THE APPLICATION OF THE CONCEPTS OF LEARNING

STYLES AND LEARNING STRATEGIES IN

A DEVELOPING NATION

By

ARMADA C. PINKINS

Bachelor of Science
University of Connecticut
Storrs, Connecticut
1975

Master of Arts
Webster University
St. Louis, Missouri
1979

Master of Arts
Oral Roberts University
Tulsa, Oklahoma
1997

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF EDUCATION
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Thesis Approved:

Gary J. Conti

Thesis Adviser

P. H. Nkor

Carolyn Brown-Ukpaka

[signature]

Timothy A. Pettibone

Dean of the Graduate College

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CHAPTER I

INTRODUCTION

The Gambia

The Republic of the Gambia, commonly known as The Gambia, is one of the smallest and poorest countries in West Africa. The United Nations includes it in the list of the ten poorest countries in the world (http://apwww.stmarys. ca/~west/gambia/main.tml). It has a total area of about 10,600 square kilometers. The Atlantic Ocean is the border on the Western side, and the Republic of Senegal bound all other borders. The country forms a narrow stretch of land from the coast to about 400 kilometers inland, varying in width from about 50 kilometers near the coast to less than 35 kilometers inland. The Gambia has a very agreeable climate. The weather is subtropical with distinct dry and rainy seasons (http://www.gambia.com/gambia.html).

The Gambia River is the most important geographical feature of the country, and it divides the country into two equal parts. It serves as a useful means of transportation and irrigation as well as a place for fishing, boating, and sailing. In the past, the Gambia River was famous for the ability of sailing vessels to navigate as far as the country's eastern border. This was very attractive to the slave traders of the past. Their slave ships could easily

navigate up this river and out to the Atlantic Ocean. Estimates suggest that millions of slaves were taken from this particular area of West Africa (http://www.gambia. com/gambia.html).

The current population is estimated at 1.5 million with an annual growth rate of 3.5%. The population is predominantly Muslim with more than 90% following Islam. The remaining 10% are mostly Christians of different denominations. The distinct cultural differences in language, food, customs has lead to the formation of different ethnic groups. The main ethnic groups are Wollofs and the Mandinkas. These ethnic groups reflect the former empires of Wollofs and Mandingos in this region. In addition, there are Fulas, Sarahuleys, Akus (Creoles), Mauritanians, Morrocans, Lebanese and other African nationalities. Each ethnic group speaks its own language, but English is the official language and is commonly spoken (http://www.gambia.com/gambia.html).

The economy of The Gambia is still dominated by agriculture. Due to the weather, groundnut (peanut) production is the principal cash crop. Economic and infrastructure development is desperately needed in this country to elevate the output versus the input ratio of groundnut production. The economic recovery program of 1985 was developed to address this issue. This program was later

replaced with the Program for Sustained Development that places emphasis on the private sector, which is expected to lead the growth through further diversification of economic activity. Included in the Program for Sustained Development is a provision with more incentives to enhance private sector participation in the economic development process (http://www.gambia.com/gambia.html).

Tourism dominates The Gambia's economic development process. Over 100,000 tourists, who are mostly European, visit The Gambia annually. There are advantages and disadvantages to having tourism as a major economic sector. The government is committed to the development and expansion of this sector to maximize the benefits of tourism.

Contact between The Gambia and Western Europe dates back to the fifteenth century when Portuguese explorers landed there. Subsequently, the French visited, and later the British ultimately succeeded in taking The Gambia as a British colony. In spite of or as a result of becoming a British colony, The Gambia today remains underdeveloped and poverty stricken. When President Roosevelt stopped in The Gambia on his way to Casablanca in 1943, he witnessed, "the worst situation British colonialism could present." When talking to Winston Churchill, Roosevelt subsequently referred to The Gambia ás "that hell-hole of yours" (Wright, 1995, p. 47). Visitors to The Gambia called it "a

deplorable, and open sore, or one of the worst tropical slums in Africa and a disgrace to the Colonial Empire" (Wright, 1995, p. 47).

Perhaps the underdevelopment of The Gambia is the result of colonization. It is common knowledge that as "colonizers add formal education to a colony's social system, colonizers further remove lower classes from the possibility of financial success and survival because they cannot afford schooling" (Binns, 1993, p. 631). The institution of formal secondary education in England was "meant to educate only a few who would enter into the superior positions of society" (Timmons, 1988, p. 1).

This former British colony gained its independence in 1965 but remains underdeveloped in many ways like many other former colonies (Rodney, 1972). Many postcolonial theorists and theory admit that "colonialism continues to affect the former colonies after political independence" (Binns, 1993, p. 631). The Gambia is indicative of this especially in the areas of education and government. The perceived superiority of the British was quickly evident in the establishment of a formal education system in The Gambia. Education for a British colony was established and directed according to British norms (Ashcroft, Griffiths & Tiffin, 1997, p. 226).

British School System

The educational system in The Gambia reflects the country's colonial history and is based on the British system. At the age of 5 English students enter primary school and complete it at age 11. The first three primary years, called the infant stage, feature a student-centered, individualized, self-paced academic program. Little emphasis is placed on meeting academic standards or deadlines (McAdams, 1993, p. 133).

English students in the primary schools begin their day with a 30 to 35 minute assembly to satisfy the national requirement for an act of daily worship. The activity is Christian in nature and includes inspirational readings, music, and presentations by students (McAdams, 1993, p. 123). The final three years or primary school are referred to as the junior stage. The classroom is teacher-centered and more formal. Academic standards and time demands become more important. The curriculum is subject-centered but usually explored through a project approach (McAdams, 1993, p. 133). There is a new national student assessment program for the primary schools. All students are now tested at ages 7 and 11. Examinations at the primary school levels mark a departure from past practices.

The predominant form of secondary education in England is comprehensive high schools. Students ages 14 to 18 attend these secondary schools. Students progress through

the comprehensive high schools by completing from third to sixth form. During the first year of high school, students complete the third form. Next, they attend fourth form and prepare for the O Level (Ordinary Level) Exams by taking practice exams. At fifth form, students take the O Level Exams. Those students who are successful on the O Level Exams, attend the highest level, sixth form. Students then continue in the comprehensive school until age 18 in preparation for university entrance. Although there are other students who prepare for university entrance by attending separate sixth form colleges, "at age sixteen students either leave school, attend sixth form, attend a college for higher education, or enroll in a vocational or technical education program" (McAdams, 1993, pp. 135-136).

Uniformity in the English secondary school curriculum has been achieved through reforms that created a national curriculum and national student assessments. The teaching of fourth and fifth forms has been traditionally "shaped by the external exams, which students must pass successfully to receive a school leaving certificate" (McAdams, 1993, p. 137).

There are elite schools in England, which provide the bulk of the country's leaders, especially political leaders. The British public schools of Eton, Harrow, Rugby, and Winchester are famous and viewed as "training grounds of the

British ruling class, and by many authorities they are considered more important than the universities to which the students of such secondary schools invariably go" (Rodney, 1972, p. 259). These independent schools must also maintain the national curriculum requirements. Students attending these secondary schools have the greatest chance of being admitted to prestigious universities such as Oxford and Cambridge (McAdams, 1993).

The Gambian School System

The educational system in The Gambia begins with primary school, which lasts six years. Students ages 7 to 13 attend this level and are awarded the Primary School Leaving Certificate upon successful completion. This certificate enables them to attend the middle secondary school. The three-year middle secondary level includes ages 13 to 16. Students who successfully complete this level are awarded a Middle School Leaving Certificate. The next level of education is the higher secondary. The duration of this level is also three years, and students earn a West African Examinations Council Schools Certificate. Upon successful completion of the higher secondary level, a student is permitted to move up to the two-year, sixth form level, which includes students ages 19 to 21. A student who can successfully complete the examination for passing this level is given the West African Examinations Council "A"

Level Certificate and is eligible to continue in higher education (http://www.gambia.com/gambia.html).

Before 1949, Gambians went to Ghana or Sierra Leone to train as teachers. There were no teacher training institutions in the country. In 1949, a center for training teachers was opened in Georgetown as an annex to Armitage School. Training lasted only one year, and only male students were admitted. In 1952, the training center was relocated closer to the colonial administration at Yundum near Banjul, the capital city. Teacher Training College (TTC) was the name given to the school. Teachers who had one year of training at the center at Georgetown were brought to Yundum and given one additional year of training. By 1953, women were permitted entrance to train as teachers (Gambia College Distance Education Booklet, 2000, p. 30).

Teacher training lasted three years and students were taught all subjects in the primary school curriculum including woodwork as a vocational subject. Initially, students were prepared only to teach in the primary schools, but in 1961 the intermediate level teacher training began. The teachers in this program were trained for two years and had more of an emphasis in methodology than in academic work. However, this training only lasted one year because it was not cost effective. In 1956, a teacher training college was established in The Gambia and was named Yundum

College (Gamiba College Distance Education Booklet, 2000, p. 30).

The policy of Universal Primary Education was introduced in the 1980s and intensified the need for competent and qualified teachers to handle the expansion of primary schools. The problem became a high priority to the government and led to the establishment of Gambia College. In the early 1980s, the Gambia Parliament passed the long awaited Education Act which included the establishment of Gambia College and its four constituent schools (Gambia College Distance Education Booklet, 2000, p. 30).

Until last year, Gambia College was the only institution providing higher education in The Gambia. It includes the four schools of agriculture, education, nursing, and public health. The school of education is the largest of the four schools with 90% of the student population.

Last Year, the University of The Gambia opened and provides higher education. Currently, the university offers degrees in the following disciplines: Medicine and Allied Health Services, Humanities and Social Sciences, Economic and Management Sciences, and Science and Agriculture. The University of The Gambia evolved from an extension program with Saint Mary's University (http://apwww.stmarys.

ca/~west/gambia/main.tml). Students now have the choices of attending the University of The Gambia, Gambia College or going abroad to attend an institution of higher learning. However, because of the lack of money many students are left with only the choice of attending Gambia College where the government pays for their schooling, if they agree to teach in the nation's schools.

Technical and vocational education is offered at the Gambia Technical Training Institute. This institute has courses which prepare students to take the examinations of the City and Guilds of London Institute and the Royal Society of Arts (http://www.gambia.com/gambia.html).

Gambia College is the sole provider of teacher education in The Gambia. Primary school teachers take a two-year course leading to a Primary Teaching Certificate (PTC). Secondary teachers are also trained at Gambia College School of Education in a two-year course. After successful completion of this course, students earn a Higher Teachers' Certificate. Students must have a West African Examinations Council School Certificate in order to enter this course. (http://www.gambia/com/gambia/html).

The established educational system in The Gambia uses a behaviorist approach, and classes at all levels can be very large. The tenets of the behaviorist approach applied in this public school system assume that learners are a

homogeneous group and that teachers have the role of lecturers. Teaching should therefore be applied equally and consistently across all learners. Learners are viewed as passive recipients of knowledge and skills. They are vessels into which new information can be poured. In this setting, the learners react when necessary, but they do not take much initiative to control their learning. This learning environment produces learners who have relatively dependent personalities feeling most comfortable when the teacher is in control of the learning process (Elias & Merriam, 1995, pp. 85-86). Most of the teachers in these traditional classes assume that learners have relatively little experience that relates to the subject. Instruction centers around the assumption that external pressures, goals, and the promise of extrinsic rewards motivate learners. Teaching methodologies in schools such as these use "fact-laden lectures, assigned readings, drill, quizzes, rote memorizing, and examination" (Knowles, 1980, p. 41).

Students completing 14 years in such learning environments, enter higher education with certain expectations about the learning process. They explicitly or implicitly presume that the learning process will be the same. When these learners become teachers, many use these same methodologies (Knowles, 1980, p. 53)

Adult Learning

Knowles (1980) purports the theory of andragogy, which refers to the process of helping adults learn or facilitating self-directed activities. In andragogy, great emphasis is placed on the learner as a self-directed individual who should be involved in self-diagnosis of needs for learning. There are six basic assumptions underlying this andragogy theory. First, as individuals mature they move toward independence reflecting their self-concept. These adults learners have a deep and powerful drive to be self-directing, to be in charge of their developmental destinies, and to take control of their learning processes. The next assumption is that adults accumulate a substantial reservoir of quality experiences that has the potential to be a resource for learning. These experiences represent a rich resource, which can be built upon and to which new material can be related. Thirdly, individuals are ready to learn once they experience a need. Adults are ready to learn when there is a need to know for self, job, family, or community. They will learn best when they experience this need. The fourth assumption is that education is a process, which can help a person live better tomorrow by developing increased competencies. The next assumption is that adults need to know why they need to know something before engaging in it. Lastly, the greatest motivation for adult learners

comes from internal desires such as increased job satisfaction, self-esteem, and quality of life (Knowles, 1980, pp. 43-44; 1990 pp. 57-61).

A central element of adult learning is the concept of self-directed learning. Self-directed learning is a form of study where learners "have the primary responsibility for planning, carrying out, and evaluating their own learning experiences" (Merriam & Caffarella, 1991, p. 41). Learning on one's own, which can take place inside or outside of institutionally-based learning programs, is the paramount way adults acquire new ideas, skills, and attitudes (Merriam & Caffarella, 1991). Approximately "70% of all learning projects are planned by the learner himself, who seeks help and subject matter from a variety of acquaintances, experts, and printed resource" (Tough, 1979, p. 10).

Adult learning has the potential to significantly change people's lives. The theory of transformative learning, which results from individual learners engaging in critical self-reflection, provides the potential for profoundly changing the way one rationalizes:

> of our experience of the world, other people and ourselves. Such transformative learning, in turn, leads to action that can significantly affect the character of our interpersonal relationships, the organizations in which we work and socialize, and the socioeconomic system itself.(Mezirow, 1990, p. xiii)

Transformative learning occurs when adults learn that their assumptions or premises based on previous experiences are now invalid (Mezirow, 1990, p. 14). As a result of this newly learned knowledge, the learner seeks other meaningful ways to interpret, communicate, recognize, and understand previously learned experiences and materials in a new context (Mezirow, 1991, p. 15).

Myles Horton is an adult educator who has addressed the learning needs of people in developing areas. Horton (1990) contends that the traditional goal of education is to "prepare people to live in whatever system the educational school system is about. Like in our [American] system it's to prepare people to live under capitalism " (p. 3). According to Horton, this should not be the goal of education at all. This type of thinking just turns people into "nuts and bolts to keep the system together" (p. 3). This is unfortunate because people are creative and the educational process should "allow them to do a lot of things that don't fit any kind of systems, and you've got to have a lot of deviations, to have a lot of pluralism" (p. 3). This type of learning environment can help people to empower themselves.

Horton argues that in order for people to empower themselves, they must see that they have powerful ideas that are in their minds (Adams, 1975, ,p. 24). Since people do

not know that these ideas are there, educators can help people to become aware of the existence of these ideas and how to utilize them. Horton felt that educators help prepare the ground for them to grow, help people learn, and assist them in learning from each other (Horton, 1990, p. 3). Likewise, Horton believed that individuality "is enhanced by being part of a group, instead of telling people they should go at it alone, they should be competitive... with their fellow man. We say, work together, and you'll be a better person" (Horton, 1990, p. 4).

On the subject of motivation, Horton says, "motivation comes from within, not from outside, you don't motivate somebody, you help them learn to motivate themselves" (Moyers, 1990, p. 5). An educator's job is (a) to try to bring people to a point where they have more confidence in themselves and their peers and (b) to impress upon the individual that solutions are with them so they should not wait for someone else to act. Each person must be ready and willing to take necessary action.

Like Knowles, Horton recognized that adults are people with a past, which forms a rich reservoir of experiences (Adams, 1975). These experiences of the people are very important. Most adults are not aware of just how important these experiences are because they have not learned to analyze these experiences so they can learn from them

(Horton, 1990, p. 2). Horton indicates that "people say you learn from experiences--you only learn from experiences that you learn [to analyze]" (Horton, 1990, p. 2). These experiences become the building blocks for the curriculum. The job of educators "is to help them understand that they can analyze their experiences an build on those experiences, and maybe transform those experiences" (p. 2). This kind of learning occurs throughout life.

Lifelong learning "is based on the view that learning occurs throughout life as a normal and natural process" (Cropley & Dave, 1978, p. 9). It includes "all levels of education including formal, school-based learning, non-formal learning that goes on in non-institutionalized settings, and informal learning which occurs in many different settings" (p. 12).

The principle of lifelong learning delivers a dynamic approach to education that adapts learning materials and methods to changing needs and adopts new media and communication means as they become available. The flexibility of lifelong learning permits "alternative patterns of education, and diversity in content, in learning tools, in techniques of learning and in timing of learning" (Cropley & Dave, 1978, p. 14).

The ultimate goal of lifelong learning is to improve one's quality of life. Real-life learning is learning that

is relevant to the living tasks of the learner. This type of learning results in practical knowledge, which is needed to be successful in accomplishing everyday living tasks (Fellenz & conti, 1989, p. 3).

<div align="center">Learning Styles</div>

The concept of learning styles is one approach to consider when addressing individual differences in the learning process. Kolb has been a leader in conceptualizing learning styles with his theory of experiential learning. Learning is "the process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 41). His definition of learning is based upon the Experiential Learning Model (1981, pp. 27-28). The four-stage cycle of this model describes learning as beginning with an experience which is concrete and which one observes and reflects upon. This brings about the formation of generalizations, which are applied in new situations, resulting in the creation of new concrete experiences (Ivey, 1992, p. 41). Measures of learning styles will predict behavior in a way that is consistent with the theory of experiential learning (Kolb, 1976). The learning styles description by Kolb represents a learning theory based on the "information processing approach" (Ivey, 1992, p. 41).

The four basic modes are defined as follows:

1. An orientation toward concrete

experience focuses on being involved in experiences and dealing with immediate human situations in a personal way. It emphasizes feeling as opposed to thinking.

2. An orientation toward reflective observation focuses on understanding the meaning of ideas and situations by carefully observing and impartially describing them. It emphasizes understanding as opposed to practical application.

3. An orientation toward abstract conceptualization focuses on using logic, ideas, and concepts. It emphasizes thinking as opposed to feeling.

4. An orientation toward active experimentation focuses on actively influencing people and changing situations. It emphasizes practical application as opposed to reflective understanding. (Kolb, 1981, pp. 68-69)

This four-mode learning model consists of learning preferences that are opposites (Kolb, 1984, pp. 68-69). Ultimately, learners develop a unique learning style based on preferences, which stresses one learning style over another. As individuals develop and mature, they usually resolve conflicts and learn new material utilizing this learning style.

There are four learning styles groups based on the theory of experiential learning: Accommodators, Assimilators, Divergers, and Convergers (Kolb, 1976). Accommodators are the opposite of Assimilators. They tend

to ignore theory and use intuition and trial-and-error in completing tasks. Assimilators use their strong reasoning abilities to create theoretical models. They are more focused on ideas and abstract concepts and less on people (Kolb, 1984, pp. 77-78). Divergers are just the opposite of Convergers. The Diverger is a people-oriented individual with strengths in "imaginative ability and awareness of meaning and values" (pp. 77-78). Convergers strengths of abstract conceptualization and active experimentation enable them "to do best in situations like conventional intelligence tests where there is a single correct answer" to a question (Kolb, 1974, p. 30). Most adults will show partiality for one style although other styles or a combination of styles may be developed and used in learning (Kolb, 1976).

Learning Strategies

The concept of learning strategies is another learner-centered approach that can be used to explore the individual differences of learners. Learning strategies differ from learning styles. Learning styles are "a rather stable characteristic of an individual" (Fellenz & Conti, 1993, p. 4) that "are cognitive, affective, and physiological traits that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (Keefe, 1982, p. 44). In contrast, learning

strategies "are developed throughout life and vary by task. While the effectiveness of a particular style relates to the individual, the success of strategies depends more on the situation" (Fellenz & Conti, 1993, p. 4). In any learning situation, "learners use various strategies to achieve their learning tasks. Learning strategies are those techniques or specialized skills that the learner has developed to use in both formal and informal learning situations" (Conti & Kolody, 1995, p. 2). While learning styles describe the innate ways that people process information, learning strategies define the way learners approach specific learning situations.

Five conceptual areas of learning strategies have been identified in adult education as vital elements of the adult learning process. These are Metacognition, Memory, Metamotivation, Critical Thinking, and Resource Management (Fellenz & conti, 1989, p. 8). Research related to specific learning strategies in the five areas has led to the identification of three distinct groups of learners. These are Navigators, Problem Solvers, and Engagers (Conti & Kolody, 1999, p. 11). Navigators are focused learners who map out a course for learning and follow it. Problem Solvers are learners who depend a lot on strategies in the area of critical thinking. Engagers are affectionate learners love to learn, learn with feeling, and learn best

when they are actively engaged in a meaningful manner with the learning task (Conti & Kolody, 1999, pp. 9-13).

Qualitative data indicates that each of the three groups approach learning differently. Navigators prefer structured learning environments with specific objectives, expectations, deadlines, and summarization of the main points. Change can be difficult for them and they value prompt feedback (Conti & Kolody, 1999a, p. 9). Like Navigators, Problem Solvers also like deadlines. Moreover, they are curious, inventive, and intuitive learners who will generate additional learning options. They do best with assessments, which include open-ended questions and problem solving activities. On the contrary, Engagers approach learning in a strikingly different manner from Navigators and Problems Solvers. They like cooperative learning activities, and they respond best to educators who take a personal interest in them. Engagers "succeed best with teachers who focus on learning rather than on formal evaluation and who encourage involvement in projects based on individual interests. Engagers consider work as an extension of themselves and are motivated by feeling of satisfaction or pride" (Conti & Kolody, 1999, p. 15). Oftentimes, an Engager's self-worth is defined and affirmed by their work (p. 15).

Problem Statement

World leaders met over a decade ago in Jomtien,
Thailand, and made a commitment to providing basic lifelong
education to all their citizens. Most African countries
signed the Jomtien Declaration on Education For All (EFA)
(African News Service On-line http://www.comtexnews.com).
Nevertheless, as the world entered the new millennium,
African countries still have "low enrollment, high dropout
rates, irrelevant curricula, among other things" in its
schools (Africa News Service On-line http://www.
comtexnews.com) in its schools. Some of the issues that
emerged at the recent Sub-Saharan Africa Regional Conference
on Education For All included declining educational quality
and irrelevant school curricula, which did not meet the
needs of the learners and communities (Africa News Service
On-line http://www.comtexnews.com). At the same time that
the established educational system is failing to educate
many in The Gambia, learning principles exist in the field
of Adult Education, which suggest methods for making the
learning process effective for adult learners. One of the
central principles in developing efficient lifelong learners
is to address individual learning needs.

Today there are as many as 800 different cultures in
Africa, and each has "its own traditions, values and ways of
doing things" (Perry, 1998, p. 145). Yet there are some
broad principles that extend across most African cultures.

These principles include respect for elders, loyalty to family and neighbors, valued person-to-person interaction, and cooperative group learning. An immediate way to improve learning at an institution such as Gambia College is to begin to utilize these cultural factors in the teaching-learning process. One possible way to initiate this process is to address the individual learner's needs by using learning styles and learning strategies. This could make the instruction more relevant to adult learners.

However, the current way of defining and measuring learning styles and strategies is from a Western perspective. In the past, there has been widespread use of Western patterns, which are irrelevant to the African situation" (Hanson, 1971, p. 34). The broader use and understanding of learning styles and strategies may offer opportunities for the development of approaches and techniques that can assist the African student population and their teachers.

Identification and teaching of learning styles and learning strategies may provide useful insights to help learners better understand how they go about the learning process. Knowledge of student learning styles and learning strategies may be beneficial in the teacher's "selection of appropriate methods and techniques used to focus understanding, discussion, and reflective thought about the

learner" (Kolody & Conti, 1999, p. 16). While the concept of addressing individual differences offers hope for improving the effectiveness of learning, it is not known if these Western concepts and instruments are relevant and suitable to African culture. Before the ideas and instruments related to learning styles and strategies are implemented in developing countries such as The Gambia, research is needed with African adult learners to determine if they are transportable to the African culture.

Purpose

The purpose of this study was to describe the learning styles and learning strategy preferences of students at Gambia College in West Africa and to describe the learners' perceptions of the action of teachers that help and hinder them in the learning process. Goals identified were to discover the learning strategy preferences and learning style types of these students. Thus, Kolb's Learning Style Inventory (LSI) and Assessing The Learning Strategies of AdultS (ATLAS) were administered to students in the school of education at Gambia College to determine their learning styles and learning strategy groupings. Individual and group interviews were then conducted to obtain additional data.

Research Questions

The research covering learning strategies is a

continuation of the learning strategy line of inquiry, which is based on the use of Self-Knowledge Inventory of Lifelong Learning Strategies and on the use of Assessing The Learning Strategies of Adults. Using a similar research design with many different populations such as with this line of inquiry allows for making generalizations from the results of one or more studies to what is probably true for all students like the ones observed in the studies (Shavelson, 1996).

While these studies of learning strategies have used diverse populations, all have been conducted in North America. Likewise, the learning style research has been almost exclusively used with Western learners. This study will expand this by including learners from The Gambia. In order that the results may be included with that of other studies, the design for this study will closely relate to the study by James (2000). The following research questions will be addressed.

1. What are the learning styles and learning strategy preferences profiles for students at Gambia College?

2. How do Gambia College student Assessing The Learning Strategies of AdultS (ATLAS) compare to the responses of those used to create the norm for this instruments?

