

CHAPTER ONE

INTRODUCTION

Background to the Study

There are controversies on the reason why students have poor performance in school. Many variables have been considered and studied by researchers and scholars. These include psycho-emotional factors, cognitive skills, home and school variables, family stress, inadequate learning and infrastructural facilities, teachers' qualification, quality of school atmosphere, instability of educational policies among others.

Students' performance according to Mushtaq and Khan (2012) are affected by social, psychological, economic, environmental and personal factors. These factors could either be internal or external classroom factors. Internal classroom factors could include students' competence in the subject taught, class schedule and size, materials and learning facilities available, class environment, complexity of material as well as teachers' role in delivering subject matters while external classroom factors may include extracurricular activities, family and social issues. These are peculiar variables that had been studied to find solutions to problems facing Nigerian system of Education.

The Nigerian system of education is confronted with many problems. These include corruption, inadequate facilities, inadequate funding, change in policy and

poor performance of students among others. The most persistent of these countless problems is poor performance of students. This is rampant among SSS as shown in their external examination results (Ojo & Olaniyan, 2011). This menace in the Nigerian educational system as regards students' performance has been a detrimental issue for so long despite intervention from government and stakeholders to reverse it (Idakwoji, 2016). This is evidenced in students' performance in the West African Senior School Examination (W.A.S.S.C.E.) as shown in Table 1.

Table 1: Nigerian West African Senior School Certificate Examination Results: 2010-2018 showing the percentage of students that obtained Credit and above (A1-C6) pass and below (D7-F9) in the May/June WASSCE including English and Mathematics

Year	Total number of students	No. of students with Credit and Above	% of students with Credit and Above	No. of students with D7-F9	% of students with D7-F9
2010	1,351,557	453,447	33.55	898,110	66.45
2011	1,540,250	581,630	38.93	952,620	61.07
2012	1,695,878	658,170	38.81	1,037,708	61.19
2013	1,543,683	564,524	36.67	979,159	63.43
2014	1,705,976	529,425	31.03	1,176,551	68.97
2015	1,593,442	616,370	38.68	977,072	61.32
2016	1,552,758	878,040	52.97	674,718	47.03
2017	1,559,162	923,486	59.22	635,676	40.78
2018	1,572,396	786,016	49.98	786,380	50.02

Source: Test Development Division, West African Examination Council (WAEC) Lagos, Nigeria 2016.

Performance among Nigerian students over the years have not been impressive. As shown in table 1 above, the May/June West African Senior School certificate examination (WASSCE) presented 1,351,557 students in the year 2010. Out of this number, 453,447 students which form 33.55% of the total percentage

passed the examination with credits or more pass in five subjects and above including English and mathematics which are the major requirements for entrance into the university, leaving 66.45% with Grades D7 to F9. In 2011, 38.93% of the total candidates (1,540,250) passed the examination which shows a little un-encouraging rise in students' performance. This rising performance still show that 61.07% failed the examination.

Furthermore in the year 2012, 61.19% of the total number of candidates (1,695,878) still fail with D7 to F9 in Mathematics and English language. In 2013, the failure rate increased to 63.43% and increased more to 68.97%, in the year 2014. Comparing previous performances, the failure rate reduced to 61.32% among candidates who sat for the 2015 May/June W.A.S.S.C.E. with 616,370 students (representing 38.68 per cent) having credit and above in five subjects and above including English and Mathematics. 2016 May/June W.A.S.S.C.E. revealed the highest pass rate in over seven years. 878,040 candidates representing 52.92% out of 1,552,758 candidates who sat for the May/June examination obtained credit pass in five subjects including English and Mathematics.

The year 2016 W.A.S.S.C.E. result as released by the examination body is commendable when compared to previous years. Nevertheless, it is worrisome and alarming to note that 674,718 students which form 47.08% of the total percentage still wallowed in failure. The 2017 results was better with a performance of 59.22%. Unfortunately, in the year 2018, only 786,016 (49.98%) students out of the total of

1,572,396 passed with admit-able requirement. This becomes bothersome to the researcher, as 786,380 students who failed the 2018 May/June W.A.S.S.C.E. examination are not qualified to seek and gain admission into universities due to poor performance.

Students in south-west Nigeria are not left out of this menace. Evidence available in the 2016 W.A.S.S.C.E. results as reported by WAEC (2016) and Yakubu (2017) showed that Lagos State ranked 6th in Nigeria which is the highest in the south-western region. Ekiti State ranked 11th while Ondo was 13th on the rank. Furthermore, Ogun State stayed at 19th position in the pass ranking while Oyo State was left at 26th position with only 19% obtaining credits in five subjects and above including English and Mathematics. Osun State sat at the bottom ranking 29th out of 36 states in Nigeria. This failure rate is disturbing as schools no longer meet the expected requirements of producing qualitative students (Yakubu, 2017). This ugly act of poor performance threatens the future of this nation as youths are proposed leaders of a nation (Olaniyi, 2000).

