

ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF DEVELOPMENTAL PSYCHOLOGY

PERSONALITY TYPE AND LEARNING STYLE AS CORRELATES OF ACADEMIC
ACHIEVEMENT: THE CASE OF HIGH SCHOOL AND PREPARATORY SCHOOL
STUDENTS IN WAYUTUKA WOREDA

BY DINKA BEKELE

JUNE, 2013

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BY DINKA BEKELE

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Abbreviations

AE	Active Experimentation
AC	Abstract Conceptualization
ANOVA	Analysis of Variance
CE	Concrete Experience
RO	Reflective Observation
IQ	Intelligence Quotient
LSQ	Learning Style Questionnaire
PTQ	Personality Type Questionnaire

Abstract

Because adolescence typically is a time of preparation for adult roles, considerable attention has been paid to the development and expression of achievement during adolescence. Different research outcomes indicate that personality types and learning styles play a role in determining students' achievement. Therefore, the present study was aimed at the investigation of the effects of some personality types and learning styles on high school and preparatory school students' academic achievement. More specifically the major concern of this study was to examine the relationship between personality types and academic success; Learning styles and personality types and Learning styles and classes. Moreover, it also tries to identify whether there is the most preferred learning style among high school students and whether there is significant difference among learning styles on the basis of academic achievement.

For the study 330 high school and preparatory school students were randomly selected from Wayutuka woreda. Data on personality types and learning styles were obtained from personality types and learning style questionnaires administered to the participants. Data concerning academic achievement of the students was obtained from the high schools record office. Data were analyzed using statistical tools like Pearson product moment correlation coefficient, one way ANOVA & percentage. The result of the statistical analysis displayed significant relationship between personality type and achievement, significant relationship between introvert personality type and reflective learning preference and significant relationship. The result obtained using percentage to differentiate the most preferable learning style at high school level showed reflective learning style as the most preferred while activist was the least preferred. One way ANOVA was computed to see whether there is significant difference on the students' academic achievement due to learning styles and the result revealed that reflective learning style was the best preferred. It was concluded that personality type and learning style along with factors like intelligence and achievement motivation can determine achievement at high school level. Finally it was suggested that teachers should have an awareness of individual difference in learning and appreciate this diversity and treat students accordingly for instance by encouraging introvert students actively participate in learning activities to make them complete whole person.

CHAPTER ONE

INTRODUCTION

1.1. BACKGROUND

The biological, social and Cognitive transitions during adolescence imply that there is need for adjustment by adolescents to the changes either by accommodating or assimilating them. The transitions also imply that there arise frustrations and stresses of different degree and nature which in turn demand adolescents to adapt to them and control, as well as the significant persons' intervention and control of the stressors (Steinberg, 2002).

The other implications of the transition that made the period of adolescence focus of research are that the period on itself is vibrant or unsettled. It is the period when immaturity of childhood is passed by and the maturity of adulthood is not yet. Hence, extensive intervention and study are highly needed to help youngsters adapt or adjust to new period and settle down with the inconveniencies or frustrations, and lay firm foundation for the forthcoming period of adulthood.

Achievement as one of psychosocial development issues during adolescence needs the attention of researchers. This is because the period of adolescence is the time when young people are making transitions from childhood to the period of adulthood, which needs self motivated and responsibility holding for one's own life. Achievement is also worth given due attention at this period due to the fact that it incorporates the different aspects of individual's life events related to future life and career goals. That is the person's future life as related to career choice is determined by the extent of achievement one reaches at early period of life. It determines which direction in life individual will take related to career and life style in general. Hence, study of achievement at this period is very worthy of attention since it helps in shaping young people's future life especially related to career choice and living standard as a whole Steinberg, 2002).

Studying achievement as one of the developmental issues during adolescence involves assessment of influencing factors whether promoting or inhibiting. There are so many findings stating these factors that include motives, interests, intelligence, socio-economic status and

others like individual differences or personality type and learning style preferences (Feldman, 2000 & marton, 1986 cited in Badford, 2004 and Asefa, 2005).

It is obvious that, the motive for achievement is very crucial in shaping ones success in academic performance. Hence, it is worth that learners possess drive to achieve. Studies also reveal that socio economic status has positive and significant correlation with academic achievement. It was found that learners from higher socio economic class parents achieve more than those from low socio economic class. Interest in achievement is also decisive as it helps in putting drive for achievement forward. That is, achievement motive and interest are related factors in shaping academic achievement.

Intelligence is highly correlated with achievement i.e. it enhances high performance and thereby high achievement on school activities. Individual differences or personality types are also found to correlate with achievement together with the learning style preferences. And they are given particular emphasis in this work that all efforts here are about. There are very few findings reporting the impact or relationships of the two factors (personality types and learning styles) with academic achievement in Ethiopia. It is the intention of the practitioner that the present attempt in this work contributes a bit to finding related to investigation of these variables and their correlation.

In studying achievement as one of adolescent issues, it becomes imperative that factors responsible for it are studied. This is why this study is conducted to deal with the variables learning styles and personality types in relation to performance and achievement. In many studies the findings reveal that they correlate with academic achievement. It was intended by the researcher that the finding of the study would explore certain fact about the correlation of the variables with academic achievement and this in turn would result in awareness creation about individual differences in learning style preferences. Hence, differential treatment of learners by considering individual differences in educational institutions at least in the area delimited by this study.

1.2. Statement of the problem

Academic achievement is the outcome of education - the extent to which a student, teacher or institution has achieved their educational goals. This is commonly measured by examination or continuous assessment. An academic achievement can be defined as excellence in all academic

disciplines, in class as well as extra- curricular activities. It includes excellence in sporting, confidence, behavior, communication skills, punctuality, assertiveness, arts, culture and the like. An academic achievement can also be defined as something you do and or achieve at school, college or universities- in class, laboratory, library or field work (A. Ward, 1996 Feldman, 2000 & Madem, 2001).

Because adolescence typically is a time of preparation for adult roles, considerable attention has been paid to the development and expression of achievement during adolescence. Broadly stated, Achievement concerns the development of motives, capabilities, interests and behavior that have to do with performance in evaluative situations (Steinberg, 2002).

More specifically, the study of achievement during adolescence has focused on young people's educational ratings and on their hopes and plans for their future scholastic and career or occupation. Since young people form their first realistic educational and vocational plans during adolescence, researchers have long been interested in the factors that play great role in influencing individuals' achievement.

One of the many important questions in the study of adolescent achievement therefore, concerns factors that distinguish between young people who are successful and those who are not (Master et al. cited in Steinberg 2002).

Since adolescents achievement is one of the very important factors contributing to the future career or occupation and life goals in general, it becomes imperative to assess and investigate the factors correlating with or affecting whether promoting or inhibiting ones, which could be motivation, intelligence, learning style preference , personality types among the many others.

Personality type is the unique characteristic trait that is relatively stable and enduring for indefinite period of time. They are likely to influence individual's attitude and behavior towards information seeking. As to many scholars they are found also to influence the learners' preferred way of approaching learning materials and /or situations, called learning style. Knowing ones personality type helps in planning for activities that take the advantage of one's own natural skills and inclinations (Briggs as cited in Williams, 2004 cited in Aseffa, 2005).

Some students feel comfortable with working in groups. While others work alone and in solitary activities, some value basic assumptions, principles, theories, models and systematic thinking while others prefer to be practical down the earth (Handy, 1994 cited in Asefa, 2005).

Hence having knowledge of one's personality type leads to improvement of one's own thinking and problem solving strategies. This paves the way for goodness of fit that results in both better success and adjustment in high schools and colleges.

This shows that students learn better when they use their personal learning preference, and teaching is also better when range of methods is used to address various preferences. Therefore, instructors should pay considerable attention to this individual difference while they are planning for teaching. This helps students to be effective and successful in their learning which in turn may contribute to their better academic success (Broun, Bull and Pendle Burry 1997).

Similarly, learning style, which is the preferred way of approaching learning materials and acquiring knowledge, is also determining the degree to which an individual will succeed in performing school tasks and achieve academically. These preferred ways of learning are also found to be determined by the personality type of an individual. This shows that the two variables overlap. This overlap may contribute to students' academic achievement if it fits appropriately, i.e. when there is good match between pupil's personality and learning style preference. Therefore, it is essential to investigate the relationships between these variables. (Richard and Wiggly, 1996).

This study is intended to investigate the relationship between these variables and their impact on academic achievement among adolescents attending senior high schools in the specified area. The intention behind this study is to assess the factors correlating with the so called, "achievement", which is one of the psychosocial development issues during adolescence. Achievement is at the centre of the task, that it is focused in the study. The problem as it is read seems to be 'educational issue', but it is developmental as achievement is something developmental in nature, that it is studied under the themes of development during adolescence. Achievement is something of changing or progressing nature. As for instance it is undergoing change or improvement over times if an individual (learners) maximizes or improves the strategies and method of learning and efforts put forth in the movement of academic success. For

example, improving study habits, appropriate time management good instruction, attractive school environment and favorable socio-economic condition and intelligence can shape or mold achievement. Therefore achievement is something developmental in nature. The fact that it contributes to the future career and life goals is also evident in categorizing it under developmental issue.

Having focused on these issues as one aspect of development, it is worth and imperative to study the correlating factors in order to get knowledge and understanding of the ways of promoting it. Here is needed to assess the promoting and inhibiting factors.

These factors-personality type and learning styles - are considered out of reason by the researcher. It is my observation for years even a decade or more - of the nature of individual learner i.e. "their personality" in literal terminology, that initiated me to plan this study, especially those better performing and better scoring in class activities and tests. As far as my observation concerned majority of those better performing and better scoring were those who are quite, low in class room participation, relatively poor in social relationships, serious, socially precise, prefer reading books and other materials to talking or discussing or chatting with people. This type for sure embarrasses me as student. I also believe that, I prefer theory and principles rules and reflecting on ideas, lecture, texts books or any other materials whether after reading and (or writing) and listening. In this case, I tried to categorize my learning style be most of reflector and theorist as well. Therefore, I matched to myself to the kind of people who listens than speak, and who wants to reflect on ideas after carefully and quietly repeating to myself.

Thus in examining the correlation existing between and among the variables, this study tries to answer the following basic research questions.

1.3. Research Questions

1. Is there significant correlation between the variables personality type and learning styles on one hand, and academic achievement of the adolescents?
2. Which personality type is associated with better performance among the adolescents?
3. Is there significant difference among the learning styles in terms of their impact on academic achievement?
4. What is the learning style best preferred among the learners?

1.3.1. Objectives of the Study

The general objective of this study is to investigate the inter correlation between the independent variables personality type and learning style on one hand, and their correlation with the dependent academic achievement on the other, by describing and analyzing the difference between the levels of the two main independent variables on the basis of their correlation with the dependent variable academic achievement.

The specific objectives of the study are to:

- ❖ Investigate the correlation or relationship between the variable of Personality types and academic achievement
- ❖ analyze the extent to which learning style correlates with the academic achievement
- ❖ examine the inter correlation between personality types and learning styles and
- ❖ assess the difference between learning styles on the basis of their correlation with academic achievement of the specified study population.
- ❖ finally identify the best preferred learning style by the learners.
- ❖ Presents the kind of relationship between each level of learning style and that of personality type.

1.4. Operational Definitions

Academic achievement:- The students' average score on first semester examinations.

Personality type: - the two types of personality or individual

characteristic trait designated as extrovert and introvert

Extrovert personality type: - personality type of an individual with

interest to attach and discuss with people

rather than being alone.

Introvert Personality type: - Personality type of individual who prefers

to be alone and interested with his/her thoughts

than with people.

Learning style: - Preferred manner of involvement or participation in learning situations.

Activist: - a type of learning style that involves active participation and discussion

Theorist: - a type of learning style that prefers reading or studying theories, concepts, assumptions and ideas and acquire knowledge likewise.

Reflector: - A type of learning style characterized by observation, listening to lecture and more of independent work and reflection on ideas or phenomena observed.

Pragmatist:- A type of learning style that deals with practical problem solving and laboratory experiment

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Overview

Achievement as one of the very important adolescent developmental issues has got great attention from the modern world career and life goals of the young people. When focusing attention on adolescent academic achievement, it becomes imperative to investigate the factors determining its development and improvement. This study was designed to investigate the correlating factor with adolescent academic achievement. There are so many factors that are correlating with academic achievement including socioeconomic status, intelligence, motivation, home environment related factors, individual differences, learning style preferences, etc. In this study, personality type and learning style preferences are hypothesized to intervene achievement the same way they were found in other contexts by scholars, and become the interested and focused out of the many correlating factors.

Personality is relatively enduring and stable unique characteristic trait of an individual that dictates the ways in which individual think, feel and behave. That is, each individual has his or her own unique way of approaching the surrounding world determined by the personality traits (Lifter A. Lefton, 2001).

Research findings provide evidence that these personality traits determine the way individual approaches learning activities just the same way they influence our interaction with the world outside and our own internal world. It is also evident that learners are classified based on their personality type and accordingly engage in academic performance or school activities in different ways that fit their preferences. This classification is one that puts learners under the extrovert :- the outgoing , sociable, expressive – type and introvert :- the inward looking, shy, ones who deal with their own thought rather than with people and things – who are found to be high academic achievers in most cases.

It is also found that the preferred ways individual learns – technically defined as ‘learning style’ – correlate with academic performance and achievement in schools and colleges. Hence, there can be overlap between personality types and learning style preferences of an individual in determining the extent of academic performance and achievement.

2.2. Meaning, Nature and Implications of Academic Achievement, Learning Styles and Personality Types

2.2.1. Meaning and Factors Affecting Academic Achievement

Academic achievement is the outcome of education - the extent to which a student, teacher or institution has achieved their educational goals.

This is commonly measured by examination or continuous assessment. An academic achievement can be defined as excellence in all academic disciplines, in class as well as extra-curricular activities. It includes excellence in sporting, confidence, behavior, communication skills, punctuality, assertiveness, arts, culture and the like. An academic achievement can also be defined as something you do and or achieve at school, college or universities- in class, laboratory, library or field work (A. Ward, 1996).

Broadly defined achievement concerns the development of motives, capabilities, interests and behavior that have to do with performance in evaluative situations. More specifically the study of achievement during adolescence focused on young peoples’ performance in educational settings and on their hopes and plans for future scholastic and occupational careers (Steinberg (2002).