3. How do learning styles and learning strategies relate to demographic variables?

4.   How do the responses on the Learning Style Inventory compare to those on Assessing The Learning Strategies of AdultS?

5.   How does each learning style and learning strategy group describe its approach to learning?

6.   What perceptions of teacher actions do Convergers, Divergers, Assimilators, and Accommodators report from their learning experience that were helpful?

7.   What perceptions of teacher actions do Convergers, Divergers, Assimilators Accommodators report from their learning experience that were harmful?

8.   What perceptions of teacher actions do Navigators, Problem Solvers, and Engagers report from their learning experience that were helpful?

9.   What perceptions of teacher actions do Navigators, Problem Solvers, and Engagers report from their learning experience that were harmful?

Definitions

Accommodator--Term used to describe learners whose strength lies in doing things, in carrying out plans and tasks and getting involved in new experiences. They "tend to solve problems in an intuitive trial-and-error manner, relying heavily on other people for information rather than on their own analytic ability" (Kolb, 1984, p. 78)

Adult--Someone who has passed through the stages of childhood and adolescence and assumed the role of worker, spouse, and/or parent. An adult has taken primary responsibility for his or her live and functions in socially productive ways in the society. (Darkenwald & Merriam, 1982, p. 8).

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

Andragogy--The art and science of helping adults learn

(Knowles, 1980, P. 43).

Assimilator--Term used to describe learners whose strength
    lies in inductive reasoning and the ability to create
    theoretical models. They are less focused on people
    and more concerned with ideas and abstract concepts
    (Kolb, 1984, p. 78).

ATLAS--Assessing The Learning Strategies of Adults. An
    instrument developed by using the international
    database compiled using SKILLS data, which can assess
    learning strategies (Conti & Kolody 1998b, P. 109).

Converger--Term used to describe learners whose strength
    lies in problem solving, decision making, and the
    practical application of ideas. They are often
    "controlled in their expression of emotion. They
    prefer dealing with technical tasks and problems rather
    than social and interpersonal issues" (Kolb, 1984, p.
    77.)

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

Diverger--Term used to describe learners whose strength lies
    in imaginative ability and awareness of meaning and
    values. These learners are interested in people and
    tend to be imaginative and feeling-oriented (Kolb, 1984
    pp 77-78).

Empowerment--The process of liberating individuals and
    groups from oppression enabling them to participate
    equitably (Fellenz & Conti, 1989, p. 21).

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

Gambia--The common name of the West African country,
    Republic of The Gambia.

Higher Teaching Certificate (HTC)--A certificate given to

secondary school teachers after completion of teaching training at Gambia College.

Learning How to Learn--"Possessing, or acquiring the knowledge and skill to learn effectively in whatever learning situation one encounters (Smith, 1982, p. 19).

Learning Strategies--The techniques and skills that an individual elects to use in order to accomplish a specific learning task. Such strategies vary by individual and by learning objective (Fellenz & Conti, 1989, p. 1).

Learning Style--The individual's preferred ways of grasping and transforming information" (Dixon, 1985, p. 16)

Learning Style Inventory (LSI)--An instrument developed to determine the learning style of an individual. (Kolb, 1981).

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

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

Primary Teaching Certificate (PTC)-A certificate given to primary school teachers after completion of teaching training at Gambia College.

Problem Solver--ATLAS grouping of learners who use the learning strategies associated with critical thinking. These learners test assumptions, generate alternatives, and are open to conditional acceptance of outcomes (Conti & Kolody, 1999, p. 12)

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

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

Chapter II

REVIEW OF THE LITERATURE

The Gambia

The Gambia River, with its potential wealth, was the attraction of many adventurers from Europe since the fifteenth century. It was the first point of contact between England and West Africa (Gray, 1966). The British's first permanent settlement in The Gambia was James Island in 1618. This island, located off the West Coast of Africa, suffered many attacks from the Dutch and the French during the seventeenth and eighteenth centuries which led the British to later abandon this settlement (Hilliard, 1957, p. 50). In 1783, the British signed the Treaty of Versailles, enabling them to acquire the River Gambia as a possession. On April 23, 1816, James Island was obtained by the British government and renamed St. Mary's Island. A settlement named Bathurst was established on St. Mary's Island and served as a home for freed slaves and as a base for operations against slave traders (Hilliard, 1957, p. 50). This was the beginning of the Colony of The Gambia.

In 1821, The Colony of The Gambia was put under the Colonial Governorship of Sierra Leone. The development of The Gambia parallels that of Sierra Leone. Both The Gambia and Sierra Leone consisted of a colony and a protectorate.

The Gambia is the smallest of the two countries, and Sierra Leone is like the big sister (Hilliard, 1957). Later, an inland area along the banks of the River Gambia was added to the colony, which became the protectorate in 1901. Today, The Gambia consists of a narrow strip of land only six miles in width in most places and extends as far as 300 miles from the west coast of the country. For administrative purposes the country was divided into five provinces and the Island of St. Mary (Hilliard, 1957).

English was mandated by the British in colonial days as the official language of The Gambia. Today, it remains the established and most widely spoken language in The Gambia. However, there are some British and American English expressions that are different from some English expressions in Africa. For example, a study of African English expressions in The Gambia by Richmond (1989) developed "a long list of Gambianized English items" (p. 227). This list indicates some differences in the development of English in The Gambia. Furthermore, as one examines the English spoken in previous British colonies, an awareness comes that indicates there is not just one form of English, but several forms exist that are spoken on the African continent (p. 223). For example, the word "wonderful" does not mean something great or positive as in the Western word, but in African literature this word means "there is something

strange, unexpected, or shocking--something that makes one wonder" (p.225). Likewise, the word mad does not mean annoyance as it does in America. To call an African mad is an insult and causes resentment (p. 225).

The majority of Africans speak two or more languages. Individuals speak their "native tongue and a trade language or a colonial language to some degree" (p. 24) Also, many Africans are fluent in as many as eight or nine languages (Reining, 1962, p. 24).

There are four principal tribes in The Gambia. They are the Mandingos, the Jollofs, the Fulas, and the Jolas. The Mandingos are the largest of these four tribes. Tradition reports the original home of this tribe was Manding, a place about 700 miles east of the coast (Gray, 1966, p. 325). The Jollof tribe invaded The Gambia from the east. Both the Mandingos and Jollofs were established in the country before the arrival of the first Europeans (Gray, 1966, p. 325). The Fula tribe migrated from the Fulani of Northern Nigeria and have European features and light skin. The Jolas, who were called Feloops by the Europeans, are found mostly in Foni. However, because The Gambia has never had any tribal boundaries, there has been a tremendous amount of intermarriage, yet there has been a maintenance of their tribal characteristics, customs, and traditions (Gray,

1966, p. 327). Today one might still find small but distinct groups of one tribe interspersed in areas which another tribe dominates. Due to this fact, chieftainships have been relatively small and more territorial in nature than tribal (Gray, 1966, p. 327).

In The Gambia, there exist not only one culture but many cultures. Culture encompasses the total way of life of a group of people. It includes the food, the clothing, the language, the religion, the way of thinking, and the customs associated with life events such as births and deaths (Rodney, 1972, p. 34). There are some resemblances between the groups yet unique differences also exist. For example, music and dance have key roles especially in birth, initiation, marriage, death, and recreation in every tribal or cultural group.

In The Gambia, "Islamic worship, law, and practice coexist with other religio-cultural forms" (Ruthven, 1984, p. 160). The traditional Muslim family is made up of a husband with "multiple wives, each wife has her own dwelling and often her own cooking fire" (Sunal, 1998, p. 12). These large extended families live in compounds where children may be observed playing with their siblings. Everyone who is old enough is involved in activities related to the economic survival of the family (Graham-Brown, 1991).

<u>British School System</u>

Education in England in the sixteenth and seventeenth centuries was accomplished in the home, the church, and the workshop except for the clergy, civil servants, and lawyers (O'Day, 1982, p. 25). During the Renaissance, scholars saw an opportunity to improve society through classical education. Thus, the first grammar school emerged with a "progressive Christian, classical curriculum" (O'Day, 1982, p. 25). The belief that school was a necessary vehicle for social control was a philosophy of the ruling classes at the inception of the first schools. The literature of this period supports the philosophy "that the school has within it the power to counteract the evil influences of family and society upon the child (O'Day, 1982, p. 25).

Prior to 1660, the British communities relied heavily on grammar schools and ancient universities for education (O'Day, 1982). After 1660, a religious division occurred in the Church of England that brought about a change in the educational system. The commercial and elite classes attended the same educational institutions up until this time, but this rift brought about a division. It was discovered that "the values systems of the communities had diverged and this divergence tended to be confirmed through the medium of education" (pp. 260-261). The elite classes' students were now groomed for leadership in the state, national, or local level, whereas the working class students

were groomed to make a living working in shops (p. 260).
The upper and middle classes encouraged the expansion of
schooling for poor children because most "had the faith that
education, controlled by an elite, would bring about a
betterment of society" (p. xi).

The present system of education in England emerged at
the end of the nineteenth century and the beginning of the
twentieth (Dunford & Sharp, 1990). A movement called
Secondary Education for All was led by R. H. Tawney who
argued that the division of education, secondary education
for the middle class and elementary for the working class,
was "archaic, divisive, socially unjust and no longer met
the needs of the nation" (Dunford & Sharp, 1990, p. 16).
Furthermore, Tawney argued that all children should attend
primary school until age 11 and then continue on to
secondary school free of any charges.

The Education Act of 1944 was very instrumental in
reforming British education. The concept of elementary
education was abandoned and replaced with primary,
secondary, and further divisions of education (Dunford &
Sharp, 1990, p. 19). In addition, the school leaving age
was raised to 15 although it was not achieved until 1947 and
was subsequently raised to 16 which was attained in 1972.
The Education Act of 1944 "indicated that children should be
educated according to their ages, abilities, and aptitudes"

(Dunford & Sharp, 1990, p. 19). However no definition of abilities or aptitudes was included in the act. In 1943 a committee led by Sir Cyril Norwood, an ex-public school headmaster, suggested that children could be divided into three categories according to "types of mind" (p. 20). First, there were the academic children who were interested in "learning for its own sake" and suitable for grammar schools; next there were those with interests in "applied science or applied art" who could attend secondary technical school; and finally there were learners who dealt "more easily with concrete things than ideas" and who could be accommodated best in the secondary modern schools (Dunford & Sharp, 1990, p. 20). The origins of the tripartite system were found in this report.

These three groups of schools were held in different degrees of esteem by the society. The Grammar school were given the most esteem and gave its graduates access to professional and executive ranks in employment. Whereas the Junior Technical school, usually entered at age 12 or 13, was regarded as a "second best" for those who did not qualify for grammar school positions. The lowest esteemed position was given to the Senior Elementary school which had students who were "deemed not capable of, or who were not interested in more advanced education" (Dent, 1982, p. 87).

In the 1940s and 1950s, this tripartite selective

system of secondary schooling became universal in England. General Certificate of Education (GCE) courses were commonly offered in secondary modern schools in the 1960s (Dunford & Sharp, 1990, p. 21). The selection at age 11 based on intelligence test scores caused the tripartite system to decline, especially in suburban districts (Dunford & Sharp, 1990).

The "Eleven plus" system was instituted in the 1940s and continued to exist during the following decade. This system was based on the theory that at age 11, intelligence tests could "identify innate ability which remained almost static throughout life" (Dunford & Sharp, 1990, p. 22). A very strong emphasis was placed upon preparation for "Eleven plus" tests that caused parents and children to have anxiety and stress. In addition, teaching methods and curriculum of junior schools were severely restricted (p. 22). The techniques employed by the "Eleven-plus" system were:

1. Standardized objective tests of intelligence (or verbal reasoning...).

2. Tests, usually objective and frequently standardized, of attainment in formal English and arithmetic.

3. Reports from Primary school Head Teachers...

4. Scrutiny of records of children compiled over the period of Primary education. (Dent, 1982, p. 88)

Although the "Eleven-plus" examination system was in

operation, in the 1950s and 1960s, many junior schools used a liberal curricula that was:

> Making extensive use of individual and group methods of learning, encouraging initiative, activity and enterprise in their pupils, giving them a great deal of freedom to determine the jobs they would do, the ways in which they would carry them out, and the speed at which they work. (Dent, 1982, p. 81)

This approach operated on the belief that the way to develop children's potential is through skillfully supervised and directed activities and experiences not just the accumulation of knowledge. Many critics emerged in the 1970s to discredit this approach. There are a large variety of age ranges for middle schools: 8-12, 8-13, 9-13, 9-14, and 10-14, but 8-12 and 9-13 were the most common (Dent, 1982). Because of this large variety of age ranges, there are minor variations in the curriculum, but all middle schools must have the following: (a) a foreign language must be taught; (b) there must be laboratory facilities for science; (c) there must be specialist areas for the teaching of craft and design subjects; and (d) these requirements involve the inclusion of specialist teachers on the staff (p. 82).

In 1964, the government attempted to end selection at eleven and to introduce comprehensive schools throughout the country (Dunford & Sharp, 1990, p. 23). By the 1980s, the majority of children of secondary age attended comprehensive

schools, leaving a small percentage still accommodated by grammar and secondary modern schools (p. 23).

Although recent reforms have been made in the British school system, certain basic facets date back to the nineteenth century (Dunford & Sharp, 1990). Certain philosophies and traditions have been so firmly established that attempts to change them have been met with much resistance. For instance, the elementary school concept in England was established to educate the children of the poorer classes and although attempts were made in 1944 to eliminate such concept, the educational system has traces of this concept within the system today. Indeed, the philosophy of education of a particular kind of schooling for a specified social group has remained a part of British education for centuries (p. 1).

One philosophical stance taken by members of the ruling class concerning the education of the children of the poor was that "educating the poor would easily stir them up and make them discontented with their lot in life" (Dunford & Sharp, 1990, p. 1). In other words, they believed in "letting sleeping dogs lie" (p. 2). Another group from the influential social classes embraced a different philosophy. They also wanted to preserve the status quo, but they believed the children of the poor should be provided with a specialized education that stressed certain qualities such

as "obedience to authority and virtues such as hard work" (p. 2). Religious education was viewed as being important with this philosophy. The goal of educating the poor under this philosophy was for social control.

The responsibility for educating poor children in England in the early years of the nineteenth century fell primarily on the church. Many of the church schools used older pupils to teach the younger ones. The main focus of the curriculum was reading, writing, and arithmetic. Religious rivalries developed because of the competition which emerged between different denominations. Since the churches provided schools for the education of the poor children before the government got involved, religious organizations have "sought to retain an important place in the education service ever since" (Dunford & Sharp, 1990, p. 3).

There are three unique features which distinguish the British educational system from systems operating in other countries. First, there exist a private sector along the state educational system. This sector encompasses the prestigious and expensive public boarding schools. Second, religious organizations, primarily the Anglican and Roman Catholic Church, still provide education to over one-fifth of primary and secondary pupils (Evans, 1975, p. 157). Third, the distribution of power and responsibility within

the system ensures that the system stays dependent upon the "cooperative efforts of the central government, the local authorities, the churches and the teaching profession" (Evans, 1975, p. 157).

Grammar schools are the oldest kinds of schools in England and can be traced back to the seventh century (Dent, 1982). These schools provide for:

> A general course lasting for about five years in which the treatment of all subjects and groups of subjects but notably languages (classical and modern), mathematics, and science, follows a predominantly logical development; and ... a subsequent intensive course in the "sixth form" covering a narrower range of studies, which for many boys and girls leads naturally on to studies at the University level. (Dent, 1982, p. 91)

All grammar schools prepare their students to take the General Certificate of Education (GCE) examinations. Students will usually take these examination between the ages of 15 and 18. These examinations are taken at two levels, "Ordinary ["O" level] and Advanced ["A" level]" (Dent, 1982, p. 92). A student can be exempt from university entrance examinations if they have a GCE with passing scores in the required subjects.

In 1963, the Secondary Schools Examination Council announced examinations which led to the attainment of the Certificate of Secondary Education (CSE). These examinations were similar the GCE exams and were designed to "overlap with 'O' level GCE at one end, and to cater for

pupils of slightly below average ability at the other"
(Dent, 1982, p. 95). They could be voluntarily taken by any
student in any type of school but especially Secondary
Modern schools who had completed or almost completed five
years of education. Sixth Form Colleges were established by
some school boards. These colleges were to work under
secondary school regulations, and offer almost the same
curriculum as the Sixth Form in a school but with a wider
choice of subjects.

The universities in England are independent and self-
governing bodies despite the fact that 75% of their income
come from public funds (Dent, 1982). Most of the
universities are divided into "Faculties" for the purposes
of teaching, research, and examination. Faculties are then
subdivided into subject departments. The universities have
the absolute right concerning the admission of students. If
a student succeeds in any of the examinations leading to the
conferring of the General Certificate of Education,
universities will usually exempt prospective students from
their own entrance examinations (Dent, 1982).

The Gambian School System

Education has always played a critical role in any type
of society for the "preservation of the lives of its members
and the maintenance of the social structure [and] under
certain circumstances, education also promotes social

change" (Rodney, 1972, pp. 238-239). Therefore, prior to the arrival of colonialism, education was evident in The Gambia. The type of education for the most part was informal in nature. The young members of the society learned from the elders the necessities for existence and survival. For example, children at a very young age might be able to name numerous species of trees because the trees were a necessary resource in the environment because of use by families (p. 239). This pre-colonial education system was very relevant to Africans but was largely ignored by colonizers and it tended to decline (p. 272). The colonizers did not introduce education to The Gambia, but they introduced a new type of formal and informal education with different values and practices (p. 240).

The principal purpose of education during colonial days was to train and educate Africans to help the colonial administration and to produce competent workers for the European companies (Rodney, 1972). These workers were trained and educated to take junior positions rather than lead positions for fear of uprising (p. 241). This is the reason why secondary and higher education institutions were virtually nonexistent for many years. In addition, "colonial schooling was education for subordination and exploitation" and included the class biases which were evident in European education, especially in England (p.

241)

    During the first 40 years of colonialism, virtually no colonial education system existed. Schooling was put in the hands of missionaries (Rodney, 1972, p. 241). There were only two elementary schools in The Gambia in the 1920s. These two schools were Christian schools established with the objective of producing converts to Christianity.

    The British established Armitage School at Georgetown in 1923 to educate the sons of chiefs. The initial curriculum included courses in reading and writing. After World War II, the demand for secondary schools became evident coupled with the need for an expansion of elementary schools. Therefore, Armitage school became a post-primary boarding school. In 1961, the facilities at Armitage were expanded to accommodate 200 students and not only the sons of chiefs were permitted entrance but the school also produced man political leaders (Hughes & Gailey, 1999, pp. 32-33).

    The philosophy of the British was to educate the elite. It is commonly known that "curriculum and instruction were strongly British in the former British colonies like Nigeria, Ghana, Gambia, and Sierra Leone" (Szymanski Sunal, 1998, pp. 212-213). There were a few private schools in The Gambia prior to independence, and these continued to operate after independence. "Frequently, these [schools] were

founded by missionaries and churches. Well-funded public schools were few" (Sunal, 1998, p. 13). Post independent private schools, usually colonial, often taught a limited curriculum. Some subjects were emphasized and others not included. The breadth of national curricula after independence was not found in earlier colonial private schools. However, these schools were often free or low cost and the quality of education while biased was stronger than it appeared to be in many of the new public schools (Graham-Brown, 1991).

Armitage School is such a school, and it continued to educate the elite in the years following independence. Today, the school is a boarding school where many of The Gambia's future leaders are educated.

The Gambia educational system is a reflection of the British educational system. "Educational arrangements are inevitably a reflection of deeply embedded political, economic, and cultural factors that are unique to a particular society" (Sunal, 1998, p. viii). Such is the case in the educational system of The Gambia.

The history of education in The Gambia needs to be examined from two perspectives, Muslim and Christian. From the earliest days Muslims schools existed in The Gambia (Hilliard, 1957). "Islam is not merely a religion to the West African Muslim but a whole way of life" (Hilliard,

1957, p. 157). One does not just believe and worship as a Muslim but also thinks, behaves, and even sometimes dresses in traditional Muslim attire. In The Gambia, Islam is the faith and life of 90% of the people.

The introduction of European education has been an area of suspicion by Muslims in West Africa (Hilliard, 1957, p. 158). This suspicion emerged because the European education appeared "to be alien to their traditions and to lead to deviation" (Hilliard, 1957, p. 158) from their religion. The Muslims for many centuries have had some well-defined forms of education of the children through "Qur'anic Schools" although this system of education may have been viewed as a "rather haphazard system of traditional education" (p. 158).

In the past these Qur'anic Schools consisted of an assembly of boys and sometimes a few girls. Today, the number of girls in these schools is steadily increasing. The "Mallam" or teacher is the one who gives the instruction. The curriculum is dominated by the "the Qur'an," a termed used to describe the memorization of large sections of the Qur'an, but it also includes "training in the correct methods of worship and in the elementary laws of social behaviour" (Hilliard, 1957, p. 158). The memorization and study of the Quran occupies a large part of the traditional Muslim education and "has always been regarded

as the most meritorious of all religious activities"
(Ruthven, 1984, p. 108). The rationalization for such
curriculum comes from the thought that as a student
assimilates and internalizes "through constant repetition,
the sacred book became part of the Muslim's very being, the
filter through which he received the world and its mental
images" (p. 109).

In the government and private schools in sub-Saharan
African countries like The Gambia, the family is expected to
pay for school fees, writing material, textbooks, and
uniforms. There are many poor families in The Gambia who
are faced with tough choices when the limits of their
finances are reached. Estimates suggest that the percentage
of poor children who are not in school can be expected to
grow (Sunal, 1998, p. 14).

In the Gambia, girls are less likely to be educated
because of cultural and religious beliefs. Also, if they do
have the opportunity to go to school, the curriculum may be
less relevant to their needs and less directed at their
perspectives than it is for boys (Stacey, 1995). Families
with limited resources with increasing educational costs
will usually elect to discontinue the education of girls in
favor of schooling for the boys. There are projections that
although the number of girls in school in sub-Saharan Africa
may increase with population gains, the percentage of girls

attending school will decrease over the next few decades (Graham-Brown, 1991).

Instruction in sub-Saharan countries like The Gambia is often authoritarian and places students in a passive role where recall of information is the expected result of student learning. Observations of classes in Botswana found students listening to lectures for 54% of the observed instructional time and participating in oral recitation without discussion of material for 43% of the time. These are teaching strategies used in many traditional societies. They are strategies that require little preparation time on the part of the teacher. An even more limited strategy is for teachers to write a section of a textbook on the chalkboard and ask students to copy and memorize it when there is just one copy of a textbook available (Graham-Brown, 1991).

The role of education in development has been redefined (Darkenwald & Merriam, 1982). European and North American educational systems were transported along with the Western industrialized model of development to the Third World (p. 201). Therefore, the educational systems in these post-colonial nations like The Gambia reflect the educational system of the colonizers.

In Africa, the development of human resources is as urgent and essential as the development of material

resources. Educational investment is of a long-term nature but if properly planned obtains simultaneously a high rate of return(Bigelow, 1962, p. 30).

By educating and training adults, developing nations can get an immediate pay off (Darkenwald & Merriam, 1982). Because of the rapid technological advances, an individual can no longer be trained for all the skills required to earn a living throughout life. Political and social changes are also occurring rapidly especially in developing countries which have recently become independent (Coles, 1969). Furthermore, "the desirability of enabling people to reach their full potential, and the need for learning new vocational skills, are universal arguments for adult education" (p. 7).

> The quickest way to increase productivity in the less developed countries is to train the adults who are already on the job. Education for children is fine, but its potential contribution to output over ten years is small compared with the potential contribution of efforts devoted to improving adult skills. (p. 11)

The Gambia, like other sub-Saharan nations, adopted models of higher education similar to the British colonial power. This model has continued even after independence. The great need for teachers in The Gambia and other sub-Saharan nations has been often filled by special schools rather than universities (Sunal & Haas, 1998, p. 39). At Gambia College, qualified students come from throughout the

nation, and the government provides the students with full academic services, social services, and living expenses. In return, students pledge to teach in the nation's school system.

Student admission to Gambia College is based on performance through the examination system, which takes place at the conclusion of secondary school. This examination system is modeled after the British system. School teaching offers many Gambians an occupation with some prestige and a modest but relatively secure salary. Furthermore, the educational system of a nation is a reflection of that nation. In fact, the educational system "is a mirror held against the face of a people...how they take care of their children tells unerringly who they are" (Bereday, 1964, p.5). This is true in Africa.

> Inequities in access to education exist in all
> societies. How Africans deal with perceived and
> real inequities in access to education will inform
> others. The diversity of cultures, languages, and
> religious and political perspectives creates
> complex problems from which inequities can spring,
> but also creates the material out of which
> innovative solutions can be fashioned. (Sunal,
> 1998, p. 228)

Adult Learning

Adult education consists of a myriad of educational activities and agencies. Adult education is "a process whereby persons whose major social roles are characteristic of adult status undertake systematic and sustained learning

activities for the purpose of bringing about changes in knowledge, attitudes, values, or skills" (Darkenwald & Merriam, 1982, p. 9). Neither this definition of adult education nor any other definition has been universally accepted. Furthermore, even the term "adult education" is not universally accepted by professional who teach adult learners. Adult education is not limited to formal educational activities and academic topics (Darkenwald & Merriam, 1982, p. 152). Research indicates that most adults engage in one or more self-initiated, highly deliberate efforts to learn during any given year (p. 152). Further, "almost everyone undertakes at least one or two major learning efforts a year, and some individuals undertake as many as 15 or 20" (Tough, 1979, p. 1). Additionally, "education, and adult education in particular, is one medium whereby the urgency of world problems can be addressed, and the ideal of a world community brought closer to reality" (Darkenwald & Merriam, 1982, p. 199).

Important concepts in the field of adult education are andragogy, self-directed learning, transformative learning, empowerment, and lifelong learning. Understanding these concepts is key to discovery of adults' learning styles and learning strategies in any situation, culture, or country.

<u>Andragogy</u>

The concept of andragogy is a principal element to the

field of adult learning and education. This concept is "the single most popular idea in the education and training of adults" (Brookfield, 1986, p. 91). Since the introduction and adoption of the adult learning concept of andragogy in America, it "has been taken up with enthusiasm in many settings, and the results of the ensuing projects have been extensively publicized" (Houle, 1996, p. 27).

Prior to the emergence of the concept of andragogy, teachers of adults used a pedagogical model which taught adults as if they were children (Knowles, Holton, & Swanson, 1998, p. 62). With the pedagogical model, the teacher makes all the decision about what the learners learn, how they will learn it, when they will learn it and if they have learned it (p. 62). The theory supporting the pedagogical model is based on the assumption that all learning should be teacher-directed and the learner's role is one of exact submission to the teacher's instructions (Knowles, Holton, & Swanson, 1998, p. 62).

Andragogy was first introduced and used in 1833 by a German grammar school teacher (Knowles, et al., 1998). Malcolm Knowles is the individual who is recognized as the person who brought this term to the United States (Merriam & Brockett, 1996, p. 135). Moreover, Knowles popularized the term andragogy "at a time when adult educators were in search of a theory to call their own" (Lee, 1998, p. 48).

Knowles's (1970) first definition of andragogy was "emerging technology for adult learning" (p. 58). However, he later revised its meaning to "the art and science of helping adults learn" (Knowles, 1980, p. 43).

In the 1960s Knowles adopted the name of andragogy although he first presented his andragogical model a decade earlier (Houle, 1996, p. 27). Andragogy and Malcom Knowles have been linked ever since. Knowles based the theory of andragogy on four basic assumptions about adult learners and how they differ from child learners (Knowles, 1970). Later, Knowles expanded these four basic assumptions to include two additional assumptions (Knowles, et al., 1998). These six core assumptions are:

1. The need to know. Adults need to know why the need to learn something before undertaking to learn it.

2. The learners' self-concept. Adults have self-concept of being responsible for their own decisions, for their own lives.

3. The role of the learners' experiences. Adults come into an educational activity with both a greater volume and a different quality of experience from youths.

4. Readiness to learn. Adults become ready to learn those things they need to know and be able to do in order to cope effectively with their real-life situations.

5. Orientation to learning. In contrast to children's and youths' subject-centered orientation to learning (at least in school), adults are life-centered (or task-centered or problem-centered) in their orientation to

learning.

6.   Motivation. While adults are responsive to
some external motivators (better jobs,
promotions, higher salaries, and the like),
the most potent motivators are internal
pressures (the desire for increased job
satisfaction, self-esteem, quality of life,
and the like). (pp. 64-68)

The perception of the adult learner in the andragogical
model is that of an active learner engaged in all stages of
the learning process from beginning to end. When andragogy
is embraced, the teacher becomes a facilitator and a human
resource for adult learners serving as directors of their
learning processes and requirements. Although andragogy has
been used with a wide spectrum of learners including
children, it has been proven most effective with adult
learners because children have limited experiences and
undeveloped management skills. As adult learners assume
responsibility for their learning, they make critical
decisions that can guide them to the release of their human
potentials (Knowles, 1980, pp. 67-68).

Knowles (1980) not only addresses the teaching-learning
process but also identified seven elements of adult learning
practice (p. 59). This seven-step program planning model is
"concerned with providing procedures and resources for
helping learners acquire information and skills" and should
be used by administrators and instructors alike to
effectively facilitate adult learning (Knowles, 1990, p.

120).

At the first step of Knowles' program-planning model facilitators and administrators are directed to establish a climate conducive to learning. This conducive climate should incorporate elements to address all learning needs, including physical and psychological learning needs. Knowles (1980) stresses that "perhaps the single most critical thing I do as a facilitator of learning" is to establish an environment conducive to learning (p. 224). Some questions to be answered in establishing an adult learning environment that is beneficial to learning are: (a) Is it student-centered? (b) Is there an atmosphere of trust, mutual respect, friendliness and cooperation? (c) Is democracy practiced? (d) Is the furniture appropriate for adults? (e) Is the room temperature and lighting comfortable? and Have distractions been removed? (Knowles, 1980, p. 224).

The second step is concerned with whether there is a joint partnership between the facilitators and learners in the design of instructional methods and curricula building. The result of involving adult learners in the planning and implementation of their learning activities yields a higher commitment from the learners and increased interest in the results from the learning process (Knowles, 1980, p. 226).

The third step in Knowles' program-planning model

involves addressing the needs of the learners. This is a self-diagnosis on the part of the learner. Self-motivation rises when adult learners evaluate and assess their present and desired competencies (Knowles, 1980, p. 227).

The fourth step is concerned with getting the learners to develop their individual learning objectives. The fifth step integrates the learners' needs into the creation and design of progressive learning projects. Adults are more interested in participating in programs which enable them to pursue objectives that are relevant to their needs. Moreover, it is essential that learning activities relate to the needs and objectives as formulated by the adult learner (Knowles, 1980, p. 234).

The sixth step in the program-planning model is concerned with the implementation and assessment of learning objectives. The final step addresses the role of the educator as a facilitator in the learning process. The facilitator of adult learning serves as s guide and resource to the learning as they engage various aspects of the learning process (Knowles, 1980, p. 239). In addition, the seventh step of the program-planning model consists of an evaluation, a reappraisal, and a review of the learning processes by the individual learner. For learners, the most important fact is "whether they have learned what is useful to them" (p. 171).

Self-Directed Learning

Self-directed learning is a form of study where learners "have the primary responsibility for planning, carrying out, and evaluating their own learning experiences" (Merriam & Caffarella, 1991, p. 41). Moreover, it is "a major deliberate learning effort which the learner himself or herself is responsible for most of the day-to-day" decisions about the learning project" (Tough, 1979, p. 2). For instance, "it is the individual's responsibility to select appropriate learning resources and to decide how the resources will be used" (Spencer, 2000, p. 10). Although the majority of the decisions are made by the learner in self-directed learning, the learning does not take place in isolation. "Self-directed learning usually takes place in association with various kinds of helpers, such as teachers, tutors, mentors, resource people and peers" (Knowles, 1975, p. 18).

Knowles (1975) was also a proponent of self-directed learning and his classic definition states that:

> Self-directed learning is defined as a process in which individuals take the initiative with or without the help of others, diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (p. 18)

Knowles identified several principles about self-directed

learners. First, as a learner matures and develops, they become more self-directed (p.20). Secondly, the learner's experience is valued and considered vitally important in self-directed learning (p.20). Thirdly, learners engaging in self-directed learning have a tendency to learn by concentrating on learning projects and problems which are applicable to them (p. 21). Lastly, self-directed learners' motivation is internal with such motivators as self-esteem, the desire to achieve and grow, personal satisfaction, the goal to obtain specific knowledge and curiosity (p. 21).

Learning on one's own, which can take place inside or outside of institutionally based learning programs, is the paramount way adults use to acquire new ideas, skills, and attitudes (Merriam & Caffarella, 1991).

It is common for adults to spend 700 hours per year involved in learning projects, usually motivated by practical reasons (Tough, 1979). In fact:

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

During the mid-1960s, the concept of self-directed learning was considered "the most overlooked avenue of activity in the whole field of adult education" (Johnstone & Rivera, 1968, p. 37). Tough's original research in 1967 was

undertaken to challenge Verner's view that self-directed learning should not be considered adult education (Merriam & Cafarella, 1991). Tough contributed to adult education by providing the first comprehensive description of self-directed learning as a form of study. Tough (1978) estimates that approximately 90% of the population participates in at least one self-directed learning activity per year (Merriam & Cafarella, 1991).

In recent years, a significant amount of attention has been given to the concept of self-directed learning in various studies and articles. Self-directed learning has evolved as "the essence of what adult learning is all about" (Caffarella, 1993, p. 25). Self-directed learning has emerged as an accepted concept in adult learning research but not without much deliberation and debate ((Knowles et al., 1998, p. 135).

Self-directed learning is considered to be an essential concept of andragogy, which is important to the learner and instructor alike (Knowles, 1975, p. 7). There are two principles of self-directed learning in the adult learning literature. First, self-directed is self-teaching (p. 135). This happens when adult learners take command of the methods and materials necessary to teach themselves. Secondly, self-directed learning is independence in which learners begin "taking control of the goals and purposes of learning"

(Knowles et al., 1998, p. 135).

Stephen Brookfield (1986) is another proponent of self-directed learning, maintaining that self-directed learning takes place when adults achieve meaning through a combination of processes and reflections (p. 47). Brookfield distinguishes between two types of successful self-directed learning. In the first type of successful self-directed learning, the learners utilize techniques such as "specifying goals, identifying resources, implementing strategies, and evaluating progress" (p. 47). The second type of successful self-directed learning refers to the learner reaching a state of internal consciousness. "Learners come to regard knowledge as relative and contextual, to view the value frameworks and moral codes informing their behaviors," and in turn they use them to "contemplate ways in which they can transform their personal and social worlds" (pp. 43-47).

Brookfield (1986) considered the relationship between the instructor and learner as paramount because facilitation was critical to help adults become self-directed learners. He envisioned this relationship to be an equal partnership that changes perspectives, shifts paradigms, and replaces one interpretation of the world with another (Brookfield, 1986, p. 19).

There are six concepts of effective practice to promote

the effective practices of the teaching-learning transactins and promote self-directed learners (Brookfield, 1986, pp. 9-20). The first two concepts of effective practice acknowledge that learning is voluntary and mutual respect is a key ingredient to successful participation. The learner's voluntarily participation in a learning activity is in response to a need or desire to develop a new skill or gain knowledge (p. 9). In regards to mutual respect, it is essential for adult learners to have an experience where they are respected and valued (pp. 12-13). In order for facilitators to be successful, there must be "a respect for participants uniqueness, self-worth, and separateness" (p. 13).

The next two concepts of effective practice are collaboration and praxis. Collaboration is the process of diagnosing needs, setting goals and objectives, planning learning activities, developing curriculum, determining methodologies, and evaluating results (Brookfield, 1986, p. 14). Praxis is a process of enabling action and reflection on the part of the learner. Self-directed learners use praxis as they take action, reflect on their action, and take further action as the learning activity is in progress (pp. 14-15).

The final two concepts of effective practice are critical reflection and self-direction (Brookfield, 1986,

pp. 16-20). Critical reflection skills of learners are enhanced as they examine the assumptions underlying the acquisition of skills, consider alternative purposes, and place skill acquisition in a broader framework during their participation in self-direction learning activities (p. 17). The primary goal of effective practice is producing adult learners who are empowered as a result of the learning process. Self-directed learning is a "matter of learning how to change our perspectives, shift our paradigms, and replace one way of interpreting the world by another" (p. 19).

Transformative Learning

Transformative learning occurs when adult learners are confronted with the fact that their assumptions or premises based on previous experiences are now invalid (Mezirow, 1991). As a result of this newly learned knowledge, the learner seeks for other meaningful ways to interpret, communicate, recognize, and understand previously learned experiences and materials in a new context (Mezirow, 1991).

Mezirow (1990) defined perspective transformation as:

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

Adult educators play a crucial role in perspective transformation (Mezirow, 1995). In adult education, "every adult educator has a central responsibility for fostering critical reflection and transformative learning" (Mezirow, 1995, p. 124). Furthermore, adult educators must respond to initial learner interests and self-defined needs "with the intent to move the learner to an awareness of the 'reasons' for these needs" (p. 124). Transformative learning also includes learners making informed decisions in regards to how and when to act upon their new perspectives (p. 124).

In addition, adult educators:

Have a professional obligation to become skilled in the strategies and tactics of social action education and to share this expertise where we can....We do share a rich body of experience and a proud professional legacy from community development and social action education. These are areas of specialization within adult education, and we have much to learn from social action educators like Heaney and Horton, who devote themselves to working within oppressed groups throughout the entire process of transformation, including taking collective political action themselves. (Mezirow, 1995, P. 125)

Thus, "it is not sufficient for adult education programs to satisfy the identified learning needs of individuals, organizations, and society" (Knowles et al., 1998, p. 105). Adult educators must "seek to help adult learners transform their way of thinking about themselves and their world" (p. 105).

Empowerment

The concept of empowerment in the field of adult education "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). Myles Horton and Paulo Freire embraced and utilized this concept to achieve empowerment and social change. Although their work was with different people and in separate places, both had the same objective 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 a critical avenue for social change and freedom (p. 41).

Horton believed that true democracy begins in grassroots efforts where people learn through their personal experiences. Thus, his design to learning for social change was anchored in real-life human struggles for democracy Horton & Freire, 1990, p. 9). He felt learning should result in continuous growth for the learners. Furthermore, people should "develop their own thinking without you trying to think for them" (Horton & Freire, 1990, p. 149).

Horton established the Highlander Folk School as a place where ideas, individuals, and ideologies could come together (Conti, 1977). The principle belief at Highlander was that "people have within themselves the potential to

solve their own problems" (Conti & Fellenz, 1986, p. 2).
Moreover, empowerment was the result of people working
together in harmony to satisfy shared needs and solve common
problems (Adams, 1975, pp. 15-16). Grassroots efforts in
the Labor Movement and the Civil Rights Movement gained
impetus at Highlander as everyday people came together
collectively to solve problems in an atmosphere of trust and
mutual respect.

The role of the educator as Horton saw it was to guide
the direct connection between the learners' experiences and
the problems they are attempting to solve (Horton & Freire,
1990, p. 152). Educators were never to impose their ideas
and beliefs on others but they should relate relevant
information in the context of the learners' society (Horton
& Freire, 1990, p. 104).

Freire utilized these same empowerment principles in
South America with impoverished and oppressed individuals.
His goal was to help poor people better the quality of their
lives and eliminate illiteracy. Freire's aim was to help
poor and oppressed people overcome their sense of
powerlessness and to advocate for themselves.

Freire viewed education in the traditional sense as a
series of "banking" transactions where knowledge and
informational deposits are conferred to individuals for the
primary purpose of maintaining the existing social structure

and the status quo (Freire, 1998, p. 53). This concept views the learners as receptacles or depositories of knowledge which "is a gift bestowed by those who consider themselves knowledgeable upon those whom they consider know nothing" (p. 53). The "banking" approach to adult education "will never propose to students that they critically consider reality" (p. 55)

Adult educators' efforts should coincide with the learners "to engage in critical thinking" (Freire, 1998, p. 56). Furthermore, there should be a partnership between the educator and student, characterized by "trust in people and their creative power" (p.56). In this problem-posing educational environment, learners receive help in order to recognize, define, and clarify problems in their lives so they can think critically about solutions and act collectively (p. 60). Problem-posing education serves to empower and liberate instead to enslave.

Lifelong Learning

Lifelong learning is the process of learning that never ends but extends throughout the lifetime of a person (Darkenwald, & Merriam, 1982). This type of learning is "based on individual needs, circumstances, interests, and learning skills" (Merriam & Cunningham, 1989, p. 377). Lifelong learning is viewed "as a cradle-to-grave activity in which public schooling as well as adult and continuing

education are important but not exclusive players" (Merriam & Brockett, 1996, p. 13)

Learning how to learn is a concept that is important to understand in the field of adult education, because it "holds great promise for helping adults expand their learning effectiveness" (Knowles et al., 1998, p. 166). With the shift of focus from adult education to adult learning, there has been an "increased emphasis on learning how to learn" (Fellenz & Conti, 1989, p. 23). The activities and situations of everyday life are the setting where learning how to learn happens. However, the research about learning how to learn has almost exclusively been done in formal educational or organizational settings (Smith, 1982). A large amount of this research about learning how to learn involves college students' meta-cognitive processes (Brookfield, 1986). Instead, the focus of learning how to learn should not be on the traditional school settings but learning how to learn should be seen as a project for life with its focus on the everyday lives of learners (Brookfield, 1986).

An understanding of the learners' needs, the learners' learning styles, and the learners' training is necessary in order to understand the concept of learning how to learn. These three elements are interrelated and serve as a support structure to the concept of learning how to learn (Smith,

1982, p. 17). The learners' needs relate to the basic skills of reading, writing, self-knowledge, and learning process skills in self-direction, collaboration, and institutional learning methods (pp. 20-22). The learners' learning styles are the diverse ways that people think, approach problems, and process information during learning activities (p. 23). Training refers to the "efforts to help people become better at learning and more successful in the educational arena" (p. 25).

Adult education is a "purposeful effort to foster learning by persons who have become largely responsible for their own comings and goings, in other words, adults" (Smith, 1982, p. 38). There are four unique characteristics of adult learners as:

1. A different orientation to education and learning. Adult learners have different responsibilities, choices, and time demands than children. In addition, adults have different perceptions of time and of their self-concept in the life span.

2. An accumulation of experience. Compared to children, adults obviously have more accumulated life experiences. These unique experiences will effect the adult learner's orientation toward and reaction to learning.

3. Special developmental trends. The developmental stages that adult learners travel through are different from the stages of children. These adult stages go back and forth between periods of stability and periods of transition.

4. Anxiety and ambivalence. Adult learners

> frequently approach learning opportunities
> with a mixture of excitement and fear. These
> feelings may be directed at learning content
> areas and/or learning techniques areas. (pp.
> 38-47)

Six optimum conditions for learning exist. These are
conditions that "learners have a right to expect" so that
they can optimize their learning performances (Smith, 1982,
p. 47). The learning how to learn process is enhanced when
adult learners:

1. Feel the need to learn and have input into
   what, why, and how they will learn.

2. Learning content and processes bear a
   perceived and meaningful relationship to past
   experience and experiences are effectively
   utilized as a resource for learning.

3. Can relate what is to be learned to the
   individual's development.

4. Amount of autonomy exercised is congruent
   with that required by the mode or method
   utilized.

5. Learn in a climate that minimizes anxiety and
   encourages freedom to experiment.

6. Learning styles are taken into account. (pp.
   47-49)

Learning how to learn is a conceptual process that is
helpful to people desiring to increase the effectiveness of
their learning processes (Knowles et al., 1998, p. 166). In
the world today, lifelong learning is a essential because
learners must not just become educated to function in their
societies but they need to be global citizens. The rapid

technological changes and advances demand that learners know how to learn. "Learning how to learn is becoming more important in a world economy that is increasingly dependent on knowledge and intellectual capital and faced with rapid change" (p. 169).

The concepts of real-life learning and learning how to learn are linked and vital elements in the pursuit of lifelong learning. Learning how to learn occurs on a recurring basis, especially in every-day, real-life learning situations and real-world situations throughout the life of an individual.

Real-life learning is pertinent learning that pertains to and is relevant to everyday living tasks (Fellenz & Conti, 1989, p. 3). "Real-life" or "real-world" learning which results in the acquisition of "practical" knowledge are terms used to refer to real-life learning (p. 3). In recent years, the field of adult learning "has witnessed a growing emphasis on learning in real-life settings" (p. 23). Equally important as formal learning, it is more critical for adult learners to "learn on an ongoing basis in everyday, real world situations" (Kitazawa, 1991, p. 31).

Real-life learning occurs daily in the real-life circumstances of individuals. In order for teachers to effectively work with learners in real-life learning situations, it is imperative that they gain an understanding

of "the social foundations of the learners" (Fellenz & Conti, 1989, p. 25). This includes "personal factors such as the learner's, background, language and culture as well as social factors such as poverty and discrimination" (p. 25).

Problems encountered in real life are considerably different from the problems that learners are faced with in formal education (Fellenz & Conti, 1989; Sternberg, 1990). When learners are confronted with problems in real life the problems are unstructured, relate directly to their lives, and usually have multiple answers. Therefore, they must recognize that a problems exist, define the problem, and take steps to solve the problem. Whereas in formal education, problems are structured, defined by instructors, and usually have one answer (Sternberg, 1990, pp. 35-39). Real-life learning undertakings of adults are "distinct for each individual, seldom follow a clear pattern, defy measurement, and often are so episodic in nature that beginnings, patterns, and outcomes are impossible to define" (Fellenz & Conti, 1989, p. 4).

The United Nations Educational, Scientific and Cultural Organization's (UNESCO) world-wide study of education determined that lifelong education "is the master integrative concept for both industrialized and Third World Countries. Noting that over a long term, education

stimulates, accompanies, or sets a seal on social and political development, as well as technical and economic development" (Darkenwald & Merriam, 1982, p. 202).

Learning Styles

Henry David Thoreau said, "If a man does not keep pace with his companions, perhaps it is because he hears a different drummer. Let him step to the music which he hears, however measured or far away" (Guild & Garger, 1985, p. vii). The fact that people learn differently is ancient and probably had its beginnings with the Greeks (Diaz & Cartnal, 1999). The concept of learning styles appears in the literature as one approach to consider when individual differences in learning are of concern. Research in learning styles reveals a conflict of terminology. The term cognitive style appears often and is used interchangeably with the term learning style. Cherry (1981) reports:

> During the winter quarter of 1980, a group of potential learning style researchers at the University of Tennessee, Knoxville met weekly to discuss the general thrust and results of past research in the area of personal learning style. It was decided that the most logical and appropriate overall term for this field of study was "Learning Style." Additionally, secondary levels of the pattern were labeled "Modalities." The original four modalities identified were: Perceptual, Cognitive, Emotional, and Social. (p. 26)

Learning styles are "personal qualities that influence a student's ability to acquire information, to interact with

peers and the teacher, and otherwise to participate in learning experiences" (Guild & Garger, 1985, p. 41). A person's learning style is "the individual's characteristic ways of processing information, feeling, and behaving in certain learning situations" (Smith 1982, p. 24). Knowledge about ones' learning styles is also a way to help learners learn how to learn. There are three identified steps which must be taken in order to develop activities using concepts of style. First, "an awareness and knowledge of the concepts, ideas, and issues" (p. 96). Each individual should have a clear, personal understanding of style. Second, once a person is aware of style differences, people must make a conscious commitment to respect and honor individual diversity. For many learners and educators alike, it may be easier to accept individual diversity in theory more than in practice. After awareness and personal commitment, the third and final step is for each person to develop a plan of action and ask fundamental questions about the implications of style (p. 96).

The term "learning style" surfaced when researchers "began to look for specific strategies for combining course presentation and materials to match the particular needs of each learner" (Paxton & Murrell, 1987, p. 71). A widely accepted definition of learning styles "refers to characteristic cognitive, affective, and psychological

behaviors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (Keefe, 1979, p. 4). Thus, learning styles are "stable individual differences in cognition and personality" that influence the ways in which individuals learn and perform (Messick, 1976, p. 2).

The fact that people learn differently is an ancient idea formulated over 2,500 years ago. "At that time, people were seen as active or passive and as emotional or thoughtful (Fizzell, 1984, p. 304). Numerous researchers have examined a variety of learning style elements. German psychologists Guild and Garger, examined cognitive style at the turn of the century. Carl Jung's work on "psychological types" first appeared in 1921. Gordon Allport embraced the word "style" to refer to "consistent patterns on the part of individuals". Lowenfield identified "haptic types," who learned through touch, and "visual types," who learn through seeing. Klein (1951) identified "levelers," who retreated from objects and avoided competition and "sharpeners" who were more competitive and had a strong need for attainment and autonomy (Paxton & Murrell, 1987, p. 3).

A cross-reference matrix of 62 learning style elements presented by 18 writers indicates that more than two-thirds (13) of the writers failed to define elements in common with other authors of the group (Oen, 1973). Only 7 of the 62

elements were duplicated by more than one of the authors (Oen, 1973). Style elements examined by this study were visual, oral/aural, physical/tactile, perceptual/conceptual, auditory, olfactory, and kinesthetic.

Research of learning styles reveal a conflict of terminology and contradictory findings. This may be because learning style has been addressed by researchers in various disciplines who were asking different questions and focusing on different aspects of the learning process (Paxton & Murrell, 1987, p.4). The term cognitive style continues to appear and is often used interchangeably with the term learning style.

<u>Personality Learning Style Models</u>

Learning style research models can be divided into four areas: personality models, information processing models, social interaction models, and instructional preference models. There are several instruments based on personality models. Field dependence and independence is a personality model researched extensively by Witkin. The culmination of several years of Witkin's research resulted in the publication of the 1954 report, <u>Personality Through Perception</u>. The instruments used to study field dependence-independence are the rod-and-frame test, the body-adjustment test, and the embedded-figures test (Paxton & Murrell, 1987, p.8). Studies in academic contexts show that field

dependence-independence is a significant variable in a student's selection of major, course, and career (Paxton & Murrell, 1987, p. 8). Critics of the Witkin's model highlight the negative-sounding traits in field dependents. Since women tend to be field dependent more than men, "some people view the description of this style as sexist" (Paxton & Murrell, 1987, p. 12).

The Myers-Briggs Type Indicator (MBTI) is an instrument that was designed to facilitate the application of Jungian theory in counseling, education, and business. Jung's theorizes that people can perceive the world in the two distinct ways of sensing or intuition and "that people use two distinct contrasting ways to reach conclusions and judgements, thinking and feeling" (Paxton & Murrell, 1987, p. 13). In addition, an individual's preference for extraversion or introversion, and whether a person's attitude is judging or perceptive about life, is included (Paxton & Murrell, 1987, p. 13).

Another personality models examines reflection versus impulsivity. This model refers to "the tendency [in problems with highly uncertain responses] to reflect over alternative solution possibilities, in contrast with the tendency to make an impulsive selection of a solution" (Paxton & Murrell, 1987, p. 16). The tools used to measure this tendency include the matching-figures test and the

identical pictures test (Paxton & Murrell, 1987).

The Omnibus Personality Inventory is another instrument that provides a comprehensive look at personality. The University of California at Berkeley used this inventory to measure the intellectual, interpersonal, and social-emotional development of college students. This instrument has 14 scales "that measure different modes of thinking, handling feelings and impulses, and ways of relating to self and others" (Paxton & Murrell, 1987, p.18).

The Holland Typology of Personality was originally developed for use in career development and to understand more about the environmental preference in the workplace, however, it use has extended to the classroom. This typology identifies six personality types: realistic, investigative, social, conventional, enterprising, and artistic.

Information Processing Learning Style Models

The second area of learning style models includes the information processing models. The research of Pask (1975, 1976) identifies two types of learners holists who use a global approach to learning and serialists (p.21) who focus their attention on pieces of information low in the hierarchical structure. Siegel and Siegel (1965) examined a cognitive style referred to as "educational set," a continuum "ranging from a preference to learn factually

oriented material to a preference to learn conceptually oriented material" (Paxton & Murrell, 1987, p. 23). Ausubel (1963) purports it is best for all learners to learn concepts first, which then serve as an anchor for subsequent learning. Siegel and Siegel (1965) believe this only holds true for those learners whose educational sets are congruent with this subsumptive approach (p. 23). Schmeck (1981) identified two styles in terms of how individuals process information: "deep-elaborative" processors and "shallow-reiterative" processors. Schmeck (1981) defines learning style as "a predisposition" on the part of some learners "to adopt a particular learning strategy regardless of the specific demand of the learning task. Thus, a style is a "strategy that is used with some cross-situational consistency" (Paxton & Murrell, 1987, p. 24).

Another information processing model was developed by Kolb (1984). This model differs from the other information processing models in that it was developed from Kolb's "experiential learning theory." This theory examines not just style but also learning and development. Kolb's theory is based on the work of three researchers: Dewey (1938) who stressed the need for learning to be based in experience, Lewin (1951) who emphasized the importance of learners being active in learning, and Piaget (1952) who presented intelligence as being the outcome of the interaction of the

individual and the environment (Paxton & Murrell, 1987, p. 25).

The Learning Style Inventory conceptualized by Kolb describes learning as a four-step process. First, learning begins with a concrete experience. Learners involve themselves totally in the learning experience and then they reflect on the experience from different perspectives. After these reflective observations, learners move on to engage in abstract conceptualization where they create generalizations or principles that integrate their observations into sound theories. The next step involves the learner's use of these generalizations or theories as guides to further action. Lastly, the learners engage in active experimentation, testing what they have learned in new, more complex situations. The end result is another concrete experience, but it is at a more complex level (Kolb, 1976).

The four points on the experiential learning cycle are modes of dealing with information or adapting to the world. Kolb (1976, 1985) developed the Learning Style Inventory in which participants rank order 9 sets of four words (the 1976 version) or 12 stem completions (the 1985 version) concerning learning preferences. Similar to Kolb's model, Antony Gegorc (1979) believes that learning styles result from innate predispositions and people learn both through

concrete experience and abstraction (Paxton & Murrell, 1987, p.33).

Social Interaction Learning Style Models

Mann (1973) conducted research on four undergraduate classes at the University of Michigan and developed a social interaction model which includes eight clusters. These clusters were as follows: the complaint students; the anxious dependent students; the discouraged workers; the independent students; the heroes who felt superior to the rest of the group; the snipers; the attention seekers; and the silent students (Paxton & Murrell, 1987, pp. 38-39).

Various learning styles evolved from examining the learners' attitudes towards the different elements and participants in the learning process. One study examined the attitudes of learners toward learning, learners' views of the teacher and peers, and learners' interactions to classroom procedures (Grasha & Reichmann, 1974). The following learning styles were developed: independent students, dependent students, collaborative students, competitive students, participant students, and avoidant students. The Fuhrmann-Jacobs model involves three styles: dependent, collaborative, and independent. The Eison model examines students' attitudes toward grading and learning (Paxton & Murrell, 1987).

Instructional-Preference Learning Style Models

Instructional-preference learning style models are concerned with the students' preferences for particular teaching methods. Hill (1973) believed it was possible to develop an "underlying structure and scientific language for education" (Paxton & Murrell, 1987, p. 47). Hill (1973) developed "educational sciences," which included: (a) symbols and their meanings; (b) cultural determinants of the meanings of symbols; (c) modalities of influence; (d) biochemical and electrophysiological aspect of memory-concern; (e) cognitive style; (f) teaching, counseling, and administrative style; and (g) systematic analysis decision making (Paxton & Murrell, 1987, p. 47).

Canfield (1980) developed the Canfield Learning Style Inventory, which was based on Maslow's hierarchy of needs and McClelland's research on achievement and motivation (Paxton & Murrell, 1987). The first area of this model is concerned with the condition of learning. The second area examines the students preferences in the area of content. The third area evaluates the students' preferences in terms of mode: listening, reading, iconic, and direct experience. The final area examines te students' expectations about the grades students expect to receive.

Rita and Kenneth Dunn have researched learning styles extensively. The Dunns (1974, 1975) describe learning styles as "the manner in which at least 18 different

elements of four basic stimuli affect a person's ability to absorb and to retain information, values, facts or concepts" (Guild & Garger, 1985, p. 44). Environmental, emotional, sociological and physical factors make up the four basic stimuli. Citing recent studies, the Dunns (1982) emphasize that (a) students can identify their own strong style preferences, (b) teaching through learning styles increases academic achievement and improves students' attitudes toward school, and (c) learning style is often stable over time and consistent across subject areas (Guild & Garger, 1985, pp. 46-47).

<u>Learning Strategies</u>

The use of learning strategies is a way to learn how to learn. Because of the uniqueness of individuals, differences in how one conducts learning activities is expected. These differences in how individuals approach learning have been referred to as learning styles and learning strategies. Learning strategies are "the techniques or skills that an individual elects to use in order to accomplish a learning task" (Fellenz & Conti, 1989, p. 7). Furthermore, learning strategies "are more a matter of preference; they are developed throughout life and vary by task" (Fellenz & Conti, 1993, p. 4). Learning strategies are different from learning styles in that styles are a more permanent characteristic of the individual that does not

change easily (Keefe, 1982).

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

Learning strategy research is probably a natural spin-off of the mental process examined by cognitive psychologies in the sixties and seventies. Authors like Houle (1980), Tough (1971), Apps (1979), and Smith (1970) all wrote about how individuals take charge and manage their own learning process. Numerous researchers have examined learning strategies and have concluded that learning strategies are useful in the learning process (Conti & Fellenz , 1991; Ghost Bear, 2001; Hays, 1995; James, 2000; Korinek, 1997; McKeachie, et at, 1989).

Improvement in both classroom achievement and the learning outside of formal educational institutions has been ascribed to learning strategies (Fellenz & Conti, 1993; McKeachie et al., 1986). "There is a need to teach students how to use learning strategies" (McKeachie, 1986, p. 30). Learning strategies which contribute to successful task completion are retained by individuals whereas those which

have been ineffective or perhaps less productive are
abandoned (McKenna, 1991).

Research in learning strategies indicates that one of
the major differences between successful and unsuccessful
students is their understanding and use of effective
learning strategies (James, 2000). Learning strategy
research identifies two major themes:

> (a) The choice of which learning strategies to use
> in a given situation is affected by many factors
> which in turn affect the quality and end product
> of the learning experience; and (b) students can
> be taught learning strategies that will help them
> approach tasks more efficiently and effectively,
> thus improving their chances for success. (James,
> 2000, p. 58)

In the field of Adult Education, learning strategies
have been conceptualized into five areas of learning. These
five areas are identified in the Self-Knowledge Inventory of
Lifelong Learning Strategies (SKILLS), a valid and reliable
instrument used to measure learning strategies of adult
learners (Conti & Kolody, 1999, pp. 16-20). SKILLS uses
real-life learning scenarios to determine how likely a
learner is to use specific learning skills or techniques in
circumstances one might encounter in life such as assembling
a bicycle, writing a letter to the editor, or caring for a
relative (Fellenz & Conti, 1993). "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" (Fellenz & conti, 1993, p. 4). This approach conceptualizes learning strategies as consisting of the five areas of Metacognition, Metamotivation, Memory, Critical Thinking, and Resource Management (Fellenz & Conti, 1993).

<u>Metacognition</u>

Metacognition is a concept from cognitive psychology introduced by Ann Brown and John Flavell in the 1970s (Brown, 1985). Metacognition has to do with the ability of learners to make reflections, maintain control, and gain understanding of their learning (Kincannon, Gleber, & Kim, 1999). Furthermore, it is the knowledge and control over one's thinking and learning (Brown, 1985). Smith (1982) explains that it is important for adult learners to have some control over their learning processes and to become "aware of oneself as a learner" (p. 57). Metacognition strategies include Planning, Monitoring, and Adjusting (Counter & Fellenz, 1993).

Planning involves an individual deciding the best method for completing a learning task. Yussen (1985) suggests that planning are the steps taken by the individual to organize and identify the essential steps for the learning process. Learners must have an understanding of

their own learning requirements, what is required by the learning task, and a general idea of how to plan (Counter & Fellenz, 1993). Today's learners must assume increasing responsibility for planning and regulating their learning. It is difficult for learners to become self-directed when learning is planned and monitored by someone else (http://www.ncel.org/sdrs/areas/issues/students/learnig/lr1m etp.htm). Making plans for learning activities including estimating time requirements, organizing materials, and scheduling procedures necessary to complete an activity are examples of Planning.

Monitoring requires maintaining a consciousness of the strategies, tasks, processes, and goals of the learning task within the context of individual abilities (Counter & Fellenz, 1993). It relates to the ability to assess one's progress in the learning task.

Adjusting permits the learner to make necessary changes in the learning process based upon the desired results and the learner's evaluation of the process. An adjustment can also be a modification made to one's approach to a learning task. Adjusting necessitates the learner to remain flexible during the learning process in order to modify the process to produce the desired outcomes.

Metamotivation

Metamotivation is concerned with "one's knowing and

understanding how or why one is motivated to participate or remain in a learning activity" (Conti & Kolody, 1999, p. 4) Metamotivation is the awareness of and control over factors that stimulate and direct one's learning (Fellenz & Conti, 1993, p. 12). Metamotivation includes the strategies of Attention, Reward and Enjoyment, and Confidence.

Attention is defined as focusing on the material to be learned (Kolody, 1997). Attention includes identifying distractions and implementing a plan to avoid potential distractions.

Reward and Enjoyment, the second component of Metamotivation, is the anticipation or recognition of the value to oneself of learning a specific material, having fun, or experiencing satisfaction with the learning activity. For example, a learner is using the Reward and Enjoyment strategy if the learner recognizes the outcome of the learning activity to be personally useful or relevant (Fellenz & Conti, 1989).

Confidence, the third component of Metamotivation, is directly related to one's ability to learn. The belief that a learner can complete a task is an important factor in the motivation to learn (Fellenz & Conti, 1993, p. 16).

Memory

For learning purposes, memory is defined as the ability to repeatedly store, recall, and process information as an

essentially important skill when dealing with learning strategies (Korinek, 1997, p. 48). Memory activities include acquisition, storage, and retrieval processes. Memory strategies include Organization, Use of External Aids, and Memory Application (Paul & Fellenz, 1993).

Organization is the restructuring or processing of information so that the material will be better stored, retained, and retrieved. For example, chunking is an organization strategy used to put information into sets to reduce the number of categories to be remembered (p. 23). External Aids incorporates the use of remembrances, mental images, or other memories to facilitate planning or problem solving. The use of daily planners, date timers, and calendars are examples of external aids. Memory Application involves the use of remembrances, mental images or other memories to plan, implement, and evaluate learning activities. (Fellenz & Conti, 1993, p. 30).

Critical Thinking

The area of Critical Thinking was derived from Brookfield's (1987)critical thinking components. These components are "applied to real-life situations and is composed of (a) identifying and challenging assumptions; (b) challenging the importance of concepts; (c) imagining and exploring alternatives; and (d) reflective skepticism" (p. 7). Critical Thinking strategies are Testing Assumptions,

Generating Alternatives, and Conditional Acceptance.

The strategy of Testing Assumptions involves identifying, examining, and challenging assumptions in the learning process (Fellenz & Conti, 1993). "The process of challenging assumptions presumes the ability to identify these assumptions and the willingness to examine them" (Fellenz & Conti, 1993, p. 31). Generating Alternatives entails considering and searching for alternative solutions or possibilities and includes strategies such as brainstorming and rank ordering the alternatives (Fellenz & Conti, p. 33). Conditional Acceptance involves "advocating reflective skepticism to avoid absolutes or over simplifications." Examples of Conditional Acceptance strategies are questioning simplistic answers and predicting consequences (Conti & Kolody, 1999, p. 8).

Resource Management

Resource Management is "the identification of appropriate resources, critical use of such resources, and the use of human resources in learning" (Fellenz & Conti, 1993, p. 3). Resources include but are not limited to sources of information such as books, magazines, libraries, computers, electronic media, or individuals. Resource Management strategies are Identification of Resources, Critical Use of Resources, and Use of Human Resources (Fellenz & Conti, 1993).

Identification of Resources consists of identifying possible sources of needed information. The learner must make a judgement of the value of obtaining the resource versus the time, energy, and expenses incurred in securing it (Conti & Kolody, 1999, p. 9). Critical Use of Resources involves ascertaining "the most appropriate resource rather than simply those that are readily available" (Conti & Kolody, 1999, p. 9). Use of Human Resources consists of including others in learning situations (conti & Kolody, 1999, p. 9)

Learning Strategy Research

SKILLS has been used in various studies related to learning strategies of adult learners (James, 2000, p. 66). Lockwood (1997) studied the learning strategy preferences of students in the nursing program in Montana. This study concluded that discriminant analysis revealed no learning strategy differences between groups of students in associate and baccalaureate programs or between students in other academic disciplines.

Kolody (1997) studied adult learners at 2-year colleges in Canada. This study "set the standard for many subsequent learning strategy preference studies" (James, 2000, p. 68). This study and the Conti & Kolody (1995) study provides a basic design for researchers in subsequent studies using discriminant analysis to determine the relationship between

learning strategy preferences and demographic characteristics (James, 2000, p. 69).

Bighorn (1997) examined the learning strategy preferences of adult learners at the Fort Peck Reservation in Montana. This study revealed that "when the variables of age, gender, ethnicity, tribal affiliation, traditionalism, and grades were considered, learning strategy preferences differentiated only between individuals grouped on grades" (James, 2000, p. 70).

Likewise, in another study conducted by Gehring (1997) which examined the learning strategy preferences of workers in Great Falls, Montana, the results concluded that preferences "did not differentiate between individuals grouped on the demographic variables of age, gender, post-secondary attendance, educational credential, or number of years in a particular position" (James, 2000, p. 70).

Assessing The Learning Strategies of AdultS (ATLAS) has been used in various studies related to learning strategies of adult learners. In a study of learning strategy groups as identified by ATLAS of eBay users on the internet, some significant differences between learning strategy preference groups were identified (Ghost Bear, 2001). This study found a disportionate number of Problem Solvers although in the general adult population the three learning strategy preference groups have a fairly even distribution (p. 87).

Navigators were found to depend on external advertisements and most likely found out about the internet auction site from other participants or the media (Ghost Bear, 2001). In addition, the results of this study confirmed that "Navigators are masterful in using such external resources such as books, magazines, and trade journals as they depend on the learning strategies of Identification of Resources and Critical Use of Resources" (p. 96). Problem Solvers on the other hand, were more likely to list co-workers as the way they learned about the eBay internet site. "Of the participants who learned about eBay from co-workers or business associates, 61.5% of them were problem Solvers, 23.1% Navigagors, and 15.4% Engagers" (p. 98). Unlike Navigators or Problem Solvers in this study, over 75% of the Engagers reported that they learned about the eBay site from friends (p. 98).

When learning strategy preference groups were examined about participating in eBay activities, differences were identified between the ATLAS learning groups. For example, "Navigators tended to use predetermined plans and external resources" (Ghost Bear, 2001, p. 343). Problem Solvers consistently provided detailed examples and stories to report their activities and generate alternatives depending on the situation (Ghost Bear, 2001). Engagers consistently refrained from expending efforts on activities they deem

unworthy. They displayed a tendency of "involving other people and using emotionally-laden words and phrases in their descriptions" (p. 343).

In this same study of eBay internet users, when learning strategy preference groups were examined about their perceptions of the advantages and disadvantages of e-mail on ebay, differences were identified between the ATLAS learning groups (Ghost Bear, 2000). Navigators reported that the speed and additional resource of getting more information about auction items was advantageous. Problem Solvers gave detailed lists of the advantages they perceived, while Engagers reported strong feelings about the importance of good communication (p. 344). When reporting the disadvantages of the email, Navigators were concerned about the possible legal problems and the inefficiencies of other participants on eBay. Problem Solvers offered detailed list of their perceptions of the disadvantages of the e-mail and were concerned about "unpleasant e-mail interactions with other eBay users" (p. 344). Engagers expressed concern about the competition with other participants and the boring details of e-mails (p. 344).

Discernable differences were also found between the ATLAS groups in the area of learning on eBay. The Navigators valued the rules, regulations, control, and feedback while utilizing external resources to get their

desired results (Ghost Bear, 2001). The self-confidence of the Problem Solvers and their disposition for giving detailed, descriptive stories about their learning transactions was very evident. Engagers expressed their learning on eBay using "using internal feelings or emotionally-laden words or phrase" (p.346). They consistently employed methods that caused "their lives easier, more worthwhile, and more enjoyable" (p. 347). Engagers in this study also displayed their value of relationships and interactions with others (p. 347).

Willyard (2000) examined the learning strategies of first generation and non-first-generation community college students. This study found a "disportionately large number of Engagers" (p. 116). Navigators were under-represented whereas Engagers were over-represented. In a study of a specialized technical college, Massey (2001) also found an unusual large number of Engagers. The studies utilizing ATLAS with a more specialized group of adult learners (Ghost Bear, 2001; Massey, 2001; Willyard, 2000) found a disportionate number of one group of ATLAS learners instead of the expected equal distribution found with the norm group.

Other studies using the ATLAS with a more universal group of adult learners found a more even distribution of Navigators, Problem Solvers, and Engagers. Hinds (2001)

examined the learning strategy preferences of adults learners in an African-American community in Oklahoma and found results consistent with the norms. Likewise, Armstrong (2001) at a state university and Shumaker (2001) at an intensive English language school, using the ATLAS, found an equal distribution of learning strategy preference groups among international students.

In all of these studies, the findings associated with the characteristics of the ATLAS learning strategy groups were consistent. The distinctive traits of Navigators, Problem Solvers, and Engagers remained constant in all the studies that utilized the ATLAS instruments in their design. The original ATLAS categories are true and stable. In all of these studies, participants overwhelmingly (over 90%) reported that ATLAS accurately described them. Furthermore, all 6 studies found that ATLAS is a useful tool for addressing the individual differences of adult learners.

Chapter III

METHODOLOGY

<u>Design</u>

This was a descriptive study which employed both qualitative and quantitative methods. A descriptive study:

> Involves collecting data in order to test hypotheses or answer questions concerning the current status of the subject of the study. A descriptive study determines and reports the way things are. One common type of descriptive research involves assessing attitudes or opinions toward individuals, organizations, events or procedures...Descriptive data are typically collected through a questionnaire survey, an interview, or observation. (Gay, 1996, p. 14)

This research attempted to determine if Gambia College students fall predominantly into one of the learning style preferences on the Kolb's Learning Style Inventory (LSI). The study was also designed to determine if the distribution from Assessing The Learning Strategies of AdultS (ATLAS) fell evenly into the three categories as did those in the database compiled from SKILLS studies data, and to compare these LSI learning style groups to the ATLAS learning strategies groups. In addition, qualitative data were gathered to determine the perceptions of actions taken by teachers and students in learning situations that were beneficial or detrimental to the learners' success.

In this study, the learning style and learning strategy preferences of 412 teacher preparation students who were

attending classes in the 2000-2001 school year at Gambia College in West Africa were assessed. The Assessing The Learning Strategies of AdultS (ATLAS) and Learning Style Inventory (LSI) were given to each participant and volunteers were asked to participate in focus group discussions and individual interviews. Group responses were then compiled according to ATLAS learning strategy preferences categories. The results of Gambia College students' responses on ATLAS were then compared to the responses of those used to create the norm for ATLAS. Also, the group responses for the LSI were compiled according to the learning style categories. By comparing data to the norms gives meaning to the data because data alone cannot provide answers to research questions (Merriam & Simpson, 1984, p. 126). In this study, individual interview and focus group discussion methods were used as qualitative sources of data collection in an attempt to describe the clusters.

The qualitative interview "is probably man's oldest and most often used device for obtaining information. It has the qualities that objective tests and scales and behavioral observation do not possess" (Zemke & Kerlinger, 1964, p. 467). It is a qualitative research technique used to gather information that will "promote greater understanding of how and why people behave the way they do" (Gay, 1996, p. 211).

Interviewing is necessary when a researcher cannot observe "behavior, feelings, or how people interpret the world around them" (Merriam, 1998, p. 72).

Interviews are useful when one needs to know about past events that cannot be replicated. The use of the interview is often for the purpose of generating data in qualitative research (Chenail, 1997). Interviews are an excellent way to "tap a person's thoughts, opinions, and feelings" about a subject matter (Zemke & Kramlinger, 1982). A researcher interviews:

> People to find out from them those things we cannot directly observe...We cannot observe feelings, thoughts, and intentions. We cannot observe behaviors that took place at some previous point in time. We cannot observe situations that preclude the presence of an observer. We cannot observe how people have organized the world and the meanings they attach to what goes on in the world. We have to ask people questions about those things. The purpose of interviewing, then, is to allow us to enter into the other person's perspective. (Patton, 1990, p. 196)

Individual interviews were conducted in this study to gather information about the experiences of participants during the learning process. The data reflected how Gambia College students describe their approach to learning and their perceptions related to what teachers did to help or hinder their learning.

Another source of data collection in this study was through focus groups. In the 1940s, focus group originated

in the social sciences (Morgan, 1988, p. 13). "A focus group is a group focused" (Zemke & Kramlinger, 1982, p. 86). Focus groups are "group interviews, which are often used in evaluation efforts, [which] involve a small number of people who have something of interest in common" (Gay, 1996, p. 224). For example, a focus group might be made up of participants in the same program.

Focus groups are used to assess individual and group needs and feelings about a particular topic or issue (Nielsen, 1997, p. 1). Researchers make use of focus groups to gain "insights into people's shared understandings of everyday life and the way in which individuals are influenced by others in a group situation" (Gibbs, 2000, p. 2). The collective "efforts of the group will produce a wider range of information, insight, and ideas" (Stewart & Shamdasani, 1990, p. 19).

A focus group "usually consists of eight to twelve people working with a moderator to express opinions and attitudes and to discuss a specific topic that all group participants are familiar with" (Zemke & Kramlinger, 1982, p. 86). The objective of focus groups "is not debate or consensus, but rather expression of ideas and feelings" (Gay, 1996, p. 224). A typical session runs from one to two hours. Focus groups were used in this study to assess the

ATLAS and LSI groups needs and feelings about learning. Sessions lasted about forty-five minutes to an hour.

Finally, responses on the LSI and ATLAS were compared to each other. Chi Square was used to determine if a relationship exists between the categories measured on each of the instruments. In addition, analysis of variance was used to determine if the ATLAS groups differed on the two continuum scaled produced by the LSI. Also an examination of how learning styles and learning strategies related to demographic variables was conducted.

<u>Sample</u>

A population is a universal group of people, things, or events which have at least one common trait (Gay, 1996, pp. 112-113). This population group is usually large; therefore, researchers extract a sample or subgroup from this population which then can be used to make inferences about the larger population if the sample is representative of the population (Shavelson, 1996).

A target population is a group that has similar characteristics and to which the results of the study are generalizable (Gay, 1996, p. 112). The target population for this study was students in the School of Education, attending Gambia College during the 2000-2001 school year.

The Gambia College has a student population of 1,007.

Of these students, over 900 study in the School of Education. Approximately two-thirds of the School of Education students are enrolled in the Higher Teaching Certificate course, and one-third are preparing for the Primary Teaching Certificate. Approximately 650 of the School of Education students attend classes on campus daily. The remaining 250 students are engaged in field study or attend classes at other facilities. Two hundred of these students live on campus while the remaining students live off campus.

A sample is a group selected from the population for a particular study. A sample is "a number of individuals selected from a population for a study, preferably in such a way that they represent the larger group from which they were selected" (Gay, 1996, p. 624).

"Selection of a sample is a very important step in conducting a research study" (Gay, 1996, p. 113). The four basic ways of selecting a representative sample are random sampling, stratified sampling, cluster sampling, and systematic sampling. The common steps of identification and definition of the population, determination of desired sample size, and selection of the sample must be completed no matter which sampling technique you use (Gay, 1996, p. 123). Cluster sampling is "sampling in which groups, not individuals, are randomly selected. All members of selected

groups have similar characteristics" (Gay, 1996, p. 119).
Cluster sampling was used to select the sample in this
study. The clusters consisted of six classrooms for
students in the Higher Teaching Certificate program and four
classrooms for students in the Primary Teaching Certificate
program.

The sample of this study consisted of students from the
school of education at Gambia College. Both students in the
Primary Teaching Certificate program and the Higher Teaching
Certificate program were included in the sample. The sample
in this study was selected from a list of classes provided
by the college. All students in this sample were Gambians
studying to be teachers in the public schools.

<div align="center">ATLAS</div>

The ATLAS (Assessing The Learning Strategies of AdultS)
instrument was developed in response to a need for an
expeditious way to assess the learning strategies of adult
students and to enable facilitators and learners to have
results that could be used immediately (Conti & Kolody,
1999). Results from The Self-Knowledge Inventory of
Lifelong Learning Strategies (SKILLS) studies were used to
create ATLAS. The ATLAS instrument is an orange booklet
with black print that is one-half the size of standard paper
size, 8.5" x 11" page. This booklet is bound with a black
plastic binding and opened by lifting the outside cover

upward. Once opened, one views the directions on the inside cover. Assessment items are printed in a flow chart manner on five different colored cards, which are one-quarter the size of a standard 8.5" x 11" page. A statement about learning in the first box on the page directs respondents to options in the next two boxes of the flow chart on the first page. Arrows connecting the boxes guide the respondent to the options. Selection of an option leads the respondent to another box which either directs the respondent to continue to another colored card or which gives information about respondent's correct learning strategy group placement (Conti & Kolody, 1999, p. 16).

Three groups of learners were identified through the quantitative research methods of cluster analysis, discriminant analysis, and analysis of variance of the data from the SKILLS research. The three ATLAS learning strategy groups are Navigators, Problem Solvers, and Engagers (Conti & Kolody, 1999, p. 9). These groups have been further described through qualitative research.

With an instrument, validity and reliability are essential. The most important characteristic of any instrument is the validity, which is the degree to which a test measures what it is designed to measure. Content, construct, and criterion-related are the three most recognized types of validity in educational research. A

test is valid for a particular purpose for a particular group (Gay, 1996). Establishing validity is essential and directly related to the credibility of any instrument. Validation of an instrument is a lengthy process.

Construct validity refers to the degree to which a test measures a hypothetical non-observable trait (construct). Construct validity examines the underlying theory of the test. Results from field-based research studies using the SKILLS were synthesized to establish construct validity for ATLAS. From the consolidation of similar data from many of these studies, researchers identified three groups: Navigators, Problem Solvers, and Engagers (Conti & Kolody, 1999, p. 18).

Content validity is concerned with the degree to which a test measures an intended content area. "For ATLAS, content validity is concerned with the degree to which the items are representative of learning strategy characteristics of the three groups identified in the SKILLS research" (Conti & Kolody, 1999, p. 18). To establish content validity for this instrument, multiple steps were taken with a series of discriminant analyses being conducted to ascertain the variance between each grouping. Findings from the structure matrix for the discriminant analysis were used to determine wording of the items. ATLAS uses discriminant analysis to precisely describe the content for

each item (Conti & Kolody, 1998). Since ATLAS is based on the research findings of SKILLS, content validity was further established through field testing SKILLS in a variety of adult learning situations throughout North America (Conti & Fellenz, 1991). The validity of ATLAS is rooted in the validity of SKILLS because of this relationship.

Criterion-related validity establishes validity by comparing the scores on a particular instrument to external criteria believed to be valid for the instrument (Gay, 1996). Criterion-related validity for ATLAS was established by making a comparison between scores on the ATLAS to actual group placement using SKILLS. The current version of ATLAS correctly places about 70 percent of the respondents in their corresponding SKILLS group (Conti & Kolody, 1999). A study using ATLAS with eBay participants reported that at least 90% of the respondents agree that ATLAS correctly identifies their learning strategies Ghost Bear, 2001, p. 81).

"Reliability is the degree to which a test consistently measures whatever it measures" (Gay, 1996, pp. 144-145). Reliability is concerned with the dependability, trustworthiness, or consistency in measuring what it was designed to measure. No test is perfectly reliable because of inaccuracies of measurement, which have a variety of

explanations. Causes for errors or inaccuracies could stem from the characteristics of the test itself, conditions of test administration, current status of the person taking the test, or a combination of the above (Gay, 1996).

Current statistics indicates that "test-retest measures results are approximately 90% accurate for placing people in the same learning strategy preference category" (Willyard, 2000, pp. 88-89). In "test-retest examination covering periods of time from one-week to three-weeks, ATLAS has a reliability of .87" (Ghost Bear, 2001, p. 82). Additionally, the researchers have found that in a study of internet users, over 90% of the time when respondents have taken the instrument, they report the ATLAS description correctly identifies them (Ghost Bear, 2001). This degree of accuracy has also been found in quantitative research (James, 2000; Lively, 2001; Turman, 2001; Willyard, 2000).

Learning Style Inventory

Kolb (1974) developed a Learning Style Inventory (LSI) to describe the ways people learn and how they deal with ideas and situations. This instrument is a simple way of measuring learning style preference (p. 30). The original 9-item questionnaire was revised and expanded to 12 items (Kolb, 1985). The LSI is one of the most widely used learning style instruments with a variety of adult populations (Baker, Cooke, Conroy, Bromley, Hollon, &

Alpert, 1988; Brundage & MacKeracher, 1984; Davie, 1987; Harb, Durrant, & Terry, 1993; Katz, 1988; Kruzich, Friensen, & Van Soest, 1986). The Learning Style Inventory (LSI) consists of 12 statements of which each has four possible endings. The learner is asked to rank order the four sentence endings by giving a "4" to the ending that best describes the situation in which they learn best and continuing down to a "1" for the ending that describes the least preferred way. Accordingly, the lowest raw score for any of the modes is 12, and the highest is 48. The LSI is based on a Cartesian coordinate consisting of active experimentation (doing) versus reflective observation (watching) on the x-axis, and concrete experience (feeling) versus abstract conceptualization (thinking) on the y-axis. Since the order of responses is consistent for all questions, adding rating values for corresponding responses yields four primary scores: CE for concrete experience, RO for reflective observation, AC for abstract conceptualization, and AE for active experimentation (Kolb, 1984, pp. 68-69).

Scores for Abstract Conceptualization and Concrete Experience are at opposite ends of the perception learning scale, so a composite score is calculated by subtracting these scores (AC-CE). A composite score for the processing dimension is obtained by subtracting Reflective Observaton

from Active Experimentation(AE-RO). These composite figures are used to place individuals along the two axes of a graph thereby assigning them one of the four learning styles.

The coordinate system yields four learning styles: Accommodator, Diverger, Converger, and Assimilator (Kolb, 1984, pp. 77-78). Accommodators are best at learning from "hands on" experiences (doing and feeling); Divergers excel in using imagination and brainstorming, combining concrete experience and reflective observation (feeling and watching). Convergers' dominant learning abilities are focused on finding practical uses for ideas and theories (doing and thinking). Assimilators are most adept at logically organizing and analyzing information, building and testing theories, and designing experiments.

The norms for the 1985 version of the LSI were established using a sample of 1,446 adults consisting of 638 men and 801 women (Learning Style Inventory, 1985, p. 5). The average number of years of education for the group was two years of college. Mean scores for the sample were for CE--26.0, RO--29.94, AC--30.28, AE--35.37, AC-CE--4.28, and AE-RO--5.42 (Kolb, 1976, p. 7).

Kolb (1984) documents the validity of the LSI, stressing that the two dimensions of the learning model are not unitary but instead are dialectically opposed. This indicates that there is not a perfect mathematical

relationship between LSI scores for AC and CE and between AE
and RO but there are general relationships. Furthermore,
Kolb (1984) emphasizes,

> We would predict a moderate (but not perfect)
> negative relation between abstract
> conceptualization [AC] and concrete experience
> [CE] and a similar negative relation between
> active experimentation [AE] and reflective
> observation [RO]. Other correlations should be
> near zero. (p. 74)

In a sample of 807 respondents, the correlations between AC
and CE (r = -.57, p < .001) and between AE and RO r = -.50,
p < .001) were slightly negative. Other correlations were
considerably lower, ranging from .13 to -.19 (p. 74).

Kolb uses research done by Kohlberg, Piaget, and others
that show the concrete/abstract dimensions correlates with
measures of cognitive development to support the validity of
the LSI. This research also shows that the two dimensions
of the learning model are independent (Ivey, 1992, p. 69).
Kolb (1984) cites as evidence of validity that "the built-in
negative correlations in the LSI [are] caused by the forced-
ranking procedure" (p.75).

External validation of the LSI also comes from a study
by Gypen (1980). This study correlates ratings from social
workers and engineers as to the degree that they were
oriented toward each of the four learning modes in their
current job as compared with their previous LSI scores
obtained four to six months earlier. These results provide

strong support for the negative relationship between
Concrete Experience and Abstract Conceptualization and less
substantial support for the negative relationship between
Active Experimentation and Reflective Observation. Kolb
interprets this as "empirical support for the bipolar nature
of the experiential learning model that is independent of
the forced-ranking method used in the LSI" (Kolb, 1984, p.
76).

For the most part, the information provided by Kolb
pertaining to the validity of the LSI is somewhat
precarious. A graph of "validity relationship between
learning styles and career field of study" in the technical
manual fails to support validity of the LSI (Learning-Style
Inventory, 1985, p. 8). Kolb (1984) admits that the "data
do not prove the validity of the structural learning model,"
but he suggests using the LSI as an "analytic heuristic"
tool for examining the characteristics of learning (p. 76).
This is the way that the LSI was used in this study.

Curry (1983) reported that the LSI has an average test-
retest reliability of .85 and an internal consistency of
.69. He concluded that the test-retest reliability and
internal consistency of the LSI is adequate for its role in
cognitive style assessment.

Spearman-Brown split-half coefficients reported by Kolb
(1976) for the primary scales range from .54 for Concrete

Experience (CE) to .73 for Abstract Conceptualization (AC). Derived scores had split-half coefficients of .79 for AC-CE and .83 for AE-RO. Freedman and Stumpf (1978, 1980) report lower alpa coefficients, but they followed the same pattern with CE the lowest at .34, and AC the highest at .70.

The revised and expanded 1985 version of the LSI shows improved reliabilities. Both the primary and composite scores "show good internal reliability as measured by Cronbach's Standardized Scale Alpha," with values in a range from .73 to .88 (Ivey, 1992, p. 71). A study by Romero, Tepper, and Tetrault (1992) that developed new scales to measure Kolb's (1985) learning style dimensions provides support for the reliability (internal consistency and six-week test-retest stability).

Although the LSI has been criticized by some researchers, it was found to be suitable for the purposes of this study. Learning style information was used to select learners whose LSI scores were similar to participate in focus groups. Scores from the LSI were compared in order to examine differences and similarities of the groups. Because experience impacts adult learners, Kolb's description of learning styles was chosen because it differentiates between experience and abstraction. In addition, the LSI measures the element of active experimentation which is a characteristic of active learning. In this study interviews

were also used to follow up and determine if the LSI categories were accurate.

Procedures

An invitation to conduct research at Gambia College was extended to the researcher in 1999 during an African summer study abroad trip. Arrangements were made to take a return trip to The Gambia. Contact was made with the college and a visit schedule was developed. The college also provided office and living space for the researcher.

Clusters samples of six Higher Teaching Certificate (HTC) classes and four Primary Teaching Certificate (PTC) classes were randomly selected. The researcher was accompanied by a college representative to all the classes. The Learning Style Inventory and Assessing The Learning Strategies of AdultS were administered to those students that volunteered to participate. The participants involved signed a volunteer release form prior to the administration of the instruments, and they gave their name if they wanted to be considered for an interview. The results were used to select volunteer participants for focus groups and individual interviews.

Part of the research involved gathering data from focus groups for the Learning Style Inventory and Assessing The Learning Strategies of ÁdultS. ATLAS focus groups were conducted with groups of students as identified by their

learning strategy groupings of Navigators, Problem Solvers, and Engagers. Likewise, students whose LSI scores placed them in the categories of Accommodators, Divergers, Convergers, and Assimilators were asked to represent that particular learning style group by participating in a focus group. Several individual were also selected to participate in an individual interview.

A total of seven focus groups were conducted with one representing each learning style group and learning strategy group. The Accommodator focus group had a total of 6 participants with 5 males ranging in age from 23 to 30 years old and one 20 year-old female. The group of Divergers were one of the largest focus groups with a total of eight participants. There were six males with an age range of 21 to 31 years old. This group had two female participants ages 22 and 28 years. The Converger group had six participants with four males ages 20 to 30 years and two females ages 20 and 21 years. The Assimilators accounted for the smallest focus group of three participants. These participants were three males ages 20 to 25 years. Navigators had a group of four male participants ranging in age from 23 to 33 years old. The Problem Solvers were also one of the largest groups with a total of eight participants. There were five females ages 18 to 23 years and 3 males ages 23 to 26 years. The Engagers had a total

of six participants, five males ages 23 to 25 years and a 23-year old female.

Individual interviews were conducted with seven respondents. Of these, four were enrolled in the Primary Teaching Certificate (PTC) course, and the remaining 3 participants were Higher Teaching Certificate students. Both female participants interviewed were PTC students. Several (3) of the male interviewees were 25 years old. Two of these males were in the Converger learning style category and Navigator learning strategies group. The other 25-year old male fell into the Diverger learning style category and the Engager learning strategies group. The other two males interviewees were in the Problem Solver learning strategies group; one was a 45-year old Diverger and the other was a 21-year old Assimilator. The two females participating in the interviews were 22 and 23 years old. While both of these females scored in the Diverger learning style group, one was a Problem Solver and the other was an Engager.

There were five questions that were asked in both the focus groups and the interview sessions. They are:

1. What kinds of things do teacher do in a learning situation that you like and that really help you learn?

2. What kinds of things do teacher do in a learning situation that you do not like and that really do not help you learn?

3. Did you find the Learning Style Inventory and Assessing The Learning Strategies of AdultS to be an accurate assessment of your learning style and learning strategy preference?

4. Tell me about your best teacher ever.

5. Tell me about your worst teacher ever.

In addition, Learning strategy groups were asked:

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

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

Problem Solvers
1. How do you plan a learning project?

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

Engagers
1. What process do you go through in determining if a learning project is worth doing?

2. What types of activities do you like to use in a learning project?

These additional questions were asked during the interviews.

1. How do you go about learning a specific task?

2. Tell me about a recent learning project in which you were involved.

3. What kinds of things do you do to help yourself in a learning situation?

4. What do you think either you or the teacher can do about learning barriers?

CHAPTER IV

FINDINGS

Data were collected on learning styles and learning strategies with two instruments, Kolb's Learning Styles Inventory (LSI) and Assessing The Learning Strategies of AdultS (ATLAS). First the ATLAS was administered to students at the beginning of the class session, and then the LSI was administered immediately following the ATLAS. Classes were selected from the School of Education at Gambia College. In addition, qualitative data were gathered in interviews and focus groups to determine the perceptions of actions taken by teachers and students in learning situations that were beneficial or detrimental to the learners' success.

Demographics

Of the 412 participants in this descriptive study, almost three-fourths (70.6%) were males and over one-fourth (29.4%) were females (see Table 1). This gender profile of respondents support the historical male dominance at Gambia College and other educational institutions in this Muslim society. "Generally, the level of literacy among Muslim women is much lower than among men, and much lower among rural women then among town women" (Stacey, 1995, p. 40). In recent years efforts on the part of the administration of

the Gambia College and the government have been taken to recruit more female students. The department head of Population/Family Life Education at Gambia College reports that programs have been instituted which will result in a more equal gender distribution in the educational institutions of The Gambia (Personal Conversation, Ndow, 2000).

Table 1: Demographic Variables for Sample

Variable	Number	Percent
Gender		
Male	291	70.63
Female	121	29.37
Certification		
PTC	165	40.24
HTC	245	59.76
Age		
17-20	43	10.44
21-24	213	51.70
25-29	119	28.88
30-39	32	7.77
40-45	5	1.21

All respondents in this study were enrolled at Gambia College in the School of Education Higher Teaching Certificate (HTC) and the Primary Teaching Certificate (PTC) training courses. Almost three-fifths (59.5%) of the respondents were enrolled in the HTC course and two-fifths (40.0%) were enrolled in the PTC course. Two people did not specify their course. Although participants ranged in age from 17 years to 45 years old, about 62% of participants

fell at or below the mean age of 24. Approximately, 90% of the respondents were between the ages of 20 to 29 years. (see Table 1). Since the college for the most part accepts and prepares Gambian citizens to teach in the government schools, all respondents in this study were Gambians. These age statistics are not surprising because the government pays educational stipends to teacher preparation students at Gambia College and the government's goal is to get a high rate of return on their investments. Therefore, the younger age group is more widely recruited and represented in this study. Upon successful completion of the teacher preparation courses, the majority of respondents will teach for at least two decades or more in the government schools.

A gender difference exists between the two certificate programs (χ^2=44.78, df=1, p=.001) There was a disproportionate number of males enrolled in the Higher Teaching Certificate (HTC) course (84%). While females accounted for 16% of the students in the HTC course (see Table 2). The Primary Teaching Certificate course had an even distribution of males (52%) and females (48%).

Table 2: Gender Distribution by Certification

Certification	Gender		Total
	Male	Female	
PTC	86	79	165
HTC	203	42	245
Total	289	121	410

Gender differences between the two certificate courses have several explanations. Females outnumbered males in the Primary Teaching Certificate course because upon completion of this course, students will teach at the primary school level and entry to the teaching profession is facilitated best at the primary school level. Furthermore, some of the Higher Teaching Certificate students have already been teaching in the government schools and are at Gambia College to change from primary school certification to secondary school certification.

The amount of time that respondents had been studying at the college was one month for 150 (36.4%), two months for 232 (56.3%), and a year or longer for 25 (6.1%) participants. Almost 93% of the respondents had just begun their course of study. These statistics reflect the fact that the data were collected at the beginning of an academic year.

Learning Style Profile

The Learning Style Inventory (LSI) categorizes learners into four learning style groups: Convergers, Assimilators, Divergers, and Accommodators. Respondents are placed into one the four groupings based on their responses on the LSI. The Converger wants to know how something works; the Assimilator seeks to get the facts; the Diverger wants to know why or why not; and the Accommodator wants to know what

can the learning project or experience produce (Kolb, 1976).
Nearly three-fourths (74.5%) of the participants in this
study were fairly evenly distributed between the
Assimilators (37.14%) and the Divergers (37.38%) (see Table
3). The representation of the other two remaining style
groups was much smaller. The Accommodators made up about
one-fifth (12.14%) of the total group while the Convergers
accounted for only slightly over one-tenth (13.35%) of the
total group.

Table 3: Learning Style Distribution

Learning Style	Frequency	Percent
Diverger	154	37.38
Assimilator	153	37.14
Converger	55	13.35
Accommodator	50	12.14
Total	412	100.00

The Learning Style Inventory is based on Kolb's
experiential learning theory which divides learning into
four modes. It produces several continuous scores in
addition to the categorical groupings for learning styles.
The four learning modes for which continuous scores were
produced are Concrete Experience (CE), Reflective
Observation (RO), Abstract Conceptualization (AC), and
Active Experimentation (AE). Learners with high scores on
Concrete Experience (CE) prefer learning situations which
enable them to immerse themselves in new experiences.

Learners scoring high on the Reflective Observation (RO) prefer to be giving opportunities to reflect on new information. Individuals with high scores on Abstract Conceptualization (AC) prefer learning situations which permit them to integrate new information with existing theories. These learners use theory to solve problems and make decisions. Those scoring high on Active Experimentation (AE) embrace a very practical approach to learning and desire to see what works. These learners will experiment, influence, and change situations (Kolb, 1974, p. 92).

The Learning Style Inventory has a range of 12 to 48. The means for each of the modes were Reflective Observation (RO)--31.5, Abstract Conceptualization (AC)--31.3, Active Experimentation (AE)--30.1, and Concrete Experience (CE)--27.5. The median of 27.0 for the Concrete Experience mode was lower than the other modes which had a similar median: Reflective Observation--31.0, Abstract Conceptualization--31.0, and Active Experimentation--30.0. Likewise, the mode for the Concrete Experience group was the lowest of the four groups at 26 with the Reflective Observation (31), Abstract Conceptualization (31), and Active Experimentation (30) having an equivalent mode.

Table 4: Learning Style Continuous Scores by Quartile

Ranges	Number	Percent
CE		
12-24	124	30.10
25-27	90	21.84
28-31	106	25.73
32-48	92	22.33
RO		
16-27	107	25.97
28-31	117	28.39
32-35	105	25.49
36-48	83	20.15
AC		
17-28	110	26.70
29-31	112	27.18
32-34	107	25.97
35-48	83	20.15
AE		
14-26	114	27.67
27-30	111	26.94
31-34	98	23.79
35-47	89	21.60

Learning style continuous scores were arranged in quartiles for clarity. The quartile categories of scores is consistent between the Reflective Observation, Active Experimentation, and Abstract Conceptualization scales (see Table 4). People scored about the same for every category. The quartile range tends to be slightly lower on the Concrete Experience scale.

Two composite scores are also produced from the Learning Style Inventory results. These are constructed by combining the Abstract Conceptualization scores and the Concrete Experience (AC-CE) and Active Experimentation and

Reflective Observation (AE-RO) scores (see Table 5). These scores show the two different ways by which one learns. The composite score for Abstract Conceptualization and Concrete Experience (AC-CE) reflects how an individual perceives or takes in new information. The composite score for Active Experimentation and Reflective Observation (AE-RO) indicates how a learner processes information. The perception learning scale and the processing learning scale are combined on a grid. The intersection of these scores places a person in one of the four quadrants of the grid, and each of these quadrants represent one of the four learning styles.

Table 5: Learning Style Composite Scores

Learning Style Group	Number	Percent
AC-CE		
-21 to -2	112	27.19
-1 to 4	114	27.67
5 to 9	85	20.63
10 to 36	101	24.51
AE-RO		
-26 to -7	115	27.91
-6 to -1	105	25.49
0 to 6	96	23.30
7 to 31	96	23.30

On the Learning-Style Type Grid that Kolb uses, the Abstract Conceptualization - Concrete Experience (AC-CE) scores ranges from -36 to +36. The midpoint for this scale is near 4. The AC-CE mean (3.87) is close to the median

(4.0) on this grid. In this study the AC-CE scores ranged
from -21 to +36 with more than 55% of the scores closer to
the Abstract Conceptualization end of the grid. Thus, the
majority of the learners with composite scores on the AC-CE
perception learning scale prefer to take in new information
by comparing it to existing theories. Their perceptions in
the learning process are based more on thinking rather than
feeling.

The range on the Active Experimentation - Reflective
Observation (AE-RO) scale can be from -36 to +36. The
midpoint for this scale on the Learning-Style Type Grid is
between 6 and 5. The AE-RO mean (-1.07) is in the same area
as the Median (-1.0) on this grid. Active Experimentation
(AE) - Reflective Observation (RO) in this study range of
scores was from -26 to +31. The majority of scores (over
53%) on the processing learning scale were on the Reflective
Observation side which indicates that most of the
participants in this study prefer to process new information
by watching instead of doing (see Table 5).

Learning styles and learning strategies were compared
to the demographic variables. For this, analysis of
variance (ANOVA) was used. Analysis of variance is "a
statistical method that can be used to equate groups on one
or more variables for initial differences" (Gay, 1996, p.
328). Two or more means from a statistical tests are

compared in the ANOVA to determine if there is any significant difference. Thus, it is used to "increase the power of a statistical test" (p. 617). Several one-way analysis of variance procedures were conducted with learners grouped by their certification area, gender, and age with LSI and ATLAS scores. The LSI scores for Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE) and the composite scores for Abstract Conceptualization and Concrete Experience (AC-CE) and Active Experimentation and Reflective Observation (AE-RO) were used. For ATLAS, learners were grouped by their learning strategies groups of Navigators, Problem Solvers and Engages.

In the analysis of variance for certification, the groups consisted of students in the Higher Teaching Certificate(HTC) or Primary Teaching Certificate(PTC) course of study. Significant differences were found on half of the scales (see Table 6). Significant differences were found for the continuous score of Reflective Observation with the PTC (32.24) group having a higher mean than the HTC (30.47) group . On the Active Experimentation scale the opposite was true. The HTC (30.55) group had the higher mean than the PTC (29.32) group. For the composite score AE-RO the HTC(.07) group once again had a higher mean than the PTC (-2.92) group (see Table 6).

However, just because results are "statistically significant does not automatically mean that they are of any educational value" (Gay, 1996, p. 521). The correlation coefficients for the AE and AE-RO groups show they are statistically significant. Researchers should be "concerned about practical significance as well as statistical significance" (Huck & Cormier, 1996, p. 316). Caution should be taken by researchers in reporting "significant (or non-significant) findings into more than what they truly are" (p. 342). Researcher should not hurry to report results that show statistical significance without thorough analysis because "a result that is deemed to be statistically significant can be, at the same time, completely devoid of any practical significance whatsoever" (p. 190).

Table 6: ANOVA for Learning Styles by Certification

Style	SS	df	MS	F	p
RO					
Between	308.53	1	308.53	10.86	0.001
Within	11589.38	408	28.41		
AE-RO					
Between	884.23	1	884.23	8.98	0.003
Within	40172.65	408	98.46		
AE					
Between	148.13	1	148.13	4.28	0.039
Within	14124.69	408	34.62		
AC					
Between	62.58	1	62.58	2.90	0.089
Within	8792.55	408	21.55		

AC-CE					
Between	108.72	1	108.72	1.35	0.245
Within	32751.63	408	80.27		
CE					
Between	6.33	1	6.33	0.20	0.659
Within	13211.01	408	32.38		

The relationship of various learning modes were also analyzed with the participants grouped by gender. No significant differences were found between groups for any of the scales (see Table 7).

Table 7: ANOVA of Learning Styles and Gender

Style	SS	df	MS	F	p
CE					
Between	18.41	1	18.41	0.57	0.452
Within	13313.52	410	32.47		
RO					
Between	89.58	1	89.58	3.05	0.081
Within	12041.79	410	29.37		
AC					
Between	73.90	1	73.90	3.41	0.065
Within	8879.44	410	21.66		
AE					
Between	26.61	1	26.61	0.75	0.387
Within	14569.74	410	35.54		
AE-RO					
Between	213.85	1	213.85	2.09	0.149
Within	41935.97	410	102.28		
AC-CE					
Between	166.09	1	166.09	2.06	0.152
Within	33098.83	410	80.73		

Another analysis of variance was conducted for the learning style groups using the age variable (see Table 8). The age groups were 17 to 20 years, 21 to 24 years, 25 to 29

years, and 30 to 45 years. The last age was larger because it included the small number of participants who were in their forties. There were no significant differences except on the CE scale. The Concrete Experience scale reflects the degree to which a learner approaches the learning situation in a receptive, experience-based manner (Kolb, 1984). The individual with this approach to learning, "values relating to people and being involved in real situations, and has an open-minded approach to life" (p. 68). The post-hoc tests indicates that these differences are not significant, therefore, no differences exists when examining learning style groups by age.

Table 8: ANOVA for Learning Styles by Age

Style	SS	df	MS	F	p
CE					
Between	273.19	3	91.06	2.85	0.037
Within	13058.74	408	32.01		
ACCE					
Between	614.64	3	204.88	2.56	0.055
Within	32650.28	408	80.03		
AC					
Between	77.93	3	25.98	1.19	0.312
Within	8875.42	408	21.75		
AE					
Between	54.82	3	18.27	0.51	0.674
Within	14541.53	408	35.64		
AERO					
Between	41.62	3	13.87	0.13	0.939
Within	42108.19	408	103.21		
RO					
Between	9.79	3	3.26	0.11	0.954
Within	12121.58	408	29.71		

Learning Strategies Profile

The three learning strategies preference groups
identified by ATLAS are Navigators, Problem Solvers, and
Engagers. Respondents are placed into one of the three
groupings based on their responses. Participants in this
study were almost equally distributed between the three
groups of learners. There are 131 (31.8%) Navigators, 148
(35.9%) Problem Solvers, and 133 (32.3%) Engagers. Of these
respondents, 92% (379) reported that ATLAS accurately
described them. This finding of the accuracy of the ATLAS
description is consistent with other findings for ATLAS
(Armstrong, 2001; Ghost Bear, 2001; Hinds, 2001; Massey,
2001; James, 2000; Shumaker, 2001; Willyard, 2000). Only
8%(33) said that ATLAS did not accurately describe them.

Learning strategies groups were examined to determine
if any differences existed when groups were divided
according to gender and certification. Certification
included participants in the two teacher preparation
courses, PTC and HTC. In this study, the men and women
participants were close to being evenly distributed across
the ATLAS groups. The largest number of males (77%) were
found in the Navigator group and the smallest number (66%)
fell into the Engager group. Whereas, the largest number of
females (34%) were found in the Engager group and they were
least represented (23%) in the Navigator group. Similarly,

the distribution of the ATLAS groups by certification was fairly evenly distributed with the largest number of HTC respondents in the Navigator group and the largest number of PTC participants in the Engager group (see Table 9). The observed distribution (see Table 9) for gender was not significantly different from the expected distribution ($\chi^2 = 4.13$, $\underline{df} = 2$, $\underline{p} = .127$). Also, The observed distribution for certification was not significantly different from the expected distribution ($\chi^2 = 6.57$, $\underline{df} = 2$, $\underline{p} = .037$).

Table 9: ATLAS Groups by Gender and Certification

Variable	ATLAS			
	Navigator	Prob. Sol.	Engager	Total
Gender				
Male	101	102	88	291
Female	30	46	45	121
Total	131	148	133	412
Cert.				
PTC	43	58	64	165
HTC	87	90	68	245
Total	130	148	132	410

An investigation of ATLAS groups by age was also undertaken to determine if any differences existed. The same ATLAS groups were used and age groups were divided in four ranges, ages 17 to 20 years, 21 to 24 years, 25 to 29 years, and 30 to 45 yrs. The last group included the few participants who were in their forties. Eighty-one percent of participants in this study were between the ages of 21

years and 29 years old. Of this majority group, the largest number (35%) fell into the Problem Solvers group, followed by 34% in the Engager group, and the smallest representation (31%) was found in the Navigator group (see Table 10). The observed distribution (see Table 10) was not significantly different from the expected distribution (χ^2 = 10.37, df = 6, p = .110).

Table 10: ATLAS Groups by Age

Ages	ATLAS			Total
	Navigator	Prob. Sol.	Engager	
17-20	14	19	10	43
21-24	79	69	65	213
25-29	26	47	46	119
30-45	12	13	12	37
Total	131	148	133	412

The responses of Gambia College participants on ATLAS were compared to the norms for the instrument. Chi-square was used for this analysis. A chi-square is used to determine whether an observed frequency distribution is significantly different from a hypothesized frequency distribution (Roscoe, 1975, p. 247). In this type of chi-square test, there are various categories of nominal variable of interest. A chi-square test shows what proportion of the population under consideration falls into each category. Then "the researcher determines what proportion of their sample falls into each of the established categories" (Huck & Cormier, 1996, p. 519).

This type of chi-square test is referred to as a goodness-of-fit test because it "compares the set of observed sample proportions with the corresponding set of population proportions" (p. 519).

In this study, a chi-square goodness of fit test was conducted to determine the distribution to examine if there was any significant relationship between the learning strategy scores of the students at Gambia College and the norms for ATLAS which were developed from Western adult learners in North America. The expected distribution of ATLAS learning strategy preference groups is Navigators--36.5%, Problem Solvers-- 31.7%, and Engagers-31.8% (Conti & Kolody, 1999, p. 18). The observed distribution (see Table 11) was not significantly different from the expected distribution (χ^2 = 4.84, $\underline{df}$ = 2, $\underline{p}$ = .089).

Table 11: Observed and Expected Outcomes for ATLAS Groups

Groups	Observed	Expected	Difference
Navigator	131	150.38	-19.38
Problem Solver	148	130.60	17.40
Engager	133	131.02	1.98

ATLAS further divides the three groups into two subgroups. Of the 412 respondents, 51.7% fell into Subgroup 1 and 48.3% fell into Subgroup 2, indicating almost an even distribution between the two subgroups. Navigators in Subgroup 1 prefer to use human resources while those in

Subgroup 2 prefer to get the materials organized into meaningful patterns. Problems Solvers in Subgroup 1 are more concerned with planning the best way to proceed with the learning task while learners in Subgroup 2 like to make sure that they use the most appropriate resources for the learning task. Engagers in Subgroup 1, like Navigators in the same subgroup, prefer to use human resources while those in Subgroup 2 prefer reflecting upon the results of the learning and planning the best way to learn.

Table 12: ATLAS Subgroups

ATLAS	Frequency	Percent
Group		
Navigator	131	31.80
Problem Solver	148	35.92
Engager	133	32.28
Subgroup		
1	213	51.70
2	199	48.30

Learning Styles and Learning Strategies Relationship

The results from the Assessing The Learning Strategies of AdultS (ATLAS) and Learning Style Inventory (LSI) were examined to determine the relationship between learning styles and learning strategies. Because both instruments place participants into categories, a chi-square was used with this nominal data to examine the relationship of these groups. Chi-square tests for contingency tables is used to determine the relationship of two nominal groups on the variables under

consideration (Huck & Cormier, 1996, p. 519). Categorical placement was available for the LSI and the ATLAS for all 412 participants. No significant differences were found in the distribution of the categories for the four categories of the LSI and the three categories of ATLAS (χ^2 = 8.26, df=6, p=.22) (see Table 13). Learning styles and learning strategies are independent of each other.

Table 13: Crosstabulation of Learning Styles and Learning
Strategies

Styles	ATLAS		
	Navigator	Prob. Sol.	Engager
Converger	16	24	15
Assimilator	50	58	45
Diverger	53	52	49
Accommodator	12	14	24
Total	131	148	133

The Learning Style Inventory produces categorical groupings and continuous scores for learning styles. The continuous scores were used as the dependent variable to investigate the relationship between learning styles and learning strategies. Analysis of variance is a way for "the researcher to use the data in the samples for the purpose of making a single inferential statement concerning the means of the study's populations" (Huck & Cormier, 1996, p. 296). It ascertains "whether there is a significant difference between two or more means at a selected probability level" (Gay, 1996, p. 479).

Multiple one-way analysis of variances were conducted with the respondents grouped by their learning strategy on Assessing The Learning Strategies of AdultS. The Learning Style Inventory scores for Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation were used. In addition, the composite scores of Abstract Conceptualization and Concrete Experience (AC-CE) and Active Experimentation and Reflective Observation (AE-RO) were also used. No significant differences were found between learning strategy groups for any of the scales (see Table 14).

Table 14: ANOVA for Learning Styles and Learning Strategies

Styles	SS	df	MS	F	p
AC					
Between	49.51	2	24.75	1.14	0.32
Within	8903.84	409	21.77		
CE					
Between	66.18	2	33.09	1.02	0.36
Within	13265.75	409	32.43		
AE					
Between	53.64	2	26.82	0.75	0.47
Within	14542.71	409	35.56		
AC-CE					
Between	119.43	2	59.72	0.74	0.48
Within	33145.49	409	81.04		
RO					
Between	16.16	2	8.08	0.27	0.76
Within	12115.21	409	29.62		
AE-RO					
Between	27.67	2	13.84	0.13	0.87
Within	42122.14	409	102.99		

Approach to Learning

The Learning Style Inventory (LSI) and Assessing The Learning Strategies of Adults (ATLAS) were given to students at Gambia College. These instruments identify individual differences in approaching learning and part of the challenge of this study was to discern if these principles applied to learners in Africa based on the Western learning concepts. Focus groups and interviews were conducted to ascertain evolving themes and gather additional information about how learners proceed with learning tasks, their perceptions on how teachers help or hinder their learning, and how organizational factors affect their learning. The main objective for these interview sessions was to determine if indeed these learning styles and learning strategies were implemented among the students. The data gathered from the explanations they gave concerning their background and learning experiences gave insight about this inquiry.

Focus groups and interviews provide information that can "promote greater understanding of how and why people behave the way they do" (Gay, 1996, p. 211). The students were able to articulate their thoughts and feelings about their learning experiences. In addition, these interview and focus groups sessions provided insight into the lives and the world of the learners. A total of 46 respondents

volunteered to participate in the focus groups and interviews. A focus group was conducted for each learning style and learning strategies category. In addition, several individual interview were held. There were a total of seven focus groups. The smallest focus group had three participants who represented the Converger participants. The Divergers focus group and the ATLAS Problem Solvers group had the most participants with eight each. During the focus group sessions, learners shared about their approaches to learning, their perceptions about teacher actions that help or hinder their efforts in the learning process, and their learning experiences. Volunteers were selected for the learning styles focus groups to obtain a range of scores, including those at the extremes. Participants with high scores on the various scales were selected first. Respondents participating in the focus groups and interviews ranged in age from 18 to 45 years old.

Some of the emerging themes centered around the teachers and whether they had a teacher-centered or a learner-centered approach. For instance, learners talked extensively about the relationships and the environment. They indicated that the relationship element in the learning situation is a type of two-edged sword that can have a positive impact on their learning if they have good relationships but it can also have a negative impact if they

have bad ones. The environment that the teacher creates in the classroom is crucial to the teaching-learning process. A negative environment hinders the learning process, but a positive environment creates an atmosphere conducive to learning. Another factor impacting the learning process is the methods and instructional techniques used by the teacher.

Learners at Gambia College repeatedly expressed principles associated with the learner-centered approach to learning as the most beneficial and helpful to them in the teaching-learning process. The learner-centered approach is very important to adult learners, and Knowles (1970) talked extensively about the concept of building a proper learning climate. The andralogical model of learning is a learner-centered model based on four core assumptions about adult learners as distinguished from child learners (Knowles, 1970). Andragogy is the theme which emerged out of this model. After additional research, Knowles (1998) added two more assumptions. The first assumption is that adults need to know why it is necessary to learn something before they engage in the learning. The second assumption address the learner's self-concept. Adults have a self-concept of being responsible for their decisions and their lives. Next, the adult learner brings a large rich reservoir of experiences to any learning situation. The fourth and fifth assumptions

deal with adults readiness to learn and orientation to learning respectively. Adults are ready to learn things when their lives dictate a need for them to learn them in order to solve problems and effectively complete tasks. Adults are life-centered, problem-centered, or task-centered in their orientation to learning. The final assumption addresses motivation of adult learners. Adults are responsive at times to external motivators (e.g. better jobs, promotions, and higher salaries), but the prominent motivators come from within (e.g. the desire for increase job satisfaction, a better quality of life, and self-esteem).

In this study, as adults expressed actions that they take when beginning a learning task. Repeatedly comments were made about making practical application and linking the learning to their lives. Adults need to know why they are learning something or how it relates to their lives. For example, participants in the focus groups and interviews described the steps they take and the skills and techniques they use when initiating a learning activity. Learners report that they use these strategies both in formal and informal learning. Thirty-six comments in the focus groups were made about how the adult learners in this study approach learning. Problem Solvers (25%) and Convergers (25%) account for 50% of the comments while Accommodators

(13.9%) and Navigators (11.1%) each made a similar amount of comments. Assimilators made 20% of the comments. The least amount of comments (5.6%) about learning were made by Engagers. Engagers talked more about this area during individual interviews. The Divergers did not make any comments about their approaches to learning during their focus groups. However, Divergers did talk about this subject during the individual interviews.

In addition to making the most comments about learning, the comments by Problem Solvers were typically longer. In another study about learning strategies, Problem Solvers also distinguished themselves as the most descriptive and detailed in their responses. They are known for the ones who you "ask them what time it is, and they will build you a clock" (Ghost Bear, 2001, p. 371) For example, a Problem Solver describing his approach to learning says:

> When I begin to learn something, I will do the research myself. I will use the dictionary to look up key words to gather information. For instance, here at the college when new material is presented, I will key in on the new words, and after class I will research these words and the subject also. I use books, elders, granddads, grandmother, etc. for information about our culture, history, and customs that is not in any books.

The Problem Solver making this comment is using critical thinking strategies to generate alternatives, test assumptions and conditionally accept information (Conti &

Kolody, 1999, p. 12) This adult learner is also engaging in finding the answer to the question of why I need to know this or how does this connect to my life. Also, this learner is operating as an adult learner who is taking control of the learning process on which they have embarked. The fact that Problem Solvers prefer to use human resources is reflected in the examples given in this comment about using human resources such as elders, granddads, and grandmothers. Problem Solves typically practice conditional acceptance in learning situations which is reflected in the comment, "I make my own evaluation of the subject."

Another comment by a Problem Solver emphasizes a need that these learners have for an environment with practical experimentation.

> It helps me to put my learning into practical application. For example, If I learn a scientific process in the class, I want to be able to go home or to the lab and apply the information I have learned.

Convergers made the same amount of comments in this areas as Problem Solvers. Convergers are known to be strong problem solvers and decision makers. Individuals in the Convergent learning style group have an innate ability to make practical application of ideas. When they approach a learning situation, Convergers depend on their abilities in abstract conceptualization and active experimentation (Kolb, 1984, p. 77). The following comment by a Converger

illustrates their ability to make practical application of ideas and their need as an adult to connect learning to real life:

> When I learn, I will usually use reasoning, and I need to apply the information because that is how I really connect it to my life.

Convergers rely heavily on their abilities in abstract conceptualization and active experimentation when approaching a learning situation (Kolb, 1984, p. 77). The Converger's skill in "using logic, ideas, and concepts...[while] actively influencing people and changing situations" (Kolb, 1984, p. 69) is reflected in comments by these types of learners:

> For me to learn, I need to the teachers to give me the necessary information and explain it to me. I will then go and read and conduct my own research to learn more about the subject matter.
>
> I learn best by analyzing and dissecting things. It's important for me to understand the logic behind ideas

Almost 14% of the comments about how one approaches learning were made by the Accommodators. These learners are seen as opportunity seekers, risk takers, and action-oriented individuals (Kolb, 1984, p. 78). They depend on their abilities in concrete experience and active experimentation. Some comments made by the Accommodators reflect how they rely heavily on doing in order to learn.

> I like to be doing things when I learn.

> In order for me to learn best, I need teachers to
> give me time to practice what is presented.
>
> It helps me to learn by taking part in group
> studies and intellectual discussions.
>
> I am an active learner who prefers to do rather
> than watch or listen.
>
> I learn best when I am given the chance to try out
> something or to practice it by doing it.

These comments emphasize that Accommodators are learners who like to "carry out plans and tasks and [get] involved in new experiences" (Kolb, 1984, p. 78).

Navigators also expressed a need to know exactly what it is they need to learn. They want to know because they are ever ready to develop their plan. They are known to "plan the work and work the plan" (Ghost Bear, 2001, p. 369). For the Navigator the what do I need to learn part usually comes before the why I need to learn it. Also, they have a need to know why something must be learned. For example,

> When I begin I learning project, I make sure I
> know what it is that I want to learn. I identify
> my aim or objective. Then I make a plan of
> strategies to achieve my objective. Then I
> implement it and put it into action. The last
> thing I do is to evaluate it to measure my success
> and make adjustments.

Navigators approach their learning tasks with a lot of effort. These learners tend to be very task oriented and results minded. In this study a Navigator said, "when I begin to learn something new, I identify the problem, then I

identify the resources, and then I make a plan. I will ask for assistance from teachers and friends only if I need it."

Assimilators are strong inductive reasoners who have the ability to "create theoretical models: and are able to take dissimilar observations and produce integrated explanations (Kolb, 1984, p. 78). This is reflected in the following comment by an Assimilator:

> When I can make a mental picture of what I am being taught, it helps me to understand and remember.

In learning, Assimilators depend on their abilities in abstract conceptualization and reflective observation (p. 78). For Assimilators, ideas and abstract concepts are judged on their practical value and greater emphasis is placed on theories being "logically sound and precise" (p. 7). The typical Assimilators' comments relating to their approach to learning were:

> In order to learn, I listen and watch intently. It helps me to observe. I depend on my observations in order to learn.

> I learn if I can see it; then [I] practice it.

> Seeing and observing are most important from me. I have a philosophy that "seeing is believing."

> I like to watch and observe so visual aids are very important to me.

Engagers also approach the learning situation in a specialized way. They often refer to learning as "It's fun!"; this is a common characteristic of Engagers (Ghost

Bear, 2001, p. 373). For example, an Engager said, "I want to learn things that I enjoy." The following statement reflects how these learners need an "internal sense of the importance of the learning to them personally before getting involved in the learning" (Conti & Kolody, 1999 p. 14).

> What really motivated me in secondary school were the subjects of geography and history. I love studying about the achievements of people in Africa. Also it helped me when the teacher would link the information to how it applied to Africa, slaves, etc. This was the beginning of a love for these two subjects that I still have today.
>
> In order for me to understand and retain what I am learning I must be able to connect it to something meaningful.

Some other comments made by Engagers depict their love for learning and the strong feelings involved in the teaching-learning process.

> When I enjoy the learning activity, I think I will be successful.
>
> Many times I must rely on friends to discuss the lectures [lessons] and get further understanding.
>
> I relate what I am presently learning to how I will use it in the future.

Teacher Actions that Hinder Learning

One area that hinders learning whether it is formal or informal learning situations is the learning climate or environment. The responsibility for controlling whether the learning environment fosters or inhibits learning lies with the educator. "In a world full of broken relationships,

broken promises, and broken hearts, a strong supportive relationship is important to students" (Tileston, 2000, p. 1); therefore, the environment in learning situations is of vital importance. Factors such as "people, structure, and culture can either facilitate or deter learning" (Merriam & Caffarella, 1991, p. 30). The organization "provides an environment that either facilitates or inhibits learning" (Knowles, 1980, p. 66). Both teachers and learners are instrumental in setting the environment in the classroom; however, since the teachers are the authority, the ultimate obligation lies with them. In the learning process, the environment or the educational climate has a tremendous impact on learning. Four basic characteristics of environments conducive to learning in all type of organizations attempting to help people learn have been identified by Knowles (1980). First, "respect for personality; [second,] participation in decision making; [third,] freedom of expression and availability of information; and [fourth], mutuality of responsibility in defining goals, planning and conducting activities, and evaluating" (p. 67).

In this study, 21 comments were made about how the environment impacted the learning process negatively. Problem Solvers made almost 40% of the comments, followed by Engagers who made 33% of the comments. The other leaning

style and learning strategies groups had very little to say in this area. However, just about every interviewee had something to say about the learning environment.

More than any of the learning strategies groups, Engagers are perhaps the most needy of a positive learning environment because they learn with feeling. An Engager said, "If the environment is negative, I will keep quiet even if I know the answer." Likewise, the environment has a tremendous impact on the learning of Divergers. This style has learners who are interested in people and whose emotions and imaginations impact their learning (Kolb, 1984). A Diverger said:

> The environment or the climate really is important
> to me. If it's a positive climate then I can
> learn easily but if it is negative or hostile,
> It's hard for me to learn.

Navigators had the tendency in this study to make comments about the environment and lack of resources as the things that hindered their learning. Comments by Navigators about the environment centered more on conditions that would hinder them from staying focused and completing their learning tasks. For instance, Navigators reported:

> The classroom conditions at the college are not
> effective and conducive to learning. Two people must
> share a seat that is for one and three people share a
> seat that is meant for two people. There are no
> textbooks and no teaching aids and materials.

> The resources at the library are inadequate and
> outdated.

Problem Solvers mentioned the fact that they need a quiet atmosphere in order to do their best learning. Comments centered around getting rid of distractions by noises and other people. In a similar study on learning strategies, James (2000) discovered this Problem Solver need. The following are examples of comments by Problem Solvers about the learning environment:

> The atmosphere and classroom conditions are important to me. They must be conducive to studying. For example, if people are talking or the noise level is high or it's too cold or hot then it's very hard to give your attention to studying.

> The number of students to each class makes it hard for me to learn.

> The overcrowded classes really hinder my learning.

> The ratio for the teacher and student is 1 teacher to about 60 students and in the class there are fast and slow students. Many times we have to transport chairs from one classroom to another in order to have a place to sit.

> The environment of the classroom needs to be cool with no disturbances in order for me to learn best.

Accommodators are known for being the type of learners who adapt themselves to the circumstances. However, an Accommodator made the following comment:

> I learn best in a comfortable place with proper lighting. It's hard to study by candlelight.

Another Accommodator highlighted the problem about the lack of proper resources:

> In the library you cannot find the books and a lot
> of the materials are antiquated.

Some Problem Solvers also had something to say about a lack of a variety of resources at the college. Problem Solvers like a variety of materials which aids them in generating a variety of alternatives in a situation.

> It would help to have books and materials. We
> have limited resources here at the college. There
> are no textbooks. What the lecturers do is that
> they will dictate from a copy of their book but
> students don't have books to read or look up
> information. If you don't take good notes, then
> it is difficult to learn.

> What hinders my learning are the inadequate
> materials like textbooks, classroom furniture, and
> buildings.

One Problem Solver felt so strongly about the lack of proper resources that he gave all the details about several educational reference books which are needed in the library. This learner mentioned these books by author and title.

An Engager commented that "We have hardly any relevant textbooks. The only thing you have is an explanation from the teacher." comments such as these indicate that organizations need to minimize the negative factors in the environment which hinder learning.

Although the goal of teachers is to promote and facilitate learning, sometimes their actions hinder the learning process. In this study, learners talked more about the past than the present when it came to examining teachers

actions which hindered their learning. There were a total of 18 comments made about how teacher actions hindered the participants in the learning process. The Navigator focus group made 22.2% of the comments in the particular area, and Engagers accounted for 27.8%. However, Problem Solvers made twice that amount 44.4% of the comments. In the learning style focus groups, hardly any comments (5.6%) were made in this area.

