Learning strategies in the Fort Peck Reservation community
by Robin Bighorn

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Education
Montana State University

Abstract:
Native Americans are the least represented group in higher education. However, through the self-determination movement, Indian people are seeking to regain control of their learning. A major institution for Native American's regaining the control of their education is the tribal college. To do this, a need exists to know more about how various groups of Indian people learn. Learning strategies offer one way of finding this source of information.

This study described the learners served by the tribal college on the Fort Peck Reservation. To do this, both students from the college and employees from community agencies were included. The purpose of this study was to (a) identify learning strategies of adults on the Fort Peck Reservation at different agencies in the community, (b) examine Fort Peck Community College students to determine if it is possible to discriminate between the highest and lowest achievers, and (c) identify and describe distinct groups of learners on the Fort Peck Reservation.

The Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) was used to measure the learning strategies of the 179 participants. The scenarios in SKILLS were specifically tailored to fit learning situations on the Fort Peck Reservation. Discriminant analysis revealed that the participants did not differ in their use of learning strategies when they were grouped by gender, ethnicity, age, tribal affiliation, degree of traditionalism, and grouping as either a college student or a community agency employee. However, when the tribal college students were grouped according to those with the highest and those with the lowest grade point averages, they differed in the process of Reactive Networking. Those with low grade point averages engaged in active networking with others much more than those who maintained a high grade point average.

Cluster analysis was used to identify four distinct groups of learners on the Fort Peck Reservation. One-way analysis of variance and individual and group interviewing of the respondents provided additional data for describing these clusters. Based upon this quantitative and qualitative data, the four clusters of learners were named Adjusters, Critical Thinkers, Resource Managers, and Engagers.

LEARNING STRATEGIES IN THE FORT PECK RESERVATION COMMUNITY

by

Robin Bighorn

A thesis submitted in partial fulfillment
of the requirements for the degree

of

Doctor of Education

MONTANA STATE UNIVERSITY
Bozeman, Montana

May 1997

APPROVAL

of a thesis submitted by

Robin Bighorn

This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

Gary J. Conti — 4-17-97

Dr. Gary J. Conti
Chairperson, Graduate Committee

Date

Approved for the Major Department

Gloria A. Gregg — 9-18-97

Dr. Gloria A. Gregg
Head, Major Department

Date

Approved for the College of Graduate Studies

R L Brown — 5/8/97

Dr. Robert L. Brown
Graduate Dean

Date

STATEMENT OF PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a doctoral degree at Montana State University, I agree that the Library shall make it available to borrowers under rules of the Library. I further agree that copying of this thesis is allowable only for scholarly purposes, consistent with "fair use" as prescribed in the U.S. Copyright Law. Requests for extensive copying or reproduction of this thesis should be referred to University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106, to whom I have granted "the exclusive right to reproduce and distribute my dissertation in and from microform along with the non-exclusive right to reproduce and distribute my abstract in any format in whole or in part."

Signature Bobbie Bigham

Date 4/18-97

ACKNOWLEDGMENTS

The author wishes to acknowledge the support and never-ending encouragement of his family. In particular Angie, Fred, Greg, Dean, and, of course, Smiley. Without their confidence, this study may have never been accomplished. The author also acknowledges his many friends who gave their support when times were so difficult.

The author, from his heart, wishes to express his gratitude and appreciation to the chair of his committee, Dr. Gary Conti, without his concern and dedication this study would not have been completed. The author also expresses his gratitude and appreciation to Dr. Robert Fellenz and to the other committee members.

TABLE OF CONTENTS

TABLE OF CONTENTS--Continued

LIST OF TABLES

ABSTRACT

Native Americans are the least represented group in higher education. However, through the self-determination movement, Indian people are seeking to regain control of their learning. A major institution for Native American's regaining the control of their education is the tribal college. To do this, a need exists to know more about how various groups of Indian people learn. Learning strategies offer one way of finding this source of information.

This study described the learners served by the tribal college on the Fort Peck Reservation. To do this, both students from the college and employees from community agencies were included. The purpose of this study was to (a) identify learning strategies of adults on the Fort Peck Reservation at different agencies in the community, (b) examine Fort Peck Community College students to determine if it is possible to discriminate between the highest and lowest achievers, and (c) identify and describe distinct groups of learners on the Fort Peck Reservation.

The Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) was used to measure the learning strategies of the 179 participants. The scenarios in SKILLS were specifically tailored to fit learning situations on the Fort Peck Reservation. Discriminant analysis revealed that the participants did not differ in their use of learning strategies when they were grouped by gender, ethnicity, age, tribal affiliation, degree of traditionalism, and grouping as either a college student or a community agency employee. However, when the tribal college students were grouped according to those with the highest and those with the lowest grade point averages, they differed in the process of Reactive Networking. Those with low grade point averages engaged in active networking with others much more than those who maintained a high grade point average.

Cluster analysis was used to identify four distinct groups of learners on the Fort Peck Reservation. One-way analysis of variance and individual and group interviewing of the respondents provided additional data for describing these clusters. Based upon this quantitative and qualitative data, the four clusters of learners were named Adjusters, Critical Thinkers, Resource Managers, and Engagers.

CHAPTER 1

INTRODUCTION

Indian Education

The coming of the Europeans to the New World drastically influenced Native American communities through civilization, Christianization, and education. These influences affected Native American culture and religion; it disarranged the Native people's self-image and way of life. This change also placed Native Americans in a new society of which they did not want to be part and which they could not understand.

Native American educational practices have a long history in America. Early European educational processes affected indigenous peoples (Wright, 1985). However, Native American tribes were strong, and independent during these eras and had little need for the educational procedures brought by the early colonists (Beck, Walters, & Francisco, 1977).

Furthermore, Native American schooling in colonial America was affected by the continual change that characterized the exchange between the European and Indian cultures. Where this cultural exchange occurred, it affected both Native Americans and Euro-Americans. This

exchange took place on many levels. It brought into contact and often conflict different various or religion, land ownership, family relationships, and ways of live. All of those involved were molded and remolded as they found themselves continually thrust into the cultural arena (Szasz, 1988, p. 3).

Colonial Native American schooling took place within this changing society. Education was viewed by several Euro-Americans and Native Americans as a tool for achieving a cultural change between the two societies. The colonial schoolmasters felt that work was a way to change Native American youth. These teachers reasoned that if the Native American youth could be taught to read and write, to do math, to cipher, to comprehend the Bible, and to change their ways of life, they might teach their own people to do likewise (p. 4).

Native American youth were educated in white schools during the 19th and 20th century. They brought with them to these schools varying degrees of Native culture. Formal schooling often served as an overlay for the attitudes and perceptions of the world that they had already acquired within their family and community. Thus, the Native American child came to school with unique cultural traits. Educators, scholars, and students of Native American history cannot fully comprehend the responses of the Native American youth in a formal setting without an awareness of the Native

American child-rearing practices that preceded the educational process (p. 7). Consequently, as a result of the Louisiana Purchase and other factors contributing to westward expansion, Native Americans had no other alternative but to change their established ways of educating their youth and somehow adapt to the methodology of the colonists (Beck, Walters, & Francisco, 1977).