Academic achievement can also be defined as attainment that brings an individual closer to the fulfillment of one’s own goals and dreams. Achievement is not simply reaching an end such as holding one’s diploma. It is a process and invariably, includes aspiration, efforts and strategies for achieving better out comes. It occurs because it is aspired and worked hard to make it happen. Therefore, if one academically worked hard using different strategies for different subjects, and make his intellectual capability to full use, one will achieve to his or her interest (Feldman, 2000 & Maden, 2001). Success is a source of prestige, self satisfaction and differential rewards as a means of evaluating performance and a goal towards which ones efforts directed (Hurlock, 2000).

2.2.2. Factors Affecting Academic Achievement

Individual differences in academic performance have been linked to differences in intelligence and personality. Students with higher mental ability demonstrated by IQ tests (quick learners) and those who are higher in conscientiousness (linked to effort and achievement motivation) tend to achieve highly in academic settings. A recent meta-analysis suggested that mental curiosity (as measured by intellectual engagement) has an important influence on academic achievement in addition to intelligence and conscientiousness. Children's semi-structured home learning environment transitions into a more structured learning environment when children start first grade, plays role of shaping students' engagement in school activities at early years. Early academic achievement enhances later academic achievement (Katherine, 2007).

Parent's academic socialization i.e. a term describing the way parents influence students' academic achievement by shaping students' skills, behaviors and attitudes towards school influences students learning. Academic socialization can be influenced by parents' socioeconomic status. Highly educated parents have more discourse with their children, which in turn tend to have more stimulating learning environments. Children's first few years of life are crucial to the development of language and social skills and school preparedness in these areas help students adjust to academic expectancies (Hurlock, 2000 & Jack Naglieri, 2008).

The key to achievement is to make sure planning, systematic time management and organizing oneself which are essential. The best way to plan systematically is to use goal setting strategies which should be clear, directed as well as realistic and attainable as to the capacity of an individual. This is because the perceived importance of the task and the task importance related to future goal in individual will increase the arousal of achievement motives which lead to success (Halvari, 1997) Moreover, having state of mind about things, attributing success to ability and hard work, and failure to lack of effort, lack of appropriate risk taking level and persistence in the face of difficult tasks, curiosity and confidence including anticipating the occurrence of success are the way to success and can contribute for improved performance (Daniel. 1992 & Feldman. 2000).

On top of this, self-concept, which is ones view of oneself physically. Socially, and personal self are also other factors that affect ones academic success. Self fulfilling prophecy, which is

tendency to act in accordance with one's expectation and belief, to increase the likelihood that event or behavior consistent with this expectation and belief will also have its contribution. In other words, believing that something will happen can lead to actions that make it more likely actually will happen (Feldman, 2000).

Researchers have suggested that self-efficacy beliefs may play a role in relation to cognitive enhancement. This might lead to increased use of cognitive strategies that in turn leads to improved performance towards success. In relation to this idea, Pajeros cited in Knife, 2004, has demonstrated that in high school and college, beliefs students develop about their academic capabilities help determine what they do with the knowledge and skills they possess. Consequently, their academic performances are in large parts the result of what the students come to believe they accomplish, are accomplishing and will accomplish in the future. Hence, people with positive self-esteem and positive perceived self-efficacy, pursue a relatively high level of performance towards anticipated success because they do not put off easily, even though they face difficult tasks (Feldman, 2000). In reference to this concept, Davis as cited in Daniel, (1992) stated that students' perception of who they are, what they enjoy, and what they can or cannot do, his attitude and conduct in learning affects his response to ongoing learning which may affect the students' performance and academic success. Therefore, regardless of intelligence, socio-economic status, and social factors, interest, attitude, engagement, the desire to achievement with willingness to study constantly can also be the secret behind academic success. Myers cited in Knife, (2004) found that students with academic achievement motivation tend to achieve higher grade to succeed with their stated goals. Apparently, good grade is related with personality characteristics of need to achievement academically. Individuals with high need for achievement approach achievement related activities so as to become successful in his/her academic work. Motivation, the inner power and energy that directs and fuels one's behavior is allowing to persist even when 'guts rough'. Therefore, the key to achievement in and out classroom is to tap to motivation which is positively related with academic achievement since a student who experiences a great deal in academic intrinsic motivation should enjoy learning and show task persistence (A.E Gottfried cited in Workineh, 2004).

McClelland and Weiner as cited in Knife. (2004) have shown that individuals who possess high academic motivation have the motive to obtain high academic performance and show the need to

manipulate their environment. These people are also action oriented. They have better planning ability and interest to involve in demanding and challenging tasks. As a result, highly academic motivated individuals tend to demonstrate superior performance that leads towards success and satisfaction. It is obvious that individuals drive for achievement together with beliefs and attitude can affect academic attainment towards achievement.

Students who generally see work effort as reason behind their performance are usually better in college. It is not hard to see why. When they are working assignment, they feel that the greater the effort, they put forth, the greater their chances of achievement will be (Feldman. 2000). Students frequently attribute outcome by referring to ability, effort, task factor, luck. Each of these factors has different motivational consequences. Of these, attributions, the effort attribution is most likely to motivate learning to future academic success. Success and failure are believed to be controlled based on the effort put on task to be mastered. Therefore, student who attributes his performance to amount of effort invested would have the possibility of improving performance to each of success (Weiner. 1984; cited in Kinfe, 2004 and Asefa,2005). This is to say, perceived academic competence is determining factor for academic success. Similarly, Gravy; Boivins & Hoges and Newman, as cited in Workneh, 2004). Stated that students who perceive themselves as academically competent tend to display high level of task engagement that leads them to achieve academically. Hence, student's perception of himself, his ability, his needs to achieve and behaving in socially appropriate way such as being cooperative and helpfulness which may result in positive academic interaction with peers and teachers can also contribute for academic achievement (Daniel, 1992). Therefore, achievement is not an easy task. It needs effort, strategies, patience, and persistence in difficult tasks as well as responsibility to achieve at it.

2.2.3. Learning Styles

2.2.3.1. Overview of learning styles

Learning style is the ways in which an individual systematically and habitually responds and works on learning tasks. It is solving one's own problem for one's own purpose by questioning things and testing until solution is part of one's own life but not merely finding out what other people know. Individuals learn differently by different styles that refer to expression of

individuality, qualities, activities and behaviors sustained over a longer period of time (Handy, 1994 cited in Asefa, 2005).

These styles have been identified and recognized as construct for individual differences in learning contexts. The concept of learning styles in academic achievement is important because it incorporates all human attributes which help to determine and characterize person's preferred approach to problem solving (Child, 1993). Therefore, there is no finding that suggests that students are confined to learning in only one way; rather the existence of individual differences assures that no process is ever quite the same even for two learners. Based on this idea, learning styles account for individual differences according to the manner in which an individual processes information from his or her environment (Clenton, 2003 cited in Asefa, 2005).

Thus the fact that individuals are unique implies that the way one approaches to learning is different from others' personal style of learning.

These preferences can be interrelated with personality characteristics and also it is believed to be derived in part from biological and physical characteristics of an individual. Moreover it reflects the developmental, cultural, and other environmental actors. For instance student's preference for working alone or in group may be the result of familial, cultural, or personality characteristic tendencies (Eby, 1997).

Similarly, (Niven, 2002), stressed that there is no single learning style that will be perfect for every individual learner because of the complexity of human beings. Therefore, ones individual learning style affects the way one processes and assimilates information since individuals have unique approach to perceive and understand situations. Indeed, studies have addressed an exhaustive range of factors. Keefe as cited in Clenton, 2003 and Asefa, 2005), highlights different components of styles including personality trait, attitude and psychological factors.

Similarly, (Dunn and et al, as cited in Clenton,2003) claim that learning styles include such factors as individuals response to sound, light, temperature, design, motivation, responsibility, or conformity and need for structure. Accordingly, with these diverse components, there are a number of learning styles which are stated by different authors. For instance, field dependent and field independent cognitive styles or differences in the way an individual analysis or and structure information, holiest and serialist styles that manifest differences in the ways people

approach to learning and problem solving; deep and surface approach that involves active search for meaning and that relies primarily on attempt to memorize; and Kolb's learning style which are the combination of two bipolar dimension of the cognitive growth.

This implies that there is no one single style of learning in which learners need is to be met. Learning styles are like finger prints, no two styles are alike (Carbo, Dunn, and Dunn, 1991 and Eby, 1997). learning style theorists point out that individuals vary in the ways how they approach learning. According to Brooks, (2002), values and beliefs, previous experiences, social relationships and gender are some of the factors which influence approach to learning. So each approach or style must be honored for its particular contribution and strength. Therefore, rather than focusing on one or two approaches of learning, educators should strive to develop all the various means that contribute to pupil's understanding of and interaction with their world (Evans, Hamrick and Schultz, 2002).

2.2.3.2. Definition and Concepts of Learning Styles

Learning style which is characterized as individual's preference of how to learn has been defined by different authors differently.

According to Carbo, Dunn and Dunn, 1991, learning style is the way student is affected by immediate environment, own emotions, sociological needs, physical characteristics and psychological inclination when concentrating and trying to master and remember new or difficult information. This definition implies that learning styles are phenomenon in which students interact with various factors when they are on the process of acquiring and mastering knowledge using their own personal skills. Learning styles are also defined as general tendency to adopt strategic reaction to particular learning situation which might be dependent on interest, anxiety that may be linked to features of personality and motivation (Entwestle and Ford as, cited in Heinemann 1995).

According to Claxton and Ralston cited in Clenton, 2003, & Kolb as cited in Cornwell and Mannfredo, 1994) learning styles are people's consistent way of responding and characteristic tendencies for the understanding and processing of information and experience in the context of learning. Hence, they are unique for the individuals since they develop during various phases of life. Learning styles are also seen as social interaction describing different roles students play in

class room interaction with their peers, teachers and course contents (Fuhrman & Grasha as cited in Heinemann, 1995).

This concept emphasizes on the learner's role and their interaction with different individuals or things in the process of acquiring knowledge. Hence, this interaction is processed through effective communication in reference to their experience and personality traits. In relation to this idea, (Garger and Guld cited in Raven, Carton and Shellmer, 1993), defined learning style as stable and pervasive characteristics of individuals expressed through interaction of one's behavior and personality trait in learning situations. In general, from the stated definition of the concept of learning styles, it is possible to say that learning styles are composites of characteristics of cognitive, affective, and psychomotor factors that can be influenced by different forces such as environmental factors, emotions, or personality traits but adopted and relatively stable across time and situations. Moreover, it is an individual's concentration, observation, and retention of information and skills with effective communication.

The term learning style has been used in the literatures during the last thirty years (Maran cited in Badford, 2004). In relation to this concept, (Thaell,2003) also stated that the best validated concept of learning styles emanated from research began in Sweden in the mid 1970's by Ference Marton and Roger Saljo. Similarly, Randall, 2004 stated that the term "learning style" first came in to use when researchers began to search for specific strategies for matching course presentation and materials to students' need. From these concepts, it is possible to assume that learning style concepts began to emerge in the literature in recent years.

The concept of styles in relation to learning styles is referred to as cognitive centered, personality centered and activity centered approach. As a result, the concept of learning styles is developed from the activity centered approach conceptualizing and defining 'styles', where as the concept of cognitive styles are developed from the cognitive centered approach. Then the concept of learning styles approach to have developed, to some extent concomitantly, with the concept of cognitive styles from research by psychologists in to individual differences Garcia and Hughes 2002 & Hick Cock Cited in Badford,2004 and Asefa, 2005).

Hence the development of the concept of cognitive styles preceded the development of the concept of learning styles (Dunn as cited in Badford, 2004; Claxton and Murrele as cited in

Badford, 2004) also concluded that learning style is a concept broader than and incorporates the concept of cognitive style, or cognitive style is the subset of the more comprehensive concept of learning styles.

However, there is confusion in the literature concerning the terms cognitive style and learning in that numerous authors use the terms interchangeably. For instance,(Garity,1984, cited in Heinemann,1995), noted that learning style has been used as description of cognitive process of thinking, perceiving and remembering. Therefore, most definition of learning styles as well as cognitive styles illustrates variations in individual information processing. Hence, there is no single definition for learning styles or cognitive styles as has been identified (Mc Fadden, cited in Heinemann, 1995).

Farther more, cognitive style is involved in thinking and problem solving, while learning style points to preference in learning and studying which really are the two sides of a coin. Therefore, it can be used interchangeably, since no sharp distinctions exist between these terms (Snow, et al, cited in Elliot, 2000).

To fully motivate students to learn new materials, it is also important to consider each students particular learning style since learning style is the result of biologically and developmentally imposed set of personal characteristics that makes the same teaching method effective for some and ineffective for others. In other words each person has a particular pattern of needs for optimum learning (Dun, Beaundry and Klaus as cited in Eby, 1997). However diagnosing students learning style and providing unique set of experience for every student in the class is impossible, appreciating the fact that variation in learning style exists and being flexible enough to allow students to work in the way they find most comfortable and productive (Eby,1997).

Learning style diagnosis and treatment is probably best accomplished by allowing students to make choice. This choice depends on such factors as their interest in the topic, the nature of their academic motivation, the pressures others put on their time and energy, the total amount of content in course, the way in which the task is introduced, and their perception of what will be demanded of them in subsequent evaluations or application of the material (handy, 1994).

Therefore, it is advisable to build an adaptable learning environment that presents learning material in the variety of methods rather than trying to determine each person's personal style

(Clark, 2000). This is because the core of learning style is the person's characteristics of personality. Hence, personality characteristics are the most stable and the least subject to change in response to intervention by researcher or instructor (Randal, 2004). To analyze learning styles that may fit to different individuals, researchers (Scameck, Ribich, and Ramaniah, 1997; Entwistle, 1981 cited in Handy, 1994) have developed inventories of learning processes and study approaches. These were designed largely to get insights to the varied style and approach employed by students in the internalization of cognitive materials. Accordingly, one of the most learning styles that attract the researchers is Kolb's, 1976 model of learning style. It was built on the work of cognitive psychologists and identified two dimensions along which cognitive learning occurs and attracted considerable attention (Yoel and Noilee, 1994).