Despite series of efforts made to find solution to the problem of poor performance among students, the problem still persists. Several variables have been considered which included gender differences, school type, motivation, self-concept, teachers' education and teaching style, among others. Irrespective of this, not much significant improvement has been recorded (Idakwoji, 2016). Does that mean that some important variables have yet not been considered? This, therefore,

motivated the researcher to consider variables on individual differences, in this case, PT and LS s. Studies revealed that individuals react differently to situations because of their differences in thought, emotion, motivation, and behavior. This shows that students may react, learn and assimilate differently on the basis of their diversities in personality and LS s.

The concept of Personality Types (PT) and LS s (LS) appear to have been marginally considered. Recent psychological evidences appear to have left out these fascinating variables, which, to the author of this research, may also be relevant to qualitative performances of students at secondary school level. The term Personality has countless definitions that no single definition is commonly adopted. In terms of historical conceptual definition and development, Catell (1933) has always been acclaimed to be the first scholar who explained the term personality. Catell (1933) developed a theory which discussed personality in terms of consistent events measurable by means of a personality inventory. Cattell defined personality as that which allows a prediction of what a person will do in a given situation.

Other definitions commonly referred to are the definitions of Funder (2004) and Mayer (2007) who defined Personality as an individual's in the way they think, feel and behave, and their disposition to those patterns. Also, Larsen and Buss (2005) defined Personality as the set of organized psychological traits and mechanisms within the individual which influences individual adjustment to the society.

Different definitions of personality are in general agreement with one another. This agrees with Olowonirejuaro (2007) who defined personality as a psychological construct which helps in defining an individual's likely disposition towards an event, in this case academic performance. Based on these definitions, personality refers to the unique and distinctive characteristics which set a person apart from others. Personality is sometimes seen as the physical attributes of an individual or as the typical behaviour of an individual in certain circumstances seen as a psychological construct. Holland (2007) sees personality differently when he described personality as the underlying stable psychological structure and processes that organize human experiences and shape a person's action and reaction to the environment or an event.

Thus, personality as a concept penetrates into areas like career counseling and development in the field of education which stems partly from the fact that it is assumed that people's whole personality can be divided into four independent areas or scales; energizing, attending, deciding and living. These categories can further be re-classified into two major PT, namely PT A and B (Mussen, 2013). Type A and B personality are examples of personality type theory. In this, impatient and achievement – oriented people are classified as type A, and gentle and relaxed individuals are known to be type B. Developmental psychologist Jerome Kagan (1995) in Mussen (2013) is a prominent contemporary advocate of type theory. He suggested that shy and withdrawn children are best viewed as having an inhibited temperament, which is qualitatively different from other children. In this

categorization, an individual is either more of one than the other. PT sometimes differs from trait, with the latter embodying a smaller grouping of behavioral tendencies. PT are sometimes said to involve qualitative differences between people whereas traits might be construed as quantitative differences.. Other typologies such as Socionics, Myers-Brigg's type Indicator (MBTI) and Keirsey Temperament Sorter all have roots in the Jungian philosophy (Norting, 2003). Personality type and LS are therefore the main variables of this study.

PT and LS over the years have been seen to be related through the Myers-Briggs Type Indicator (MBTI). A study according to Fallan (2006) suggested that a student's personality type and learning are related and can lead to failure if not considered. Researches such as Fallan (2006) have provided valuable insight regarding the relationship between PT and LS. There is a wide-spread assumption in academia that each individual student has unique learning characteristics, learns differently and possesses a LS. Attempts to measure these characteristics and to establish reliable LS have been inconclusive. One historical problem with LS research is that no one has clearly defined the underlying elements of a LS. Tallmadge, Shearer, and Greenberg (2006) pointed out that the characteristics of an individual possesses his interaction with instruction, sometimes enhancing learning and sometimes impeding instruction, have popularly been called LS.

Personality and learning are closely linked. Studies have shown the existing relationship between personality and LS (Elshout & Hamaker, 2000; Aragon,

Johnson & Shaik 2002; MacClanaghan, 2000). Furnham (2000) reported higher correlation between PT and LS s. Personality variables according to him are closely related to LS s. PT are mostly expressed in LS (De Raad & Schouwenburg, 2006). Personality type of students plays significant roles in their motivation and learning strategies (Cano & Raven, 2002). LS is, however related to personality type.