The early educational efforts for Native Americans was designed from the colonial perspective. These educational efforts were supposedly to create new Native Americans and to replace their original culture (Beck, Walters, & Francisco, 1977). Freire (1970) uses the term "cultural invasion" to describe the imposition of one dominant people's culture over another culturally different group. As a result of this cultural invasion and the educational policies that have been imposed on Indian people, Native Americans have remained behind other ethnic groups in regard to education from the time of early colonial efforts until the present day (Stein, 1988).

After the first quarter of the 20th century, there was a concern among some government officials to review and improve upon Native American education and economic life patterns. The outcome of these efforts was the return of some control to the Native American people at the local level. Two examples were the Indian Reorganization Act of 1934 and the Indian Education Act of 1974. Although, the

Indian Reorganization Act did not address Native American education directly, it indirectly brought to surface the need for higher education through policies such as tribal economic restoration, political reform, and meaningful self-government (Davis, 1994, p. 261). The Indian Reorganization Act did return a limited amount of control to tribal authorities in such areas as land ownership, and it provided a small amount of funding for vocational purposes. The Indian Education Act of 1974 provided with some funding for Native American students in undergraduate and graduate levels of education, and it also provided for some adult education classes.

In addition, the Indian Self-Determination and Education Assistance Act of 1975 presented tribally-operated schools as an alternative to schools administered by state or federal governments. In tribally-run schools, also known as contract or grant schools, tribes assume responsibility for school management and operations. Once a tribe contracts with the Bureau of Indian Affairs (BIA), it is able to control the curriculum, teacher hiring, and overall administration (Levitan & Miller, 1993, pp. 49-50).

In 1992, the BIA was responsible for the education of nearly 41,000 students. Almost 17,000 of these lived at and attended reservation boarding schools. These boarding schools housed students who lived too far from school facilities for daily commuting to be practical, children

with discipline problems, and those whose parents were unable to care for them. Of the 166 BIA funded schools, 74 were operated and managed by tribes under contract (p. 50).

In 1991, an audit of BIA schools by the Interior Department inspector general's office revealed that the BIA was deficient in implementing its mandates. An on-site inspection of several schools found physical conditions "so deplorable as to impede the education process (p. 47). The audit showed unstable management as a major factor contributing to BIA's failure to provide effective administration and oversight of its programs (p. 50).

Tribal Colleges

Tribal colleges are two-year, post-secondary, educational institutions. These institutions offer a broad curriculum from various educational levels, which are (a) one-year and two-year vocational programs leading to certificates or degrees in a number of occupational fields, (b) transfer programs comprising the first two years of a four-year program, (c) adult basic education components, and (d) community service classes which are to meet local needs and services. Tribal colleges focus on organized departments of Native American studies. They stress the study of Native American culture, and particularly, the culture of their local tribe (Boyer, 1989).

The lack of educational achievement among post-high school reservation students is a long-standing problem. In

the early 1970's the realization that reservation Indians were having difficulty on mainstream campuses prompted the creation of Tribally-Controlled Community Colleges. There are currently 29 tribal colleges (Boyer, 1989, p. 50). In most instances, lack of achievement has been a major obstacle in the educational advancement of Native Americans (Stein, 1987). In contrast to other groups of Americans, indicators suggest that Native American are behind in educational attainment. These indicators include percentages of Native Americans graduating from high school, percentages going on to college, percentage of Native Americans graduating from college and/or holding advanced degrees (Astin, 1988; Boyer, 1989).

"The most significant piece of legislation in the field of American Indian higher education was the Tribally Controlled Community College Assistance Act of 1978 (PL95-47)" (Oppelt, 1990, p. 86). This piece of legislation served as a vehicle in the form of financial support to the tribal college movement. This movement has proven to be a driving force among Native peoples to secure control over their own education. Furthermore, Tribally Controlled Community Colleges have proven to be very rewarding and a continuous development in the field of Native American education (Boyer, 1989; Stein, 1986).

Local control shapes individual colleges in meeting the specific educational needs of their institutions. The

institutions are diverse and become more so as they mature. Each has its own history, educational philosophy, limitations, and resources. Curricula, both academic and vocational, reflect the social, economic, and cultural situations of college development and innovation (Houser, 1991).

One aspect that has contributed to the success of tribal colleges is their philosophy which stresses the priority of serving the needs and interests of the community. Another factor to their success is they place a high priority of each tribes's culture as an integral part of their curriculum (Boyer, 1989).

Tribal college students, whose average age is approximately 27, return to the academic environment for a number of reasons; these include to seek job training, for personal satisfaction, or to enter a transfer program where they may eventually attend a four-year institution (Boyer, 1989). As adult learners, they have a number of social roles and responsibilities, have an abundance of different experiences, are undergoing character changes of development related to stable and unstable social and economic environments, and undergo educational challenges with anxiety and without academic confidence (p. 38-45). Some of these factors are identical or similar to those found by other adult students.

The communities in which tribal college students live

are, economically, the poorest in the United States. Seventeen of the colleges are located in chronically distressed agricultural areas of the Northern Great Plains. Economic hardships on reservation communities are compounded by the hardships of geographic and cultural isolation and by extreme climatic conditions (Houser, 1991). In addition, there are high rates of alcoholism and drug abuse present, which are important factors for low educational attainment (Mayeske, 1973).

Despite the high dropout rate and low levels of academic achievement, the total number of Native Americans attending post-secondary educational institutions is increasing. Women attending college accounted for most of the increase. Between 1978 and 1990 Native American female enrollment jumped from 41,000 to 60,000 while Native American male enrollment increased by only 6,000, from 37,000 to 43,000. In 1990, a total of 103,000 Native American students on both reservation and nonreservation attended post-secondary institutions. Forty-seven percent enrolled in four-year institutions, and the rest were in two-year institutions. Only 1 in 10 Native Americans 25-years or older has completed 16 years of education, compared with 20.3% of the total population. Native Americans are even more underrepresented among graduate students. In 1988, 1,133 were awarded master's degrees, 84 received doctorates, and 268 received their first professional

degrees (Levitan & Miller, 1993).

Although the trend of low educational attainment is changing, Native American students still remain behind that of other ethnic groups. Less than 55% of Native American students graduate from high school, and for those who do finish, the level of academic preparation is not satisfactory (Boyer, 1989). 17% of those students who graduate from high school go on to college as compared to 35% of white students (p. 28). Less than 33% of Native Americans do not complete college requirements where as 60% of white students complete the baccalaureate (Austin, 1988).

Tribal colleges have been grossly underfunded. In 1981 Congress authorized funding up to $6,000 per student to promote post-secondary education for Native Americans, but budget cuts during the 1980's diminished the funding levels. The funding hit a low of just under $2,000 per student in 1988 but rose to $3,168 per student in 1991. By comparison, public colleges spent $4,234 per student in 1991 (Levitan & Miller, 1993).

With the founding of tribal colleges, the college success rate for Native American students has increased. This is partly because of the tribal college's educational mission that supports Native American needs and interests. The large numbers of full and part-time Native Americans enrolled in tribal colleges indicate that Native American students are meeting academic requirements. Tribal colleges

are successful (Boyer, 1989). Tribal colleges must continue their educational mission because they are the source, and future for Native Americans. Because of tribal colleges, "the future holds a vision of hope for Indian people" (St. Pierre, 1996, p. 125).