Numerous comments concerning the use of corporal punishment were made about teachers actions that hindered the students learning at the primary level. Students commented:

> It hindered my learning in primary school when I was beaten. Corporal punishment does not work. The fear of being beaten made me study. We were beaten if we were late, fighting, stealing, or disobeying rules. (Problem Solver)

> If a teacher beats or disgraces a student, this will paralyze the student. (Problem Solver)

> In primary school, the teacher would sit by the door with a stick and if you were late then you would get beat and then sent to clear some of the weeds out of the garden. I didn't like this and it did not help me to learn. (Engager)

> The beatings in primary school and the inadequate facilities are what hindered my learning. (Problem Solver)

> When I was in primary school, the teacher would beat students and this did not help me at all. It instilled fear and sometimes I would have a question but I was afraid to ask. (Engager)

> Stress is one of the highest inhibitors in the

classroom. A common producer "of stress in students is threat" (Tileston, 2000, p.2). "Examples of threat in the classroom include anything that embarrasses a student, unrealistic deadlines, a student's inability to speak a language, inappropriate learning styles, and an uncomfortable classroom culture" (p. 2).

Although in this study all participants were adult learners, it appears that the treatment by teachers at the primary level wounded them, and even at the college level, those experiences are continuing to impact them in the teaching-learning transactions. The fact that "emotional responses can actually diminish the brain's ability to process information" has been documented in research (Tileston, 2000, p. 4).

Another area in this study that learners identified where teachers actions hindered their learning was in how the teacher treated them. For instance, when teachers discouraged students or were perceived as being uncooperative, learning was inhibited. Some comments made indicate this:

> Some teachers never give encouragement. They harass students and make me feel ashamed, especially a math teacher that I had, who seemed to be angry every day and took it out on the students. He told us that on days when he wore black that we were in trouble. The problem was that he wore black almost every day. (Problem Solver)

> Some of the lecturers at Gambia College are
> cooperative and this helps but there are others
> who don't cooperate and it hinders learning.
> (Engager)

> Some teachers are not helpful. They give
> dictation and it's too fast, when you ask them to
> slow down they will not. (Engager)

> When a teacher encourages me, I feel free to say
> anything. But if a teacher embarrasses me then I
> will not try to contribute because I think that
> the teacher will criticize me. (Engager)

Adult learning is facilitated in a learner-centered environment. One of the hindrances that was revealed by the students during the focus groups and interviews is the almost exclusively teacher-centered approach to learning at Gambia College. A Problem Solver said, "It's hard to just listen to lecturers all the time." Likewise, a Navigator reported, "The lecturers are always the focal point." Another Navigator commented that "when a lecturer does not appreciate your mind, then there is a psychological discomfort produced in you." A Problem Solver commented, "There are students with special needs here at the college, and their needs are not considered."

The need for a more learner-centered environment can be summed up in these comments by Navigators:

> Lecturers find it defiant for a student to explore
> intellectual abilities. You must take what is
> available. There are limited opportunities. I
> call it "artificial efficiency." They think the
> education process is alright but it's not.
> Along the same lines Convergers commented:

> At the college, most of the learning is by
> lectures where you are given the necessary
> information. Then you are expected to memorize
> it. For me this is not the best way but I had to
> learn to do it this way, in order to survive.
>
> It does not help me as a student when teachers
> spoon feed me. I have a mind that is capable of
> using logic and reason.

Adults learners in this study displayed a readiness to learn at Gambia College because the need to start or improve their careers generated a genuine need and brought a readiness to learn. Their goals to become teachers and improve their economic status were the motivational factors for them. Despite the fact that the adult learners at Gambia College are coming there with rich experiences, this seems to be over looked in the planning and instruction.

Teacher Actions that Help Learning

In addition to the basic underlying assumptions for andragogy, Knowles identified seven components of adult learning practice (Knowles, 1980, p. 59). These components are critical to the effectiveness and success of any program engaged in facilitating adult learning. Teachers should use this seven-step program planning model which is "concerned with providing procedures and resources for helping learners acquire information and skills" (Knowles, 1990, p. 120).

The first step in Knowles' program planning model is to establish a climate conducive to both physical and psychological learning. An environment conducive to learner

is reported as the "single most critical thing" for the instructor or facilitator (Knowles, 1980, p. 224) Educators focus on the attitude and behavior of students, but students focus on the attitude and behavior of the teacher. "Good teachers display a variety of warm, human feelings that are telegraphed to students by a [genuine] smile" (Conti & Fellenz, 1988, p. 97). In the teaching-learning process, good teachers take into consideration the students' feelings. The actions of teachers in the classroom has a tremendous impact on the learning that does or does not take place (Conti & Fellenz, 1988).

In this study during the focus groups, there were 20 comments made by learners concerning the actions of teachers that helped facilitate their learning Problem Solvers, once again made the most comments (50%), and Accommodators made half that many (25%). The other learning style and learning strategies groups made very few comments accounting for the other 25%. Strikingly, the Divergers focus group did not make any comments in this particular area.

Problem Solvers are learners who have a preference for open-ended questions, examples, and problem-solving activities rather than multiple choice exams (Conti & Kolody, 1999, pp. 12-13) Problem Solvers in this study said that teachers are most helpful to them as learners:

when the teacher explains and demonstrates, this

> helps me to earn better.

> When the teacher ask questions to the students,
> this helps me to learn. When the student is
> permitted to ask questions to the teacher, this
> helps my learning.

Problem Solvers like to generate alternatives and asking
questions to the teacher or having the teacher ask questions
to the class is a way for these learners to satisfy this
need and explore alternatives. The need for active
experimentation by the Problem Solver is demonstrated in the
comment:

> The things that really help me at this college are
> the explanations and examples that lecturers give.
> Also, I learn better when they give me practice.

The second step of the program planning model involves
adult learners getting involved in the design of
instructional methods and curricula structure. If adult
learners are personally involved in the planning and
implementation of learning activities, they are more
interested in executing the activities and setting personal
goals to respond to the plans. Small cooperative groups
engaging in activity planning, subcommittees, and large
group discussions are effective tools to establish a
positive planning environment (Knowles, 1980, p. 226). At
Gambia College a minuscule amount of this type of planning
is occurring, but the participants are mainly instructors
and administrators.

The third and fourth steps of Knowles program-planning model involves conducting need analyses and setting objectives. The third step involves the participants involvement in diagnosing their own learning needs. Adult learners motivation increases when they are involved in the assessment and measurement of their present and desired performance outcomes (Knowles, 1980, p. 234). The fourth step serves to inspire learners as they participate in formulating their own objectives. Adults are more responsive to participation if the objectives are viewed as being relevant to their needs. This particular area of the program-planning was not observed at Gambia College and probably does not exist.

The fifth step involves integrating the identified needs of the learners and the set objectives into the development of chronological learning activities (Knowles, 1980, p. 234). These learning activities must address the needs and objectives set by the learner.

The final two steps of Knowles' program-planning model involve the implementation and evaluation of learning objectives. The sixth step establishes the importance of the educator as facilitator, guide, and resource to learners as they take part in all the tasks to complete a learning activity (Knowles, 1980, p. 239). The seventh step involves the evaluation, reevaluation, and review of the learning

process by the learner themselves. The ultimate test for learners is "whether they have learned what is useful to them" (p. 171).

At Gambia College, activities related to the sixth and seventh steps of this model are being done by some individual learners but not throughout the college as a program model. For instance, Navigators who are focused learners report:

> When I learn, I first plan. Then I identify specific problems, and I set a plan of action. Then I do the plan. The last thing I do is evaluate it on what I have achieved and make adjustments if necessary. I call this the "functional process".

During the focus groups and interviews, the impact of relationships was consistently reported. Relationships were seen as very important to the learning process. This factor could either be a positive force or a negative one depending if the relationship was good or bad.

For the Diverger and the Engager, relationships seems to be extremely important. Divergers have strong "imaginative abilities and awareness of meaning and values" (Kolb, 1984, p. 77). Divergers are able to see from many perspectives and can "organize many relationships into a meaningful "gestalt" (pp. 77-78). Comments like the following show how relationships are very important to Divergers:

> I like to take part in group studies where everyone has a part and there is a lot of interaction with others.
>
> It helps me to interact with other students.
>
> I like to consult with others in order to learn something.
>
> I like to interact with fellow students.

These learners are feeling-oriented individuals who are very interested in people and have great imaginations. A Diverger said, "I must feel free in order to learn." Another comment illustrating how feelings are involved in the Diverger's learning process is, "When a teacher encourages, me, I will excel in my learning. When a teacher discourages me, I am no longer interested in learning. A Diverger expressed an opinion about the teacher-student relationships at Gambia College:

> The teacher-student relationships at Gambia College are very cordial, and this helps me in the learning process. The lecturers here make the learning environment conducive to learning. I need this type of environment. Most of the lecturers are willing to explain and answer questions when you don't understand. I think the lecturers give students access to them and motivate students to work harder.

Another group of learners who find relationships in the teacher-learning transactions of upmost importance are the Engagers. Engagers are very active in the learning process. They usually have strong feelings and emotions that are involved in their learning and their interactions with those

who are a part of their learning environment (Conti &
Kolody, 1999). Teachers actions that helped Engagers
centered more around the relationships and feelings that
these learners encountered. For instance, an Engager says:

> When a teacher encourages me, I feel free to say
> anything, but if a teacher embarrasses me, then I
> will not try to contribute because I think that
> the teacher will criticize me.

> When I am recognized by the instructor or given
> distinction, it inspires me to continue to do my
> work.

In conclusion, one student summed up the need for a
learner-centered environment in the following statement, "If
a student is not given the opportunity to express their
ideas and opinions, then their hidden talents are not
revealed."

Chapter V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

<u>Summary of the Study</u>

Representatives from many countries convened at a conference more than a decade ago in Jomtien, Thailand, and made a resolution to provide basic lifelong education to all their citizens. Most African countries, including The Gambia, signed the Jomtien Declaration on Education For All (EFA) (African News Service On-linehttp://www.comtexnews. com). Nevertheless, as the twenty-first century began, African countries still have problems in their educational systems such as low enrollment, high dropout rates, and irrelevant curricula in its schools (Africa News Service On-line http://www. comtexnews.com). Nowadays, students must be prepared to be global citizens and equipped to function effectively in any society. In this century, technology and information dominate most societies, and education is crucial to keeping pace with the rapid changes which are occurring in the world.

Gambia College for many years has been the only higher education institution in The Gambia that trains teachers for the nation's schools. These teachers are responsible for the education of the children as well as the adults in their communities. Gambia College has only recently taken steps to investigate and explore adult education practices for

incorporation in both the teacher preparation programs and in the communities. The department head of the Population and Family Life department has the responsibility of establishing an adult education program.

In many developing nations, the education of adults is a national priority. Countries just cannot wait for their children and youth to obtain the skills and knowledge necessary to meet the urgent demands of national development:

> The education of the young is...a necessarily slow process. In this context adult education comes to play a very important part. Not because it is per se a quicker process—all developments that require a large degree of human change are slow processes— but mainly because it has time-saving and cost-reducing properties, such as a faster turnover rate. You do not need to grow up to use what you have learnt; the skills achieved can be used immediately. (Darkenwald & Merriam, 1982, p. 203)

In educating adults, much attention has been directed toward addressing individual differences by examining learning styles and learning strategies. Although the concepts of learning styles and learning strategies have been researched and employed in North America, little is known about how and if these concepts are relevant and are applied by adult learners in developing nations. Adult education is crucial to developing countries that seek to obtain the highest rate of return on their investments.

The concepts of learning styles and learning strategies

are essential to learners, especially those who are preparing to teach others. Developing nations such as The Gambia have not fully examined and implemented the adult education concepts of learning styles and learning strategies. Furthermore, adult educators, administrators and program planners at Gambia College are not aware of how these adult learning principles may enhance and facilitate the learning in the teacher preparation courses.

Therefore, the purpose of this study was to describe the learning styles and learning strategy preferences of students at Gambia College in West Africa and to describe the learners' perceptions of the actions of teachers that help and hinder them in the learning process. Goals identified were to discover the learning strategy preferences and learning style types of these teacher-preparation students. The study explored the learning styles and learning strategy preferences profiles for students at Gambia College based upon the student responses on The Learning Style Inventory (LSI) and Assessing The Learning Strategies of AdultS (ATLAS). Responses on the ATLAS were then compared to the responses of the group used to establish the norms. Then the responses on the LSI were contrasted to those on ATLAS. Lastly, an examination of the approaches to learning was conducted during interviews and focus groups for each learning style and leaning strategy

group.   In these sessions, learners also reported actions by the teacher that hindered or facilitated their learning.

This study used a descriptive design along with the information and data gathered from focus groups and interviews.   The study included students enrolled in the School of Education Primary Teaching Certificate and the Higher Teaching Certificate courses.

Summary of Findings

In this descriptive study, a representative sample of 412 learners participated. Almost three-fourths (70.6%) were males and about one-fourth (29.4) were females. Respondents ranged in age from 17 years old to 45 years old.   Of these in the study, 60% were pursuing a Higher Teacher Training Certificate and the remaining 40% were seeking the Primary Teaching Certificate.   Findings in this study were arranged in three areas: Learning Styles, Learning Strategies, and Teaching-Learning.

Learning Styles

Respondents' learning style types were categorized into four groups: Convergers, Assimilators, Divergers, and Accommodators based on their responses from the Learning Style Inventory (LSI).   The majority of the participants in this study fell into two groups: Assimilators 37.1% (153) and Divergers 37.4% (154) while the remainder of the participants fell into the other two style groups of:

Convergers 13.3% (55) and Accommodators 21.1% (50). The
vast majority of participants (over 90%) reported that the
LSI accurately identified their learning styles.

Two composite scores are also produced by the LSI by
combining the Abstract Conceptualization and Concrete
Experience (AC-CE) and Active Experimentation and Reflective
Observation (AE-RO) scores. The AC-CE score reflects how a
learner perceives or takes in new information and the AE-RO
score indicates how an individual processes the information
once it is taken in. The perception scale and the
processing scale are combined to determine the categorical
group or style quadrant of the respondent. In this study
these combined scores placed 75% (305) of the learners on
the Reflective Observation end of the scale, which are the
style quadrants representing Assimilators and Divergers.

Learning Strategies

All 412 participants took the Assessing The Learning
Strategies of AdultS (ATLAS) which placed them into one of
the three group of Navigators, Problem Solvers, or Engagers.
As in previous studies (Armstrong, 2001; Ghost Bear, 2001;
Hinds, 2001; James, 2000; Massey, 2001; Willyard, 2000)
using ATLAS, an overwhelming number of respondents (92%)
reported that ATLAS correctly identified their learning
strategy preferences. Participants in this study were just
about evenly distributed between the three groups.

Navigators accounted for 35.9% (148) of the respondents, 32.3% (133) were Problem Solvers, and the remaining 32.3% (133) fell into the Engagers group. These results are consistent with the expected distribution of ATLAS learning strategy preference groups: Navigators --36.5%, Problem Solvers--31.7%, and Engagers--31.8% (Conti & Kolody, 1999, p. 18). A chi-square goodness of fit indicated that the distribution of the students at Gambia College was not significantly different from the expected outcomes for ATLAS.

The relationship between the LSI and ATLAS groups was examined using a chi-square test for contingency tables and several analysis of variances. No significant differences were identified by either type of statistical analysis.

<u>Teaching-Learning</u>

Focus groups and individual interviews were conducted to further explore the perceptions and actions of Gambia College students and teachers. These interview sessions permitted learners to voice their perceptions and feelings about the learning-teaching process at Gambia College. Interviews of participants identified many individual differences among learners. Effective teaching practices which help facilitate learning and teaching practices which hindered the learning process were also reported during the focus groups and interview sessions.

To facilitate the education of the adults in any society, adult learning principles need to be examined and utilized. The problem for this study was conceptualized around three main areas. Those areas are concepts related to learning styles, learning strategies, and teaching-learning.

Learning Styles

Conclusions

Diverse learning groups as identified by the Kolb Learning Style Inventory exist among the students attending Gambia College.

The Kolb Learning Style Inventory is an instrument that accurately depicts learning styles preferences of Gambia College students.

Gambia College is attracting a preponderance amount of reflective thinkers.

As the findings from this study clearly disclose, all four learning style groups of Convergers, Assimilators, Divergers, and Accommodators as identified by the Learning Style Inventory (LSI) are represented in the population of students at Gambia College. The norms for the LSI were established by administering the LSI to 1,933 adults ages 18 to 60 years of age (Kolb, 1976). When continuous scores of the students at Gambia College are compared to the norms, the scores are consistent with the norms; however, there is divergence in the distribution and scores are bunched with a bell-shaped curve eschewed toward the Reflective Observation

side of the scale. Unlike the norms, the categorical scores show that 75% of respondents fell into either the Diverger (38%) and Assimilator (37%) groups.

Cognitive psychology emerged along side behaviorism and showed that the workings of the human mind are more complicated than previously believed from research studies done by behaviorists such as Skinner. It became apparent that learning for human beings was more complicated than the conditioning of laboratory animals (McKeachie, 1974). Cognitive styles are reflected in how learners perceive, remember, think, and problem solve. They are "characterized as consistencies in information processing that develop in concert with underlying personality trends" (Merriam & Caffarella, 1991, p. 175).

Learning styles is a term related to cognitive style yet differs from cognitive style because it focuses on the learner and the learning environment. Learning style is the "individual's characteristic ways of processing information, feeling, and behaving in learning situations" (Smith, 1982, p. 24). People are different, and these individual differences appear in learning environments.

Kolb's Experiential Learning Cycle and accompanying Learning Style Inventory (LSI) have 679 citations in the Social Sciences Citation Index between 1971 and 1989, indicating that both the model and the LSI have been

extensively analyzed, tested, and critiqued (Hickcox, 1991, p. 4). The majority of these critiques, especially those related to the use of the LSI in higher education, give positive comments about it value in determining learning styles. "Criticisms usually center on psychometric issues, and it should be noted that even the most critical studies of the LSI are not entirely unsupportive of the theory" (pp. 319-320). In this study, The Learning Style Inventory was used to identify the learning style profile of Gambia College students. Kolb (1984) defines learning as "the process whereby knowledge is created through the transformation of experience" (p. 41). This instrument is based on Kolb's Experiential Learning Model (Kolb, 1974, pp. 27-28). In this model, learning is viewed as cyclic, and the different stages of the cycle call for different cognitive skills. Learning starts with a concrete experience which the learner observes and reflects upon. This leads to the formation of generalizations which are tested in new situations, creating new concrete experiences and learning continues in this cycle (pp. 27-28).

During the focus groups and interviews, adult learners repeatedly said that the LSI accurately described their learning style. For Example,

I like to accept people and ideas until I learn differently and I get very involved in my

learning. The LSI reflected this. (Divergers)

Relationships are very important for me. The
relationships that I have both with my fellow
classmates and with the instructor are equally
important. LSI described me very well.
(Divergers)

LSI is correct for me because I learn by doing.
(Accommodators)

I like to think and analyze, and the LSI is a
correct indicator of my style of learning.
(Assimilators)

Moreover, the Learning Style Inventory indicated that
all learning style groups were represented at Gambia
College. However, the data from this study indicated that
the university attracted more Divergers and Assimilators
than Accommodators and Convergers.

Understanding how reflective thinkers approach learning
situations is a starting point in possibly understanding why
an extremely large amount of them are attending Gambia
College. The Reflective Observation scores tend to be high
for Divergers and Assimilators. High scores on the
Reflective Observation scale indicate a tentative,
impartial, and reflective approach to learning (Kolb, 1984).
High Reflective Observation learners are watchers and rely
heavily on careful observation. They prefer learning
situations such as lectures that allow them to become
impartial observers (Dixon, 1983).

An awareness of why reflective thinkers are

overwhelmingly attracted to Gambia College is knowledge that
can help those involved. One of the goals of education is
for learners to develop effective learning skills.
Educational experiences at the primary and secondary levels
teach individuals how to learn and are instrumental in
shaping individual learning styles (Kolb, 1984, p. 85). The
Gambia educational system is based upon the British
educational system which for the most part relies heavily on
lectures at all levels.

One explanation of why Gambia College is attracting a
disproportionate number of reflective thinkers is possibly
because the school system as a whole rewards this style of
learner. Perhaps reflective learners are more successful in
teacher-centered learning environments which are
characteristic of schools in The Gambia. Since learning is
such a complex process, Kolb (1984) explains that people
through experience program themselves to understand reality
"through varying degrees of emphasis on apprehension or
comprehension" (p. 64). Furthermore, this "self-programing"
which is adapted by experience "determines the extent to
which the person emphasizes the four modes of the learning
process" (p. 64).

The Active Experimentation (AE)-oriented learners,
which are under-represented at Gambia College, are learners
which rely heavily on "doing" or experimentation (Kolb,

1984). High Active Experimentation individuals learn best when they can engage in learning activities such as projects, presentations, and cooperative learning or group situations. They have a distaste for passive learning situations such as lectures (Dixon, 1983). The possibility exists that students with high Active Experimentation scores, which are represented by the Accommodator and Converger learning styles, are not as successful in primary and in particular secondary school; therefore, they may drop out of the Gambia school system before reaching the college level. The department head of the Population and Family Life Education department at Gambia College indicates that the highest drop out rate in The Gambia school system is right after ninth grade (Ndow, personal conversation, November, 2000).

<u>Recommendations for Learning Styles</u>

Methods for teaching learning style concepts should be developed at Gambia College.

Instruction in learning style concepts and techniques should be included in training programs for educators, administrators, and program planners at Gambia College.

Instruction in learning style concepts should be given to all students at Gambia College.

Students should be given the Learning Style Inventory and an explanation of learning style groups when they begin a course of study at Gambia College.

One of the goals of education should be to produce

lifelong learners (Smith, 1982). The Gambia has made a commitment to provide basic lifelong education to all their citizens. One of the underlying concepts of andragogy, which is the art of helping adults learn, is that adult learners have a self-concept of being responsible for their decisions and lives (Knowles, 1975). Another important concept about adult learning is self-directed learning.

When adults acquire meaning by means of a combination of processes and reflections, then they are engaging in self-directed learning (Brookfield, 1986, p. 47). The first type of self-directed learning is identified by the learner's utilization of techniques such as "specifying goals, identifying resources, implementing strategies, and evaluating progress" (p. 47). The second type of self-directed learning speaks of the learner reaching a state of internal consciousness which can lead to the learner contemplating "ways in which they can transform their personal and social worlds" (pp. 43-47). Self-directed learning is an essential principle of andragogy and is important both to the learner and the teacher alike (Knowles, 1975, p. 7). This form of learning rarely takes place in isolation or alone, but it occurs in coordination with others such as helpers, teachers, tutors, mentors, resource people, and peers (Knowles, 1975, p.18).

Since adults are learners who have a need to be more

self-directed in their learning, Gambia College can assist
its students by developing methods for teaching its students
learning style concepts. This may not only help them become
more effective learners, but then as the learners graduate
and assume their teaching positions in communities,
throughout The Gambia, these teachers will be familiar with
and have an understanding of how to teach their students
learning style concepts.

Adult learners need timely information that will help
them fulfill their roles in their families, communities and
workplaces. The fact exists that adults become ready to
learn things when they have a need in order to handle real-
life tasks or problems (Knowles et at., 1998). Adult
learners are also life-centered or problem-centered in their
orientation to learning (Knowles et al., 1998, pp. 64-68).
Therefore, by providing instruction in learning style
concepts for the entire community at Gambia College, the
needs of teachers and learners will be satisfied.

A major finding of this study is that a variety of
learning styles exists in the population of students at
Gambia College as indicated by the Learning Style Inventory
results. Consequently, all learners should be made of aware
of what their particular learning style is. If this is done
at the beginning of studies at the college, then learners
can be equipped with strategies and techniques which may

help their academic performance. Since "learning Style instruments are best used as tools to create awareness that learners differ and as a starting place for each individual's continued investigation of self as learner" (Dixon, 1985, p. 17), administration of the LSI to students at the beginning of their course of study is appropriate.

Although a group of learners are taught all the same way, "the learning process is not identical" (Kolb, 1984, p. 62) for all learners. The concept of learning styles "can be important in working with the diverse array of students entering higher education today" (Merriam & Caffarella, 1991, p. 177). The knowledge and practical application of learning styles can inform teachers, learners, and the institution itself of a concept which can help facilitate learning. Learning style inventories "have proved useful in helping both learners and instructors alike become aware of their personal learning styles and their strengths and weaknesses as learners and teachers" (p. 177). These learning style inventories are useful for identifying the learning style groupings, which then can subsequently be addressed properly in the learning process. Understanding various student leaning styles can be helpful in designing instruction that engages students by appealing to their particular learning abilities. Besides, the more knowledge gained about students' learning styles, the better

instruction can be designed that enables students to utilize

their strengths and not be confined by their learning

weaknesses.

<div align="center">Learning Strategies</div>

Conclusions

> Diverse learning strategy groups as identified by
> the ATLAS exist among the students attending
> Gambia College.

> Assessing The Learning Strategies of AdultS is a
> useful tool that accurately identifies and
> describes the learning strategy preferences of
> learners at Gambia College.

> No particular learning strategy group is more
> dominant than the others.

Results of this study indicate that all three learning style groups of Navigators, Problem Solvers, and Engagers as identified by Assessing the Learning Strategies of AdultS (ATLAS) are represented in the population of learners at Gambia College. In fact, these three strategy groups are fairly evenly distributed among the student population at the college. The Western norms for ATLAS indicate that in a given population the distribution should be fairly even between the three groups with the Navigator group having a slightly larger number (Conti & Kolody, 1999).

Additional descriptors for each ATLAS group of learners were identified by Ghost Bear (2001). In that study, Navigators are identified as "strivers" who continually "strive for improvement" (p. 369). Navigators work better with a definite plan. They are known to "plan the work and work the plan" (p.369). Problem Solvers are described as "storytellers" who when you "ask them what time it is [they] will build you a clock" (p. 371). Engagers are characteristically passionate about learning and actually love to learn. The phrase "it's fun!" is associated with the Engager group of learners (Ghost Bear, p. 373).

In a study of internet users engaging in auctions on

eBay, Ghost Bear (2001) ˝found more Problem Solvers were

represented. In a higher education setting at a specilized

college, Massey (2001) and Willyard (2000) discovered more Engagers. Unlike these studies, but similar to this study, several researchers found a fairly equal distribution of Navigators, Problem Solvers, and Engagers in the groups. Hinds used ATLAS in a study of learning strategies in an African-American community in Oklahoma and found an equal distribution of learning strategy groups. Studies of more universal populations resulted in a similar even distribution of learning strategy groups (Armstrong, 2001; Shumaker, 2001). This fairly even distribution was found in these two studies although the participants were international students.

The work of Durkheim who studied the similarity of groups presents a plausible explanation. The research of Durkheim focuses attention on "social-structural determinants" to explain why something happens in the society. Attention is given to the characteristics of groups and structures rather than those of the individuals (www.hewett.norfolk.sch.up/curric/soc/durkeim/durkwrk.htm). Mechanical solidarity prevails in artificial communities where individual differences are minimized and participants of the community are very much alike. Unlike mechanical solidarity, organic solidarity is the result of differences rather than similarities between individuals, and organic communities are the end result (www.hewett.norfolk.sch.up/

curric/soc/durkeim/durkwrk.htm). Conceivably, the reason the populations of the studies done by Ghost Bear (2001); Massey (2001); and Willyard (2000) indicate more of one particular learning strategy group is because these communities are artificial in nature compared to organic or natural communities. This distinction is most likely because of the specialization of the institutions represented in these studies. When more universal populations were examined in the studies of Armstrong (2001) and Shumaker (2001), a more even distribution occurred. Likewise, Hinds (2001) also found a natural or organic community in his study and a more even distribution of learning strategy groups. Gambia College is a state-supported school for education. Everyone who wants to become a teacher in The Gambia attend this institution. Therefore, the population at the college is more universal and there is a fairly even distribution of learning strategy groups.

The finding of this study about the usefulness of the ATLAS instrument is consistent with previous studies (Armstrong, 2001; Ghost Bear 2001; Hinds, 2001; James, 2000; Massey, 2001; Shumaker, 2001; Willyard, 2000) that utilized the ATLAS instrument to determine learning strategies among groups of learners. Respondents in these studies overwhelmingly reported that ATLAS accurately identified

their learning strategies. The characteristics associated with the three groups of learners of Navigators, Problem Solvers and Engagers, were consistent across the findings of all of these studies. This confirms that the original ATLAS groupings accurately reflect adult learners.

Recommendation for Learning Strategies

> Methods for teaching learning strategies concepts should be developed at Gambia College.

> Instruction in learning strategies concepts and techniques should be included in training programs for educators, administrators and program planners at Gambia College.

> Instruction in learning strategies concepts should be given to all students at Gambia College.

> Students should be given Assessing The Learning Strategies of AdultS (ATLAS) and an explanation of learning strategies groups when they begin a course of study at Gambia College.

The Gambia is committed to becoming a society of lifelong learners as indicated in the educational goals of the country. This commitment was evident in the signing of the Jomtien Declaration of Education for All by the president of The Gambia (African-News Service On-line http://www.comtexnews.com). This commitment was reaffruned at the World Education Forum in Dakar, Senegal in April of 2000 (UNESCO, 2000). The Head of the School of Education indicated that Gambia College has a commitment to meet te demand for teachers in The Gambia by training and certificating highly qualified teachers. In order to do

this effectively, new delivery mediums, curricula, instructional strategies, and methods are examined on an ongoing basis (Phillott, Personal Communication, 2000). The establishment in 2000 of the Population/Family Life Education department which will have as one of its responsibilities to address the learning needs of adults in The Gambia and to train teachers in the instruction of these adults shows the commitment of the college (Ndow, Personal Communication, 2000).

An explanation for the distinction between individual learners and their various approaches they take to accomplish a learning task exists in learning strategies (Conti & Kolody, 1999, p. 2). Nowadays, adult educators are examining the concept of learning strategies to gain understanding about individual learners. Learning strategies are techniques and skills that learners use when engaging in formal and informal learning situations (Conti & Kolody, 1999, p. 2).

The findings of this study support the use of learning strategies as a broad adult learning concept that can be utilized at Gambia College to enhance learning. The learning strategies used by students can have an effect upon their academic performance and "a learner's effective choice of learning strategies usually results in greater learning" (Conti & Kolody, 1999, p. 2).

ATLAS is an instrument that enables individuals to collect meaningful data on how adults learn. In order for adults to become lifelong learners who learn across the life span, they must become aware of how they learn and utilize strategies to facilitate their learning. ATLAS is a quick and accurate test to inform adult learners about how they learn. In this technological age with "breathtaking change, it is truly impossible to acquire early in life the knowledge that adulthood will require" (Smith, 1982, p. 15). Understanding learning strategies, gaining self-knowledge, and becoming aware of processes one undertakes in the learning process "helps us to control these processes and gives us the opportunity to take responsibility for our own learning" (Nisbet & Shucksmith, 1986, p. vii). Despite the efforts of educators, it is the learner who determines the degree of acquisition, interpretation, or assimilation of information (Knowles, 1970, p. 42).

The implementation of learning strategies instruction and training will provide a way for Gambia College to move from a overwhelmingly teacher-centered learning environment to a learner-centered environment that is more conducive for adult learners and which promotes understanding of learning differences and addresses individual learning needs. A 45 year-old Problem Solver/Diverger student who has taught in the Gambia school system at various levels for the past

twenty-four years, and is back at the college to change his

certification made the following comment:

> I recommend that the college incorporate adult
> learning principles. It will help motivate and
> better teach students. I believe the use of adult
> learning principles can challenge the good
> students and help with classroom instruction and
> management by giving the students their learning
> strategies and learning styles.

Learning Styles and Learning Strategies

Conclusions

> Learning styles and learning strategies are
> concepts that are not culturally bound but are
> cross-cultural concepts.
>
> Learning styles and learning strategies are broad
> concepts related to learning and are not just some
> concepts created and unique to North America.
>
> Learning styles and learning strategies are
> separate concepts.
>
> Individual differences exist and can be
> conceptualized around learning styles and learning
> strategies.

Adult education takes on various forms and differences

depending on the country. Nevertheless, common threads

emerge when emphasis is "placed on the learning of adults"

(Darkenwald & Merriam, 1982, p. 190). Learning styles and

learning strategies are basic adult education learning

concepts which can be used to address the unique differences

of adult learners. Learning strategies differ from learning

styles. An individual's learning style refers to fixed

traits and innate methods used by the learner to process

information (Fellenz & Conti, 1989, p. 7) and have a tendency to be rather stable across the life span. Learning strategies, on the other hand, are more variable and contextual (Conti & Fellenz, 1991, p. 64). These learning strategies are "more a matter of preference; they are developed throughout life and vary task by task" (Fellenz & Conti, 1993, p. 4).

The Learning Style Inventory, which is based upon the theory of experiential learning, has been translated into French and Spanish and used in studies with non-Western cultures. The implication is that learning styles is a concept that applies not only to Western European groups but also to Spanish and French speaking cultural groups made up of people who have a different perspective.

Learning strategies have been conceptualized around five areas of learning: Metacognition, Metamotivation, Memory, Critical Thinking, and Resource Management (Conti & Kolody, 1999, p. 3). These five fundamental areas are identified by the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) instrument. SKILLS uses real-life learning scenarios such as assembling a bicycle or caring for a sick relative as a means to determine individuals' learning strategies (Fellenz & Conti, 1993). The validity and reliability of SKILLS as an instrument for measuring learning strategies of adult learners has been

documented (Conti & Kolody, 1999, pp. 16-20). SKILLS has been used in various studies related to the learning strategies of adult learners (James, 2000, p. 66).

In an examination of self-directed adult learning on the Internet, Spencer (2000) discovered an unusually larger number of Problem Solvers than expected. Similar results were discovered by Ghost Bear (2001), finding significantly more Problem Solvers in a study about adult learners participating in the eBay auction site on the Internet. Hinds (2001) examined the learning strategy preferences of a rural African-American community in Oklahoma and found that the learning strategies of this group of respondents was consistent with the ATLAS norms. The leaning strategies of adult learners at a state specialized university in Oklahoma was studied by Massey (2001) who discovered more Engagers and less Navigators in a representative sample of the school. Perhaps "this university is systematically driving away Navigators and attracting Engagers" (p. 151). In a similar study, Shumaker (2001) studied the learning styles and learning strategy preferences of international students from 13 different nations who were enrolled in an intensive English language school. The analysis of this study revealed that the ATLAS learning strategies groups were fairly evenly distributed between the three groups of learners. This finding is consistent with the expected

results based on the norms developed for ATLAS. Although the population in this study was made up on students from 13 different cultural groups, the results are fairly identical with the North American normative group.

Research in the area of learning strategies with diverse populations indicate that this is a concept that is not culturally bound but rather that it is a cross-cultural concept applicable to any group of learners. Although the majority of the populations studied using ATLAS have been in North America, the learning strategy preferences of the adult learners at Gambia College were statistically similar to those of the expected norm form ATLAS.

Learning Styles/Learning Strategies Recommendations

Gambia College should implement learning styles and learning strategies instruction.

Instructors at Gambia College should be trained on how to determine and accommodate for learning styles and learning strategies of students.

Instructors at Gambia College should incorporate instructional techniques and strategies that reflect adult learning principles.

Both concepts of learning styles and learning strategies are concepts which seem to be more generic and universal than just Western concepts and therefore may be an intrinsic part of the overall adult learning process. Learning styles and learning strategies can serve to facilitate adult learning in any culture. The knowledge and

use of learning styles and learning strategies offer adult educators and adult learners a way of effectively addressing individual differences .

A case study conducted in Nigeria with college lecturers in the department of education about effective teaching in African universities revealed that virtually all lecturers reported the highest need for development is a need to learn about "students' learning styles, characteristics, and needs", followed by a need to improve instructional strategies by experimenting with different teaching techniques. (Sunal & Haas, 1998, p. 63). All learners in this study were adult learners participating in higher education. Incorporation of the concepts of learning styles and learning strategies can serve to address the needs of addressing individual differences of these adult learners and improving instructional strategies that were identified in the case study in Nigeria.

<u>Teaching-Learning</u>

<u>Teaching-Learning Conclusions</u>

Adult learners carry scars from past educational experiences to higher education.

The learner-centered approach is a natural desire of learners even in higher education.

Learners at Gambia College reflect a desire to be taught in an atmosphere that supports basic adult education learning principles.

Students at Gambia College are concerned about how

the environment is negatively impacting their learning.

Brookfield (1986) suggests that there are six principles to effective practice that apply to the adult teaching-learning transactions. These six principles are voluntary participation, mutual respect, collaborative spirit, action and reflection, critical reflection, and self-direction (pp. 10-11). These principles apply to the learners at Gambia College.

Adults participate in learning activities to address a need that exist in their lives. Thus, the motivational level of adult learners are usually high. Since this participation is voluntary, adult learners can easily withdraw if they believe that the activity does not meet their needs. Learners at Gambia College are attending because they desire a career teaching in the school system or because they want to upgrade their teaching skills. The average age of these learners in this study was 24 years old, therefore they are at the beginning of their careers. Motivation to succeed and get one of the best jobs in The Gambia to provide a good lifestyle for their families is consistent among the learners. One student reported:

> I wanted to go to a university but because of a
> lack of finances I had to accept the invitation to
> study at Gambia College but now I see that it will
> be beneficial for me to learn to teach. Being
> here is also helping me develop my personality. I
> used to be an introvert but since coming to the

college, I talk with other students and
participate in class and my self-confidence is
increasing. I am really motivated to so well.

Since participation is voluntary, adult learners can
easily withdraw if they believe that the activity does not
meet their needs. The learners in this study did not speak
of leaving the program.

Mutual respect for each others self-worth is a
principle of effective practice. Adult learners need to
know that they are "valued as separate, unique individuals
deserving of respect" (Brookfield, 1986, p. 13). The
environment needs to be free of any emotional or physical
abuse. An analysis of comments of adult learners in this
study indicates that many of them are carrying scars from
past educational experiences although they have progressed
to higher education. The experiences of beatings and
threats in primary school have some learners apprehensive
about learning. One of the factors identified in research
about barriers to participation is "negative experiences
with educational activities (Merriam & Caffarella, 1991, p.
87). Adult educators must ensure that learners are valued
for their uniqueness and given respect (p. 13).

A collaborative spirit is another effective practice in
teaching-learning transactions. This collaboration between
learners and facilitators centers around "assessing needs,
and generating objectives, methods of learning, and

evaluative procedures" (Brookfield, 1986, p. 12).
Participants in the learning activity can assume different
roles at various times. At Gambia College the students
reported that the teacher-centered learning environment was
not one where they were asked or felt free to contribute
ideas, but they were told what to do by the lecturers and
the administration the majority of the time. Although some
expressed a need and a desire to make contributions.

Action and reflection are also critical to effective
practice. This principle focuses on the need to engage
learners in "a continuous and alternating process of
investigation and exploration, followed by action" resulting
from these inquiries and probes (Brookfield, 1986, p. 15).
The term "praxis" is associated with this process of
investigation and exploration by teachers and learners and
was exhibited in the literacy work by the Brazilian-educator
Paulo Freire (Brookfield, 1986, p. 15).

Effective practice in adult education should promote
critical reflection. This principle is characterized by a
student-centered approach to learning, which "assigns to
learners the responsibility for assessing needs, identifying
educational aims and objectives, and generating evaluative
criteria" (Brookfield, 1986, p. 16). Critical reflection
involves the adoption of a "critically aware frame of mind"
(p. 17) that will "challenge existing norms, practices, and

structures" (p. 18).

At Gambia College the effective practice of action and reflection was not evident. This particular practice finds expression in a student-centered approach to learning since the principle approach to learning at Gambia College is teacher-centered, this practice has not found expression.

The last principle of effective practice seeks to assist adults to become self-directed learners. In self-directed learning, adult learners take responsibility for setting their educational goals and developing evaluative measures. "Unless an external source places before us alternative ways of thinking, behaving, and living, we are comfortable with our familiar value systems, beliefs, and behaviors" (Brookfield, 1986, p. 19).

An analysis of comments made by adult learners in this study indicates that many of them are carrying scars from past educational experiences although they have progressed to higher education. The experiences of beatings and threats at the primary level have made some of the learners apprehensive about learning. One of the factors identified in research about barriers to participation is "negative experiences with educational activities" (Merriam & Caffarella, 1991, p. 87). An effective practice of adult education identified by Brookfield (1986) is mutual respect. Facilitators of adult education must ensure that learners

are valued for their uniqueness and given proper respect
(p.13). Educators who are disrespectful to learners and
habitually embarrass them publicly will create learners who
are intimidated and perhaps be unable or unwilling to learn
(Brookfield, 1986, p. 13).

Research with Native American learners at tribal
community colleges found that good teachers were identified
as those that "respect a student's dignity while helping in
the learning process. They create a caring atmosphere with
individual attention where learning is fun" (Conti &
Fellenz, 1988, p. 96). On the other hand, bad teachers were
identified as those that create barriers between the
learners and themselves and restrain questioning and
personal development (p. 96). Bad teachers were identified
as producing "negative forces in the lives of students" (p.
101). Learners are left with "long enduring scars" from the
actions of bad teachers (p. 101). The embarrassment and
abuse inflicted by the bad teacher created insecurity,
anger, and low self-esteem in learners whenever they engage
in learning.

In this study, learners indicated that the beatings and
the embarrassment they suffered in primary classes did not
enhance their learning. Instead, it did just the opposite;
it hindered their learning. The vivid explanations and non-
verbal expressions of these incidents indicated that these

learners had personally suffered by the behaviors of bad teachers. Moreover, even though they are now adults, these learners are carrying the negative remembrances of these events.

Some learners are experiencing more negative practices at Gambia College. A number of adult learners at Gambia College report that there are some lecturers who never give encouragement and discourage any type of questioning. Although from the learners comments, most lecturers were identified as being helpful and cooperative, some were seen as being uncooperative and disrespectful of students.

For example, a comment by a learner addressed this area.

> Teachers who put me down or discourage me really make me feel bad and I'm not motivated to learn. (25-year old male, Engager, Diverger, PTC)

The person making this comment is an Engager and this type of learner is very sensitive to whether they are respected and valued as an individual. They learn with feeling and they must feel that they are respected and valued because it is linked to their motivation to continue with the learning activity. This individual also has a Diverger learning style and research indicates that this kind of learner is interested in people and tend to be emotional as well as imaginative (Kolb, 1984).

Another learner made a similar comment:

It helps me to learn if the teacher talks in a simple and polite manner. It is easy for me to link myself with him. (Assimilator)

Although the Assimilator learning style is not characteristically interested in people, because this is an adult learner, the mutual respect and need to be valued is evident.

The organization and facilitation of adult learning has been widely addressed in Knowles' (1980) andragogical model of instruction. The concept of andragogy for helping adults learn is essential to the field of adult learning and education. This model of adult learning is learner-centered instead of instructor-centered. Traditionally, instructors use teacher-centered instruction with learners of all ages (Knowles, 1980, p. 40). In the andragogical model, the adult learner is considered to be a mutual partner in the learning process.

Self-directed learning is also a concept that is essential to adult learning and education. Knowles (1975) described self-directed learning as:

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

Extensive research of successful self-directed learning has been conducted by Brookfield (1986). The two forms of

successful self-directed learning identified by Brookfield are the employment of a variety of techniques and an internal change of consciousness. Adults have a strong desire to be self-directed in their learning because the self-concept of an adult learner creates a need for them to be responsible for their own decisions and for their own lives (Knowle, et al., 1998, p. 65). Self-directed learning is a "matter of learning how to change our perspectives, shift our paradigms, and replace one way of interpreting the world by another" (Brookfield, 1986, p. 19). Although the learner-centered approach is critical to adult learning, "adult learning in formal settings, for the most part, is still instructor designed and directed" (Merriam & Caffarella, 1991, p. 26).

At Gambia College the overwhelming majority of instruction is lecturer-centered. Comments made by participants report that about 90-95% of instruction is given by lectures. In addition, an analysis of comments made by students at Gambia College indicate a desire to be taught by adult learning principles. The concept of learning how to learn is also important in the field of adult education. Smith (1990) emphasizes a need for a paradigm shift which "links teaching and learning in a reciprocal and collaborative manner--a transaction--but also links teaching and learning to learning to learn" (p. 25).

In this approach, teaching becomes more learning-centered and accordingly learning-to-learn-centered (p. 25). A learner-centered instructional approach incorporates basic adult learning principles of andragogy, self-directed learning, and learning how to learn.

Numerous comments were made about the negative elements in the environment at Gambia College. In their comments about the facilities, the students indicate that classes are overcrowded; that there is a shortage of resources such as books, computers, and reference materials; and that disruptions are daily happenings. Students report that two students must sit on a chair designed for one student or three students must crowd into a chair made to accommodate two students. They report this as being uncomfortable and a hindrance to their learning. Furthermore, daily disruptions occur because students who come in late must go to another classroom to get a chair and bring it to the class in order to have a place to sit. Students indicate that these distractions hinder their learning especially since the class is a lecture class and listening without any interference is a must.

Many students commented about the lack of adequate resources. Statements indicate that computers and textbooks for student use are virtually nonexistent. In addition, library resources are extremely limited. For instance,

learners explain how lecturers give library research
assignments and one hundred students must sometimes compete
for the use of the one book that the library has in order to
complete their assignment.

Teaching-Learning Recommendations

> Consideration should be given to removing negative
> environmental factors in order to create a climate
> that is physically and psychologically conducive
> to and supportive of adult learning.

> Adult learning principles and concepts should be
> included in training programs for educators,
> administrators, and program planners so that they
> can begin to see the relationship between content
> and process.

> Instructional strategies for teaching adults
> should be taught to instructors and utilized in
> classes.

> Learning styles and learning strategies should be
> incorporated in the teaching-learning process.

> A dilemma exist and it poses a challenge to The Gambia

and other sub-Saharan African nations.

> International competitiveness requires
> flexibility. It needs workers who can be trained,
> retrain, can handle abstract complex tasks, and
> can cope well with change. It has been predicted
> that sub-Saharan Africa will see less economic
> growth in the near future than will other parts of
> the world. Without an effective cadre of workers,
> quick economic growth cannot occur. Without
> economic growth, it will be impossible to fund the
> training of teachers and the development of
> materials that foster the growth of overall
> thinking abilities of students.(Sunal, 1998, p.
> 28)

People make the comment that the world is getting
smaller and smaller. What is really happening is that the

world is becoming more connected. In the world today, it is no longer popular for an individual to be trained in one particular area and work at that until retirement. There is a need for laborers who know how to learn and can be trained and retrained and cope with abstract and complicated tasks. The technological advances are causing the world to rapidly change. If countries and especially African countries are going to keep up with this rapid rate of change which effects their development and economic health, they must be highly effective in educating and training their citizens. Without such workers, economic growth will be hindered and with economic growth, the money will not come in that is needed to fund the educational institutions and programs of the country.

Learning can be taught through the use of various processes, perceptions, and capacities. A learner can "learn how to learn more effectively and efficiently" (Knowles, 1970, p. 15). Most learners "know how to be taught; [but] haven't learned how to learn" (p. 14). In this twenty-first century and those beyond, learners at all levels must engage in learning processes that teach them how to become competent lifelong learners with the ability to meet the demands of a rapidly changing world. Adult educators have a responsibility to facilitate the learning of adults, especially those who are entering the teaching

profession and becoming key players in teaching-learning transactions.

Commencement

Adult learning principles transcends cultural and geographical barriers. These principles definitely apply to developing nations like The Gambia as confirmed in the concepts of learning styles and learning strategies as well as the principles of andragogy and the principles of effective practice for the teaching-learning transaction. These basic adult learning principles are generic and apply universally across diverse cultures. The adult learning principles clearly support the statement by Glasser (1994), in "Teach Students What They Will Need in Life":

> Except for those who live in deepest poverty, the psychological needs--love, power, freedom, and fun--take precedence over the survival needs, which most of us are able to satisfy. All our lives we search for ways to satisfy our needs for love, belonging, caring, sharing, and cooperation. If a student feels no sense of belonging in school, no sense of being involved in caring and concern, that [learner] will pay little attention to academic subjects. (Tileston, 2000, p. 1)

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APPENDIX

Oklahoma State University
Institutional Review Board

Protocol Expires: 4/4/02

Date : Thursday, April 05, 2001   IRB Application No   ED0177

Proposal Title: THE APPLICATION OF THE CONCEPTS OF LEARNING STYLES AND LEARNING
                  STRATEGIES IN A DEVELOPING NATION

Principal
Investigator(s) :

Armada C. Pinkins   Gary Conti
1545 E. 67th Pl So.   206 Willard
Tulsa, OK 74136   Stillwater, OK 74078

Reviewed and
Processed as: Exempt

Approval Status Recommended by Reviewer(s) : Approved

Signature :   *Carol Olson signature*

                                              Thursday, April 05, 2001
Carol Olson, Director of University Research Compliance   Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modifications
to the research project approved by the IRB must be submitted for approval with the advisor's signature   The IRB office
MUST be notified in writing when a project is complete. Approved projects are subject to monitoring by the IRB. Expedited
and exempt projects may be reviewed by the full Institutional Review Board.

VITA

Armada C. Pinkins

Candidate for the Degree of

Doctor of Education

Thesis: THE APPLICATION OF THE CONCEPTS OF LEARNING STYLES AND LEARNING STRATEGIES IN A DEVELOPING NATION

Major Field: Occupational and Adult Education

Biographical:

Education: Graduated from Walton High School, Bronx, New York in June 1971; received Bachelor of Science degree in Health and Physical Education from University of Connecticut in Storrs, Connecticut in June 1975; received Masters of Arts degree in Human Relations and Management from Webster University, St. Louis, Missouri in December 1979; received Masters of Arts degree in Education from Oral Roberts University, in May 1997, in Tulsa, Oklahoma. Completed the requirements for the Doctor of Education degree with a major in Occupational and Adult Education at Oklahoma State University, Stillwater, Oklahoma, in December 2001.

Experience: Employed at University Language Institute as an Instructor of English as a Second Language.

Professional Memberships: National Association of Teaching English to Speakers of Other Languages, Oklahoma Association of Teaching English to Speakers to Other Languages, Oklahoma Adult Basic Educators, and Phi Kappa Pi Education Honor Society.