Learning as a concept in psychology is said to begin from birth to death. LS describes the process that learners use to sort and process information. Learning is the ability to absorb, process and retain information till when needed (DeBello, 2000). LS according to Othman, Sumarni and Foog (2017) is a natural characteristic which does not change easily during life time but could be developed through life experiences. LS is an important factor in several areas including students' academic performance, how students learn and teachers teach, and student-teacher interaction (Adewoye, 2008). Several studies have measured and explained LS s. Keefe (2003) describes LS as a combination of psychological issues that affects the way the interacts with the environment.

LS has been said to have contributed and played enormous role in the teaching-learning process by enhancing teachers' understanding of learners' diversities (Salehi, Yousef, Seyed, & Mohammed, 2016). Most students are not aware of their LS preferences. If they are, it will help them to utilize the appropriate learning methods and also assist them to attain their academic goal. So also, teachers

need to be aware of their students' learning preferences and choose the best method of instruction which will aid students' performance (Entwistle 2001; Bordak 2001). Students' interest and success increases when teachers' method addresses their individual LS (Kazu, 2009). Felder and Spurlin (2005) however reported that learners who possess specific LS might experience difficulties in learning when teachers' method does not favour their style. Their study revealed significantly better results for students whose LS match with teachers' teaching styles.

Also, scholars have attempted to address the problem of low performance by observing LS, its influence on students' performance with the understanding that different students possess different LS s. It is pertinent to note that teachers, psychologists and decision makers need to have deep knowledge of students' diversities in LS and how this influence their performance. As pointed out by Bennet (2003), teachers' approach to teaching in some schools is not addressing students' diverse LS. When teachers' teaching styles, accompanied with relevant materials, address students' preferred LS during the teaching process, the students understand better and retain information longer.

It is necessary to understand students' perspective of learning to foster retention and in turn, academic performance. This agrees with Alizera, Rahil, Habiba, Shafee and Jafer (2011) who stated that the first step in ensuring students' achievement is to understand the impact of their LS since there is no single way of

optimal delivery for all students. It is however important for teacher to accommodate learners' diversities in learning in their planning as well as their delivery process. Teaching-learning process is therefore not complete without the understanding of students' abilities and diversities in learning. A teacher's method may accommodate most learners while teaching but a good teacher accommodates all learners regardless of their differences in LS.

Teachers' teaching method must favour all learners regardless of their differences in learning or personality. When teachers' style is compatible with student's LS, academic success is recorded. It implies that when learning materials are in line, it brings about longer retention which leads to application of knowledge. This however cannot be achieved when learning and teaching styles are mismatched. Teaching methods are more effective when given to students with particular LS. When students' styles do not match teachers' teaching method, there might be great negative effect on students' performance (Humphrey, 2014).

Gregory and Chapman (2012) also in the same line claimed that teachers' knowledge of students' diversity in LS help them in developing curriculum, schemes and lesson plans that accommodates students' area of strength and weaknesses. Students, however, have dominant LS as well as personality. PT and LS may be intertwined in ways that link LS to the Big Five personality traits. Walter (2009) asserted that PT and LS are basis for individual differences among students

which accord them the knowledge of their strengths and weaknesses. Also, Coffield, Moseley, Hall and Ecclestone (2004) opined that personality and LS if well understood provide basis for understanding students' diversities in learning. Students reflect their LS through their personality which in turn determines their learning strategies and performance. Students' performance is affected by individuals approach to learning. Individual differences in gender, personality and LS may affect students' motivation and attitude towards learning especially when the mode of instruction is not suitable (Heinston, 2000). Of importance to this study is Flemming's (2001) theory of LS. Flemming (2001) is the creator of the VARK system. There are four distinct LS in the theory. VARK stands for Visual, Aural/Auditory, Read/Write and Kinesthetic.

In VARK theory, someone with a visual LS prefers to see or observed things such as pictures, diagrams, demonstrations, films, flip-chart, etc. They will say phrases like 'show me', 'can I have a look' and will be able understand better after reading or watching instructions. 'Auditory' learners have prefer to listen to the spoken words, of self or others, of sounds and noises. These people will use phrases like 'tell me', 'let's talk it over' and will be best able to perform a new task after listening to instructions. Read/Write explains the learners who read and write down what they have learnt. 'Kinesthetic' LS according to the theory has a preference for physical experience such as touching, feeling, holding, doing, and practical. These people will use phrases such as 'let me try', and will be best able to perform a new

task by going ahead and trying it out. In his work, approximately 60 percent of the population is considered Multi-Modal, meaning they exhibit preferences in several learning methods.

VARK model explains students' preferred and dominant LS s. The main sensory receivers are involved in the VARK LS model, the Visual, Aural/Auditory, