarly, Problem Solvers demand respect in the classroom. This issue of mutual respect emerged when Problem Solvers were discussing actions that instructors take that detract from their learning process. In order to provide mutual respect, an instructor must "make participants feel that they are valued as separate, unique individuals deserving of respect" (Brookfield, 1986, p. 13). Problem Solvers want attention when they have a question and an instructor who is responsive to their individual needs. Problem Solvers indicated this desire when they stated:

> I think a teacher should be willing to answer your question. If they won't that is part of their job to answer questions. It goes along with respect. Respect is important. I think the student deserves respect. (56-year-old; Caucasian; female; first-generation)

> One instructor didn't care. He focused on other students not me. If they don't I will skip or drop the class. It is a respect issue. It is about mutual respect. (19-year-old; Asian; male; first-generation)

Problem Solvers expect to be treated as co-inquirers in the learning process and do not respond well when they are treated as less.

Engagers

Engagers "key to learning is engagement--a relationship between the learner...and the teacher" (Kidd, 1973, p. 266). Engagers discussed instructor behavior that had negative implications for their learning. It is clear from the dialogue just how central a relationship with the instructor is to Engagers. Engagers strongly align learning with their feelings toward the instructor and the efforts they take to nurture a personal relationship with the students. Engager comments concerning this aspect of the learning process include:

> One instructor, he didn't help me. He provided no personal or one-on-one contact. He just said here is the work do it and he just spent a little time with us. (28-year-old; African American; male, first-generation)

> He was a drill sergeant and had no compassion for his students. If someone doesn't care and doesn't like their job they should do something else. (39-year-old; Caucasian; female; non-first-generation)

> If I don't feel close, I still try to study lessons but it makes me not want to go to class. I prefer to do something else. If I think the class is boring or not learning much, I feel I am wasting my time. (34-year-old; Caucasian; Iran; female; first-generation)

> My worst teacher was insensitive and unconcerned about teaching. I want to grow and he didn't want to give feedback. (42-year-old; Caucasian; female; non-first-generation)

> I do not like teachers that don't seem to care if you learn the material or how you learn. (43-year-old; Caucasian; male; first-generation)

> I don't like it when instructors just come to class and talk about themselves and say I'm the best teacher, I'm the best or if they only talk about themselves and their family. (20-year-old; Caucasian; Iran; female; first-generation)

Learning Projects

Interviewees were asked to discuss specific actions that they took in the last learning project they were engaged in outside of the realm of college coursework. However, students did not want to discuss this area in-depth. As a result, the information gathered here was not as rich as other data gathered for this study. Navigators are learners who "like to be in control of their surroundings and to work with others who value the same clean, organized setting" (Conti & Kolody, 1999a, p. 10). Navigators go directly to the source or sources that they feel will be of both the best and most immediate help. They definitely adopt a no nonsense approach on both

learning projects and what resources to utilize in the process. Key words that surfaced in the interviews concerning the approach to learning projects were "deadlines", "examples", and "experts".

> I call people who know how to do it. I use experts. If I don't know how, I'll go to the top. If it is something I don't know I'll find out. Trust me, I'm inquisitive. (36-year-old; Caucasian; female; non-first)

> I need really good examples on writing papers so I pull them off the Internet to get ideas of structure. I need someone to show me. (38-year-old; Caucasian; female; first-generation)

> I take time setting things up such as materials, getting ideas, and examples. I looked in books, magazines, and got ideas for my house. I have a plan in mind when I begin and dates I wanted certain things done by—deadlines. (48-year-old; African American; female; non-first-generation)

Problem Solvers utilize a more comprehensive approach when beginning a learning project. Problem Solvers begin with the end in mind and work backward from the end point. After looking at the overall goal they have in mind, Problem Solvers then begin to generate all the alternatives they could employ to complete the project. Visualization was once again a primary component as they conceive their project from the end to the beginning. Problem Solvers' inquiry is guided by a natural curiosity to learn.

> I picture what could or what is going to happen when I am done with that opportunity. It is a meditative state to picture yourself doing what

> you want to do. Then what you do is 10 times easier cause you know the end result. Just finding a way to the end result. If you fall down one way, there might be 20 others. One way might be easier. (25-year-old; Caucasian; male; non-first-generation)

> I go to the Internet and look it up broadly and see other resources. If I have something in my head and I really want to know about something or how to do it, I look up resources and see if something is there to benefit me. I plan out exactly what I'm going to do and spend this much time. I like to have things planned out. (21-year-old; Hispanic; female; non-first-generation)

> First, I investigate it. I ask, would I like to do it and put effort in? What is it going to take for me to learn this? Will I use a class, book, video, or some combination or personal instruction to learn this the best. Then I pursue those avenues. If I don't have a lot of time and don't want to waste it so I do a lot of preparation before I begin. (43-year-old; Caucasian; female; first-generation)

> I take a little tiny piece at a time and try not to throw everything together and not know what is going on. (25-year-old; Caucasian; male; non-first-generation)

"When an Engager makes a decision to enter into a learning activity, it is usually well contemplated and a commitment is made to achieve the goal originally intended" (Conti & Kolody, 1999a, p. 14). Engagers overwhelmingly mentioned that they had to have a desire or need for the learning in order to for them to initiate a learning project. Another fundamental element was building or maintaining confidence that they could actually complete

the learning project. One student mentioned that she had to personally be involved in the project or she would become bored. Immersion in learning provides Engagers personal satisfaction when the project is complete (p. 14). Engagers will not continue a project if they perceive there is little value they will receive as a result or if they believe it will not be an enjoyable task (p. 14).

> The first step, it would have to be something I was really motivated to do. (41-year-old; Caucasian; female; first-generation)
>
> First I say I like to learn this and I do my best to do that. (34-year-old; Caucasian; Iran; female, first-generation)
>
> When I have something I want to learn about, first of all I have to think is whether it will help me in the future or not. I might end up not using this skill, and it would be a waste spending the time learning something I won't use. (31-year-old; African American; female; first-generation)
>
> When I do a project, if somebody else is doing it for me, I get bored. Don't tell me how to do it or do it for me. I'm not going to learn anything. (42-year-old; Caucasian; female; non-first-generation)

CHAPTER 6

INFLUENCES ON COLLEGE ATTENDANCE

First-Generation College Students

Influences on college attendance of first-generation and non-first-generation students cut across learning strategy groups. Like other demographic variables related to learning strategies, these two areas were not specific to any learning strategy group. When asked what influences impelled first-generation students to attend college, students gave varied responses. Several of the students were motivated by primarily economic factors. Watching family members struggle financially in physically-challenging jobs also strongly influenced first-generation students to pursue an education. Many were attending college in hopes of obtaining not only better employment possibilities but a different future as well.

> I attend college for money--to get a decent education, support higher quality of life, and support your family. (19-year-old; Asian; male; first-generation; Problem Solver)

> I watched my mother work jobs that were hard on her body, physical minimum wage jobs. I wanted more. I saw myself going down the same road. Use your head not your body, and you won't miss much work being hurt. All my friends are college educated, and I hear them talk about things. I think I should know those things. (38-year-old; Caucasian; female; first-generation; Navigator)

> If you don't have a good education, you don't get a good paying job. It's important. I know that it just helps you along the way. (27-year-old; African American; female; first-generation; Navigator)

Life transitions heavily influenced first-generation college students in their pursuit of new opportunities for the future. Life altering situations such as divorce or disabilities changed many of these students' life plans. Education was seen as a way to help alleviate both financial or physical limitations. These transitions included:

> A divorce that resulted in closing my home day-care business. My mother said she would help me and my dad will too. I am determined to stand on my own. My husband, I caused him problems because I wouldn't be dominated and under his control. People shouldn't be kept in a cage. (36-year-old; Caucasian; female; non-first-generation; Navigator)

> I got into Chapter 31 vocational rehabilitation from the VA. I have a bad employment history due to staying short time spans at work. I was a truck driver and due to a disability and medications for it, I am staying away from my profession. Due to my physical disability they offered schooling at no cost to change occupations. Forty-eight months of school is like giving me a vacation to choose something else. (28-year-old; Caucasian; male; first-generation; Problem Solver)

> In the last 5 or 6 years I've had a lot of sickness. I'm a practical nurse and couldn't do that kind of work anymore. I developed carpal tunnel and the doctor said, "Change your profession". I did something I thought I could do years ago and didn't take the opportunity.

> That is why I am here. (52-year-old; African American; female; first-generation; Navigator)

Career changes are among the top events that precipitate first-generation students beginning college or their return to complete initial attempts at receiving a college education.