Adult Learning

Efforts have been made by some teachers to create an exciting classroom environment by using different teaching skills. Although the educator has little control of the learning process, the behavior of the teacher influences the learning process more than any other factor (Knowles, 1970). However, it is the learner who determines the level of learning, and the interpretation of that particular learning process. While the teacher has an important role, however, the students is the one who actually decides what is to be learned; this is more important than what the teacher actually does (Shuell, 1986). Some factors that exercise this learning may be the students past experiences, the student's level of interest in the subject, participation in the subject matter, and the knowledge that the student has to accomplish this learning.

The learner-centered approach has developed enormous changes in the past two decades as the field has moved from a focus on adult education to adult learning.

> As a field of practice, research and conceptual development had been on providing services with

> learning viewed as one component of educational programs. But a shift to a field of study with the individual learner as the central concern open whole new realms; such as, self-directedness, and individual development, to the field (Fellenz & Conti, 1989, p. 4).

Adult education could be viewed as a focus on the educator; on the other hand, adult learning implies that the emphasis be directed to the learner.

Through his continuous work, Knowles (1970) has enhanced this learner-centered approach, which others in the field have come to accept. He labeled the term as "andragogy." Andragogy comes from two Greek roots: aner (an adult) and agogos (leader of) (Grubbs, 1981). The two words connected creates andragogy, which means an "educational mode in which the teacher is viewed as a facilitator of learning" (p. 5). Students are perceived to be self-directed. The relationship between teacher and student is personal and trusting. The atmosphere for learning is formal and cooperative (p. 6).

Researchers have found that in the field of education and psychology learning strategies are of significance. Through his investigation, McKeachie (1988) has suggested that there are similarities between types of attention or concentration; memory aids such as grouping, automatization, and visualizing the use of elaboration as a memory aid; and the vital role of motivation in learning. Other researchers such as Hill (1992) have focused on the role of learning strategies used in real life learning situations.

Fellenz and Conti (1989) have chosen five areas of learning strategies upon which to center their investigation. They are metacognition, metamotivation, management of resources, critical thinking, and memory. Metacognition learning strategies are applied to planning how to go about learning, monitoring how well the plan is carried out, and adjusting the plan depending on progress toward the learning goal. Metamotivation is an awareness of how individuals achieve and have control of self-motivation to accomplish a learning task. Resource management is how learners distinguish and critically use appropriate method of information. Critical thinking relates to how one hypothesizes and uses other options in a solution of the learning material. Memory strategies are important because to recall things from memory, they must be stored in a structural and efficient manner.

These aspects of learning strategies are thought to be an integral part in how much and how well students achieve in learning situations (McKeachie, 1988).

Fort Peck Community College

One of Montana's seven tribal colleges is Fort Peck Community College (FPCC). FPCC is located on the Fort Peck Reservation. "Fort Peck, the second largest reservation in the state of Montana, is the home of two different tribes: The Assiniboine tribe, Yanktonai and Sisseton Wahpeton

Sioux" (Bryan, 1985, p. 42). Fort Peck Community College (FPCC) began operations in 1978. It was housed in the out-dated Bureau of Indian Affairs building across the street from the Fort Peck Assiniboine and Sioux Tribal Building in Poplar, Montana. College founders shared a vision that the Assiniboine and Sioux Tribes would be able to educate and train their own people and to use this education to preserve, revitalize, and perpetuate their tribal cultures (Shanley, 1994). "Fort Peck tied its mission closely to the tribe's longstanding desire for better educational opportunities and self-determination policies" (Stein, 1992, p. 140).

By the end of 1993, the vision had become a reality. Fifteen years after opening, the college still occupies the old BIA building which has been completely renovated. In addition, FPCC occupies nine other buildings in Poplar and Wolf Point. Approximately 350 students enroll each semester to pursue general and vocational education leading to associate degrees in various fields. The college's budget has increased 1,000% over the past 10 years. In 1991, full accreditation was granted to FPCC by the Northwest Association of Schools and Colleges (Shanley, 1994, p. 3).

Fort Peck Community College serves the people of the Fort Peck Reservation and northeastern Montana. FPCC's academic program enables students to transfer credits to other post-secondary institutions. The college serves the

constituency of the reservation populations by maintaining an occupational training program based on the needs of the people living on and near the reservation and on potential employment opportunities available in the region. The college serves the people by initiating and supporting community activities, and organizations based on the needs and wishes of community members.

The expressed goals of Fort Peck Community College are to provide education, and vocational training for Native Americans and area residents. FPCC stresses those careers and occupations that have high employment potential. Programs strive to improve employee proficiency at local businesses, industries, and government agencies. The college has developed academic curricula that lead to the granting of the Associate of Arts, Associate of Science, and Associate of Applied Science degrees. Several vocational certificate programs are also offered. Credits earned in courses at FPCC are transferable to other state colleges and universities. Community service programs respond to the needs and requests of community members by offering evening classes and workshops (p. 8).

The mission of FPCC differs from that of its non-Indian counterparts. Like all community colleges, FPCC exists to meet the education and adult training needs of the community. As a tribal college, however, its role is broader, and its existence is directly and totally

interconnected to the life and well-being of the tribes. It carries a mandate to preserve tribal culture, history, and beliefs. Also, it is closely involved in efforts that contribute toward the positive economic development for the tribe and its members (p. 3).

Fort Peck Community College must respond to the demands that mainstream America places on its higher education institutions: efficiency, access, and quality. With limited resources, it must deliver services to sparse population and find efficient ways to provide a range of academic and vocational programs to a small number of students. The college is committed to helping students achieve their personal career goals through higher education. FPCC has a remarkable influence on the educational initiatives undertaken by tribal members. Unlike the period before the college's inception, the number of Indian students now pursuing higher education is nearly double that of the non-Indian population in the area (p. 5).

Fort Peck Community College deals with a far different student population than do mainstream educational institutions. A profile of the average FPCC potential student resembles a description of the under-served and disadvantaged in America. FPCC first-generation college student are older than the traditional college student. There are more women than men. Employment opportunities are at best sporadic. Entrance tests place students at low

reading, and math levels, despite average or above average intelligence. For most of these students, education has typically been a negative experience. Poverty, alcoholism, violence, and abuse are all common reservation experiences. Finally, many students harbor deep distrust and even resentment toward American society. These feelings are rooted in both historical fact and personal experience, and they pose barriers to personal, and academic advancement (p. 5-6).

Still, another major problem is recruitment and retention of quality faculty. Given the rural, tribal environment of the college and the keen national competition for Native American faculty, faculty recruitment and retention are difficult task for FPCC administrators (p. 6).

The mission of Fort Peck Community College stems from the philosophy that the tribes must provide higher education if they are to meet the unique educational needs of their people. Since many tribal members choose not to leave their homeland, it is necessary to bring education to them. Important functions of the college include the preservation of Indian culture, history, and beliefs and the perpetuation of this heritage among Indian people of all ages. The mission of FPCC reflects tribal values. Among these is the belief that self-awareness through education is the foundation necessary to build a career, create a lifestyle, and achieve a true sense of true pride. Although, FPCC does

not deny anyone the opportunity for higher education, the institution's primary purpose is service to the Indian population of Fort Peck Reservation (p. 8).

Fort Peck Community

The Fort Peck Assiniboine and Sioux Reservation is located in Northeastern Montana. There are approximately 10,000 enrolled tribal members of whom 6,000 live on the reservation. The reservation is 90 miles long and 40 miles wide occupying 2.1 million acres north of the Missouri River. The majority of the reservation occupants live in the two larger communities of Poplar and Wolf Point and in two smaller communities of Brockton and Frazer. The tribal government is seated in Poplar, the principle community with a population of 3,500. Also, located in Poplar are the Bureau of Indian Affairs and Indian Health Service. The reservation is rural and geographically remote. The economy is based on dry farming and cattle production and on the two tribally-owned manufacturing enterprises of West Electronics and Assiniboine and Sioux tribal Industries.

For 1993, the unemployment rate on the Fort Peck Reservation was 43.9%. Not surprisingly, poverty is a major problem with average per capita income being $4,778. The average for Roosevelt County is $7,751, compared to a state average of $11,213. Welfare programs play a pivotal role in the lives of many tribal members with over 1,000 families receiving General Assistance or Aid to Family with Dependent

Children, during a average year.

The Problem

Rowland (1994) has shown that the intervention by the mainstream culture has upset Native people's way of being. Rowland's study of the Northern Cheyenne demonstrates that "from a philosophical, and spiritual perspective, the Cheyenne perceive their existence, and purpose in life very differently from which is accepted in the larger non-Indian society" (p. 24) This may well apply to all Native people in the plains culture.

Tribal colleges have been set up to address some of these cultural needs. However, Hill (1992) found that tribal colleges are really promoting uncritical acceptance. Despite this and the great efforts that tribal colleges have made in educating Native people, the success rate for Indian people is still low. Therefore, a need exists to know more about how various groups of Indian people learn. Learning strategies offer one way of finding this source of information.

Purpose

The purpose of this study is threefold. First, it identified learning strategies of adults on the Fort Peck Reservation at different agency personnel such as the Bureau of Indian Affairs, Indian Health Service and Tribal

Employees. Second, it examined Fort Peck Community College students to determine if it is possible to discriminate between the highest and lowest achievers. Third, it identified four distinct groups of learners on the Fort Peck Reservation. Once they were identified, group and individual interviews were conducted to obtain additional data for a qualitative description of these groups.

Research Questions

This study described the learning strategies used by adults in everyday life situations in the Fort Peck Community. To accomplish this, the following research questions were asked:

(1) What is the learning strategies profile of the learners on the Fort Peck Reservation?

(2) Is it possible to use learning strategy scores as measured by SKILLS to discriminate between different groups of students at Fort Peck Community College when the students are grouped by grade point average?

(3) Is it possible to use learning strategy scores as measured by SKILLS to discriminate between groups in the Fort Peck community formulated by the demographic variables of gender, ethnicity, tribal affiliation, age, degree of traditionalism, and grouping of either college student or

community agency worker?

(4) What different groups of learners exist in the Fort Peck Community?

(5) If different groups of learners exist, how do they go about learning?

Definition of Terms

Critical Thinking: "Identifying and challenging assumptions, challenging importance of context, imagining and exploring alternatives, and reflective skepticism" (Brookfield, 1987, p.12).

Fort Peck Reservation: The the second largest reservation in Montana which is the home of the Assiniboine and Sioux tribes and which is located in the northeast corner of the state.

Learning Strategies: "The techniques and skills that an individual elects to use in order to accomplish a specific learning task" (Fellenz & Conti, 1988, p.1).

Memory: Processes that are mental activities that store information and later make use of that information (Paul & Fellenz, 1993, p. 19).

Metacognition: "Metacognition is popularly conceived of as thinking about the process of thinking" (Fellenz & Conti, 1989, p. 9).

Metamotivation: "Tactics and techniques used by the learner to provide internal impetus in accomplishing learning tasks" (Kolody, 1997, p. 14)

Resource Management: The identification of appropriate resources, critical use of these resources, and the use of human resources in learning activities (Fellenz, 1993, pp. 36-37).

SKILLS: The Self-Knowledge Inventory of Lifelong Learning Strategies instrument for measuring learning strategies in the areas of Metacognition, Metamotivation, Memory, Critical Thinking, and Resource Management.

Tribal Colleges: Two-year, post-secondary, educational institutions in Indian communities which stress the

study of Native American culture and particularly the culture of the local tribe (Boyer, 1989).

CHAPTER 2

LITERATURE REVIEW

There are several factors that effect learning in the tribal community. The teaching-learning concept at the tribal colleges includes the adult learning factors of self-directed learning, real-life learning, learning style, and learning strategies. Since the tribal colleges primary purpose is serving adults, they are adult education institutions (Conti & Fellenz, 1989). With the ever-increasing student body and Native American faculty, tribal colleges have come a long way and have accomplished much since 1968. However, there is still much to be done in the tribal college movement.

Adult Learning

When adult educators came to realize that adults learn differently from children and youth, new methods of adult learning began to develop. Early contributions to this growing area of knowledge come from Lindeman's (1926), Thorndike (1928), Bryson (1936), and Sorenson (1938). These brought new interest and ideology to adult learning. By the 1980s, "the focus of the field had changed from adult education to adult learning" (Fellenz & Conti, 1989, p. 1).

In this process adult educators made a shift from methods of teaching, to methods of facilitating learning (Galbraith, 1990). "Learning means change. It is not simply a matter of accretion--of adding something. There is always reorganization or restructuring. Learning is not so much coming to terms with what is new, but reorganizing what has been learned" (Kidd, 1973, p. 15).

Because of the works of Cyril Houle, many theorist began to explore the individual learner. His work was focused on "what adults do to learn, how this learning is done, and what is the real life context of adult learning" (Hill, 1992, p. 20). In addition, Apps (1981) through his investigations found three criteria that adult educators should have: (a) knowledge of content, (b) knowledge of learners, and (c) knowledge of methods (Galbraith, 1990).

The focus on the individual learner is the result of shifting from adult teaching to that of adult learning. It is because of this shift, Kidd and others in the field of adult education have based their view of adult learning research (Fellenz, 1988). This emphasis on learning implies that adult education has moved from a field of practice to a field of study. This "shift to a field of study with the individual learner as the central concern opened whole new realm, such as self-directedness and individual development" (Fellenz & Conti, 1989, p. 1). The interest in learning styles and strategies fit into this trend.

Before theorists made the shift of their ideas from teaching to learning, instruction was in the form of imposing the will or knowledge upon another. This was by direct or indirect methods and always from the view of those doing the instructing (Kidd, 1973).

Malcolm Knowles is one of the most distinguished researchers in the field of adult education. Knowles' work with andragogy has inspired many in the field (Hill, 1992). Andragogy in its simplest form means "the art and science of helping adults learn" (Galbraith, 1990, p. 5). Although, andragogy can be approached in many fashions, the concept should be treated exactly for what Knowles claims it to be--a set of assumptions" (p. 91).

Adult learning takes place when adults come to realize that changes in their life occur by outside influences such as family settings, friends, change in jobs, new educational settings, and factors that change their role in life. When adults engage in a new learning task it is usually based on experience and information that the adult already has (Knox, 1977).

There are particular instances that relate to adjustment in the adult learning process; these are search for meaning, learning ability, interference, and feedback (Knox, 1979). "Effective practitioners typically understand that almost every adult is able to learn about almost any subject, given sufficient time and attention" (p. 15).

The adult independence of direction in learning and the use of personal experience as a learning source are two distinguishing characteristics of adult learning. In the past three decades, a number of theorists such as Gibb (1960), Miller (1964), Kidd (1973), and Knox (1977) have made attempts to identify principles that aid adult learning (Brookfield, 1986). Some of these are "learning must be problem centered, learning must be experienced centered, experience must be meaningful to the learner, the learner must be free to look at experience, goals must be set and pursued by the learner, and the learner must have feedback about progress toward goals" (p. 26).

Adults who participate in educational activities do increase their knowledge and content competence. Also, those who participate learn more effectively than those who do not participate. Furthermore, when adults assume the responsibility in a learning activity on a self-directed basis, the anticipation of this activity increases. When others share in the learning activity such as teachers and counselors, there is also an increase in learning (Knox, 1977).

Because of the constant flux in society, changes in such areas as employment, politics, religion, family relationships, and education have an impact on the field of adult education (Long, 1983). As McClusky has noted, "Our only hope lies in the realization of the fact that

continuous change requires continuous education. This is true of the individual, of the community, and the society at large" (Long, 1983, pp. 32-33). Furthermore, "helping adults learn is a transactional process in which the adult educator interacts with learners, content, other people, and material to plan and implement an educational program" (Galbraith, 1990, p. 3).

Self-Directed Learning

Self-directed learning is a "form of study in which learners have the primary responsibility for planning, carrying out, and evaluating their own learning experience (Caffarella, 1994, p. 152). Chene (1983) says self-directed learning "refers to situations where individuals set their own rules, although it is possible to conceive of autonomous people being free to act within the limits of preexisting rules" (Jarvis, 1992, p. 120).

Houle is the forerunner in developing the concept of self-directed learning (Houle, 1961). However, through Toughs work (1971, 1978) other theorists have become involved in self-directed learning. Tough concluded that 90% of all adults within one year find themselves in some type of learning activity (Long, 1983). This type of finding is supported by the Educational Testing Service national survey which found that one out of three adults between the ages of 18 and 60 participated in some form of adult

education (Darkenwald & Merriam, 1982). Likewise, Johnstone and Rivera in their national survey concluded that effect of self-direction was larger than thought and that self-education "is probably the most overlooked avenue to activity in the whole field of adult education" (Cross, 1981, p. 63).

Brookfield (1986) argues that "learning must be deliberate and purposeful, occur outside of designated educational institutions, receive no institutional accreditation, and be voluntary and self-generating" (p. 47). In addition, Candy (1991) indicates that there are various techniques that adults use to become self-directed learners. These learners could be isolated, living in some remote community, or learning from the media. Others might attend a college, university, or even vocational institutions. Knowles (1975) maintains that self-directed learning takes place with assistance from teachers, tutors and peers (Jarvis, 1992).

When defining a learning project, most researchers are satisfied with Tough's (1979) definition of "a series of related episodes, adding up to at least seven hours" (Hill, 1992, p. 26). When defined this way, Tough (1978) has found that the adult public participate in at least five learning projects each year (Knox, 1979, p. 1).

Coolican (1975) has made attempts to classify learning projects. She has categorized learning projects by most

popular and found the following order of popularity: vocational subjects, home and family, and hobbies and recreation. Penland has also categorized learning projects and grouped them as formal topics such as formal learning (i.e., history); practical topics in the area of business, clerical, and education; and intraself topics which include sensory awareness, religion, and psychology (Cross, 1981).

Adults who participate in a learning project usually do so with the intent of solving a problem and not for the purpose of learning a subject (Cross, 1991). Self-directed learning projects are "essentially nonthreatening because learners have complete control over the situation" (p. 133).

Because of the concern with learning competence, learning skills are "often embedded within other curricular content, so that learners may develop their competence in both the context and the process areas simultaneously" (Candy, 1991, p. 317). There are skills such as time management, critical thinking, goal setting, and problem solving that are essential to self-directed learning efforts (p. 318).

It has been argued that if learning in formal settings is different than learning in everyday or natural societal settings, then it has important implications for research, teaching, and theory building. It influences self-directed learning activities that are carried out in each context. The result is this affects the strategies implemented to

support, encourage, or facilitate the development of learning competence (Candy, 1991, p. 402).

Self-directed learning had been identified during the era of Plato. However, it has only taken root in the past four decades. Researchers such as Knowles, Tough, Houle, and Brookfield can be accredited with the blueprint of self-directed learning (Jarvis, 1992).

Because adults in learning situations are directing themselves, adult educators cannot predict how adults respond to new ideas, interpretations, or experiences. These are choices when self-directiveness is involved (Brookfield, 1986).

Real-life Learning

Real-life learning has become an area of interest in the past three decades by works such as Houle (1961) and Tough (1971). In recent years researchers as Nisser and Wagner and Sternberg (1984) have shown continued interest in the area of real-life learning (Fellenz & Conti, 1989, p. 3). The concept of real-life learning can be attributed to learning outside formal educational settings (Hill, 1992). Although there has been some discrepancy concerning "autodiduxy" which is self-instruction or self-directed learning that occurs outside the educational setting, awareness of real-life learning has strengthen by works as Houle and Brookfield (Candy, 1991).

Tough has done a vast amount of research in regard to self-directed independent learning which "goes on outside the formal organizations of adult education" (Griffen, 1983, p. 60). Real-life learning relates to learning situations which stem from experience and knowledge and which are distinguishable from traditional educational settings (Hill, 1992).

Learning trends that stimulate adult learning outside formal educational settings have an affect on real-life learning (Fellenz & Conti, 1989). Some of these settings are the "home, the work place, and means of transport" (Kidd, 1973, p. 236) and include other environments as "workshops, and interpersonal relationships" (Hill, 1992, p. 29).

Furthermore, some adults take the initiative to create learning projects for the purpose of self-knowledge, and not for college credit. Direction and planning on what to be learned by the adult is motivated by diagnosing and problem solving (Hill, 1992). "Adult learning occurs in diverse settings" (p.29), and it takes place in many forms of context (Brookfield, 1986).

Accreditation is not the only purpose of adult learning. Indeed, much of this "learning occurs within informal networks" (p. 150). Adults come together for one reason or another, "by some common concern, some shared interest, or some agreed-upon purpose (p. 151). These

activities promote challenges and rewards in problem solving and new forms of knowledge (Brookfield, 1986).

Real-life learning differs from traditional education in that the former usually occurs outside educational settings whereas traditional education takes place in a formal setting perspective (Wagner & Sternberg, 1984). Sternberg has identified some of the differences between real-life learning and learning in a traditional educational environment as: (a) solutions for real-life problems are usually trial and error and not structured as in the form of a curriculum; (b) real-life problems have some form of meaning or context which a curriculum format is impetus for solving problems; (c) real-life problems are usually but not necessarily group tasks ending in a conclusion which the traditional method encourages solving problems individually, either by teacher or text; (d) the significance of a problem is of interest to the learner, an academic approach is a must thing; and (e) real-life problems do not have hands-on resources to resolve their situations, the traditional student has many resources (Hill, 1992, p. 30).

Hill (1992) points out that colleges and universities give little recognition of adult intelligence outside educational settings. While higher education is now accessible to nontraditional students, their distant high school academic record is of little direct relationship to their current skills and abilities. Instead, the rich

reservoir of experiences which they bring to the learning situation is the important factor (Knowles, 1970).

In addition, the term intelligence is "almost impossible to define" (Glendenning & Stuart, 1995, p. 31). However, intelligence may be measured by "fluid intelligence" and "crystallized intelligence" (p. 31). The latter is what the general public would call general knowledge. Fluid intelligence is "the ability to process information" (p. 32). Experiences from real-life enhance fluid intelligence.

Although, it has been emphasized that adults do not receive credit for their educational efforts outside classroom academia, there are some institutions that do provide such credit. In 1978, a Carnegie Council Survey found "81 percent of the colleges and universities in the country awarded credit or advanced standing through the College-Level Examination Program (CLEP)" (Cross & McCartan, 1984, p. 80). This allows adults to demonstrate by examination that they have college classroom knowledge (Cross & McCartan, 1984).

Researchers have attempted to justify skills necessary for success in real-life. "Reading, speaking, writing, computation, and problem solving are task that relate to consumer economics, occupation, health, government, law, and using community resources" to base their definition of success in real-life (Hill, 1992, p. 31).

Learning Style

Claxton and Rolston (1978), Cross (1981), Dunn and Dunn (1972) describe learning style as "the characteristic and preferred way in which an adult engages in learning activities" (Knox, 1986, pp. 20-21). A more acceptable definition among theorist is Smiths' (1982) definition which holds that learning styles are "individual's characteristic ways of processing information, feeling, and behaving in learning situations" (Merriam & Caffarella, 1991, p. 176).

Associated with learning style is cognitive style. Cognitive style recognizes that "different individuals have distinctive manners, approaches, or style of perceiving and processing information" (Long, 1983, p. 69). However, cognitive style and learning style are not synonymous terms. "Cognitive style relates to the thought process, whereas, learning style relates to the ways in which people endeavor to learn" (Jarvis, 1987, p. 109).

Learning style research has come to a plateau (Hill, 1992). Learning style research is at a slow pace because learners' determine how fast and how far their development skill progresses (Knox, 1986). Furthermore, there are difficulties when attempting to apply learning style in teaching and learning because there is no acceptable definition to substantiate learning style (Hill, 1992). When using Kolbs' (1977) learning style inventory, individuals have not achieved consistent results (Jarvis,

1987). When using instruments for learning style, it must be remembered that each inventory will measure different things. According to how the designer has developed the instrument and how learning style is defined (Merriam & Caffarella, 1991).

There have been several attempts to classify types of learning and cognitive styles. For example, Messick and Associates document as many as 19 learning styles; Smith tabulates 17 existing learning style inventories; Squires notes that learning styles are typically represented as polar opposites on a range of dimensions (Peters, Jarvis, & Associates, 1991, p. 206).

Researchers such as Hill (1972), Kolb (1976), Price, Dunn and Dunn (1978) have investigated learning instruments with little reliability and validity. Other learning styles instruments receiving attention on Your Style of Learning and Thinking, Grasha-Riechmann Student Learning Style Scales and Canfield Learning Style Inventory. Most learning style instruments have proven to be insufficient when measuring learning style. In addition, learning style is seen as a "thinly developed theory and weak instrument, supported by fragmented research, often in settings not typical of adult education" (Bonham, 1989, p. 19). In addition, Grasha came to realize that as a result of the "inadequate reliability and validity of some instruments [to measure learning style], some researchers do not clarify instructional

procedures that would enhance certain styles" (Hill, 1992, p. 34).

Nevertheless, these instruments have been used in research projects. When using Canfield Learning Scale Inventory, it was found that learning styles did not enhance student achievement (Conti & Welborn, 1986). At the University of Wisconsin, Madison, Schmidt in his survey of returning adults found that they "prefer to work independently, they did not like competitive class activities, and they did not wish to develop social relations with their instructors or peers" (Brookfield, 1986, p. 133). An investigation of learning styles in regard to adult learning methods by Dubin and Okum (1973) found that there were "no conclusions regarding the appropriate teaching behaviors to be used with adults" (Brookfield, 1986, p. 129). Also, there was no one theory of learning where adults learning style were concerned (Brookfield, 1986).

Smith (1982a) emphasizes that learning style could be referred to as, "Bright Ideas for Learning" when workshops are held. He felt that learners would shy away from their typical learning style if headings as "Becoming a Self-Directed Learner" or "Learning How to Participate in Discussions" are used (Brookfield, 1986).

In recent years educators and trainers have become interested in "mathematics" which is in the area of how

adults learn how to learn (Brookfield, 1986). Others are interested in using terminology as "experiential learning" or simply "training" (Jackson & Caffarella, 1994, p. 62).

Learning style and cognitive style learning are in a theoretical stage, so it is difficult to measure then with an instrument or as an approach to a learning task (Long, 1983). Because theorist have many differing views of what constitutes learning styles, there is no one acceptable definition. Therefore, progress in this area is needed in order that adults can pursue learning activities with confidence (Hill, 1992). According to Dubin and Okum, Machie, Even, and More, there is a need for more research in the area of learning style, so that it can also be used with confidence in learning activities (Brookfield, 1986). Furthermore, research is needed in the area of adult teaching and learning process and how the teacher can better influence this process (Peters, Jarvis, & Associates, 1991).

Learning Strategies

In recent years, learning strategies have become notable through the concept of study skills. However, learning strategies are different than study skills (Fellenz & Conti, 1989). Many learning strategies exist because there are many different learning styles (Chipman, Segal, & Glaser, 1985). Learning styles are ways of approaching tasks that are characteristic of individuals, whereas

learning strategies are ways of handling particular tasks. "Styles are focused on the person, strategies on the task" (Schmeck, 1988, p. 185).

Since individuals approach learning in different ways, there are many definitions of learning strategies. These differences of learning style reflect the way learners proceed in their learning strategies (Hill, 1992). Learning strategies can be defined as "the way in which the learner selects, acquires, organizes, or integrates new knowledge" (Weinstein & Mayer, 1983, p. 4). Learning strategies are "the techniques or skills that an individual elects to use in order to accomplish a learning task (Fellenz & Conti, 1990, p. 3). Learning strategies are learner-centered and focus on the learning method which is most appropriate to resolve a particular learning task (Fellenz & Conti,1990).

Although, there are similarities between learning style and learning strategies, there are essential differences. "Learning styles are seen as part of the internal, psychological framework of the learner and are not easily changed or change slowly" (Hill, 1992, p. 36). Learning strategies differ from learning style in that they are external aids such as "notes and lists, helping to reorganize information, and ensure retention" (Weinstein, Goetz, & Alexander, 1988, p. 299). Learning strategies also tend to promote "metacognition, memory, and motivational strategies (Fellenz & Conti, 1989, p. 8). Furthermore, if

learners are to except responsibility for their own learning, they must have proper skills and abilities to "actively engage appropriate metacognition, cognition, and affective (motivational) strategies" (Weinstein, Goetz, & Alexander, 1988, p. 141).

Learning strategies have become a branch of study skills through research by many researchers. One major researcher in this area is McKeachie (1988). He has noted that colleges and universities have become part of this moving force, in the use of learning strategies. "What is different today is that we have a better theoretical understanding of the reasons theses study strategies work. Cognitive psychology has developed a set of laboratory research studies, and theoretical concepts that are much closer to the natural learning settings in which study strategies have been applied" (Fellenz & Conti, 1989, p. 8). Studies in this area with adults have found that a believe that "low" educational effects hinders one's understanding and competence. On the other hand, those who believe that they have "high" educational effects increase their competence (Knox, 1977).

Learning strategies have become an issue in recent years concerning the methodology of teaching. Metacognition, memory, and motivation are methods that concern teachers in teaching learning strategies to adults (Fellenz & Conti, 1989). According to Weinstein, for

learners to be effective in learning strategies they must become cognitively active in three ways; the learner must be "purposeful, goal directed, and strategic" (Weinstein, 1987, p. 590).

However, a barrier to the effective use of learning strategies is that home backgrounds or schools have not made an attempt to highlight alternative ways or options of adults to approaching learning situations. Education is directed to provide opportunities to carry out "elaboration, self-monitoring or other strategies, but seldom is any explicit attention given to helping students become aware that they have a choice in types of learning strategies that may be employed" (Weinstein, Goetz, & Alexander, 1988, p. 5). Because of this lack of preparation

> It is also possible that in some instances, metacognition, thinking about thinking, may actually interfere with effective performance. After all, if one is making decisions about learning strategies and is conscious that one is trying different strategies, a certain amount of intellectual capacity must be taken up with his thinking and decision-making, which may simply result in overloading or distracting the student from business of studying. (McKeachie & others, 1984, p. 9)

Thus, researchers have defined learning strategies in various ways (e.g., Weinstein, 1987; Fellenz & Conti, 1989). However, the adult education research related to learning strategies has concentrated on the five strategy areas of matamotivation, metacognition, memory, resource management, and critical thinking (Fellenz & Conti, 1989). These

strategies are of importance in teaching/learning transaction of adults (Fellenz & Conti, 1989).

Metamotivation

There are several ways to approach motivation and these differ among various theorists. According to their assumptions about people and about what govern their actions. Energy and direction of behavior are two factors that govern motivation (Deci & Ryan, 1985, p. 3). Energy in motivation notes the needs that are innate to the organism and those that are acquired through interactions with the environment. Direction in motivation theory is interested in the process and structures of the behavior. This gives meaning to internal and external stimuli.

The learner is vital and the most important aspect of human motivation. Individual action enhances self-esteem; self-concept of determine thoughts and behaviors; and self-perception is one aspect of personality and behavior over time. The learner is at the heart of human experience and must be part of any theoretical formation in the field of human motivation (Sorrentino & Higgens, 1986, p. 286).

One motivation factor is enjoyment of the activity (Hill, 1992). However, there are other motivation factors concerning why individuals want to learn. These include such things as earning extra money by doing odd jobs, enhancing status in society, enhancing career opportunities, or enhancing quality of life and leisure (Wlodkowski, 1985,

p. 8).

Motivational learners work longer and harder and with more vigor and intensity than those who are not motivated. Also, when learners are motivated more concentration and care occur in the process of learning. This has a psychological affect to the learning material and enhance information processing (p. 5).

Furthermore, for learning to occur there must be the presence of ability and quality of instruction. No matter how motivated learners are they will be unable to accomplish these tasks (Wlodkowski, 1985).

Wlodkowski (1985) has developed a learning sequence based on a time continuum which he labeled as "The Time Continuum Model of Motivation." In this process, there is always a beginning, a middle, and an end. These three phases, according to Wlodkowski can enhance learner motivation. Beginning learning process are attitude needs; during learning process are stimulation affect; and ending learning process are competence reinforcement (pp. 60-61).

Metacognition

Metacognition refers to "the knowledge the learner has about his or her learning system and the decisions the learner makes bout how to act on information coming into the learning system" (Rhye & Andre, 1986, p. 206). In another sense, metacognition is "thinking about the process of learning" (Hill, 1992, p. 39).

Flavell (1979) has defined the distinction between cognitive strategy and metacogition strategy as the following: "Cognitive strategies are invoked to make cognitive progress, metacognitive strategies to monitor it" (Chipmen, Segal, & Glaser, 1985, p. 589). In addition, Biggs (1984) noted that "students must be aware of their motives and intentions, of their own cognitive resources, so that they are able to control those resources and monitor their consequence performance" (Schmeck, 1988, p. 320-321).

As learners come to mature, it is believed that metacognition is acquired throughout development as learners experience new and varied demands on their cognitive skills. By the activities and strategies used, learners control how much they learn (Rhye & Andre, 1986).

Furthermore, to develop positive results in accomplishing goals, there are certain techniques that ought to be used. When and how these techniques are used involves metacognition (McCormick, Miller, & Pressley, 1989). Metacognition is the central force in the technique and function of learning (Hill, 1992).

Weinstein (1987) relates that not only do students have to possess their own cognition processes, but they must also have abilities to control these processes. Content is how students' think such as their preferences, methods, and strategies. However, the control aspect of metacognition refers to the ability to organize, monitor, and modify the

thinking process (p. 591).

Schmeck (1988) tends to agree with this statement. Metacognition may be thought of as individuals' knowledge about their own cognitive processes, their abilities to control these processes by organizing, monitoring, and modifying them as a function of learning outcomes and feedback.

Comprehension monitoring is part of metacognition and requires several types of knowledge on part of learners. First, learners need to know something about themselves (i.e., what are their preferred learning styles or what is the best and worst times of the day for their learning). Second, learners must have some knowledge of the task they are undertaking (i.e., students must have an understanding of what is required by different learning tasks). Third, students must have knowledge of strategies that can guide learning or can be called upon when a problem is encountered (p. 295).

Metacognition is "an intricately interwoven system of knowledge" (Wellman, 1983, p. 32) and is not a source concerning factors about cognition (Garner, 1987). Flavell (1985) indicates there is no reason to think that metacognitive knowledge is qualitatively different from other kinds of knowledge. "Some metacognitive knowledge is declarative and some procedural," and Metacognition "is a slow process and builds up through experience" (Garner,

1987, p. 18). In a common sense approach concerning metacognition, learners accomplish what they are most familiar with and set up a sequence on how to go about the learning (Hill, 1992).

Metacognitive strategies include the designing of learning projects by one's learning style and the task at hand. They are concerned with the planning, monitoring, and regulating of one's learning activities" (Fellenz & Conti, 1993, p. 3).

Memory

Memory is a fascinating function of the complex brain. Memory refers to the ability "to retain information, to recall it when needed, and to recognize its familiarity when they latter see it or here it again" (Wingfield & Byrnes, 1981, p. 4). For years, researchers have been concerned with how memory works, how people remember, why some people have better memories than others, and why we remember some things, and not other things (Cohen, 1989, p. 2).

There are two methods of testing or measuring how well memory works. These are "self-reports" or introspections. The other is "natural experiments." The first is to record one's own observations about things they remember and forget. The second is to retain the methods of formal experimentation which is more representative of real life (Cohen, Eysenick, & LeVoi, 1986, p. 18).

Mnemonics are used to enhance recall. Two of these

approaches are chunking and loci. Chunking is "the organization of information into sets" (Paul & Fellenz, 1993, p. 23). It involves changes in the subjective unit of memory such as a sing-song rhyme used to recite the alphabet. Memorizing a speech is an example of using loci (Hill, 1992).

According to Wlodkowski (1985) short-term memory seems to be more of a problem for older adults then long-term memory. Problems that hinder older adults are "memorizing meaningless material, complex material, and learning something that requires reassessment of old learning" (Wlodkowski, 1985, p. 10).

Schema theory is a delicate part of memory. It allows recalling or remembering what is influenced by what is already known. It controls the pattern of remembering and forgetting. From schema theory, "the knowledge we have stored in memory is organized as a set of schemes or mental representations, each of which incorporates all that we have acquired from past experience" (Cohen, Eysenck, & LeVoi, 1986, p. 26). Schemes are items of information stored in memory having knowledge about objects, situations, events, or actions (p. 27).

Acquisition, retention, and retrieval are types of memory processes. Acquisition is information that should be remembered. When recall or recognition default in the memory process, this is known as encoding. Some problems of

encoding are attention, understanding in learning, strategy used to encode information, and practice. Retention is information which is acquired to be used at a latter time of remembering. Retaining and retrieving information may be a problem even if it has been adequately coded (Wingfield & Byrnes, 1981, p. 6-8). Retrieval is getting information out of storage when needed (Merriam & Caffarella, 1991).

Effective real-life memory has been categorized into three strategies (Hill, 1982). These are (a) organization of memory--strategies for encoding new information that intertwines with knowledge already stored, (b) external memory strategies--aids which require outside influences for recall such as checklists or appointment books, (c) application of memory strategies--internal cues that could enhance memory such as mnemonics. Mnemonics could include rhymes or training sequence of events (Hill, 1992, p. 43).

Critical Thinking

Critical thinking can be thought of as decision making, problem solving, logic, and rational thinking (Fellenz & Conti, 1989, p. 11). Brookfield (1987) suggests critical thinking "occurs when people question existing ideas or behaviors, or information that has been presented to them" (Brockett & Hiemstra, 1991, p. 134).

Knowledge is a foundation for critical thought. Richard Paul has pointed out that "knowledge is produced by thought, analyzed by thought, comprehended, organized,

evaluated, maintained, and transformed by thought" (Barnes, 1992, p. 5). Therefore, learners must possess their own knowledge and have critical reflection to distinguish a meaningful concept of their own surroundings (Hill, 1992).

In addition, critical thinking is important because to the learning process judgments are made by past experiences of existing situations. By deciding these judgments, learners question the authenticity of what is inevitable and, therefore, become responsible for their own beliefs and actions (Brockett & Hiemstra, 1991).

Brookfield (1987) has provided the framework for conceptualizing critical thinking in the field of adult education. He has selected four categories that would enhance critical thinking for adults. These are (a) test assumptions by not accepting conclusions but rather by identifying one's own conclusions; (b) assess content by realizing that what worked before may not work at the present or may not be appropriate because of change; (c) generating and testing alternatives by brainstorming or seeking group interaction, and (d) critical acceptance by not accepting anything on authority only or avoiding absolutes.

Resource Management

An approach to resource management may be "learning how to learn. With the mass amount of new educational technology, adults must adopt a systematic learning process

to all that is learned" (Klevins, 1972, p. 314). As changes occur in educational settings, adults must adapt to the numerous needs that are required of education. Not only do adult careers change but occupations as well change. Therefore, the need for adequate resource management becomes an educational factor (Cross, Valley & Associates, 1974). Resource management is the "identification of appropriate resources, critical use of such resources, and the use of human resources in learning (Fellenz, 1988, p. 3).

How learners manage these resources determines the solution of daily problems. There are a number of references available. Some are tapes, computers, and audiovisual material. Because of the amount of references available, choices must be made wisely (Hill, 1992). Learning strategies should be included in an adult learning curriculum that offers "techniques for identifying and acquiring appropriate learning resources" (Fellenz & Conti, 1989, pp. 4-5).

"The effectiveness of adult learning depends in part on the availability, appropriateness, and effectiveness of resources of learning" (Knox, 1977, p. 441). Effective learning resources help adults to

> (a) become more interested in the topic; (b) understand major aspects of the topic around which details can be organized; (c) refer new information to current understanding; (d) persist in the learning activity; (e) register information so that it is retained as long as needed and can be recalled when needed; (f) obtain sufficient practice and reinforcement; (g) minimize

or thoughts that facilitate encoding in such a way that knowledge integration and retrieval are enhance" (Schmeck, 1988, p. 291). Even more so, these thoughts and behaviors establish organized plans to achieve a particular goal (Schmeck, 1998).

In the past, colleges and universities primary objective was to "remedy student deficiencies" in areas as "mathematics, reading, communication, and study habits and attitudes" (Weinstein, Goetz, & Alexander, 1988, p. 25). However, in recent years, learning strategies have been the focus the interest of many researchers (Weinstein, Goetz, & Alexander, 1988) in areas of the "significance of adult education, human resource management, and continuing professional education" (Jarvis, 1992, p. xi).

Furthermore, in the past 20 years, researchers have shown interest in the studies of "meaningful learning, natural learning settings, and learning in the real world" (Weinstein, Goetz, & Alexander, 1988, p. 4). Learning can be flexible to the desire of the learner (Hill, 1992).

Higher education has not been prepared for adult learners. However, it has begun to change in recent years. This is partially due to an increase in adult learners in higher education and a recognition of adult learning traits.

In any case, learning strategies are different than study skills. Study skills are more or less a replicate of a learning process (Chipman, Segal & Glaser, 1985). As

cognitive theory has re-emerged, "there has been an increasing role for the learner in accounts of learning and memory" (Weinstein, Goetz, & Alexander, 1988, p. 43).

Therefore, the characteristics of the individual learner will determine which learning strategy to choose (Klevins, 1972). Also, past experiences will affect how adult choose learning projects (Burnman, 1983). In addition, learning strategies change when new experiences are acquired (Hill, 1992). Which indicate "learning may be grounded in the student's basic learning style, they incorporate adjustments for various situational factors" (Conti & Welborn, 1986, p. 22).

Imel (1989) acknowledged Knowles (1980, 1984) with "developing the most cogent model underlying the assumption that teaching adults should differ" (Imel, 1989, p. 1) from teaching children. To help accomplish this, learning strategies should be taught according to the learning situation (Hill, 1992).

Thinking skills can be improved. Sternberg's (1979, 1982) model suggests "components, strategies, and metacomponents" to assist thinking skills, and therefore, can be learned by individuals (Hill, 1992, p. 49). "It seems logical that the learning strategies and individual elects to use in any learning situation will have a tremendous impact on the outcome of the learning effort" (Fellenz, 1988, p. 3).

Background for Tribal Colleges

Five hundred years have past since educational efforts were imposed upon Native Americans. In the beginning of the 20th century, no consideration was given to Native Americans to choose their own destiny (Reyhner & Eder, 1989).

It was perceived that traditionalism prevented Native Americans from becoming educated. By the dissolution of boarding schools and reservation life, the thought was to "detribalize and individualize" them. The concept was that Indians would "leap into the mainstream of American life." The consequence to Native Americans was cultural disintegration and not cultural replacement as presumed (Reyhner & Eder, 1989, p. 1).

In Colonial America, colleges were charged with the task of Christianizing Native Americans. This function was included in the charters of Harvard and Dartmouth. William and Mary was chartered in 1693 based on the same approach (Reyhner & Eder, 1989). Because Native Americans were not considered Christian, it was believed they would lose their souls. Therefore, these institutions through education would prevent young Native Americans from becoming heathen. In fact, those involved in these institutions believed their culture to be superior. These efforts had little success, and Native Americans had little need for these methods which interrupted their way of being (Hill, 1992).