As learning style includes cognitive, affective and psychological dimensions, cognitive styles appear to hold greatest potential for yielding new understandings relevant to the educational process. Therefore, though the design of motivational strategies and manipulation of environmental factors may indeed enhance learning human cognition is at the core of learning process. Hence the dimension of cognitive styles appear to be most relevant to variables associated with academic achievement (Obrine, Beernold, and Akroyd, 1998). Moreover, cognitive style categories also apply to categories that describe various dimensions of personality (Delworth and Hanson, 1989).

Hence knowledge of learning styles suggests the importance of using various presentation techniques in individual programming and training sessions (Lea & Leibowitz as cited in Evans, Hamrick and Schuh, 2002). Moreover, introducing the concept of learning styles to students is another way of encouraging development to encourage students for better understanding of their learning preferences and strengths (Evans, Hamrick and Schuh, 2002). On top of this, learning style information can help students to become better student. The more students know about their own learning styles, the better they can study and have better chance for achievement. As a result learning style information can give students a greater appreciation of their strength. It then helps them to become more deliberate in their learning (Randall, 2004).

2.2.3.3. Some Characteristics of Learning Styles

Learning styles which are essential in acquiring knowledge have their own characteristics. According to some scholars these characteristics are as follows:

- **Learning styles are proclivities or natural tendencies.** They are preferred ways of processing information not ability to process information (Baltes and Staudinger, 1996).
- **Learning styles are not good or bad rather matter of fit.** What is good is to have style that fits a given task or situation of learning. The same learning style that fits a certain task or learning situation may be poor fit to others. Therefore, no one can speak of styles of learning as generally better or worse (Baltes and Staudinger, 1996).
- **Learning style can vary across tasks, situations and lifespan.** Though learning styles are relatively stable, they are not rigid or fixed through time or situation. Mc Wroter, 1996) also stated that learning style is not fixed unchanging quality. Just as personality change and develop so can learning styles change and develop through exposure or practice.
- **People differ in the strength of learning stylistic performance.** It is obvious that there is individual difference that results in various learning styles. Some come out strongly towards certain styles and weak in the others. Therefore, people are not necessarily clearly strong or weak in each aspect (Mc Wroter, 1996; Baltes and Staudinger, 1996).
- **Learning styles are measurable.** Research demonstrated that teachers are able to identify only few elements of their students learning style through observation. Other elements are identifiable through administration of reliable and valid tests (Beaty; Dunn & Prices and Marus cited in Hanson, 1996).

2.2.3. 4. Factors that Contribute to Different Learning Styles

Learning styles may be as unique as handwriting and different from individual to individual depending on personality types. However, the challenge for educators is to distinguish the style and shape instruction to meet the individual learner's needs. Hence to overcome this challenge, it is important to investigate factors that contribute to each individual learning style differences. Different authors in their study stated that there are at least three factors that contribute to each learning style of an individual that are stated as follows.

- A. **Cognition or information processing factor.** It is thought to be brain's processing of information that distinguishes the way one senses, thinks, solves problems and remembers information. For example, Kolb's learning style describes the process of learning and his model shows the process for receiving information. Each individual has preferred, consistent and distinct way of processing organizing and retaining information. Some students rely heavily on careful observation in making judgment and slow on to react. Others dislike being passive and are quick to respond. Some students focus on attention narrowly and with great intensity, while many pay attention to many things at once. These and other information processing factors are all parts of cognitive domain that contribute to different learning styles (Sadker; Sadker, 1997; Clark, 2000 & Conner, 2002).
- B. **Affective (Attitude Related Factors).** These factors are referred to as personality traits relating to attention. Emotion, values and how one motivates himself and sustain behavior. It is obvious that individuals bring different levels of motivation and derive to learning challenges. The intensity or lack of intensity of this motivation is a crucial determiner of learning style. Curiosity, which is the ability to tolerate and overcome frustration and the willingness to take risks, is different from individual to individual learner that may result from differences in personality. For instance, some learners attribute success or failure to external factors "these problems were confusing, "the teacher did not review the material well", or "my score was high because I made some lucky guesses". Others attribute performance to internal factors such as "I did not study enough", "I did not read the direction carefully enough" (James and Blank, cited in Sunny, 2001; Sadker & Sadker, 1997). Hence those who attribute their performance to external factors do not take responsibility for behaviors.
- C. **Physiological factors.** It is biological based mode of response which depends up on the physical environment, gender differences, and the individual state of nutrition and health. It represents the way one efficiently adopts data. Individuals are different in biological make up which results in various methods to react to situations. For instance, in learning situations, some students can sit and persist for a long period at one place while studying which is related to introvert personality type, while others are unable to settle and need to get up and move around which is related to extrovert personality type. In addition, light, sound, temperature and other factors to which students respond differently are based on their physiological development (Carbo, Dunn and Dunn., 1991; Sadker, 1997; James and Blank, cited in Sunny, 2001).

2.2.3.5. Models Used To Describe Learning Styles

Varieties of learning style models evolved from educational psychologist Jung with the seminal classifications. John Dewey and Jean Piaget are also early contributors to the varieties of models. Based on these three authors, wide varieties of systems were developed. They attempted to classify learning method in well organized system with ample explanations and examples of each “type” of learner in form of methods or models. Models are systems that consist of styles in which individuals adopt themselves to situations. To adopt situations, one relies on personally constructed filters to create his perception of the world. These filters which include age, experience, and maturity, processing styles, psychological factors and cultures are influential factors of learning styles (Dunn and Stevenson, as cited in Sunny, 2001). Due to these various influential factors, individuals tend to have unique approach to perceive and understand their world. This is to mean that the world is rich in information and people have different styles or models in selecting and processing this information depending up on their own personal characteristics.

O’Conner cited in Lara (2004) explains that, since there are a wide variety of models used to characterize learning styles, it is helpful to divide these models in to descriptive categories. In relation to this concept, Curry, as cited in O’conner, 2004, categorizes learning differences in to four layers of onion to understand human variations. Moreover, other researchers like Rudd, Matt, & Hoven, 2004; Randall, 2004; Claxton and Murrel cited in Badford, 2004) also suggest that leaning style models could be analyzed according to their relative focus on four dimensions of learning styles. Viz. instructional models, social interaction models, personality models, and information processing models. These models consist of different learning styles in each. However, these identified learning styles models are not discrete and each influences the other. More specifically, these models are stated as follows.

A. Instructional and Environmental Preference Models

It is preference for primary sensory input source and learning environment features. It describes the outer most layer of the onion which is the most observable trait. For instance, as it was stated by (O’conner, 2004 and Dunn, 2001), identify different dimensions that mark various preferences.

Environmental preferences- regarding sound, temperature, light, and class design.

Emotional Preferences- addressing motivation persistence, responsibility and structure.

Sociological preferences- include preferences for private peers, team, and adult or varied learning relations.

B. Information processing model

It is a psychological construct which is related perception. It also deals with how people take in and process information that can be conceptual or factual. For example, Kolb's 1984 model is primarily based on dimensions of information processing proclivities of learners. It also utilizes concepts of perception and of individually preferred learning behavior patterns (Randall, 2004); and Hickok cited in Badford, 2004). According to Curry, it describes middle layer in which information is obtained, stored and utilized (O'conner, 2004).

C. Personality Model

It is the widely used instrument that can be used in understanding individual differences. It describes the inner most layer of the onion, the level at which ones deepest personality trait can shape orientations we take towards the world (O'conner, 2004).

D. Social interaction model

In social interaction model, students learn better in settings that meet their social and emotional needs and in social situations that are attuned to their predominant patterns of behavior. It shows how high school and college students developed through different intellectual maturation level as they went through years. It shows that epistemological strategies used by students varies by gender and by maturity and is responsible to the teaching situations or contexts students find themselves in (O'conner, 2004).

Learning style models are important not only for the learners, but also for schools and colleges to be sensitive to diversity of students to design a broad range of experiences to meet the need of varied learning styles of the students to match learning with teaching (Randall,2004). When mismatch exists between learning style of most students in class and the teaching styles of the instructor, the students may become bored and inattentive in class; do poorly on tests, get discouraged about the courses, the curriculum and or drop out of schools. Hence, the society loses potentially excellent professionals (Felder cited in Lara, 2004). Therefore, considering a widely varied individual difference, that result in existence of different learning styles is important to fulfill the need of each individual learner which may in turn overcome problems of

students in mismatching learning with teaching thereby it is possible to reduce loss of potential learners that could be professional workers.

2.2.3.6. Kolb's model of learning style.

Kolb's (1984 cited in Asefa, 2005) model of learning style inventory is based on John Dewey's emphasis on the need for learning to be grounded in experience; Kurt Lewin's work that stressed the importance of a person's being active in learning and Jean Piaget's theory on intelligence as the result of interaction of the person and the environment (Clark,2000). It is obvious that there is individual difference in various ways of life including the ways of learning. Consequently, Kolb's experimental learning style has been influential in describing individual differences in modes of adaptation and adjustment in learning (Kolb, 1974; Kolb& Fry, 1975; Kolb, Rubin &Mc Intyre, cited in Deciantis and Kirton, 1996). As a result, Clark, 2000 theorized that Kolb's leaning style is a four different stages process that involves concrete experience (CE) OR FEELING, reflective observation (RO), or watching abstract conceptualization (AC) or thinking and active experimentation (AE) or doing.

In the same way, Handy,(1994) categorizes Kolb's, (1976, 1984) in to two bipolar dimensions of cognitive growth. These are the active and reflective which range from direct participation in situation to detached observation; and the abstract concrete which ranges from dealing with tangible objects to dealing with theoretical concepts.

Hence, individuals who are active than reflective are labeled as accommodators, the combination of feeling and doing approach which are CE &AE, where as those who are more reflective than active are labeled as divergers , the combination of feeling and watching learning steps that are CE and RO. Whereas those who are more concrete are labeled as converger pragmatic combination of experimental thinking and doing learning modes are AC & AE (Cornwell and Manfredo, 1994 and Cook, 2004). More specifically these four learning styles are

A. Activists

Activists like to learn using concrete experience and active experimentation such as simulation, case study, and home work. They enjoy the here and now and are happy to be dominated by immediate experience. They are open-minded and this tends to make them enthusiastic about anything new (Handy, 1994). They tell themselves "I am a game for anything". They enjoy new

experience and challenge by involving themselves in it. They are called accommodators because they excel in adapting to new and immediate circumstances (Cox, 2004 & Cook, 2004). They learn by trial and error. They are impatient and want to do things for themselves rather than waiting and told how to do it. This makes them to give spontaneous answer and to quickly move on to-do something new. Their philosophy is “I will try anything once”. They tend to act first and consider the consequences afterwards. Their days are filled with activity (Handy,1994 & Niven,2002). Activists enjoy being the centre of attention whether chairing discussions or giving presentation. They are also benefitted from the opportunity to develop ideas through discussion with others and they tend to solve problems intuitively, relying on others for information. Therefore, they are likely to learn more effectively through group work, discussions and seminars, programs of short activities, workshops and study networks. Hence, they like to be with people and tend to be extroverts (Tylor and Bonsall, 1997 and Chapman, 2004). These learners are also called kinesthetic or tactile, because they want to touch everything while learning. For instance, tracing hands on books while reading. They dislike taking passive roles in learning. However, they do not enjoy tightly constrained tasks where they have to assimilate and interpret a lot of complex information. As a result they likely learn least effective from lectures, laboratory classes (where experimental method is prescribed) and reading and writing on their own. These people are often found working in marketing and sales. These learners’ educational background is often in technical or practical fields such as business (Tylor and Bonsall, 1997 & Chapman, 2004).

Activists in general are risk takers, constantly involved with others, get new ideas from others, and try several points. They are enthusiastic and use gut reaction in here and now situation. But they have no organization or goal setting. They act first and consider later. Moreover, they employ many project alternatives so it is impossible to carry them out. On top of this they do not always tie up; they are loose ends and can be over gregarious (Cox, 2004).

B. Reflective

Reflectors are also called divergers. They like to learn using reflective observation and concrete experience. They like to think over the implications of what they hear or read before they act. They adopt wait and see approach and they are thoughtful people who like to consider all possible angles and implications before making a move. They tend to be uncertain about what to

do and this leads them to confer with other people to see what their opinion are (Handy, 1994; Chapman, 2004 & Niven, 2002).

Reflectors like to stand back to ponder experience and observe from many different perspectives. They collect data and prefer to think about it thoroughly before coming to any conclusion. The thorough collection and analysis of data about experiences and events is what counts so they tend to postpone reaching a definite conclusion for as long as possible (Handy, 1994). They prefer learning through lecture method that allows role impartiality; they are objective observers than contributing themselves. They prefer the back seat in discussion and listen to others to get drift of discussion before making their own points. They enjoy the opportunity to work independently. Hence, these individuals tend to be introverts. They are also considered visual and auditory learners since they like to learn through lecture, individual project works and independent study (Taylor & Bonsall, 1997). They look for instructors who are task makers and a guide. They are imaginative and when they act, it is a part of wide picture, which includes the past as well as the present and other's observations including their own (Taylor and Bonsall, 1997). As a result, they dislike being forced to contribute to discussion without carefully considering all the events first; and also they don't enjoy being rushed from one activity to the other. Reflectors are likely to learn least effectively from spontaneous activity which does not allow time for careful planning and presentation (Taylor and Bonsall, 1997; Handy, 1994; Chapman, 2004). People with this learning style tend to become counselors, organizational development specialist, and personnel managers. They have broad cultural interest and tend to be specializing in arts (Cox, 2004). Generally these kinds of individuals seek alternatives to create options and can wait for the best timing by looking for things introspectively. They watch to see how others cope and also they recognize stress symptom. On the other hand, they wait too long before acting and cannot see the trees for the forest. They have many ideas but do not share. They may prefer subjects like history, English and psychology (Cox, 2004).