Family was also revealed as a primary motivator for entering college in several of the first-generation college student interviews. This influence was particularly salient among the Asian students in this study. Many times both internal desires to give back to their family of origin and the external demands of family led students to attend college in hopes of a securing a better life for themselves and their families. First-generation college students indicated the following:

> Family pressures to help the family out. I think more about the family than I do myself. How can I help them? I'm pushing myself, and it puts more stress on me. How much will I make to help the family? My main concern is helping family. (22-year-old; Asian; male; first-generation; Problem Solver)

> I see my mom's trouble and pain. She works manual labor. I want to repay the debt. I am doing this for the family. I don't care about myself; [it is] family first. I am paying a debt for them having me and feeding me. I do it all for my family, for mom when she gets old. (19-year-old; Asian; male; first-generation; Problem Solver)

> You see on TV all the Hispanics live in the projects. That is why I am pushing for my son's education because it goes back to how minorities are portrayed. I wanted him to be an educated black young man and wanted him to know his past and understand how things are and not necessarily just to get a better job. (41-year-old; Hispanic; female; first-generation; Engager)

Several of the individuals interviewed felt a strong responsibility to set an example for future generations by being the first in their family to traverse the educational pathway. This commitment to serve as a positive role model for their family members tended to be an inducement that led to college attendance. Responses indicating this desire include:

> My kids are the reason. How can you tell your kids to attend college when I have only finished high school? You have to be an example for your kids. (38-year-old; Caucasian; female; first-generation; Navigator)

> I was ashamed that I was a high school dropout. There is a stigma of not having an education. I can just now talk about it, the shame of being uneducated. To cover it, I read voraciously, to enlarge my vocabulary so people wouldn't know I didn't finish high school. I got tired of thinking about it and got off my hindquarters and took the GED. It was like I won something nationally. I felt so proud about it. To me education is everything. I went about it the wrong way and won't let it happen again to my son. (47-year-old; Caucasian; female; first-generation)

Many of the first-generation students enter the community college lacking self-confidence and possessing

self-doubt. These students are motivated to attend the community college for diverse reasons. Many attend to promote personal development and personal growth, others to bolster self-esteem, or for self-improvement reasons. Typical responses that reflect this desire to achieve an education for the attainment of individual goals include the following:

> Once you get an education, you are free. The door is opened for you, and you can know more about the world, the environment, and society. (31-year-old; African American; female; first-generation; Engager)
>
> The influence for higher learning is personal. My family does not have a college background. I am the first to go to college. It is pressure. I want them to help me and serve as a role model. I want to further develop my mind and for my future occupation. (18-year-old; African American; male; first-generation; Problem Solver)
>
> I needed something to build my self-esteem. Getting a degree for me is an esteem builder. (56-year-old; Caucasian; female; first-generation; Problem Solver)
>
> I came back to school for my son at first, to set the example and make sure he went. Now I'm in it, I'm in it for me. I am not in it for more money or a better job. I am getting self-satisfaction and doing it for me. (41-year-old; Hispanic; female; first-generation; Engager)

Many of the first-generation college students had previously placed their own desires and needs behind their children's and spouses needs and are doing something for themselves for one of the first times in

their lives. The transition can be both empowering and exhilarating.

Many times education was not stressed in the home of the first-generation college students. Messages concerning the value of an education were seldom heard or uttered in their homes. Several first-generation college students mentioned the impact of this oversight. The lack of dialogue concerning the importance of a college degree was revealed in the following comments:

> Education wasn't important to my parents so they didn't stress it. Academics were not stressed in my household, but I will break that kind of thinking. My son won't be that way. This elevator is going all the way to the top for me, and I want my son to go also. (47-year-old; Caucasian; female; first-generation; Navigator)

> My family didn't value education. My parents finished junior high and started to work. I try hard, but my mother never understands and doesn't really know what it is like to be educated. She doesn't understand why I have to study more, why now. She's kind of old-fashioned. She wants me to get married and have children. I was lucky enough to take honors classes. It is a good thing. I can tell her, but she never understands. It is a sad thing. (32-year-old; Asian; male; first-generation; Navigator)

> I wasn't encouraged by my family to go to college. (28-year-old; African American; male, first-generation; Engager)

> My parents didn't see education as a key. Our family members are workers. Once you hit 14, you went to work. My son and I and my sister are the only ones in school. We were taught to work and get what we wanted by hard work. It contradicts

> what you hear in the media that you have to have an education to get a good job. (41-year-old; Hispanic; female; first-generation; Engager)

> My dad went to 11th grade and was a farmer. My mom went to 10th grade when she quit school. I would have to say they were not for education, not that they were not necessarily against it. (56-year-old; Caucasian; female; first-generation; Problem Solver)

Not all first-generation college students lacked encouragement from family members. Some first-generation college students were clearly influenced by positive messages from family members extolling the virtues of a college education. However, this was not the message sent by the majority of first-generation college students' families. These families were interested in the financial benefits that a college education can provide. Examples of encouragement include:

> My parents are very supportive on education. They encourage me. We need money. (22-year-old; Asian; male; first-generation; Problem Solver)

> My family always wanted me to go. I was going to UCO but got pregnant. I wanted to go. My mom is real supportive. She watches my daughter. (21-year-old; Caucasian; female; first-generation; Navigator)

> Education is all they emphasize. They say, "education, education." They say, "See, out in the world education is the key in America." (19-year-old; Asian; male; first-generation; Problem Solver)

> I attend because I like to learn. It makes me improve my English language. It will help me to

> have a good job, and my parents want me to go. My father encouraged me a lot. (34-year-old; Caucasian; Iran; female, first-generation; Engager)
>
> My family values education and they give me a lot of support. (27-year-old; African American; female; first-generation; Navigator)

Non-first-generation College Students

Non-first-generation college students stated several reasons that were similar to those of first-generation students for wanting to attend college. However, striking differences separated the groups. There was a difference in parental influence. College was viewed as a natural progression and step in achieving one's life goals for non-first-generation students. "Parents who have attended college have values and behaviors generally compatible with those of the college community" (Brooks-Terry, 1988, p. 128). The expectation of college attendance greatly impacted the behaviors and perceptions of the students interviewed in this study. Comments that reflect this pro-college perspective include:

> Everybody in my family had gone to college. I grew up knowing that after high school you go to college and go from there. It helps in making a living and in your overall knowledge of the world and day-to-day functioning. (25-year-old; Caucasian; male; non-first-generation)
>
> Education was very important in my family. My parents and brothers went to school. If I applied myself and showed an effort, my parents

> were behind me. If I don't, then they were gone. (39-year-old; Caucasian; male; non-first-generation)
>
> I just knew I always had to go to school from my mother. (30-year-old; African American; male; non-first-generation)
>
> My family values education. Other than church, it is one of the main expectations of my family. (19-year-old; African American; male; non-first-generation)
>
> My grandparents were strong on education. They said "education, education, education." (31-year-old; American Indian; female; non-first-generation)

Education was viewed as a cornerstone to economic well-being and future success in the majority of these families.

Factors that non-first-generation students shared with first-generation students included obtaining an education for economic and employment opportunities as well as for personal reasons. Financial factors, particularly those involving favorable employment opportunities, were indicated by non-first-generation college students as a primary motivation for college attendance.

> I got tired of working dead-end jobs and realized the career I have chosen requires college. The time to do it is now. The better jobs require the degree and that is why I did it. (31-year-old; Caucasian; male; non-first-generation)
>
> I just always liked school. When I got out of surgical tech school, I knew I didn't want to do this forever. I wanted to do further careers.

> (30-year-old; African American; male; non-first-generation)
>
> I needed college to get in the field I'm working in, to move up or get anywhere I have to have it. (23-year-old; Caucasian; male; non-first-generation)
>
> I know I need some type of degree to get anywhere. (28-year-old; Caucasian; female; non-first-generation)

Thus, financial considerations were a critical factor in deciding whether or not many of these students enrolled for college.

Non-first-generation students were motivated to attend college for numerous reasons. Many of the students came both to grow as individuals and to gain knowledge for self-improvement. While the impetus for attendance varies for each individual student, the underlying theme was one of valuing oneself as much as wanting to improve. Personal fulfillment and self-actualization were among the reasons stated by non-first-generation students for college matriculation. Examples of these influences included:

> I just wanted to be better. I didn't want to be 50-years old with the same educational level. I want more; I want it all. People have been there at work 25 to 30 years at work. I know I have more potential. (26-year-old; Caucasian; female; non-first-generation)
>
> I want to do something that I want to do. It was something I needed to do for myself, something for me. (42-year-old; Caucasian; female; non-first-generation)

> You need an education regardless of who you may be. Each person needs to better themselves and advance themselves further. Go with the ability within you. (54-year-old; African American; female; first-generation)

Many of these individuals realize the intrinsic value of learning and reflect this in their attitudes, beliefs, and perceptions concerning education.

Life transitions also compelled many of the non-first-generation students to seek an education. Life changes due to divorce, disability, and work-related changes also led many of the non-first-generation college students to college. Typical responses reflective of these shifts include:

> I wish I could have done it a long time ago. I felt I was lost and didn't have an identity. I was hurt on the job [construction] and am being retrained. I have a chance to further myself. Now my back is fused and now my brain is doing the work. (39-year-old; Caucasian; male; non-first-generation; Navigator)

> I got laid off from the job I've done 10 years covering arms rests with upholstery for an airline. I went to another job 4 months and got fired. They said I didn't pay attention to details. It was right for me to come to school. I always liked school. (42-year-old; Caucasian; female; non-first-generation; Engager)

> I am not able to do cosmetology or bus driving anymore. I have lupus, a disability, and couldn't cope with the changes. I am not supposed to be in school but I am doing it. I have come a long way and had to get on with my

life. (48-year-old; African American; female; non-first-generation; Navigator)

Barriers of First-Generation College Students

Three predominant barriers that must be overcome in order for students to initiate college attendance include dispositional, institutional, and situational barriers (Cross, 1988, p. 98). Dispositional barriers "are those related to attitudes and self-perceptions about oneself as a learner" (p. 98). Dispositional barriers include feelings of fear related to age and feelings of inferiority related to one's academic ability (p. 99). Institutional barriers "consist of all those practices and procedures that exclude or discourage working adults from participating in educational activities" (p. 98). Institutional barriers include bureaucratic enrollment procedures, lengthy programs, and inflexible course schedules (p. 99). Situational barriers "are those arising from one's situation in life at a given time" (p. 98). Situational barriers include childcare, cost, family, and work responsibilities (p.99).

Economic

Barriers that impacted first-generation and non-first-generation students cut across all groups of learners. There were no patterns related to learning strategy

preferences. All college students face barriers that they must overcome in order to achieve desired academic goals. First-generation college students experienced a variety of obstacles including cultural, economic, employment, fear-of-failure, fear related to academic work, gender, and language. These hurdles led many of the students to postpone college attendance and are still currently factors in lengthening the time to degree. Economic barriers were a distinct theme with first-generation college students. Financial pressures impact not only the individual students but also their immediate family as well. The sacrifice and struggle is evident in their words.

> Financially school is covered, but I have other financial responsibilities and wish I could do better. My daughter is 10-years old, and it is a tough blow when there is no food in the refrigerator. It makes me feel bad. (28-year-old; Caucasian; male; first-generation; Problem Solver)

> Physical barriers are pretty much my challenge. Some are financial. I have stopped and started and stopped and started because of family responsibility and work. (52-year-old; African American; female; first-generation; Navigator)

> Economically I have no money. It is up to me whether to go or not. I will get a degree and be happy. Life ain't easy, but everybody has to try. (19-year-old; Asian; male; first-generation; Problem Solver)

> Having to work while going to school, for me it is real hard. I have to stay up late for

> homework or to study. (41-year-old; Caucasian; female; first-generation; Engager)

Fear-of-Failure

Failure expectations and self-esteem issues were common among first-generation college students whose family and friends have not had exposure to the higher education system. Up to this point, these students had allowed these fears to limit their potential particularly in academically-related endeavors. Due to an existing lack of self-confidence, these students placed themselves in a very vulnerable position just by walking through the door and enrolling in college for the first time.

This fear "new students" tend to possess was discussed by Cross in the early seventies (Cross, 1971). Many times a failure-threatened personality is acquired as a result of prior negative secondary school experiences (p. 30). Many of these students:

> Have learned that learning involves risks to ego. There is, after all, always the chance that in approaching any new situation--which is the essence of learning--they might fail. Whereas the past experience of good students tells them that they probably will succeed, the past experience of poor students tells them that they will probably fail. (p. 30)

As a result, many of these students end up beginning their academic career at the community college (p. 25).

> What I fear is...thinking I can't do it and end up dropping out. That is my biggest fear and I'm trying to overcome that fear. (27-year-old; African American; first-generation; Navigator)

> I was terrified. I spent the weekend before school crying. I felt I would fall flat on my face. I stress over tests still. I am my own worst enemy expecting myself to fail. (38-year-old; Caucasian; female; first-generation; Navigator)

> The fear that I felt thinking I have been out of school a long time and the fear-of-failure. I don't want to fail. I have never really failed at anything before. After the first test, I was fine. (41-year-old; Hispanic; female; first-generation; Engager)

Academically-Related Fears

Many times first-generation college students feared that they did not have the intellectual competence or determination to succeed in this unfamiliar milieu. Other first-generation students were afraid that they no longer possessed the academic skills needed to succeed in college or if they were capable of college-level work. Age-related fears led many of the students to become intimidated by youthful classmates. Some of the students' fear and self-doubts remained even after they had proved themselves academically.

> Yes, even now that I have freshman composition under my belt, it scares me silly to think about algebra. I still have a lack of confidence.

> (56-year-old; Caucasian; female; first-generation; Problem Solver)
>
> Lots of fear about school, homework. (22-year old; Asian; male; first-generation; Problem Solver)
>
> Fear right off the bat of being surrounded by people who were not my peers, but kids as young as my children. I am the oldest one here but I say to myself, I have every right to be here. (47-year-old; Caucasian; female; first-generation; Navigator)
>
> I was afraid I would not have a grasp of what is going on now in math. Also the younger people, can I do it? I came up in a one-room schoolroom. (54-year-old; African American; female; first-generation; Problem Solver)
>
> I had some fears because I went back to school after 10 years and now I have to study another language. It makes it hard for me. I was not sure I could make it or not. (34-year-old; Caucasian; Iran; female; first-generation; Engager)

Employment

Employment barriers also impacted several of the first-generation college students. Work is viewed as an economic necessity that cannot be adjusted or modified even for college attendance. Multiple responsibilities constrain the educational focus of many of the first-generation college students who seldom are able to put their academic desires and needs first.

> I was going to college right after high school and my dad died. I took over as breadwinner since age 17. (28-year-old; African American; male; first-generation; Engager)

> I've had bumps in the road, getting married. I married young, having kids, divorces, abuse... hard stuff. It keeps you back for a while, but here I am. (42-year-old; Caucasian; female; non-first-generation; Engager)

Gender Issues

Gender issues were a predominant theme among first-generation college students. Females were generally devalued by their families and relegated to stereotypical roles of caretaker and housewife with no encouragement or hope of a better future. The message they heard from family and sometimes spouses is that women do not belong in college and that they should not continue their education beyond a high school degree. Gender inequality is still a pervasive theme in the lives of these individuals (Macionis, 1996). They have been socialized to expect less for themselves while giving more to others. Women attending college must overcome many impediments including discouragement from their own family.

> It is more challenging for females. The responsibility is a stretching. You have to push yourself, stay focused, and not deviate. Once the families needs are met, you still have to do what you have to do. (52-year-old; African American; female; first-generation; Navigator)

> After high school girls were going to get married. No one had a degree. (56-year-old; Caucasian; female; first-generation; Problem Solver)

> Being born female, you automatically have one full-time job taking care of the house. After work, you have that obligation to begin with and crowd classes on top of that and full-time work. Being female is one thing against you. My husband can go to work and school. He doesn't have house responsibilities. He comes home, pours himself a beer, plays on Internet, and watches a movie. I get home, get on jeans, and go from one thing to the next. Later, maybe there is time for the Internet. I had to make myself a schedule to put priorities concerning the house, and get focused. Otherwise all the stuff overwhelms you in your life. I take care of the yard, house, the majority of things, and there are only so many hours in the day. I love my husband and wouldn't trade being married but there are things that come with that. (43-year-old; Caucasian; female; first-generation; Problem Solver)

Most women were also the primary caretakers in their family. Consequently, many that start a family postpone their education until the children either have started kindergarten or they have finished high school. Schooling for them takes a subordinate role for these individuals who tend to start both a career and education later than their male counterparts.

> Back home I stopped out of high school. I became pregnant. Once you have a baby, for girls, you don't go back to school. My culture didn't believe girls should be educated. Most of the men don't want their women to have a higher education than they have. (31-year-old; African American; female; first-generation; Engager)

> Childbirth has been a barrier. I have two children, and one is on the way. It will interfere with school. (28-year-old; Caucasian; female; non-first-generation; Navigator)

> I got out of high school and started a family so it puts school at a lower level priority. (24-year-old; American Indian; female; first-generation; Problem Solver)

> I always wanted to come to school, but I didn't have a chance. I was married and had a child and then divorced. It has always been in my heart to finish and get an education. (54-year-old; African American; female; first-generation; Problem Solver)

Cultural Barriers

Cultural barriers also hindered several of the students. Many times the emotional hurdles that students faced in this realm proved more difficult to overcome than any financial or physical challenge they encountered. Several students felt that some instructors and fellow students had at the very least stereotyped them by their culture or race and failed to judge them as individuals. One student felt torn between her culture and the one introduced by college attendance. While the number of students who felt that cultural barriers negatively impacted them remained small, it is clear that this is still very much an issue.

> Some of the vibes I get from my teachers. When they say something I agree with, they say, "How does he know?" Classmates give you a glare like how does he know. I came from a mostly black

high school, and the first day I saw no black people. I keep quiet. A bigger university will help open me up. (18-year-old; African American; male; first-generation; Problem Solver)

Yes, [culture] it is a big barrier. Coming up even though we were in the country and walked for miles to get to school, we were segregated. Because of the Jim Crow laws and blacks were not able to go to a restaurant to eat. Doctors were different also. As we go on, Martin Luther King Jr. does sit-in demonstrations, and as a result you can stand up for what you believe and for the Constitution of the United States. It means what it says; "All men are created equal." Then blacks could vote and integration started in the 1960's. Now you see people are coming together as one nation. Some people are still in the old thinking and don't want to change, but there is great improvement and opportunity now. (54-year-old; African American; female; first-generation; Problem Solver)

For example, my instructor made a comment in front of the whole class that he was afraid I wouldn't keep up. I felt that because I was Spanish there was a perception that I'm stupid. That is how I took it. I made the highest grade in the class on the first test. People have that perception that we can't learn that we are stupid or uneducated. It is not a barrier to me. That is their problem. I don't like to be looked upon in that way. That is the way they look at minorities. It is ignorance. Anything I am interested in I can do. We have a long way to go in this country. It is ugly. It is sad and it hurts. It really hurts that it is still like that. You just have to live with it and go on. It is within the cultures too. (41-year-old; Hispanic; female; first-generation; Engager)

It is two different worlds, the American Indian community and what I see at school. When I come to school and go to class, I'm just a part of a group that wants to learn. When I'm in the community, they know where I live and know where I come from. Since I am a part of a better

> community, I cannot get out. I cannot be educated. They say I shouldn't do this or shouldn't do that. I really don't let it bother me. They can talk all they want. All I want is to make myself a better person and not just settle for what I can scrounge for. I'm not trying to do this because I want to be better than they are. I just want to be a better person. They see that as a threat sometimes. My husband and father are very proud that I am here and that I am learning. (24-year-old; American Indian; female; first-generation; Problem Solver)

English as A Second Language

Language was also a barrier for several of the first-generation college students. English as a second language led to challenges and frustrations in the learning process. It placed first-generation college students at an even greater disadvantage due to the amount of time spent on translating lessons from English to the student's native language. This undertaking can become exasperating. These students must cope with the challenges of being in a new environment combined with their efforts to learn a new language.

> Language is a barrier. The language is so different. I don't want to read anymore. I used to like to read. Now I get upset. One line I understand and the next one I can't. (22-year-old; Asian; male; first-generation; Problem Solver)

> English as a second language. If I get along with the teacher, I do very well, but if I don't, I just hate it. The male teachers, I like their speaking better. The ladies go every fast, and

> the words aren't clear. (31-year-old; African American; female; first-generation; Engager)
>
> I am proud of myself; I'm studying harder than ever. English is not my language, so I need to keep up with the other students for whom English is their first language. (32-year-old; Asian; male; first-generation; Navigator)
>
> The thing that is bothering me is my language. I am not a native speaker of English and it hurt me in speech class. I used "umm" 25 times. My "umms" are because I'm thinking about verb tense. Sometimes I'm reading something and there are too many new words to translate in a paragraph. (20-year-old; Caucasian; Iran; female; first-generation; Engager)

Barriers of Non-First-Generation Students

Financial

Non-first-generation college students did not identify many barriers that they have experienced. However, those that they mentioned related to economic and personal issues. Inadequate finances hindered non-first-generation college students in their academic pursuits. While economic concerns emerged in this group, they seemed to be less prominent. The economic difficulties become magnified because many of these individuals are financing school without outside support. The barrier was still salient enough to discuss, even for those who were receiving help from other sources such as financial aid or their employer.

> A lot is financial. It is a big part when you don't get help from all different directions, and you're the one trying to pay the whole thing.

> (31-year-old; American Indian; female; non-first-generation; Problem Solver)

> Money is hard. The GI bill doesn't seem like enough money. It is a problem. It is so expensive. (28-year-old; Caucasian; female; non-first-generation; Navigator)

> I didn't know where the money was going to come from, but now the company pays for it. Now I am very blessed. (26-year-old; Caucasian; female; non-first-generation; Engager)

Academically-Related Fears

First-generation students and non-first-generation students had similar responses on academically related fears. Prior negative educational experiences may color students' current perceptions related to collegiate level academic performance. Anxiety and concern about academic demands and performance in college affected many of the non-first-generation college students in this study. The fear of failure was also mentioned but was not as prevalent for non-first-generation students as it was for first-generation students. Females voiced most of the fears and anxiety and questioning whether they were smart enough to be successful in college.

> I have stress and anxiety so much that I almost make myself ill. I push myself to the point of not being able to go on. I am a big worrier for as much confidence and determination that I have. (19-year-old; Caucasian; female; non-first-generation; Navigator)

> Yes, returning to school and the anxiety of going to college. Everything bombards you. I was at a four-year school at first, but it was too much. (25-year-old; Caucasian; male; non-first-generation; Problem Solver)

> I had a personal fear that I was going to fail terribly. (23-year-old; American Indian; female; non-first-generation; Engager)

> To be honest I didn't think I was book smart at all, highly intelligent or intellectual. I didn't know if I could hack it. (31-year-old; American Indian; female; non-first-generation; Problem Solver)

Age-Related Fears

Non-first-generation students faced several age-related concerns. One such fear is that of being the oldest person in the classroom. These students sometimes feel out of place and fear the unknown when starting college. For many of these students the gap between finishing high school and beginning college is greater than 7 years and as many 30 years. The thought of starting school after such a long time is daunting to these students.

> Fears, somewhat. I didn't know what to expect. I've never been to real college. I made up my mind, I was going. There was no option. I was tired of sitting there not doing anything. (48-year-old; African American; female; non-first-generation; Navigator)

> I was straight up scared. Now I take it head on, but it took 9 years to get over. (26-year-old; Caucasian; female; non-first-generation; Engager)

> I thought I was too old for school. Imagine a 30-year-old freshman. (30-year-old; African American; female; non-first-generation; Engager)

> It was very difficult coming back with all the 18-year-olds. I got in and found out that experience makes school easier, somewhat. (28-year-old; Caucasian; female; non-first-generation; Navigator)

> I was afraid when I started back to school. I came to TCC right after high school in Radiology and got married. I withdrew flunking. I didn't have time for that because it was something I didn't want to do. I wanted to do nursing not radiology. (42-year-old; Caucasian; female; non-first-generation; Engager)

The Transformative Experience

Regardless of the many stumbling blocks that these students have encountered, for many education at Tulsa Community College is an initial transformative force that allows them to view themselves and the world around them differently. Perspectives can be broadened when students are exposed to an enriching and open atmosphere where learning is the primary objective. One woman's journey involved embracing an altered viewpoint concerning her life and the lives of other females in her country of origin.

> In Africa, the aim is to get married. There are very few women on their own supporting themselves. Yet they are free, free to do what they want. They have liberty. When I go back, I will have to cook and do dishes. Back home the men don't work. The women have to do everything. Women are being ruled so much. Women aren't allowed to walk alone and don't speak when in a gathering. They don't have power to speak. You

> have to keep quiet and listen to what men are saying. You wait on the husband, cook for him, and look after the children. (31-year-old; African American; female; first-generation; Engager)

Although education can be transformative, it can also be quite disruptive when these individuals return to their native culture. This particular student was asked what she would choose if circumstances were different. She stated that she would rather be single and have her freedom even though she loved her husband very much. She seemed concerned about the fact that she would have to return to her country and a culture where women have a subordinate role in every area. However, she did state that she would utilize her education to help as many women as possible in her country despite constraints she will face due to her gender.

CHAPTER 7

SUMMARY, CONCLUSIONS, AND DISCUSSION

Summary

Student attrition is one of the most persistent and significant challenges confronting higher education. "It has become clear to many institutions that keeping students is now at least as important as attracting students" (Jones, 1986, p. 14). Community colleges are a critical link to the higher education system because they are the primary access points for a multitude of diverse students. The number of adult, first-generation, and minority students attending community colleges is continuing to grow. Much of the previous research has been inordinately focused upon demographic and family characteristics as the primary indicators of student academic success. Limited examination has been given to individual differences or aspects that are amenable to alteration such as learning strategies. Therefore, this study was undertaken to (a) identify learning strategy preferences both for adult learners who are first-generation college students and for those who are non-first-generation college students, (b) examine the relationship of these learning strategies to demographic variables, (c) explore the relationship between learning strategies and academic performance, (d) describe

instructor actions that are conducive to learning as well as those that are detrimental to learning, and (e) ascertain the relationship between academic performance and generation status.

This was a descriptive study that involved 456 students at Tulsa Community College's Southeast Campus. Cluster samples of students were selected from introductory courses in the four academic divisions of Business Services, Communications, Liberal Arts, and Science and Mathematics. All 456 participants completed the ATLAS and a demographic survey. ATLAS identifies learning strategy preferences and places a person in the category of either a Navigator, Problem Solver, or Engager. A total of 45 students were interviewed to gather a more in-depth exploration of issues related to academic achievement. A total of eight first-generation students from each learning strategy category and seven non-first-generation students from each learning strategy category were interviewed.

Overview of Findings

Quantitative

One of the most striking findings of this study is in the area of learning strategy preferences. In contrast to the expected distribution in the general population, Engagers were over-represented with 54.2% of the

population. Both the Navigators with 23.9% and Problem Solvers with 21.9% were underrepresented. The anticipated distribution based on the norms for ATLAS was 31.8% for Engagers, 36.5% for Navigators, and 31.7% for Problem Solvers (Conti & Kolody, 1999a, p. 18).

The GPA's of first-generation community college students in the study surpassed those of the non-first-generation community college students. This finding was counter to postulations due to both the many risk factors that first-generation college students possess and previous research that indicated lower grade point averages for first-generation students (Billson & Terry, 1982; Riehl, 1994). However, the first-generation group was older than the non-first-generation group. Therefore, age was investigated as a covariant, and it was found that age was the influencing factor causing the difference. In other areas, the findings from this study replicated previous research and indicated that when compared to non-first-generation community college students, first-generation community college students were more likely to (a) be older (Terenzini et al., 1996), (b) earn less family income (Terenzini et al., 1996), (c) perceive slightly lower levels of social support from their families (Billson & Terry, 1982), and (d) possess lower degree aspirations

particularly beyond the 4-year bachelor's degree level (Riehl, 1994; Terenzini et al., 1996). The first-generation and non-first-generation groups did not significantly differ on issues of credit-hours enrolled, expected GPA, faculty concern, gender, or hours employed.

Qualitative

Each learning strategy group described their approach to learning. Navigators revealed that they rely upon (a) planning and organization, (b) internal and external organizers, (c) grades and feedback, (d) working alone rather than in groups, and (e) monitoring. Navigators can become so preoccupied with academic success and achievement that they become hypercritical of themselves. Problem Solvers employ (a) a trial and error process, (b) visualization, (c) practical experimentation, and (d) questioning as their primary approach to learning. Problem Solvers utilize questioning not only for their own benefit but also to promote greater understanding for others in the class as well. Engagers tend to take on the attitude the instructor possesses toward learning. If the instructor is passionate about learning, then Engagers will be also. Conversely, if the instructor is disinterested and impersonal, then Engagers will disengage from the learning as well.

Instructors' actions greatly influence the learning process for the groups of learners (Knowles, 1980). Therefore, each learning strategy group also described the instructor's actions that were perceived to facilitate learning. Navigators indicated that they preferred instructors who (a) were approachable and willing to provide feedback, (b) maintained standards that were challenging but not rigid, and (c) provided clear expectations. Problem Solvers desired instructors who (a) allowed them to question and discuss learning in an open forum, (b) utilized a step-by-step process in teaching (c) were thorough, (d) provided a hands-on environment, and (e) promoted the learning of all students in the classroom. Engagers wanted instructors who (a) place learning above evaluation, (b) develop a personal relationship with them, (c) make learning fun, and (d) are passionate about learning themselves.

Instructor's actions can also hinder the learning process for the groups of learners. Certain instructor actions can be viewed as detracting from the learning process. Each group described instructor actions that they perceived as distracting from the learning process. Navigators dislike it when instructors (a) do not answer questions, (b) do not provide feedback, and (c) do not

explain assignments. Problem Solvers dislike it when instructors (a) do not allow or promote questioning and (b) do not respect students. Engagers dislike it when instructors were (a) dispassionate about teaching their subject area and (b) unwilling to develop a personal relationship with students.

Each learning strategy group utilized different initial actions for learning projects not related to academic endeavors. Navigators referred to (a) deadlines, (b) examples, and the (c) opinions of experts. Problem Solvers referred to (a) having an idea of the broad objectives before they begin, (b) considering the alternative methods of reaching the final goal before making a decision on how to proceed, and (c) visualizing the end results before beginning. Engagers stated that they desire (a) a belief that the learning will be valuable, (b) a need for the learning they are going to undertake, (c) confidence in their ability to accomplish the project, (d) the possibility for enjoyment in the process before initiating a learning project.

Students attend college for a myriad of reasons. Students described several influences that led them to attend college. First-generation students were influenced by (a) better job opportunities, (b) family members, (c)

financial reasons, (d) life transitions such as disability or divorce, (e) personal development or self-improvement, and (f) serving as a role model for other family members. Non-first-generation students were influenced by (a) better employment opportunities, (b) life transitions, (c) personal development and self-fulfillment, and (d) strong parental encouragement in their decisions to attend college.

A variety of academic, cultural, financial, and personal barriers impact students attending the community college. The students described perceived barriers that hindered them from meeting their academic goals. First-generation students mentioned numerous obstacles including those related to (a) culture, (b) employment, (c) fear of not being smart enough, (d) fear-of-failure, (e) finances, (f) gender, and (g) language. Non-first-generation students perceived fewer barriers than first-generation students that hindered their academic progress. Two principal impediments voiced were (a) anxiety and fear and (b) financial constraints.

Learning Strategy

Conclusions

The original description of ATLAS categories concerning the groups of learners of Navigators, Problem Solvers, and Engagers is stable and

useful for identifying learning strategy preferences and working with community college students.

Faculty attitude is critical to the teaching-learning transaction for the groups of learners. Instructors need to attend to both the affective and cognitive domains to address the needs of all learners.

Learners gravitate toward learning organizations that convey images that are congruent with their preferred learning strategy.

ATLAS and its predecessor SKILLS have been utilized in numerous studies investigating the learning strategy preferences of a variety of individuals in diverse settings (Conti, Kolody, & Schneider, 1997; Gallagher, 1998; James, 2000; Kolody, 1997; Lockwood, 1997; Strakel, 1995). Findings in this study related to the characteristics of the learning strategy preference groups of Navigators, Problem Solvers, and Engagers were consistent with previous studies. Thus, the current study not only confirms these categories but also provides additional detail for understanding adult learners.

This study contributes to the development of each of those descriptions. Engagers and Problem Solvers see learning as a community activity where cooperation is promoted instead of competition. Engagers exemplify this characteristic primarily through their strong desire to collaborate and work in groups (Conti & Kolody, 1999a, p.

14). Problem Solvers in this study were individuals who envision learning as a group endeavor where everyone is responsible for assisting classmates that may not understand the material. Problem Solvers clarify concepts through the utilization of questioning as a technique to allow fellow students to benefit from this process. The notion of teamwork is central to both Problem Solvers and Engagers.

Navigators do not like group work and instead see learning as a collaborative effort between themselves and their instructor. Navigators need external verification or recognition such as grades or a test to validate their learning. They want standards and then want to compete against those standards.

> I don't settle for second best. If I'm going to do something, I do it all the way. If I do it, I do it right, if not it, is a waste of my time. (21-year-old; Caucasian; female; first-generation; Navigator)

Navigators are engrossed by the desire for achievement, and as a result they are always aiming higher and adopting increasingly rigorous standards of performance for themselves. This strong need for perfection may reduce their satisfaction with accomplishments.

The terminology from the ATLAS description of learners is so clear and understandable and useful to both students

and instructors in the community college. For example, one student who was a Navigator stated that it gave her insight about her husband who was an Engager. She stated that he is not goal-oriented unless what he is doing engages him. She summarized this by stating, "Everything that Navigators do, Engagers won't, and everything Navigators like, they don't". Most of the students in the study were receptive to information concerning their learning strategy preference. Several of the students in the study commented that this information helped them to better understand themselves as well as their classmates, friends, and spouses. Several of the students mentioned that the Engagers were less serious about learning. However others stated that Engagers sounded like individuals who truly love to learn and will exceed course requirements if they are truly excited about a subject.

Most of the instructors that allowed class time for their students to participate in this study were both appreciative and had a genuine interest in the information and insight that the ATLAS description of learners provided. Several of the instructors utilized students' learning strategy preferences as a basis for forming groups in their classes. Some of the instructors were so intrigued with ATLAS that they have continued to utilize

the instrument in their classes to both guide their interactions with students in learning situations and provide them with an awareness of the composition of the students in each respective class. The instructors who were most interested in this information were receptive to the idea of utilizing the knowledge gained to enhance the teaching-learning transaction.

One of the instructors who had a class made up of all Engagers with the exception of one Navigator said that she felt relieved by the information that the study provided her. The instructor was a Navigator and previous to this study felt uncomfortable with how the class was progressing at that point in the semester. Because of the information she gained from ATLAS, she indicated that she was going to re-evaluate some of her teaching methods for this class. Another instructor who was also a Navigator stated that the ATLAS had given her a better understanding of her daughter, who is an Engager. The teacher had asked to take a copy of the instrument to administer to both her daughter and husband. She stated that the ATLAS description of her daughter was very accurate and that this information clarified past actions of her daughter. When her daughter had come home from class the first day of school and was excited about her teacher, the mother could accurately

predict that her daughter would make an "A" in the class. However, if her daughter came in and did not say much concerning the instructor, the mother could accurately predict that her daughter would make a "C" in the class.

ATLAS provides an efficient and effortless mechanism to identify the groups of learners. This knowledge can be utilized to enrich the learning process for both faculty and students. It also provides the individual learners with alternative strategy usage that can enhance their ability to learn. While some may question this instrument because it can be utilized to label and stereotype learners,

> Such labels 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; however, they can be detrimental if they are used to avoid critical thinking about the learners. (Conti & Kolody, 1998b, p. 137)

Individual learner differences will remain important as long as the ATLAS instrument and information gathered with it is utilized for the purposes for which it was originally designed.

The axiom "knowledge is power" has been stated numerous times related to a multitude of situations. Utilizing this statement in reference to gaining information pertaining to one's learning strategy

preference is no exception. This is especially applicable in a society where "there is no one education, no one skill, that lasts a lifetime now" (Naisbitt & Aburdene, 1985, p. 141). There is little question that:

> It pays to develop awareness and understanding of self as a learner. One can gain valuable insight into personal blocks to learning, to personal strengths and weaknesses, as well as personal preferences for the methods of learning and for learning environments. (Smith, 1982, pp. 21-22)

Awareness is a central component of learning how to learn. This characteristic is vital because "if you know how to learn, you can adapt and change no matter what technological, social, or economic permutations occur" (Naisbitt & Aburdene, 1985, p. 133).

Providing community college students with an awareness of their own learning strategy preference may encourage them to further consider their current strategy utilization. This new awareness could also provide an impetus to further investigate additional methods that could be more effective in gaining the academic results they desire. "Learning strategies provide each student with the potential to adjust in an appropriate way for each learning situation" (Conti & Fellenz, 1991b, p. 20). The ability to expand one's repertoire of available strategies can lead to improvements in both learning and scholastic

performance. This could lead to the enhancement of students' grade point average, which remains as one of the most powerful retention tools available (Astin, 1977, p. 148).

Engagers' academic success is contingent upon the establishment of a personal relationship with their instructors. This relationship is the foundation of the learning process for Engagers. They are actively "engaged" in the learning as long as the instructor remains involved and is interested in the subject area. However, Engagers will disengage from learning if the instructor appears to be disinterested in the subject matter or is perceived to be teaching just to earn a living. Instructors that are willing to inspire students may help provide a key component in retaining this student population (Boyer, 1990). One Engager stated his feelings concerning instructors' attitudes as follows:

> If the teacher doesn't care, then I'm not getting my money's worth. I'm not getting their full potential if they don't care. If they care, you can tell you are getting their all and everything they know. You are getting the same knowledge. If they don't care, it is pretty much a waste of time. (30-year-old; African American; male; non-first-generation)

The importance of the instructors' attitude is not only essential to Engagers but is also important to both

Navigators and Problem Solvers. Navigators desire attention and respect from the instructor. Navigators want the instructor to be available to them in order to obtain feedback concerning their academic progress. Problem Solvers want both a more collaborative learning process and respect from the instructor. Problem Solvers also seek a learning environment where their questions and input are both heard and regarded as significant. Additionally, Problem Solvers prefer student-teacher relationships in which they are considered as true partners in the educational process. Clearly, faculty attitudes are essential to all three groups of learners, although each is exemplified in distinct ways. The student-teacher relationship impacts both students' academic performance and retention.

An emerging trend in learning strategy research is the concept of the groups of learners possessing a proclivity toward a certain type of learning environment. The current study and a study by James (2000) found that Engagers are overrepresented at the community college and in Adult Basic Education classes. Spencer (2000) and Conti and Ghost Bear (in press) have discovered that Problem Solvers are overrepresented in studies related to learning on the Internet. As of yet, Navigators have not been found to be

overrepresented in a specific learning environment. However, an ongoing study at university language institutes may produce this result.

Engagers are attracted to the inclusive, learner-centered atmosphere that the community college provides and that matches their learning strategy preference. Community colleges both offer personal environments that are responsive to learners' needs and place the teaching mission above all else (O'Banion, 1999). The community college also manifests a friendly and warm image where people are valued. Engagers embrace an atmosphere where they perceive they can experience opportunities that will ultimately lead to their success and enable them to overcome their fears of failure. Possibilities for increased student-faculty interaction and lower student-to-faculty ratios, combined with an emphasis on community, may be prime factors that foster Engagers' attendance at the community college. Thus, community colleges offer an ideal atmosphere for Engagers to initiate their higher education activities.

Learning occurs both in the affective and cognitive domains. Bloom and his associates identified three domains of learning as the (a) cognitive domain which deals with the recall or recognition of knowledge and the development

of intellectual abilities and skills, (b) the affective domains which describes values and attitudes and the development of appreciations, and (c) the psychomotor domain which deals with physical activities (Bloom et al., 1956, p. 7). For Engagers, "the affective domain is the dominant factor in learning" (Conti & Kolody, 1999a, p. 14). They "consider work as an extension of themselves and are motivated by feelings of satisfaction or pride" (p. 15). However, oftentimes instructors focus only on the content of the learning situation. Such an approach can cause Engagers to feel alienated. By addressing both the affective and cognitive domain learning needs in a classroom situation, instructors can help provide Engagers with increased self-awareness concerning their feelings and thoughts in certain learning situations. Engagers may feel guilty about not being interested in a specific class and may not realize that their learning strategy preference is making them uncomfortable in particular learning environments. Instructor recognition of both the affective and cognitive learning needs could not only help Engagers realize that there is nothing wrong with them, but it may provide answers as to why they are uncomfortable in certain situations. By recognizing this aspect of their learning, Engagers can begin to better understand their own behaviors

in learning situations. However, Engagers need instructors to attend to both the affective and cognitive components of learning in order to maximize the process.

Recommendations

Due to the ease of administration and accuracy in identifying students' learning strategy preferences, as well as the potential benefits of those who gain an awareness about themselves and other learners, ATLAS should be made available to all students attending community colleges. Orientation sessions could be one avenue to provide this service to new students. Current students could access the instrument in learning labs or through instructors who are willing to administer ATLAS in class to help ensure that students have this valuable self-knowledge tool available to them.

Knowledge of learning strategies is critical for students engaged in the pursuit of a degree in higher education. Therefore, a faculty in-service program should be implemented which focuses on learning strategies as well as adult learning principles. Knowledge of the principles of adult learning could be effective in establishing a supportive environment that will enhance student learning for all students (Knowles, 1980), and this is particularly so for Engagers. Training in the administration,

utilization, and intent of ATLAS could allow instructors the opportunity to incorporate instructional techniques that foster individual differences. It could also provide them with an array of alternative teaching techniques that are specifically designed to meet the needs of each learning strategy group.

Over 50% of the learners in this study identified themselves as Engagers. Instructor knowledge of the description and primary characteristics of Engagers' learning strategies could thus be advantageous. If instructors are willing to administer the ATLAS and utilize it in class, then all students will be able to benefit from instructors' knowledge of the learning strategy groups.

Adult learning principles encourage cooperative learning environments, and teamwork is becoming a fundamental requirement in the world of work. Navigators will need to embrace strategies that incorporate these aspects into their learning process. Knowledge and awareness of alternative learning strategies also provides Navigators as well as all students with the ability to interact more effectively with other students in learning situations. Navigators have such a strong desire to seek perfection on learning tasks that in order to help them become more balanced as learners they need to incorporate

the learning strategy of conditional acceptance. Conditional acceptance is the ability of critical thinkers to work at a problem long enough that they become satisfied with the product and move on to new learning (Conti & Kolody, 1999a, p. 8).

"The key to student success resides in the faculty" (Roueche & Roueche, 1999, p. 17). One of the ways to incorporate their expertise is to enlist faculty assistance in ongoing research concerning learning strategies. This is a vital step toward ensuring the continuation of efforts in this area. ATLAS could be used in a variety of studies as the chief instrument to investigate student learning and retention. Instructors could design classes and groups that are based on students' learning strategy preferences to provide the best environment for each type of learner. Instructors could also help students realize the value of incorporating alternative strategies to broaden the students' ability to relate to students who possess differing learning strategies and their ability to learn. "Community college faculty are uniquely positioned to conduct important research related to the learning process" (Lorenzo & Banach, 1992, p. 15). It is clear that there is much to be gained from faculty who are willing to investigate new territory.

Discussion

The combination of collecting both qualitative and quantitative data resulted in some unexpected as well as extremely powerful information. One advantage of this mixed-method design is triangulation. "Triangulation seeks convergence, corroboration, correspondence of results from the different methods" (Greene, Caracelli, & Graham, 1989, p. 259). Another is complementarity which "seeks elaboration, enhancement, illustration, clarification of the results from one method with the results from the other method" (p. 259). Additional benefits of mixed-method designs include the following.

> These different types of triangulation--methods triangulation, triangulation of data sources, investigator or analyst triangulation, and theory triangulation--are all strategies for reducing systematic bias in the data. In each case the strategy involves checking findings against other sources and perspectives. Triangulation is a process by which the researcher can guard against the accusation that a study's findings are simply an artifact of a single method, a single source, or a single investigator's biases. (Patton, 1990, p. 470)

The interviews produced discussion about learning strategies, and in the process students shared about their ambitions, their families, and their lives. The information gathered was more expansive and richer than what could have been gathered by a single source. The

qualitative and quantitative methods combined to create a mushroom-like effect. The contributions from both forms of data fuse in an almost explosive fashion. The interviews revealed that learning is an interactive and multivariate concept. This data led to the following insights related to the community college, data collection, first-generation students, and learners.

Community College

For decades the community college has been viewed as the "people's college". More recently some individuals have adopted a more critical position regarding both the mission and nature of the community college. Those detractors claim that the community college's covert mission was to divert students from the pursuit of university degrees (Brint & Karabel, 1989). Community college critics also saw the institution as a mechanism to perpetuate students' existing economics conditions utilizing both filtering and manipulation to maintain the status quo.

The findings of this study do not support the critical perspective of the community college detractors. Students in this study were keenly aware of the impact education was having on themselves and their families. Students also had no trouble sharing their voice on how Tulsa Community

College has altered their lives. These students have analyzed the cognitive and emotional effects of college attendance. All students who were interviewed evidenced changes that education was making in their lives, but to different degrees. Their comments indicate that Tulsa Community College provides an environment where students can move toward the initial step of the transformative process.

One area in which this alteration is particularly salient concerns the gender roles of women and the negative consequences that these roles sometimes have on learning. Women in this study became cognizant of their multiple roles in society as a result of college attendance. Mezirow (1978) also found this to be true in his study of women who were returning to the community college.

> Women come to see themselves as products of previously unchallenged and oppressive cultural expectations and prescribed sex roles. In making these assumptions explicit, whole new perspectives of themselves and their relationships become visible-often with dramatic consequences in terms of setting new personal and social action priorities. (p. 102)

Awareness is the initial step in helping these women overcome gender-related issues.

Students are also attending the community college to change roles and break down cultural barriers. Several of

the students mentioned stereotyping and the negative impact it had on both them and their family members. Tulsa Community College gives them the opportunity to become an example to their co-workers, friends, and family members. It also provides a mechanism to traverse obstacles and ultimately succeed in an academic setting. One student summarized her feelings about Tulsa Community College as follows:

> The thing I like about a community college is all the different ages, cultures, and races. There is such a mixture of everyone here that it is not so intimidating. The stereotypical college student is not here. (39-year-old; Caucasian; female; non-first-generation; Engager)

Many of the students stated that they were attending Tulsa Community College to not only enhance the economic status of themselves and their family but also to expand their future educational opportunities. Many of the students are excited about advancing themselves and the forthcoming changes that their education will make in their lives. Several of the students mentioned their impoverished home life as a motivating factor for attending the community college. The message that they are receiving from Tulsa Community College is one of hope.

Tulsa Community College also provides an atmosphere where students can overcome their fears related to education. Many of the students who initially feared failing or not having the academic skills to succeed became more confident in themselves as a result of their community college attendance. Several of the students were so impressed with the atmosphere provided by Tulsa Community College that they made a point of discussing their educational hopes for their own children, hopes that entailed community college attendance.

Community colleges should vigorously promote messages related to the success and initial steps of transformation that occur for many of their students. This is especially so for Engagers. Engagers are more likely to respond to messages from students that portray the community college as an enriching, responsive environment where their needs can be met. Engagers who are working out of the affective domain are more likely to respond to the personal message students relate concerning the value of community college attendance as a life altering experience. Engagers are continuously ascertaining "the value of the learning experience" and may be impacted by images

of students who have experienced tremendous gains as a result of attending the community college (Conti & Kolody, 1999a, p. 14).

The promotion of the life changing nature of the community college can also be accomplished by utilizing numerous mediums such as books, community newsletters, media, newspapers, and television commercials to illustrate the decisive difference that community college attendance has made in their lives. Inviting community college students, particularly Engagers, who are willing to share their voices on a video to discuss positive changes that have occurred for them both personally and professionally would also be advantageous. Utilization of this information could also foster new community support for the community college during local bond issues campaigns and help maintain the assistance of existing supporters. Sharing of this information publicly could help recruit administrators, board members, and faculty who want to help make positive differences in the lives of students.

Data Collection

Individuals engaged in research in higher education may benefit from the application of methodologically rigorous and sound methods in planning, collecting, analyzing, and reporting of data. This is especially so for research relating to topics subjected to social change such as the family structure. Presently there is a dearth of published literature questioning research methods and categories utilized to gather demographic information. Most of the literature does not yet reflect changes in research necessitated by corresponding demographic and social changes in society. However, several recent journal articles challenge the validity of demographic information.

One such inquiry investigated the accuracy of students' self-reported measures of socioeconomic status. An error rate of over 60% was discovered when comparing self-reported figures to actual financial aid records (McCann & Smith, 1998). One factor that potentially produced this error was "lack of clarity on the definition of family earnings" (McCann & Smith, 1998). Although numerous articles in the literature mention demographic characteristics, factors, and variables in their title, only four (McCann & Smith, 1998; Seidman, 1993, 1995, Windham, Search, & Jefferson, 1997) questioned the validity

and significance of the parameters they were measuring. Each advised greater diligence in this vital area.

Researchers must make a concerted effort to both survey the evolving social environments and to rethink current methods and procedures for data gathering. The increase in blended families should entreat investigators to no longer assume that questioning students about their mother or father is a straight forward as in times past. Racial and ethnic categories need to encompass the breadth and depth of increases in diversity in this realm as well. This may help ensure that the data gathered is an accurate depiction of reality. Particularly, researchers in post-secondary education should follow this pattern of investigation with advanced, in-depth exploration of societal trends and so modify data gathering techniques that critically impact a multitude of programs that serve students. Community colleges may benefit from being able to adapt and adjust to these changes in order to be more capable of responding to the emerging challenges that a dynamic society and mutable student body will require. In order to properly identify, study, and serve a diverse student body, "it seems clear that there will be a need to continually monitor the changes in the student body,

looking beyond demographic changes for cultural ones as well" (Windham, Search, & Jefferson, 1997, p. 162).