C. Theorist

Theorists are also called assimilators. They adapt and integrate observations in to abstracts but logically sound theories. They tend to be perfectionists who will not rest easy until they find things are tidy and fit in to rational scheme. They learn more effectively when dealing with assumptions, theories, principles, and models. In thinking through step by step, they question assumptions, and make rules from different cases. They are often more concerned with abstract

concepts, issues and ideas (Tylor & Bonsall,1997;Cox,2004; Handy,1994 and Niven,2002). Theorists thrive on understanding and participating in logic “if it is logical, it is good” ; “ how does this fit with that?” and “what are basic assumptions?”. They are dedicated to rational objectivity than anything. Their effort goes in to coherent pictures of complex situations. In doing this, they try to detach themselves from emotions and personal opinions. Their approach to problem is constantly logical; they are less concerned with practical applications of knowledge (Handy,1997 ; Niven,2002; Tylor and Bonsall,1997 and Cox,2004). Theorists like a clear and definite purpose for their work. They like to learn most effectively through class problem discussion and questioning theories with peers and tutors; and reading and evaluating books and articles. However, they dislike involvement in unstructured situations with no obvious theoretical or conceptual framework. Furthermore, they are highly suspicious of subject materials without subject methodological base (Tylor and Bonsall, 1997).

Theorists prefer certainty or objective facts and feel uncomfortable with subjective emotions and feelings. They are likely to learn least effective from open -ended questions, explorative project works and skill training. These people are often found in research and planning departments. Hence, this kind of learning style is characteristics of basic science and mathematics than applied science (Tylor and Bonsall,1997; Cox,2004). In general, they gather all facts, organize, review alternatives and calculate the probabilities; then apply their past experience. How ever, they need much evidence before they act. Moreover, they approach risks too cautiously they can also be affected by experience (Cox,2004).

D. Pragmatist

Pragmatists are also called convergers. They like to learn using abstract conceptualization and active experimentation such as laboratories, field work and observations. They enjoy seeing how theory relates to practice. They enjoy learning practical techniques which may be relevant to their subject area and future employment. They like to reinforce what they have learned through practical problem solving and like a clear guideline to work. Even if they like to be shown how to do things they need to put their newly acquired knowledge (Capman,2004 &Niven,2002; Tylor and Bonsall,19950. Hence, they are essentially practical, down to earth people who like making practical decisions and solving problems. They respond to problem and opportunities as challenge, and their philosophy is “there is always better way and

‘if it works it is good’ (Handy,1994). They are least at finding particular use of ideas and theories (Cox, 2004).

The pragmatists are likely to learn most effectively through work based projects, work experience, practical problem solving, and laboratory experiments. On the other hand, they dislike theoretical based learning situations where they cannot see practical applications. Therefore, they learn least effectively from theoretical discussions and debates (Tylor and Bonsall,1997). These people are relatively unemotional and they need or prefer to deal with things than with people. they tend to be narrow technically interested and quite often choose to specialize in physical sciences (Handy,1997). They deal with world in concrete and direct manner and might do well as engineer or plumber but may do less as philosopher (Beulter and Growth, 2003). To sum up, they are keen trying ideas techniques and theories and techniques in using detective skills to get facts and evaluate options. Furthermore, they take the opportunity to experiment, set goals and act to meet them. They also work well independently. Contrary to this concept, they act without caution and under value personal feelings, impatient and full control. Moreover, they do not use other people more effectively. This kind of people most often prefer physics subject as their major course (Cox, 2004). Thus, Kolb 1984 in Evans ,Hamrick and Schuh,2002) stressed the importance of developing each component to ensure that individual can effectively use whichever one adopts in more appropriate to ones personality type and particular6 situation. Moreover, understanding of preferred learning style may assist the development of appropriate learning opportunities (Niven, 2002). Kolb’s learning style theory could be used to understand, predict, and eventually plan for individual differences involving the pedagogical requirements of students (Kolb, cited in Cornwell, and Manfredro, 1994). A major hypothesis of Kolb learning style is that individuals use and prefer different learning styles that correspond to how effective and comfortable when they are learning. The most efficient and preferred learning method should be one that corresponds to individual’s primary learning style (Cornwell and Manfredro, 1994). To measure these learning style preferences, Honey and Mumford, 1998) prepared learning style questionnaires depending up on Kolb are learning style. This learning style questionnaire is believed to be reliable than Kolb’s learning style inventory. Moreover, Kolb’s learning style inventory has no clear factor structure.

2.2.3.7. Relationship between Learning Styles and Academic Achievement

It is obvious that students encounter different teaching styles. Though one cannot change the preferred style of learning to match the teaching style, one can take steps to actively increase one's ability to be successful in the course. Therefore, developing awareness of one's learning style preference that may best fit one's personal character can help to recognize the strength and weakness of oneself. Hence, it is possible to collaboratively work with others more effectively. This in turn may lead to more academic achievement by developing strategies for effective study, better time management, smooth communication, successful relationships and selecting courses (Hilliard, 2001).

2.2.3.8. Educational Implication of Learning Styles

The potential educational importance of information about students' learning style in college education is indicated in conclusions drawn by Marton, (1986) cited in Badford, 2004. From the result of several research studies. As identified, there are different relationships between the way in which an individual conceptualize the process of attempting learning and the outcome of individual's attempts. Marton as cited in Badford, (2004), described phenomenography as a research methodology for mapping qualitatively different ways in which people experience, conceptualize, perceive and understand various aspects and phenomena in the

These descriptions of phenomenographic studies have considerable potential to yield insight to how how individual have constructed particular aspects of their lives experience or how individuals interpret their experience in particular aspects of their lives such as their experience for studying or learning.

In college education, phenomenographic studies of how individual student engage with their study programs have potential to provide lecturers with insight in to the meaning that their students attribute to various aspects of the programs. These insights may inform the lecturers on a range of matters, including the extent and value of interaction specific aspects of the students learning styles and particular features of the study program (Badford,2004). The finding of Badford indicated that aspects of individual student learning style relating to a way in which individuals conceptualize learning and to specific learning process that individual characteristically attempts to are interrelated and that both of this aspects of influence learning

out come that the individual achieves. Regarding to this concept, some studies verified that students learn best when they can address knowledge in a way that they trust. This is to mean that individuals are different in various ways. Therefore if the student's orientation draws theory from concrete experience, and active experimentation, then they will like to learn best through doing by active participation rather than reflecting by watching. If the students personal style is oriented towards abstraction, conceptualization, and reflective observation, then they will learn best abstractly through reflecting. Thus educators should pay attention to different types of learning styles and try to ensure programs that strike all psychological levels. This is because individual learning style has great influence on academic success. Therefore, within the fact that existence of individual difference is advisable to allow variety of learning style that may fit each individual learner.

When learning something new or difficult, one naturally tends to use the learning style of ones preference. Hence it is good to know which this learning style is, so that one can respond most effectively to material being presented. Even when the material is being presented in a way that is preferred prior, knowledge of learning style is used flexibly to adjust no matter who the instructor or what the topic is (Hopper,2004). To sum up, learning style preference with relation to personality type has an impact on academic success in that it may help students succeed in their interest if their learning style matches their preferences. Therefore, it is important to build and adaptable learning environments that present the material in a variety of methods than try to determine the learners style (Clenton, 2003). This means that individuals are unique implying the way one approaches to learning is different from others personal style of learning. These preferences can be interrelated with personality characteristics and also it is believed to be derived in part from biological and physical characteristics of an individual. Moreover, it reflects developmental, cultural and other experiential factors. For instance, student's preference for working alone or in group may be the result of familial, cultural or personality characteristic tendencies (Eby, 1997).

Similarly, Niven, (2002) stressed that there is no single learning style that will be perfect for every individual learner because of the complexity of human beings. Therefore, ones individual learning style affects the way one processes and assimilates information since individuals have unique approach to perceive and understand situations.

Indeed, studies have addressed an exhaustive range of factors. Keefe, as cited in Clenton, (2003), highlights different components of styles including personality traits, attitude and psychological factors. Similarly, Dunn, et al. as cited in Clenton,(2003) claims that learning styles include such factors as individual response to sound, light, temperature, design, motivation, responsibility or conformity and need for structure. Accordingly with these diverse components there are a number of learning styles which are stated by different authors. For instance, field dependent and field independent cognitive styles or differences in the way individual structures and analyses information. Hence, the more styles to be addressed, the easier the instruction to be received by the learner (Clark, 2000).

2.2.4. Personality Types

2.2.4.1. Overview of Personality Types

Psychologists developed several theories of personality to attempt to understand the recurrent patterns of human behavior. Some theories categorized people according to their personality types, which are distinct patterns of personality characteristics. In a typology approach, people have been classified in terms of sociable behavior, value, interest, attitude, and various features of biological constitution of particular similarities (Corsini,1984 & Eysencks, 1997). This theory contends that each individual has natural preference which falls in to two categories and believed that each individual has a constitutional predisposition towards one of the two categories. In relation to this idea, Jung theory of typology is a widely known and most frequent in the literature surveyed which categorizes people in to two dimensions. According to this theory, men are all born with innate tendencies to be concerned primarily either with one's inner feeling or out side world (Baron, Earhard & Ozier, 1995).

Depending up on the above stated concept, Jung categorizes personality in to extrovert and introvert types. Then he labeled the extroverted personality type to the out ward flowing personal energy (libido). Such people have an interest in their relationship with people, an event or things and are dependent on them. Extroverted people are usually motivated by outside factors and are greatly influenced by environment. They are socially engaging, active and confident in unfamiliar situations/surroundings. They tend to be optimistic, enthusiastic. However, they show

dependence on making good impression, easily make and break relationships. They are also seen as superficial insincere (Jarchic, 2001 & Pervin, 1993).

On the other hand, introverts are labeled as inward flowing personal energy, which is withdrawal concentrating on subjective factors. Introverts are usually happy and rich with imagination and prefer reflection on activity. But they lack confidence in people and things. More over, they are cautious and hesitant as a result tends to be unsociable, shy and seen as egoistical and self centered (Jarchic, 2001 & Pervin, 1993). Jung's extroversion-introversion typologies which he tended to think in terms of opposite polarities arise from his conviction that there are stable patterns of personality characteristics. For the extroverts, the outer world is the most important and they are active rather than passive. Introverts on the other hand resort more to the inner personal world and are given to introspection rather than action (Child, 1993; Aggrawal, 1995 & Daniel, 1996).

Hence, the dimension of extroversion—introversion seems to be a basic and continuous to be subject of a considerable amount of research, since both dimensions of personality are different and have their own characteristics.

2.2.4.2. Definitions and Concepts of Personality Types

A personality type refers to categories that are distinct and discontinuous. It has to be understood as individual form or a point of reference useful for describing and understanding individual to the extent they approximate (Corrsini, 1984). According to Clenton, et al. cited in Daniel, 1996), personality type is defined as constellation of traits and states that are similar in pattern to one identified category of personality within taxonomy of personalities. This definition shows that a group of individuals show distinct type of overt behavior that manifests their inward flow of energy or out ward flow of energy. Hence, the classification personality according to this definition is based on external and observed behavior of individuals. Basically ones personality type is derived from ones psychological preferences. This can be determined by the pattern of behavior that develop over time such as how one reacts to ones environment, the style of communication, the way of interaction with friends and family and the way one reacts to problems (Jannica,2000).

Hence, one's personality type can be assessed depending on the traits that are relatively permanent. Traits are relatively enduring qualities of response tendencies of a person that forms a basic unit structure of an individual's personality. A person's personality then can be viewed as a pattern of trait that are recognizable across situations and transcend varying situational demands. Therefore, traits are basic elements of personality and are vital to any attempt to assess or predict behavior (Schultz, 1986; Beutler & Growth, 2003). Theories of personality assume that individual differences exist and these differences can be measured through personality assessment procedures. This personality assessment procedure is done through gaining information about an individual through systematic devices under specific condition in relation to specific stimuli (Pervin, 1970). Therefore, relevant data of an individual who is to be assessed is essential to know the effects of various components of situation on the behavior to identify the type of personality the individual possesses. Therefore to assess the extrovert-introvert personality type, Eysenck (1982) personality type questionnaire is designed to be used. Hence, after identifying these personality variables, it is possible to relate personality type of learner to their learning style preferences.

2.2.4.3. Categories of Personality

Jung's theory of psychological type categorizes people into extroversion-introversion dimensions that can help to understand individual differences. Hence, this dimension may be essential in learning since personality type plays role in identifying learning style (Daniel, 1996; Cox, 2000).

A. Introvert Personality Type Learners

Introvert personality type learners tend to focus on internal thought, feelings or impressions. They draw their energy from their inner world of ideas, concepts and abstractions. They are concentrators, effective thinkers, with the motto of "ready", "aim", "aim". For introvert learners, there is no impression without reflection (Harvey, 2004; Briggs, 2004). Introvert learners want to develop a framework that integrate or connect the information they learn to see the interaction of material (Handerson, 2002; and Clark, 2000). For them, knowledge means interacting material not disconnected chunks, which is merely information (Harvey, 2004). Introvert personality type students learn best through quiet mental reflection. This is because their attention naturally flows

inward to their own thoughts, ideas and impressions, since they are aroused to action by what goes on in their mind.

They tend to enjoy reading, lecture, written over oral work in the class rooms. They do well at verbal reasoning and internal processing. When they study they enjoy listening to others, talk about topic being studied and often feel uncomfortable with group discussion and hesitate to speak (Hilliard, 2001). Lawrence, 1993 and Randall, 1995). This is because they prefer to process ideas by thinking to themselves rather than by speaking to others. In class room situation, they tend to speak only when they have processed an idea, rehearse it and prepared to offer their idea to the group since they are unable to formulate an idea quickly enough to interject the conversation. Moreover, they feel that their idea may be unconnected and make no sense in the conversation (Briggs, 2004).

However, by listening and internally processing what others say, they can summarize discussion or articulate an aspect that has been left out. They excel when they can work independently with thought through listening or serving, reading, writing and independent laboratory work. They do well in the courses requiring attention to detail activities requiring diligence and planning. They need sufficient time to complete their work and to think before answering question. They are more comfortable if they are not required to speak in class but allowed to voluntarily contribute (Handerson, 2002 & Hilliard, 2001). They actually enjoy participating in lovely thought provoking discussions as long as it is structured in a way that it allows contributing introvert learners (Briggs, 2004). Though introvert learners have positive relationships with academic success at secondary and post secondary schools than extroverts, they are weak in social relationships, avoid others and secretive so that they may be misunderstood by others. They may also perform poorly in study group, in tasks requiring interpersonal communications, in social situations or job requiring extensive contact with the public (Handerson, 2004).