The modification of college applications that would help institutions gather more specific economic, demographic, and family (such as parental education) information could also be beneficial to student services personnel. Information gathered could be utilized in the beginning of a student's career to assist them in their academic endeavors rather than never being aware of specific factors that potentially place students at a disadvantage. If this modification is not possible, then the creation of a survey for all new students could be developed to gather this critical data as they enter the institution. "Obtaining early information on a student can enable colleges to channel them into support systems and programs before enrollment and to continue intervention through their college career" (Seidman, 1995, p. 252). It is clear that greater diligence in this vital area is necessary, "at the very least, institutional researchers must consider how they collect, interpret, and share... information to ensure that it most accurately reflects the profile(s) of their students" (McCann & Smith, 1998, p. 12).

First-Generation Students

First-generation students at Tulsa Community College can succeed academically. Despite the numerous obstacles that first-generation students encounter, their grade point averages exceeded those of the non-first-generation college students in this study. This difference was mitigated by age. This finding supports Knowles (1980) assumptions about adult learners that stated that adults (a) bring rich experiences to the learning transaction, (b) are self-directed, (c) desire learning that relates to developmental and social roles in their lives, (d) are motivated by internal factors, and (e) maintain a problem-centered focus in learning (pp. 43-45). All of these characteristics tend to increase adult students' likelihood of succeeding academically. Although first-generation community college students had lower educational aspirations related to the pursuit of graduate level degrees, these students are adult learners who are new to the milieu of higher education. These students can no longer be marginalized by the educational system.

> Because first-generation students may be poorly-prepared academically, constrained by financial obligations, have lower self-esteem, and may experience a culture shock, it would seem logical to expect that they do not perform as well as students whose parents succeeded in college.

> However, this is not necessarily the case. (Inman & Mayes, 1999, p. 5)

Clearly, community colleges such as Tulsa Community College are an excellent arena for first-generation college students to acclimate themselves to the higher education environment.

Not all faculty, staff, and student services personnel are cognizant of the characteristics, difficulties, and risk factors that are associated with first-generation community college students (Rendon, 1994). It is imperative for the community college as an "open door" institution to provide all students an equal opportunity to succeed. With approximately one-third of the student population in this category, it is apparent that institutions must address issues that impact first-generation community college students (Terenzini et al., 1996). Awareness and knowledge are fundamental to the development of meaningful resources that are specifically tailored to meet the needs of first-generation community college students. Increased sensitivity to the specific needs of first-generation learners may provide students with a more validating educational experience.

First-generation community college students experience a multitude of barriers that can impede their academic

progress. In this study, six primary barriers were identified for this population: cultural, economic, employment, fear, gender, and language. Cultural barriers have both affective and cognitive effects that influence students. For students who are not from the dominant culture, participating in higher education can cause them to feel like they are strangers in both their own culture and the culture that exists in the community college. Efforts must be made on behalf of the faculty, staff, and student services personnel to be both more inclusive and responsive to categorization, cultural barriers, and stereotyping that may confront first-generation community college students.

Economic and employment barriers greatly impact the learning of first-generation community college students. Faced with increased amounts of family and work responsibilities, these students must many times make choices and compromises related to education that many non-first-generation students do not have to render. As a result, education must take a subordinate role despite student preferences in this area. Community colleges can design and implement programs to help eliminate or at the very least diminish these educational impediments.

Despite many advances in this realm, gender issues are still resoundingly present for females that are first-generation community college students. What both legislation and the Civil Rights Movement have failed to alter is people's attitudes concerning the rights and roles of women in society. These first-generation students attending the community college may face a multitude of responsibilities, including that of caretaker, mother, spouse, student, and worker. Consequently, their educational focus may become diminished. Both awareness and education related to gender issues remain as avenues to allow women to move beyond constrictive and socially constructed positions of themselves to a more egalitarian stance.

Another impediment to some first-generation students' achievement is English as their second language. Students in this study struggled academically not only due to their transition to a new educational environment but also because they lacked enough English skills to succeed academically. Many of the students had to increase their efforts to learn because of this disadvantage. These students can become frustrated with the challenges and need both academic and emotional support.

First-generation community college students continually expressed anxiety and educationally related fears. Concerns about whether or not they could academically perform at the collegiate level and the fear-of-failure negatively impacted students in the study. Age-related issues also surfaced. Several students thought they were too old to be beginning college and were nervous about contending with much younger classmates. However, many times once the students gain academic success the majority of these fears subside. However, the question remains of how many people let this fear prevent them from ever attending college.

First-generation community college students in this study possessed lower degree aspirations than those of non-first-generation community college students. This is not surprising considering that community college attendance is many times these students' first experience related to higher education. This could also be a result of the fact that almost one-third of the parents of the first-generation students did not complete a high school diploma. Clearly, this is an area in which information can counteract both the lack of awareness and knowledge related to careers that necessitate post-graduate degrees.

Tulsa Community College has demonstrated that the environment it offers is beneficial to first-generation college students. A marketing campaign that incorporates student testimonials to illustrate the positive nature of Tulsa Community College should be developed. These materials could include a discussion of campus resources and an emphasis on (a) the teaching mission, (b) the community college as an atmosphere where students can overcome the fear-of-failure, (c) low student-to-faculty ratios, and (d) the availability of student services. These materials could emphasize that the community college is the door that is open for the success of all as Cross (1969) has suggested.

First-generation community college students face a plethora of barriers including culture, employment, fears, finances, gender-related concerns, and language. Many of these barriers can be successfully eliminated through the combined efforts of administration, faculty, staff, and student services. The promotion of greater faculty, staff, and student services personnel's awareness and sensitization to the needs of first-generation students can allow an avenue for students' unique needs to be addressed (Rendon, 1994). This can be accomplished by offering a staff-development program that would introduce information

regarding the characteristics of first-generation students in two phases. The first part of the session could be aimed at current research related to these students and their special needs. The second part could involve interplay between first-generation community college students and faculty, staff, and student services personnel to discuss perceived barriers and what all parties can do to help alleviate them. Providing faculty, staff, and student services with the opportunity for professional development such as conferences or workshops may also be advantageous.

The implementation of diversity training for faculty, staff, and students could allow the advancement of both cultural competence and sensitivity in order to address cultural barriers experienced by first-generation community college students (Rendon, 1994). This could be accomplished through ongoing programs and workshops that are offered throughout the academic year. Hiring diverse faculty to serve as role models for all students can also help alleviate the impact of cultural barriers and stereotypes. The development of a cultural diversity center that houses English as a Second Language programs as well as culturally diverse print and video material could also be beneficial in promoting campus-wide attention to

this area. Substantiating each student's unique qualities and celebrating diversity in an open and recognizable manner can lead to decreased feelings of isolation, increased understanding, and respect for differences. "Validating students is about making students stronger, about unleashing the power of learning and challenging students to set their goals higher than what they think they may be" (Rendon, 1996, p. 20).

Community colleges are currently providing numerous alternative course schedules and instructional formats. However, in order to meet the diverse needs of adult learners, the introduction of more creative course scheduling geared to the requirements of first-generation students could help ease the pressure of employment barriers and lead to increases in enrollment of first-generation students. The introduction of courses designed to eliminate location and time boundaries may help this population. Students may be receptive to coursework that is designed primarily as self-directed study for which students could perform the required academic work at any location or time. Instructors could still be available at several times during the week for students who desire facilitation or guidance. One way to find out what

students' ideas and needs are related to scheduling is to seek the student voice on these issues.

Information is the key to reducing financial barriers. Many first-generation college students are not aware of all the forms and types of financial aid available or even that it is available at all. One first-generation student who discussed this issue concerning lack of knowledge related to available aid stated:

> My parents didn't go to college. They attended high school, but it was a different environment. My parents don't know what courses I should take or anything about financial aid. It is very frustrating. (22-year-old; Asian; male; first-generation; Problem Solver)

Financial barriers can be lessened with the provision of targeted, financial aid information that is mailed directly to all currently enrolled students that are of first-generation college status.

Several things can be done to reduce the financial barriers for first-generation students. Scholarships could be designated that are specifically geared to meet the particular needs of first-generation students and that will financially enable them to attain their educational goals. Funds could be made available to allow students to reduce commitments outside of college such as full-time employment so that college is the students' primary consideration.

> If students are to succeed in community colleges and in four-year colleges, they must be freed of financial concerns and be allowed to spend as much time as possible pursuing their studies. (Pincus & Archer, 1989, p. 35)

Furnishing students with options such as payment plans could prevent students from having to pay for all books, tuition, and fees in advance before they are allowed to attend classes. Current practices are highly prohibitive regarding students' initial access to the institution and may need revision (Roeuche & Roeuche, 1999).

Female first-generation community college students face many dilemmas related to college attendance such as childcare and the maintenance of multiple roles. Issues involving gender barriers could be reduced by the provision of low-cost, in-house childcare facilities. Many of the women students have postponed college attendance until their children are old enough to attend kindergarten or until the children have graduated from high school. Informal support groups for women who attend college and are dealing with a multitude of roles could also be beneficial to this student population. A campus newsletter could (a) supply first-generation students with targeted information concerning their needs, (b) furnish links to campus resources, (c) share student success stories, and (d) provide support. Such a newsletter could be

instrumental in reducing attrition and providing academic and social support.

Another way to promote first-generation students is to make a concerted effort to involve them and their family members in events outside the classroom (London, 1996; Rendon, 1994; Terenzini et al., 1996). One such event could be the participation in a social gathering. This gathering could include some participatory events that focus upon cooperation rather than the competition that award ceremonies promote. This activity would be based on adult learning techniques to assure that family members and students are both actively involved and feel comfortable in the setting. Such activities could also reinforce the learning strategies of the many Engagers at the community college.

Targeted career information could be offered that emphasizes occupations that involve graduate and professional degrees and details the typical salary ranges of the various fields to first-generation students. This would provide first-generation students with the knowledge necessary to make more informed career decisions and may increase students' persistence in college (Tinto, 1987). The initiation of panel discussions that would allow area business recruiters to provide discourse concerning the

desired educational level of positions they are currently seeking to fill would also be valuable to first-generation students. Enlisting the aid of alumni to serve as mentors for first-generation students that are interested in professional careers could also be of benefit.

Longitudinal studies need to be initiated to assess over time first-generation community college students' academic progress, their retention rate, and whether they encounter a transformational experience. It would also be of value to replicate the current study and present the findings to faculty so that they could provide conclusions, feedback, and recommendations.

Learners

Learners are eager to share their voices concerning their unique approach to learning and their academic, personal, and social needs. Tulsa Community College offers a friendly, welcoming atmosphere where students are provided with the confidence to pursue their goals. Validation of each individual's unique attributes may occur as well. In the interviews, students were eager to discuss their attitudes, behaviors, and perspectives related to learning. If this desire can be translated into other areas such as program planning, both the institution and students can benefit from this collaborative effort.

Students desire an avenue that allows their experience to make valued contributions to both their own learning process and that of other students (Knowles, 1980).

A structure should be established to obtain the student voice related to the nature and structure of what services students need as well as developing a mechanism to deliver it. One such area to begin the process could be student activities, which would entail the reconceptualization of what students need socially and recreationally. Special focus should be placed upon creating opportunities for greater faculty-student contact in non-academic settings. Providing formative evaluations rather than just an exit interview that can be utilized throughout students' academic careers in order to gather opinions related to what they desire and need is warranted because "as much as possible needs to be learned about students from the beginning of their academic careers so programs can be designed to meet their needs" (Seidman, 1995, p. 251). This could allow community college administration, faculty, staff, and student services personnel the opportunity to find out what works and to identify areas that need improvement while modifications can still positively impact the students who desired changes.

Student concerns should be allowed to assist in curriculum development and program planning as well. Students will benefit from learning experiences that are more specifically designed to meet needs that are present in their lives and that are consistent with adult learning principles (Knowles, 1980). There is a continual need to address individual differences of all students, and one way to gain this information is to listen to the students.

Fulfilling the Dream

Critics of the community college such as Brint and Karabel (1989) argue that community college students' actions may be controlled at the macro level without either their knowledge or recognition. Conti and Fellenz (1989) reported Codd and Watkins' ideas related to this process of hegemony. "Hegemony is maintained by the ruling class achieving a popular consensus that permeates all social structures and by producing a group of 'intellectuals' to give legitimacy to this view of society" (p. 19). Individuals can sometimes be both unaware of and yet influenced by social structures that are set up to control them. These critics would contend that students at the community college may not be fully aware of how they fit into the larger structure of higher education in society.

However, there are sharp contradictions to this for many of the Tulsa Community College students. Tulsa Community College is helping change the face of the future one student at a time. The following example from this study brings together many of the themes for how TCC is fulfilling the promise of democracy. This student has transcended his past circumstances to become an individual who is now empowering veterans and providing them with an opportunity to rise above their current circumstances. This student is not only the first in his family to attend college but is also the first to graduate from high school. He is both frightened and strengthened by his position in his family to be the first to carve out a different life for himself and his nuclear family. His discussion of his family life as a child, his current path, and a project through which he enables others to alter their current course in life is a powerful message of the initial steps of the transformation process that has occurred for him at Tulsa Community College.

> I give my mom credit. She raised three boys by herself. I only saw her leaving for work and getting home. I have a lot of respect for her. She had a house full of kids, and I was watching every mistake. My brothers have chosen a different path. Their mistakes helped me. My brother regrets not going to school. I am the first one in my family to graduate from high school and the first one in college. I will

> finish regardless of how long it takes. Being the first person in college adds pressure; my brothers didn't graduate. In a way, I'm doing it for my family. At least one kid in the family turned out all right. I don't want my brothers downgraded or to feel embarrassed. It will benefit my brothers eventually. They can come to me if they have questions. I got hung on computers and started up a veteran's organization. The sole purpose is to take old computers, buy them, restore and then give them to the disabled veterans. I show them the basics of computers, and all they have to pay is for Internet service if they want it. (28-year-old; Caucasian; male; first-generation; Problem Solver)

It is evident that this young man wants to bestow the opportunity of education to as many others as possible. His courage and willingness to share show the powerful role that obtaining an education has already had on his life and the impact that it will have upon him and his entire family.

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APPENDICES

APPENDIX A

INSTITUTIONAL REVIEW BOARD

APPROVAL FORM

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

Date:	March 16, 2000	IRB#: ED-OO-216
Proposal Title:	"LEARNING STRATEGIES OF FIRST-GENERATION COMMUNITY COLLEGE STUDENTS"	
Principal Investigator(s)	Gary Conti Paula Willyard	
Reviewed and Processed as:	Exempt	

Approval Status Recommended by Reviewer(s) Approved

Signature: _____

Carol Olson, Director of University Research Compliance

March 16, 2000
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 with the advisor's signature. The IRB office MUST be notified in writing when a project is complete. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

APPENDIX B

PARTICIPANT PERMISSION AGREEMENT

I, _____ hereby authorize Paula Willyard to interview me as a part of her research into learning strategies of students at Tulsa Community College.

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, a questionnaire, and participating in a personal interview with the researcher. The interview will last approximately 30 minutes.
** The interview may 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 part of this research. However, portions of my interview may be presented in the research as quotations.

I may contact Paula Willyard at (918) 595-7659, 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: _____
Paula Willyard

APPENDIX C

DEMOGRAPHIC DATA FORM

Student Learning Strategies at Tulsa Community College

I am conducting a study to investigate the relationship of the learning strategies of students at TCC to various factors in a student's life. To do this, I need your help. If you are willing to assist me, please complete the following sheet. One area of special importance is the grade point average at the end of the current semester for those involved in the study. **Supplying your social security number gives me permission to obtain your overall grade point average from the registrar.** This material will be assembled into group data. You will not be identified specifically by your name or social security number. This information will remain **strictly confidential.** Thank you for your assistance.

Please check only one answer per question or fill in the correct answer when appropriate.

1. Social Security Number:
   _____ --- _____ ---_____

2. Please indicate your ATLAS grouping:

   ___ Navigator Subgroup 1
   ___ Navigator Subgroup 2
   ___ Problem Solver Subgroup 1
   ___ Problem Solver Subgroup 2
   ___ Engager Subgroup 1
   ___ Engager Subgroup 2

3. Age: _____

4. Gender:

   ___ Male
   ___ Female

5. The racial/ethnic group that best describes me is:

   ___ African-American or Black
   ___ American Indian or Alaska Native
   ___ Asian or Pacific
   ___ Caucasian or White
   ___ Hispanic
   ___ Other

6. The highest degree that I plan to pursue is:

   ___ None-courses for person interest
   ___ 1-year certificate
   ___ 2-year transferable associate degree
   ___ 2-year technical career prep degree
   ___ 4-year bachelor's degree
   ___ Master's degree
   ___ Doctorate degree

7. the total 1999 income for the family in which I am presently living was:

   ___ $10,000 or less
   ___ $10,001-$15,000
   ___ $15,001-$20,000
   ___ $20,001-$25,000
   ___ $25,001-$30,000
   ___ $30,001-$35,000
   ___ $35,001-$40,000
   ___ $40,001-$50,000
   ___ $50,001-$60,000
   ___ $60,001-$75,000
   ___ $75,001-$100,000
   ___ $100,001-$150,000
   ___ $150,001-$200,000
   ___ $200,001 plus

8. The highest level of education completed by my mother/female guardian is:

___ No high school diploma
___ High school diploma
___ Some college
___ 4-year bachelor's degree
___ Master's degree
___ Doctoral degree

9. The highest level of education completed by my father/male guardian is:

___ No high school diploma
___ High school diploma
___ Some college
___ 4-year bachelor's degree
___ Master's degree
___ Doctoral degree

10. I expect to earn the following grade point average wile a student at Tulsa Community College:

___ A
___ B
___ C
___ D
___ F

11. In how many credit hours are you currently enrolled? ____

12. How many hours per week do you plan to be employed while in college? ____

13. My family will be supportive of me and my decision to pursue a college education:

___ Strongly Disagree
___ Disagree
___ Neutral
___ Agree
___ Strongly Agree

14. My instructors are concerned about me and my future:

___ Strongly Disagree
___ Disagree
___ Neutral
___ Agree
___ Strongly Agree

If you are willing to participate in a personal interview related to your learning strategy preference, please print your name, telephone number, and email address.

Name: _____

Phone Number: _____ Email Address: _____

Thank you for participating.

APPENDIX D

STUDENT INTERVIEW QUESTIONS

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. Do you feel that your ATLAS grouping was accurate according to the description of each group of learners? If so, what characteristics in particular? If not, in what ways do you differ?

3. What do instructors do that enhance or facilitate your learning process?

4. What do instructors do that distract from or get in the way of your learning?

5. What actions do you take to help yourself accomplish a learning project?

6. What influences led you to attend college?

7. What barriers have deterred or hindered you from meeting your academic goals (i.e. cultural, economic, political, psychological, or social obstacles)?

VITA

Paula Willyard

Candidate for the Degree of

Doctor of Education

Thesis: LEARNING STRATEGIES OF FIRST-GENERATION COMMUNITY COLLEGE STUDENTS

Major Field: Occupational and Adult Education

Biographical:

Education: Graduated from Bixby High School, Bixby, Oklahoma in May 1983; received Bachelor of Science degree in Secondary Education Social Studies from Oklahoma State University, Stillwater, Oklahoma in May 1987; received Master of Education degree in Counselor Education from Northeastern State University, Tahlequah, Oklahoma, in May 1990. Completed the requirements for the Doctor of Education degree with a major in Human Resources and Adult Education at Oklahoma State University, Stillwater, Oklahoma, in December 2000.

Experience: Employed as Advisement Specialist at Tulsa Community College from 1987 to 1992. Employed as a Counselor-Coordinator of Academic Support Services at Tulsa Community College 1992 to present. Adjunct Professor for Tulsa Community College and the University of Oklahoma.

Professional Memberships: National Academic Advising Association, Oklahoma Academic Advising Association, Oklahoma College Student Personnel Association, and Tulsa Community College Faculty Association.