In general introverted personality type students are cautious, avoid risks, think thoroughly before acting, prefer silence than speaking, and in most cases they dislike to be interrupted and prefer solitary activities. Hence, the reflective learning style of Kolb (1984) is the most comfortable type of learning style for them. More over, Kolb's pragmatist learning style to some extent can also relate to introverted learners learning style. The reason is that pragmatist learners enjoy learning through experimentation in laboratory work which shares the same characteristics with

reflective learners. Moreover, pragmatist learners are also less concerned with people the same as that of reflectors having more attention to things they are doing.

B. Extrovert Personality Type Learners

Extroverted type individuals are attuned to the culture, people, and things around them. They are outgoing socially free, interested in variety and in working with people (Handerson, 2004 & Coates, 2001). They tend to focus on the outer world of people, things, activities, and are energized by interaction with others. Extroverted type like talking, participating, organizing and socializing. They are people of action and ‘on the fly’ thinkers with their motto of “ready”, “fire”, “aim”. For them, there is no impression without expression. But they are impatient with slow tedious works (jobs) and complicated procedures (Harvey, 2004 & Handerson, 2004). Extrovert students usually prefer to communicate more by talking than writing and to learn by experience. Since talking helps their thoughts to become clear, and understand the subjects by explaining it to themselves or to others. Moreover, their attention will naturally flow towards external things or events, so that they learn by teaching others (Clark, 2002 & Harvey, 2004). They do well with friends and will learn best if they study as if they are preparing to teach someone else (Hilliard, 2001; Lawrence, 1993 & Randall, 1995).

Extroverted personality type students do best in classroom that allows them for discussion, talking and working with groups. Since they are action oriented, they do well with activities involving some type of physical activity. As they are pulled in to social life, they find it difficult to settle down or concentrate on home work. They sometimes find listening difficult and need to talk to work out their ideas. Therefore, they will find many college tasks such as reading and writing which are solitary activities as challenging tasks. It seems that for this fact, they are not academically successful as that of introverts at secondary and post secondary school levels (//:www.glandare, 2004 and Hilliard, 2001). Extroverted personality type learners tend to plunge in to new materials as their tendency is to act first and think later. They are also the first who act in answering questions in class rooms (Lawrence, 1993). In class room extroverted students are thrive when they are allowed time to think things through talking such as in classroom discussions, or when working with another students. They excel in learning activities that have visible results and involve people in interaction. Since they are open minded, they are well understood by others and perform well in group activities, class participation, task requiring

interpersonal communications or “hands on work”, social situation or job requiring extensive contact with the public (Handerson,2004 & Hilliard,2001). However, most extroverts cannot work without other people, need change, variety and impatient with routine activities. Extroverted personality type individuals will also have trouble with time management, following detailed or extensive direction, independent study, monotonous or regimented tasks or tasks requiring planning like research papers (Handerson, 2004).

To sum up, extroverted personality type students are the type of students that prefer activist learning style since they can learn best through active participations. Furthermore, they are benefitted by getting information from others since they are open-minded. On top of this by chairing discussions, delivering presentation and by being center of attention, they learn much. Hence, though it is overlooked, knowing ones learning style preference and sharing that knowledge is important (Briggs, 2004).

2.2.4.4. Personality Types and Learning Styles Relationships

Students have different learning styles. Different individual learners preferably focus on different type of information tends to operate on perceived information in different ways and achieve understanding at different rates. The match or mismatch between instructor teaching and the way students learn has its own impact on the level of student’s satisfaction in colleges or high schools (Hilliard, 2001). Students whose learning style are compatible with the teaching style of the instructor or teacher tend to retain information longer, apply it more effectively, learn more and have more positive attitude towards the course and can be successful academically. It is obvious that students encounter different teaching styles. Though one can’t change the preferred style of learning to match the teaching style, one can take steps to actively increase one’s ability to be successful in that course. Therefore, developing awareness of one’s learning style preferences, that best fit ones personal character can help to recognize strength and weakness of oneself. Hence, it is possible to work collaboratively with others more effectively, this in turn, may lead to more academic success by developing strategies for more effective study, better time management, smooth communication, successful relationships and selecting courses (Hilliard,2001 & //www. glendare.2004).

2.2.4.5. The Relationships between Academic Achievement and Personality Types

There is relationship between academic achievement and personality types. Predictions of the relationships between personality types and academic achievement have revealed that introvert personality type learners are highly related with academic performance and achievement based on the assumption that introvert learners would be more self-reliant, more prepared to study alone (Hoven,2004). Moreover, introverts are more ready to maintain attention and have better long term recall than the extroverts (Entwistle,1993cited in Asefa,2005). Similarly, the early studies of Furneaux, as cited in Entwistle, 1993) stated that introverts are more successful in high school higher education examinations. The advantage of introverts has been found mainly among older pupils and students in certain areas of study. While in younger ages, extroversion is invariably related to academic achievement, (Hones and Kline,1974), in primary schools (Eysenck and Cookson found extroverts to be constantly ahead of introverts (entwistle,1993). Likewise in the study of the relative advantage of extroverts and introverts at primary and secondary school level, (Winooski, as cited in Hoven, 2004 found that before puberty, extroversion was associated with high academic achievement with introversion being more dominant later indicator after puberty. Furthermo, (Eysenck, Cookson,and Entwistle as cited in Anthony,1977), stated that up to the age of 13 – 14 years, extroversion score and ability score are positively correlated whereas after that age the correlation becomes negative. The explanation for the above reason was that after puberty or at high school level and tertiary level, the nature of teaching - learning and testing approaches managed to favor the introvert learners. In primary schools, tasks were often oriented towards group work, while at higher levels with greater subject specialization; the emphasis was more on individual work.

In relation to the above stated concept, Eyssenck as cited in entwistle,1993) commented that the informal “bitty” (disjointed or fragmented) nature of the primary school instruction may suit extrovert learners better than the introverts; when the instruction becomes more concentrated and serious, the extrovert learners interest begins to fade. In primary school when instruction was more formal, introverts were in fact superior to the extroverts. Therefore, from this evidence, it is possible to guess that formal instructions are in favor of the introverts. Besides this at secondary and college level where the structure of the teaching – learning process is more formal and

emphasizes more on independent study, it is expected to be advantageous to the introverts than to the extroverts.

Furthermore, Johnson, Pitt, and Lane (2000), in their study on relationships between the personality traits, learning style, and academic achievement found significant correlation between personality traits and academic achievement. Hence, more achievers were found to be more introverts, who are mature, serious, and socially precise than the extroverts who are warm, kind, willing to participate and expressive. Likewise, in the study of psychological correlates of achievement in college, Balkin,(1987) found that the personality characteristics of successful students were described as responsible, confirming, independent and disciplined which more or less described the personality characteristics of introversion personality traits.

Another study that may confirm the superiority of the introverts in academic achievement at secondary and post secondary schools as stated by (Harkin and Green cited in Gleitman 1996) was that introverts are highly corresponding to higher level of central nervous system arousal than the extroverts. In effect, introverts are more awoken than the extroverts as a result; they are less distracted and better able to attain tasks at hand. According to Hayes,(1998), extroverts are restless and find it hard to maintain concentration to task at hand and need long period of time since their attention fluctuates. Lynu Gordon as cited in Daninel, (1992) stated that extroverts begin tasks as effectively as introverts but after sometimes they show large amount of decrease when sustained attention is required. They are in short of vocabularies. They are quick but inaccurate in tackling tasks or problems. On the other hand introverts are more likely to concentrate longer period of time on boring, vigilance tasks since they have long span of attention and better long-term memory than the extroverts (Matthews and Deary 1998; Child, 1993; Entwistle, 1993 and Hayes,1998).

The case of positive correlation between introversion and academic success at secondary school or college as measured by Eysenck scale is more substantial. Looking at characteristics of extroverts, it is possible to imagine that he/she is at disadvantage in academic pursuit. This is because reactive inhibition is high, concentration in tedious task will be taken over by involuntary rest periods while the vigilance suffers. As a result, during examination revision, the extroverts will have difficulty in maintaining interest in what can be boring task (Child, 1993). It

is thus possible to argue that at least some of the association between personality and academic success are worth serious consideration (Entwistle, 1993). But contrary to this findings, (Daniel, 1992; Kalmanio and Power; Heaven as cited in Woodfield, (2003) reported that there is no significant relationship between introvert personality type and academic success of undergraduate and second year students. As to their findings, the reason behind was that personality variable without considering other factors such as intelligence and motivation cannot be best predictor of academic success. Concerning gender in primary school, introversion is not as much advantageous for girls as it appears to be for boys. But in the secondary and higher education, the connection has been established frequently. According to Caelles personality scale, there is a tendency for academic achievement to be linked by age to certain introversion-extroversion traits.

To sum up, it is important to be aware that personality characteristics play significant role in the act of learning and attitude towards the act of learning. Hence, variation in performance is not entirely a question of intellect, motivation or thinking skills but also depend on personal attributes which can enhance or inhibit the quality of that performance (Child, 1993). On top of this, Entwistle, 1972 as cited in Masqua,1998), suggested several variables such as ability, type of subject studied, classroom organization and size, teaching method and geographical area may have interaction with academic achievement and personality variables.

2.2.4.6. Educational Implications of Personality Types

Studies reveal that there are relationship between personality types and academic achievement. Prediction from Eysenck description of contrasting personality types and from experimental findings, introverts have shown high correlation with academic achievement based on the assumption that introvert learners would be more self reliant and more prepared to study alone (Hoven, 2004). Moreover, introverts are more ready to maintain attention longer and have better long term memory than extroverts (Entwistle, 1993 cited in Asefa,2005). Similarly the early studies of Furneaux as cited in Entwistle, 1993) stated that introverts are more successful in higher education examinations. This advantage of introverts has been found mainly among older pupils and students in certain area of study. While in younger ages extroversion is invariably related with academic achievement (Hones and Kline, 1994). In primary schools, Eysenck and

Cookson found that extroverts were constantly learn more and have positive attitude towards the course and can be successful academically.

In general the category of personality in to introverts and extroverts by (Jung) can help to understand individual differences and this in turn implies for differences in preference of learning styles. For instance, introvert learners tend to prefer reflector learning style above all and theory as well, while extroverts tend to prefer activist and pragmatist learning styles.

The above stated relationships between the three variables of the study are summarized in single statement as follows. Personality type dictates the preference for certain learning style and this preference of leaning style that best fits ones cognitive styles in turn results in better information processing and better performance hence encouraging better academic achievement, these all suggesting the interdependence of the three variables.

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1. STUDY DESIGN

Under this chapter, participants, the sampling procedure, instrument of data collection procedure of data collection and data analysis are presented.

In terms of approach, the study employed quantitative design to generate and analyze data. This design is chosen by the researcher because the nature of the study dictates to use it. That is to examine the correlation between and among the variables of the study, correlation coefficient should be calculated. The correlation coefficient is calculated for the relationship between academic achievement and the levels of personality type. The same is true for the relationships between the levels of learning styles. Then t- test and /or one way analysis of variance was computed to test the significant difference between the levels of learning styles on the basis of academic achievement.

3.1.1. Study site/ population

The site selected for this particular study was the two senior high schools found in Wayu Tuka woreda in Oromiya regional state. There were 1841 students enrolled to the two high schools, Gute senior secondary school 1357 (702 males and 655 females) and ASK preparatory school 484 (284 males and 202 females). Of this much population size, sample of students were selected to participate in the study. The sample of students selected was as follows. From Gute senior secondary school, 165 (83 males and 82 females) and from ASK preparatory school, 165 students (85 males and 80 females).

3.1.2. Sampling procedure

To select sample of the student's population, to take part in this study, probability sampling technique – cluster sampling is used. Using the technique, clusters of the two schools were selected from the schools found in the woreda. From these schools, Gute senior secondary school and ASK preparatory school classes of students were randomly taken as clusters of students. All students from the clusters participated in the study. The selection of the clusters which are used

as a sample of the students is made by applying the cluster sampling technique, which requires dividing sample size (n) by average number of participants in each cluster to get the number of class of students that participate in the study. The average number of students in the class (cluster) is 50. The sample size determined for this particular study is 340 or 18 percent of the population of the students. Hence, when the number 340 is divided by 50, the result becomes 6.8 or approximately 7. Therefore, all students in seven sections are participated in the study.

The Students From The Two Schools Separately Participated Proportionally Four Sections From Gute High school and three sections from ASK preparatory school. Then 340 students, 177 males and 163 females were randomly selected using sections as cluster of students. Accordingly, from Gute high school 177 students (89 males and 88 females) taken and from ASK preparatory school, 83 males and 80 females taken randomly and questionnaire was distributed with cooperation of the school teachers. However, 330 questionnaires were properly filled. As a result the sample size was reduced to 330 and data was analyzed accordingly. The first semester average score of the 330 students those who properly filled the questionnaire was collected from each school roster of the students.

Table1: distribution of the sample of students by sex

Schools	Target population			Sample		
	M	F	T	M	F	T
Gute senior secondary school	702	655	1357	83	82	165
ASK preparatory school	284	204	488	85	80	165
Total	986	859	1845	168	162	330

Table 2: Sections and Sample Size

Sections	Sample		
	M	F	T
Grade9	42	43	85
Grade 10	43	39	82
Grade11	46	38	84
Grade12	41	40	81
Total	169	161	330

3.1.3. Pilot Study

In order to determine the specificity, clarity, reliability and relevance of the instruments, to create favorable working condition in the study site, pilot study was carried out on 42 students randomly selected from the two high schools. The participants of the pilot study were randomly selected from the four grades of the students 9th, 10th, 11th and 12th. of Gute senior secondary school and ASK preparatory school respectively. Out of 42 student's responses, 2 were not properly filled as a result not included in the analysis. Hence, the result of 40 students was included for pilot study.

3.1.4. Personality Type Inventory

The questionnaires for personality type scales were developed from Eysenck (1982) personality inventory. The personality scale according to Eysenk (1982) has two sub-scales- extrovert and introvert. The scales have three points each – 'yes', 'may be' and 'no'. These three points were developed to five points by adapting, selecting and improving the points in order to obtain reliable, valid and appropriate information about an individual's personality type. 43 items were developed for the first draft and presented to the peers from the department of psychology for their constructive comments. Then the items were reduced to 36 that are more reliable whose reliability measures 0.72 and above that are made ready for the main study.

3.1.5. Data Collecting Procedure

The two instruments measuring personality types and learning styles were translated from English to Afan Oromo and were distributed among students of the two high schools with the help of the teachers at the schools after explaining the purpose of the questionnaires that they are required for research purpose only and their responses are valuable for the fulfillment completion of my work in this study. At the same time, the first semester average score of the students was also collected from each school's student roster and compared with their personality and learning style scores during analysis of the data.

3.1.6. Data Analysis

The variables of the study and the method of data analysis were mentioned and described under this section of the work.

3.1.6.2. Method of Data Analysis

The response of the participants and their semester average score as measure of academic performance were analyzed using SPSS program. The appropriately filled questionnaires were marked and scores were assigned to each subscale of learning styles and personality types. The Honey and Mumford procedure was employed to compute raw scores for each subscale. The participants were differentiated to each subscale depending up on the extent of their score.

For personality types subscale questions, the mean score was used as cut of point to differentiate the two types of personality extrovert and introvert. The minimum score was 36 and the maximum score was 180 and 106 was the mean used as cut of point between the two types of personality. Each and every question was scored on the extrovert personality type subscale point. Scores above the cut of point were assigned to be more introverted. The individual whose score was exactly on the cut of point was rejected from the analysis because it was not part of either of the two type of personality subscale.

- In order to describe the data, descriptive statistical values such as mean, standard deviation, range (minimum and maximum score were used).
- To investigate the extent of relationships between and among the variables, the Pearson product moment correlation coefficient was calculated.

- To examine whether or not there is significant difference between learning styles on the basis of learning styles, one way analysis of variance was computed.
- To know the most preferable learning style among the high schools students, percentage was calculated (used).

CHAPTER FOUR

4. RESULTS AND DISCUSSION

4.1. RESULTS

Under this chapter, the main results of the study are presented in terms of table and numerical data. Hence, analysis of the data carried out using tables accordingly.

Table 5: Descriptive values of the independent variables with respect to the dependent variables

Variables		N	Semester avg score	Minimum score	Maximum score	SD
Sex	M	169	76.25	56.00	92.68	1.4145
	F	161	70.64	52.50	91.46	1.3688
	T	330	71.68	52.50	92.68	1.5500
Learning styles	Activist	40	68.99	52.50	91.46	1.6322
	Reflector	117	73.23	56.80	92.68	1.5005
	Pragmatist	101	72.00	54.33	85.80	1.6225
	Theorist	72	70.55	59.00	87.48	1.5499
	Total	330	71.68	52.50	92.68	1.5500
Personality types	Introvert	174	72.12	61.72	92.68	1.2710
	Extrovert	156	71.44	62.00	91.46	1.8203
	Total	330	71.68	52.50	92.68	1.5500
Classes	Grade 9	84	74.02	56.00	92.68	1.9512
	Grade 10	82	71.56	52.50	92.24	1.6302
	Grade 11	83	70.02	56.90	91.46	1.7515
	Grade 12	81	71.00	53.50	91.02	2.0000
	Total	330	71.68	52.50	92.68	1.5542

From the table, we can see that the mean score of the male students (76.25) is far greater than the mean score of the females (70.64). the mean of the subscale of the learning styles shows that there is medium variation from each others , with reflector subscale having relatively highest score (73.23) above the others.

Regarding to the classes, the mean of grade 9 students' semester average is above the total mean of all classes followed by that of grade 10, while all other classes' mean are below the total average mean. The standard deviation in the classes was not very much far apart from one another, except the case of grade 12 which is highest of all. Otherwise the means are near to each others in terms of their standard deviation. This shows that the variation of each class's score from the total mean is not highly differentiated.

Table 6: Descriptive values of the independent variables (personality types and learning styles) on the basis of their scores.

variables	Measures of scale	Mean	SD	N
	Extrovert	118.9272	5.7348	156
Personality Types	Introvert	108.9011	3.8955	174
	Activist	40.9842	3.8217	80
Learning styles	Reflective	44.8024	2.9430	87
	Pragmatist	41.9932	2.3500	81
	theorist	42.5310	2.5172	82

From the table, it is observable that the standard deviation of the extroverts and introverts indicate the relative difference of the subjects with regard to their responses to the items on the scales. In case of the learning style subscales, relative homogeneity is observed, except that of activist (3.8217) which is slightly higher than others' standard deviation. This implies that their responses are relatively nucleated around the mean. Concerning the mean of the subscales of learning styles, reflective learning style's mean score is highest of all which shows that this style

is found to be more representative participants' preference for styles followed by theorist learning style.

Table 7: Inter co relation among independent variables - personality types (extroverts and introvert) and the dependent variable (academic achievement).

Variables	X ₁	X ₂	Y
X ₁ (Extrovert	1.000		
X ₂ (introvert)	-.042	1.000	
Y (academic achievement)	.038	.175	1.000

The test for significance of correlation for N= 156, 174 and 330 with df= N-2 at alpha level =0.05 of directional t-test revealed that there is significant correlation between personality type and academic achievement ($r_{xy} = .175, p > .05$). The result shows especially higher correlation of introvert personality type with achievement. This shows that introvert personality type is significantly correlated with semester average score of the participants. Hence, the result shows significant relationship between personality type scores and the dependent variable. This implies that being introvert in personality implies for higher academic performance and achievement than being extrovert.

Taable8: Inter Correlation matrix between independent variable learning style subscales (activist, reflective, pragmatist, and theorist) and personality types (extrovert and introvert) with academic achievement

Variables	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	Y
X ₁ (Extrovert)	1.000						
X ₂ (Introvert)	-.042	1.000					
X ₃ (Activist)	.024	-.0102	1.000				
X ₄ (Reflective)	-.013	.196	.048	1.000			
X ₅ (Pragmatist)	-.054	.079	.183	.061	1.000		
X ₆ (Theorist)	.011	.045	.108	.012	-.030	1.000	
Y(A.achievement)	.038	.175	.024	.195	.003	.013	1.000

The inter correlation among the independent variables for n= 156, 174, 80, 87, 81, 82, and 330 with degree of freedom N =2 and alpha level = .05 of directional t- test reveals that there is significant relationship between introvert personality type and reflective learning style ($r_{x2x4} = .196, p > .05$). There is no significant correlation between extrovert personality type and activist learning style ($r_{x1x3} = .024, p > .05$). From the result presented in the table, it is also observable that the relationship between introvert personality type and academic achievement is significant ($r_{x2y} = .175, p > 0.05$). There is negative and negligible relationship between extrovert personality type and reflective learning style as well as between extrovert personality type and pragmatist learning style ($r_{x1x4} = -.013, p > .05$ & $r_{x1x5} = -.054, p > .05$) respectively. There is again negligible relationship between theorist and extroversion, activist and extroversion, pragmatist and introversion and theorist and introversion. The relationship between achievement and theorist, achievement and pragmatist and achievement and activist are revealed negligible or insignificant respectively.

Table 9: Inter co relation among learning styles (activist, reflective, pragmatist and theorist) and academic achievement by their classes

	1	2	3	4	5	6	7	8	9
1.Activist	1.000								
2.Reflective	.048	1.000							
3.Pragmatist	.183	.061	1.000						
4.Theorist	.108	.014	-.030	1.000					
5.Grade 9	.106	.012	.010	.120	1.000				
6.Grade 10	-.05	.172	.023	.154	.163	1.000			
7.Grade 11	.029	.073	.225	.011	.013	.014	1.000		
8.Grade 12	-.001	.193	.102	.152	.110	.103	.102	1.000	
9.Academic Achievement	.124	.205	.003	.013	.079	.020	.002	.201	1.000

From the results depicted in the table, it is possible to observe that there is significant relationship between grade 11 students' semester average score and pragmatist learning style. It

is also observable from the table that the relationship between grade 9 students' mean of semester average score and activist learning style is significant. There is significant relationship between grade 10 students' mean of semester average score and reflective as well as theorist learning style preference. The same is true for the relationship between grade 9 student's score and that of theorist learning style. The relationship between grade 11 students semester average score mean and pragmatist learning style is also found significant Grade 12 students' semester average score and the learning styles of reflective, pragmatist and theorist have significant relationship. There is observed no significant relationship between the results of grade 10 students and the learning style preference of activist. The same is true for the relationship between grades 12 and activist, 11 and activist and grade ten and activist. The relationships between grades 9 and reflective, 9 and pragmatist, 10 and pragmatist, 11 and theorist are all insignificant and so on.

Table 10: learning style Preferences

Learning style measures	N	%
Activist	50	15.24
Reflective	119	36.36
Pragmatist	107	32.54
Theorist	54	16.84

The distribution of learning style preference proportion provided in the table, reveals that from the total participants 50 (15.24) were found to be activist, 119 (36.36) were found to be reflective, 107 (32.54) were found to be pragmatist and 54 (16.84) were found to be theorist. As indicated in the table, reflective is the most preferred learning style followed by pragmatist. This implies that high school students tend to prefer reflective learning style than all the other styles. The result also revealed that activist learning style was the least preferred.

Results of one way ANOVA

One way analysis of variance was carried out in order to see whether there is significant difference between learning styles on the basis of their impact on academic achievement.

Table 11: summary of one way ANOVA on learning styles and academic achievement

SOURCE	SS	df	MS	F	W ²
Between groups	.799	3	.312	1.820	.0112
Within groups	79.042	327	.242		
Total	79.841	330			

From the summary of one way analysis of variance, it can be observed that there is significant difference between learning styles and academic achievement of students ($F(3,327)$, $p < 0.05$, $F = 1.820$). but the difference is not much exaggerated. The mean of the four subscales of learning styles are not far apart from each other, except the reflective learning style (44.8024) which is highest of all the other subscales mean. From the result, it can be inferred that this learning style is more related to the style of learning preference of the learners. The variance accounted for the means of the subscales was about 2.5, which could be said exaggerated due to high variation of reflective learning style mean.

4.2. Discussion

The main objective of this study was to see the significance of relationship between: personality type and academic achievement, personality types and learning styles and significance of difference between learning styles on the basis of their influence on academic achievement.

4.2.1. Personality Types and Academic Achievement

Based on Eysenck, (1982) personality type questionnaire, the result of the study has revealed significant relationship between introvert personality type and the dependent variable academic achievement ($r_{xy} = .175, p > .05$).

Regarding to this finding, research results also revealed supporting evidence. For example, researchers like Furneaux, cited in Entwistle, 1993; Daniel, 1992 cited in Asefa, 2005 suggested that introverts are at the head of extroverts and are more successful at school examinations. Hence, the result of this study is in line with those researchers' finding. Thus according to the researchers finding and the result of this study too, personality type together with other factors like achievement motivation and intelligence can contribute to the extent of academic performance and achievement of learners. For instance, Farsides and Woodfield, 2003 cited in Asefa, 2005, in their study stated that

Intelligence and motivation are generally accepted as determinants of academic achievement. It has been proposed recently that personality traits might also predict such achievement. According to the above statement, since intelligence and motivation are essential factors for achievement, but recently personality variables might have been also considered as predictor of achievement. According to the researchers like Entwistle, 1993, personality variables are among the factors that determine academic achievement of the learners.

On the other hand, researches like Daniel, (1992); Halmandaris and Power as cited in Farsides, (2003); Woodfield, (2003) and Asefa, (2005) are not supporting personality alone as determinant of achievement even though personality variables have their contribution depending up on one's attitude, habit and preferences. Since one's personal style is derived from one's psychological preferences, attitudes, habit or idea, that had been learned in an individual life, it is who and how an individual reacts to his environment that determines one's success in such interaction. Hence,

different individuals have different personality types and different ways by which they react their environment.

Accordingly, different individuals learn and acquire knowledge differently through their different ways of learning depending up on their personality types. For example, extrovert personality type learners can learn by involving themselves in learning conditions and by active participation, while introvert personality type learners learn from the learning condition through observation and reflection. Therefore, both can learn and acquire knowledge differently from the same learning situation. Hence, they can succeed through their different mechanism of learning even though their personality is quite different. Students with different personality types have different abilities for different activities since personality types are determined by the patterns of thinking and behavior that develop over a period of time. There may be different psychological preferences and patters of thinking which are important in different in different academic areas (Clunch cited in Pervin, 1993 and Asefa, 2005)stated in their study of cognitive styles and examination performance that abstract students were superior to concrete students in performance on essay examinations but not on multiple choice exam. This implies that different personality types with different learning styles can have abilities to react to different situations or activities differently. On the other hand, one may have more ability in certain task and less in the other. Hence, different individuals with different personality type can succeed by applying their knowledge differently as their styles and preference to the same activity and can be successful in one activity and not or less in the other.

4.2.2. Relationship of Learning Styles and Personality Types

The result of this study revealed that there is significant relationship between reflective learning style and introvert personality type ($r_{x_2x_4} = .196, p > .05$). This result indicated that reflective learning style learners are introverts in their personality type. Thus, this finding is in line with the literature and Handerson, (2001) & Clark, 2002) supported it stating that students who prefer reflective learning style are introverts in their personality type. This is because they prefer to work with ideas and mental reflection to working with people and things. Similarly, they prefer depth to breathe thought; rely on careful observation and reflective thinking. Moreover, they prefer learning through lecture method of teaching that allows them to observe and listen since they are more of visual and auditory. These types of students with reflective preference is

independent and prefer independent study, self placed instruction and would like to work alone on courses than with others (Diaz and Cartnal, 1999 cited in Asefa, 2005). They also like learning through reading written material and independent laboratory work, and lecture method of teaching. This in general implies that learners who prefer reflective learning style are introverts in their personality type.

Regarding to the other three learning styles, there was no significant correlation with activist learning style and either of personality types, even though the expectation was there that they are categorized under either of the personality types. This is partly against Clark 2000) idea which stated that learning styles such as activist and reflective are correlated with personality types of extroverts and introverts respectively. There was negligible and negative relationship between introvert personality type and activist learning style. Concerning the pragmatist and theorist learning styles, this finding revealed no significant relationship between them and either of personality type. However the result obtained was negligible relationship between pragmatist learning style and introvert personality type as well as between pragmatist learning style and *extrovert personality type ($r_{2 \times 5} = .079, p < .05$ & $r_{1 \times 5} = .054, p < .05$).

it is observable that the relationship between theorist learning style and either of personality type was negligible. The failure or the absence of significant relationship between these independent variables might be attributed to the respondents' response, relevance, reliability and / or clarity of the questions.

Regarding to the inter correlation between the subscales of learning style, pragmatist and activist learning styles were significantly correlated ($r_{3 \times 5} = .183, p > .05$). The same is true for the relationship between activist and theorist learning styles ($r_{1 \times 6} = .108, p > .05$).

4.2.3. Relationship between Learning Styles and Classes

According to the result of this finding, it was indicated that there was significant relationship between grade 9 students' semester average score mean and activist and theorist learning style score ($r_{1 \times 5} = .106, p < .05$ & $r_{4 \times 5} = .120, p > .05$) respectively. This means that the mean of semester averages of students and that of their activist and theorist learning styles correlated positively which in turn implies the learners' preference for these learning styles. Similarly, grade 10 students' mean of semester average score and that of their theorist and reflective score

had positive and significant correlation. However, the grade's mean score and activist score had negative and significant relationship. The result also revealed that the grade11 mean of semester average score and pragmatist score was significant ($r_{3.7} = .223, p > .05$).

It is also visible that the grades 12 score and theorist as well as reflective scores are significantly correlated ($r_{2.8} = .193, p > .05$ & $r_{4.8} = .152, p > .05$), respectively this in turn implies the students' preferences for these learning styles.

4.2.4. Learning Style Preferences

The result of the study revealed that out of the total participants, 119 (36.36) were found to be reflective in their learning style preferences. This shows that highest proportion of the participants or the students prefer reflective learning style followed by pragmatist learning style 107 (32.24%). The preference for theorist was 54 (16.84%) out of the total participants. According to the result, activist was the least preferred learning style 50 (15.24).

4.2.5. The Relationship between Academic Achievement and Learning Styles

This finding indicated that there is significant difference between reflective learning styles and other preferences. That is to mean reflective learning style have significant and positive relationship between students academic performance measured by their semester average score and the reflective learning style score measured its items on the questionnaire developed from Honey and Mumford, (1996) LSQ). The mean of the reflective group, (74.23) confirms this statement as it is above the mean of all other learning styles followed by mean of theorist group (42.53). Pragmatist and activist are the third and fourth preferences respectively. The result of one way analysis of variance (ANOVA) shows that there is significant difference between the subscales of learning style ($F(3, 327, p < .05) = 1.820$). this difference could be resulted from relatively high variation accounted by means of reflective and theorist styles and that of activist which is relatively far least of all. The variance accounted for the means of the subscales was 1.42.

Generally the difference between the subscales of learning style inferred from the result of one way ANOVA or variation in means of the subscales implies for difference in extent of preferences for the styles by the learners.

This finding is against William, et al. (2004), cited in Asefa, 2005) which stated there is no significant difference among learning styles on the basis of their influence on academic achievement. Similarly, a study of met cognition regulation made by Boyle et, al. (2003) cited in Asefa, 2005) suggested that there is low association between students learning styles and academic performance. Moreover, Ronan, (1996) in his study of average academic score of final two years prior graduation found no significant correlation between academic achievement and learning styles.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. SUMMARY

The main objective of this study was to examine components of personality types and learning styles on the basis of their impact or relationship with academic achievement in case of Wayutuka woreda high schools and preparatory schools.

The investigation of the extent of relationship between independent variables learning styles and personality types and the dependent variable academic achievement was under taken by analyzing whether there is significant relationship between the variables personality types levels and by examining whether there is significant difference in academic performance due to different learning styles. In line with this the following basic questions were raised.

1. To what extent does personality type correlate with academic achievement?
2. How do learning styles and personality types correlate with each other?
3. Which learning style is most preferred by high school students?
4. Is there significant difference among learning styles on the basis of academic achievement

In order to conduct study based on these basic questions, two high schools were randomly selected from two high schools found in wayutuka woreda. Seven sections of students were randomly chosen from which sample size of 330 (167 males and 163 females) taken who participated in the study.

In order to collect data, instruments like personality type questionnaire (PTQ) & learning style questionnaire (LSQ) that are adapted from Eysenck, (1982) and Honey and Mumford, (1996) respectively are used. The Cronbatch alpha reliability of personality types was 0.72, while that of learning styles was activist: 0.67, reflective, 0.64, theorist 0.63 and pragmatist was 0.60. the statistical tools used in the study were Pearson product moment correlation coefficient, one way analysis of variance, and percentage. The alpha level used to test significance was 0.05.

Based on the data analyzed, the following results were obtained in the study.

- ❖ In the investigation of the relationships between personality types and academic achievement, the result of the study revealed significant relationship between introvert personality type and academic achievement. This is manifested by above average mean of the introvert group on their semester average score. The mean of the extrovert group is slightly below the average mean.
- ❖ Regarding to the investigation of the difference between learning styles on the basis of academic achievement, reflective learning styles has significant relationship with achievement
- ❖ Concerning the inter correlation between the personality types and learning styles, the correlation between introvert personality type and reflective learning style was significant.
- ❖ Concerning the investigation the most preferred learning style among high school students, reflective learning style is the most preferred one
- ❖ The investigation of the classes of students as to their learning style preference, and achievement association, grade 9 students' semester average score and activist vs. theorist learning styles had significant relationship. Grade ten semester average score mean and reflective as well as theorist learning styles had significant relationship. Pragmatist learning style and grade 11 semester average score mean was significantly correlated. The relationship of grade 12 students' score and reflective, theorist and pragmatist were significant.

5.2. CONCLUSION

The following conclusions could be drawn on the basis of the finding obtained.

- ❖ Personality types imply for individual differences on various aspects. Several scholars have made series of investigation on this issue and came up with different conclusions partially similar to this finding. In this finding, it is shown that there is significant relationship between personality type and academic achievement. Therefore it is found here that there that introvert personality type and better performance academic achievement are positively and significantly correlated. Hence, it is possible to conclude that personality type together with other factors like intelligence and achievement motivation can determine the extent of academic performance and then achievement.

Thus it is fact here that being introvert or extrovert can imply for learning stylistic preference of certain kind and the extent of achievement.

- ❖ It is found that individuals prefer certain way of learning based on his / her personal characteristics that are shaped by biological, developmental, familial and cultural factors. This means that as far as one's personality is concerned, individual learner may have dominant style of learning or approaching learning materials at the expense (less use of) others determined by personality characteristics. Thus learning styles depend on personal quality that influence one's ability to acquire information, interact with peers, or teachers. Therefore, different individuals have different ways of acquiring information shaped by individual difference or personality characteristics. Accordingly, learning styles are not generally determined to be good or bad rather it is the matter of fit to different situations of learning. The learning style employed for certain learning situation may not be preferred to other. Therefore, learners use various learning style preferences depending up on teaching context, and the nature of material presented as well as the nature of problem to be solved.
- ❖ Reflective learning style preference is highly associated with better academic performance. This is perhaps because this approach is based up on personality characteristics of learners with relatively better persistence, endurance in study, thoughtful, conceptual and abstract thinking, as well as the ability to reflect on situations or observations.
- ❖ Introvert personality type is related with reflective learning style in that this style manifested in independent work, cautious in character, preference for solitary activity to pairing with peers or group of people all that are supported by findings of this study.
- ❖ It is possible to conclude that reflective learning style is the preferred approach to learning by high school and college students because at these levels of education, the work becomes more complicated and more of abstract thinking or conceptualization which demands thorough thinking and concentration than simply acting by feeling which in turn is indicative for independent work, persistence and endurance. Hence one can say that preference for reflective learning style is increasing as level of education increases, then preference for activist learning style decreases.

5.3. RECOMMENDATIONS

The following recommendations can be forwarded based on the result of the study.

- ❖ Academic achievement can be determined by personality type the same way it can be shaped by intelligence, motivation and curiosity, self efficacy believes and other factors. Personality alone in the absence of these factors cannot be cause for the extent of academic performance and achievement. Hence, given certain type of personality, it is worth that one possesses these determining factors like motivation and intelligence especially, with hard work so that success is what follows.
- ❖ Given the individual difference, there is different ways o9f acquiring knowledge. Thus, understanding one’s personality types and learning styles can help to understand and appreciate diversity to manage one’s study style more wisely and to develop sound relationship with others. Therefore, appreciating this diversity, adapting and developing different styles by compensating for weakness and capitalizing on strengths can result in improved and better performance and achievement.
- ❖ Perhaps the most important thing is to be aware that people do not see the world in the same way. Therefore, teachers should have awareness that there is diversity of learning styles among students. Thus, there should as many ways of teaching as possible, as there are to learn. Hence, teachers have to appreciate this diversity and encourage them in classroom situation rather than being confined to one style so as to benefit all type of learners which in turn may reduce wastage.
- ❖ It is often visible /observable that introvert personality type students quite, shy and as a result and teachers overlooked them and their participation the class. That is to mean since these learners keep quite when teachers ask question in class, when teachers teach and forward questions, then the teachers consider them as they are low participating learners. Hence, it is suggested here that teachers should have to make them active participant and then explore their ability to make them complete whole person which otherwise becomes loss to school and its academic objectives when such potent individuals are forsaken their participation.
- ❖

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APPENDEX A

ADDIS ABABA UNIVERSITY

INSTITUTE OF PSYCHOLOGY

DEPARTMENT OF DEVELOPMENTAL PSYCHOLOGY

Questionnaire prepared to examine personality types and learning styles of Wayutuka worda high school and preparatory students in Oromiya regional state

Overview of the Questionnaire

This questionnaire encompasses three parts. Part one is about the general directions and background of the students. Part two contains the items designed to measure the variable learning style and part three is about the items measuring personality type. This questionnaire is to be filled by Wayutuka worda high school and preparatory school students and the purpose of the questionnaire is to examine the learning styles and personality types of the students. The data from the question is to be used in designing, planning and improving education or teaching learning activity in the schools. Therefore, you are kindly requested to fill the questionnaire as frankly, honestly, and kindly as possible since your responses have value in completion of this work and improvement of teaching – learning activity.

Thank you very much for your kind cooperation!!!

GENERAL DIRECTIONS

1. No need of writing your name
2. Indicate your response by putting “√” mark under number in the box

Part One: Background Information of the Students

1.1. Grade: 9. _____ 10. _____ 11. _____ 12. _____

For office use only

1.2. Sex: Male _____ female: _____

Roll No: _____

1.3. Roll No. _____

First semester average score _____

1.4. First semester average score _____

Part Two

Learning Style Questionnaire

There are items about learning style preferences of high school students listed below. Put a “√” mark in the appropriate number given in the table. The items have no right or wrong answer. They are simply to measure your preferred learning style. Therefore, complete them as frankly, honestly, and quickly as possible the meaning of the scales or numbers is provided as follows.

1. Never accurate of me 2. Not accurate of me 3. Somewhat accurate of me 4. Accurate of me 5. Very accurate of me

No.	Items	1	2	3	4	5
1	I like to be absolute about things					
2	In reading books, I prefer something that tells new facts and how to do something					
3	For me, learning means acquiring knowledge and skills so that I will use them later in practical life					
4	I prefer to solve problems by using step by step approach rather than guessing					
5	When I learn theoretically I like to strength it with practical problem solving					
6	I like to make coherent patterns for complete things					
7	I like to see things by participating to see if they work					
8	When I study in group working on difficult task, I am more likely and jump to contribute ideas					
9	When I solve problems, I rely on others information to get main point of what I learned					
10	I do not often take what I have been told or granted unless I					

	check it my self					
11	When I learn about a new idea, I immediately start working on it to see how I can try it out					
12	I prefer to jump in and do things as they come along rather than sticking to plans					
13	In study group working on difficult material, I am more likely to sit back and listen					
14	When there is inconsistency between concepts of what I have learned, I refer text book and other references					
15	If I were a teacher, I would rather teach courses that deal with ideas and theories					
16	I need a long time to think and understand what I have learned					
17	If I were a teacher, I would like to teach the courses that deal with practical application					
18	I usually talk more than I listen					
19	I like to participate in complex situation to understand them, e.g. Learning through puzzles					
20	When question is raised from the teacher, I am the first to raise my hand and reply					
21	I prefer to study myself rather than with group					
22	I can easily accommodate myself with new situation					
23	I like to think thoroughly about things before coming to conclusion					
24	I like to see and try something new and difficult					
25	Before starting to solve problems, I like to see at it from many different angles to get its real solution					
26	I like subjects that have workout in more practical ways of doing things					
27	I often irritate to people who rush in to things without careful consideration					

28	I learn from the ways other people do things					
29	I enjoy learning through project work such as collecting and observing leaves, insects, rocks, and the like					
30	I am open minded and get ideas from others					
31	Whatever it is, I try anything once					
32	I like to be cautious in my work to be effective					
33	For me, there should be logical and reasonable cases in any decisions					
34	I believe that there is always preferable way of doing things					
35	I am usually the life and soul in group discussion					
36	To solve certain problem, I like to consider all the alternatives that can be solution					
37	It is best to look before making a leap					
38	In meeting, I get very impatient with people who loss sight of the objective of the meeting					
39	I believe that careful and logical thinking is the key to getting things done better					
40	I usually listen more than I talk					

Part Three: Personality Type Questions

The following are some questions regarding to measure of your feelings, acts, and interest that you show towards things and people. Put “√” mark in front of the statements in the table under the number or scale best represent yours. The questions have no right or wrong answer but simply to measure your feeling, interest and acts towards people and or things.

The meaning of the numbers in the table is as follows.

1. Not at all
2. Rarely
3. Sometimes
4. Often
5. All the time

No.	Items	1	2	3	4	5
1	I tend to do things as quickly as I can					

2	I like to organize people for activities						
3	I am enthusiastic about starting new work						
4	I find it difficult to get in to room full of strange people						
5	I am in a hurry to get places even when there is plenty of time						
6	I would rather like to watch sport rather than playing myself						
7	I think that I talk more when I am with group of people						
8	I like mixing with a lot of people and playing with them						
9	Unless I take time, it is difficult for me to decide on something						
10	I like to crack jokes with group of friends						
11	I enjoy solitary activity such as reading, writing or watching Tv on my own						
12	When I am walking with other people, they often get it difficult to cope up with me						
13	In group work, I like to be leader or coordinator of the group						
14	I like to keep my feeling with myself rather than sharing it with others						
15	I would rather plan for things than simply going ahead and start						
16	I need to use a lot of self control in order to keep out of trouble						
17	I can make decisions quickly						
18	I calmly sit and watch competitive sports like race, foot ball and the like						
19	I frequently make careless mistakes						
20	Rather than having plan for something in advance, I prefer to do things as they appear to me						
21	I feel uncomfortable in the company of other people						
22	It is easy for me to discuss intimate and personal matters with my family						
23	I hesitate to complain if I am served test less food						
24	I can easily express my love to my partner						
25	I would be able to speak my ideas in front of group of people without fear of any thing						

26	If someone expresses an opinion which I disagree I tell my idea immediately						
27	I frequently like to be alone with my thought						
28	I am frequently lost in thought that I don't notice what is going around me						
29	I easily make friendship with members of my own sex						
30	I like works that need sustainable concentration						
31	It does often take me long time to start on some thing						
32	I do for today, let tomorrow take care of itself						
33	I am more reserved than other people						
34	I am not bothered to keep secret of others						
35	I am afraid to communicate with people of opposite sex						
36	I make sure that I am on time for appointment						

APPENDEX B

YUUNIVERSIITII ADDIS ABABAA

DHAABBATA SAAYIKKOLLOOJII

HIREE BARNOOTA SAAYIKOOLLOOJII GUDDINA NAMAA

**Bargaaffii akkaataa barattoonni itti baratan fi gosoota sansakkaa safaruuf qophaa’an,
barattoota mana barumsaa sadrkaa fi qophaa’inaa aanaa waayyuutuqaatiin kan
guutaman**

**Himoonni armaan gaditti barreeffamanii jiran waan sadii of keessaa qabu. Isaanis,
tokkoffaan odeeffannoo waa’ee barattootaa, lammaffaan , akkataa barattoonni mana
barumsa sadarkaa lammaffaa fi qophaa’inaa barumsa isaanii itti hordofanii fi sadaffaan ,
gosoota sansakkaa barattootaa ti. Kaayyoon gaaffichaas akkaataa barattoonni barumsa
isaanii itti baratanii fi gosoota sansakkaa isaanii safaruu dha. Kana yommuu ta’u firiin
qo’annichaas barumsa karoorsuuf, wixinuuf, akkasumas fooyyessuuf kan gargaaru dha
jedhamee itti amanamee ti. Kanaafuu gaaffii tokkollee osoo bira hindarbin dhugaa irratti
huundaa’uudhaan sirriitti deebii kee “√” bakka duwwaa filannoof qophaa’etti guutuu
dhaan deebii kee argisiisi.**

**Waan dhugaa irratti hundooftee deebii gaaffilee kanaa sirriitti deebistuuf dursa
galatoomi!!!**

Qajeelfama waliigalaa

1. Maqaa barreessuun hin barbaachisu
2. Bakka deebiidhaaf qophaa’etti mallattoo $\sqrt{\quad}$ guutuudhaann deebii kee argisiisi.

Kutaa tokkoffaa

Odeeffannoo waa'ee barattootaa

- 1.1. Kutaa: 9.____ 10.____ 11.____ 12.____ Abbaa dhimmaa qofaan kan guutamu
- 1.2. Lakkoofsa ____ Lak.____
- 1.3. Saala: Dhiira.____ dhalaa: ____ Qabxii giddugaleessa.____
- 1.4. Qabxii giddugalaa kan seemisteera darbee ____

Kutaa lammaffaa gaaffilee akkataa barattoonni itti baratan

Gaaffileen armaan gaditti tarreeffaman waa'ee akkaataa barattoonni barumsa itti hordofanii ti. Gaaffileen kunniinis deebii sirrii ta'ee fi dogongora jedhaman hin qaban. Isaanis kan barbaadaman akaataa barattoonni itti babratan ykn barumsa hordofan saffaruufidha. Kanaafuu akka yaadakeetti bakka duwaa fuuldura gaaffilee jiran lakkoofsota si ibsuu danda'an jalatti mallattoo “√” kana kaa'uudhaan deebii kee argisiisi.

Lakkoofsonni gabatee keess mataduree himootaatti argaman hiika armaan gadii qabu.

1. Tasayyuu nah in ibsu 2. Na hin ibsu 3. Xiqqoo xiqqoo na ibsa 4. Na ibsa 5. Baay'ee na ibsa

Lak.	Gaaffilee	1	2	3	4	5
1	Waan hundatti dhibbaa dhibba sirrii ta'uun barbaada					
2	Yeroon kitaaba dubbisu akkaataa wanni tokko itti hojjetamu kan natty argisiisu dubbisuun filadha					
3	Anaaf barumsa jechuun beekuma gara fuulduraatti hojiidhaaf nama gargaaru barachuu jeachuudha.					
4	Gilgaala kanan hojjedhu sadarkaa sadarkaadhaan malee akkasumatti akka natty fakkaatetti miti					

5	Wannan yaadhiddamaan (theory) dhaan baradhe tokko hojiitti jijjiireen barumsicha cimsachuu fedha					
6	Wanna tartiiba hin qabne tokko tartiiba qabsiisuuf baay'een dhama'a					
7	Wanni tokko akka hojjetuu fi hin hojjenne mirkaneeffachuuf shaakalaanan ilaala					
8	Yoo gareedhaan taanee barumsa ulfaataa qayyabannu ani osoo of hin qusatinan sirriitti hirmaadha					
9	Rakkooleedhaaf yeroon furmaata barbaadu waa'ee rakkichaa ilaalchisee yaada namootaa nan fudhadha					
10	Wannan dhaga'e tokko akkuman dhaga'etti osoo hin ta'in sirrii ta'uu fi hin taanee isaa ofii kootiin mirkaneeffadha					
11	Waan haraan baradhe tokko battalumattin hojiitti hiikamuu yookiin jijjiiramuu akka inni danda'u ilaala.					
12	Wantootaaif sagantaa basee boodaaf ykn gulanaaf kaa'uurra akkuma isaan na quannamaniinan hojjedha					
13	Yoo gareedhaan taanee qayyabannu dafee dubbachuurra yaada koo naanneffadhee yaada namootaas dhaggeeffadheen yaada koo kenna					
14	Wannan baradhe yaanni saa yoo wal simuu baate, kitaaba kan koo fi kitaabolee wabii dubbiseen garaagarumma fi walitti dhufeenya saanii ilaala					
15	Osoon barsiisaa ta'ee gosa barnootaa waa'ee hdaddamaa yookiin theory fi yaada (idea) irratti hundaa'en barsiisa					
16	Wannan baradhe tokko sirriitti ilaaluudhaaf yeroo fudhadheen ilaalu fedha					
17	Osoon barsiisaa ta'ee gosa barnootaa irra caalaa hojii (practical 0 ta'e barsiisuun fedha					
18	Yeroo baay'ee wannan dhaggeeffadhurra wannan dubbadhutu caala					
19	Wanna ulfaataa fi walxaxaa ta'e tokko irratti hirmaadhee waa'ee					

	isaa baruun natty tola. Fkn. Waan akka hibboo					
20	Yeroo barsiisaan kutaa keessatti gaaffii gaafatu deebiisaa deebisuuf dafeen harka baasa					
21	Gareedhaan ta'uurra qofaa ta'ee qayyabachuutu natty tola					
22	Ani haala haarawaatti dafeen itti bara ykn of madaqsa					
23	Waa'ee waan tokkoo yaada dimshaashaa irra osoon hin ga'in dura gad fageesseen xiinxala					
24	Wanna haarawaa fi adda ta'e tokko ilaalee yaaluun baay'ee natty tola					
25	Rakkoo tokko hiikuuf osoon hin jalqabin dura furmaata ta'uu kan danda'an kallattiiwwan adda addaan ilaala					
26	Gosi barnootaa ani filadhu irra caalaan kan hojiidhaan argisiifamu dha					
27	Namoonni osoo hin xiinxalin wanna tokkotti ariifatan baay'ee na aarsu					
28	Namootni broon waan isaan hojjetan irraa ilaalee barachuun natty tola					
29	Barnoonni hjiirratti xiyyeeffatan kan akka dhagaa, baalaa fi ilbiisota funaanuun barachuu baay'ee natty tola					
30	Ani namootatti nan dhiyaadha yaada isaaniis nan fudhadha					
31	Ani kanan jedhu waan fedhe iyyuu haa ta'u malee dubbachuu nan yaala					
32	Ani kanan jedhu of eeggannoon dogongora irraa nama eega					
33	Ani kanan jedhu murtoon tokko yeroo hundaa sababaawaa (reasonable) ta'uusaarrayyuu karaa sirrii (logical) ta'uu qaba					
34	Anaaf yeroo hundaa waan tokko hojjechuudhaaf karaan fooyya'aan ni jiira					
35	Yeroo hundaa marii kutaa keessatti ani lubbuu fi lafee dha					
36	Rakkoo tokko hiikuuf furmaata kan ta'an lkallattiiwwan adda addaa nan ilaala					

37	Osoo hin utaaln dura ilaaluun gaariidha					
38	Walga'ii keessatti namoonni ijoo dubbii ykn ajandaa isaanii ala ba'an natty hintolan					
39	Yeroo baay'ee wannan dubbadhurra waanan dhaggeeffadhutu caala					
40	Of eeggannoo fi yaada xiinxaluun wanti hojjetamu tokko firii gaarii akka qabu nan amana					

Gaaffilee waa'ee gosoota sansakkaa barattootaa safaruu irratti xiyyeeffatan

Himoonni armaan gaditti gabatee kessatti tarreffaman waa'ee akkataa barattoonni fedhii, yaada fi miira saanii ibsatani dha. Gaaffileen kunniin debii sirrii fi dogongora ta'an hin qaban. Wanni barbaadamaniif gosoota sansakka barattotaa safaruuf qofa. Kanaafuu bakka duwwaa gabatee keessatti lakkoofsata jalattii kennaman mallattoo √ guutuu dhaan filannoo kee argisiisi. Gulantaawwan ykn lakkoofsonni gabatee keessaa hiika akka armaaan gadii qabu.

1. Gonkuma
2. Darbee darbee
3. Yeroo tokko tokko
4. Yeroo baay'ee
4. Yeroo hunda

Lak.	Gaaffilee	1	2	3	4	5
1	Yeroon hojii hojjetu daddafeeni					
2	Namoota hojiidhaaf walitti qindeessuu nan jaalladha					
3	Wanta haaraa tokko hojjechuuf kaka'umsa nan qaba					
4	Kutaa namoonni baay'een keessummaa ta'an keessatti argaman ol seenuun baay'ee natty ulfaa5ta					
5	Bakka tokko adeemuuf yeroon ka'u yeroo ga'aa yoon qabaadhellee hangan achi ga'utti nan ariifadha					
6	Ispoortii adda taahachuurra ilaalu tu natty tola					
7	Namoota baay'ee waliin taanee yeroo odeessinu, ani namoota waliin odeessinu caalaa waanan odeessu natty fakkaata					
8	Namoota baay'ee ta'anitti makamee haasa'uu nan jaalladha					

9	Wanna tokko murteessuuf yeroo fudhadee yoon ilaale malee battalumatti murteessuun natty ulfaata					
10	Hiriyoota koo waliin taanee baacoo baacuu nan jaalladha					
11	Qofaa ta'uun kitaaba dubbisuu fi Tv. Illaluu nan jaalladha					
12	Namoota waliin ta'uudhaan yeroon karaa adeemu, namoota ani waliin adeemu na qaqqabuuf isaanitti ulfaata					
13	Hojii tuutaa yookiin garee keessatti durabu'aa ykn qindeessaa ta'uu nan jaalladha					
14	Yaada keessa koo jiru baasee dubbachuurra ofumakoo xiinxaluutu natti tola					
15	Wantoonni akka na qunnamanitti hojjechuurra durseen sagantaa itti baafadha					
16	Wanni rakkina ta'e gonkumaa akka natty hin dhufneef durseen of tiksa					
17	Wanna tokkotti dafee murtoo itti laachuu nan danda'a					
18	Tapha wal dorgommii kubbaa miilaa fi fiigicha yommuun ilaalu calliseeti					
19	wanna tokko osoon hin beekin irra deddeebi'een dogongora					
20	Wanta tokkoof sagantaa baasee fuulduraaf kaa'uurra akkuma na quannamettin hojjedha					
21	Hriyoonni koo waan tokkoraatti yommuu dogongoran dogongora saanii dafeen itti hima					
22	Wanna ana ilaallatu iciitii baasee warra koo ykn hiriyoota kootti nan hima					
23	Nyaata anaaf hin taane tokko yommuu anaaf dhiyeessan nyaatichi akka naaf hin taane warra naaf dhiyeessetti himuu nan yeella'a					
24	Jaalallee koo akkan jaalladhu osoon hin dhiphatin akka salphaatti itti himuu nan danda'a					
25	Yaada koo namoota baay'ee fuuldura dhaabadhee soda tokko malee ibsachuu ann danda'a					
26	Namni tokko yaada kan koo wajjin wal hin simanne tokko yoo					

	dhiyeesse, yaadni sun kan koo waliin akka wal hin simanne battalumattin itti hima					
27	Yeroo tokko tokko yaada koo waliin qofaa ta'uu ann barbaada					
28	Yeroo tokko tokko yaadninna fudhatee bade bakkan jirullee nan wallaala					
29	Namoota saalaan na fakkaatan waliin akka salphaatti walii galuu nan danda'a					
30	Hojii obsaa fi yeroo dheeraa barbaadu hojjechuutu natty tola					
31	Wanta tokko hojjechuu jalqabuuf yeroo dheraa natty fudhata					
32	Har'a yoon jiraadha kan boruu akka fedhe baay'ee nah in dhiphisu					
33	Ani namootatti badaa hin siqu ypokiin hin dhiyaadhu					
34	Iciitii nama tokkoo eeguun baay'ee nah in dhiphisu					
35	Yoon nama wajjin beellama qabadhe osoo yeroo isaa hin dabrsin bakka beellamichaatti nan argam					
36	Namoota saalaan anarraa adda ta'an wajjin taphachuu nan jaalladha					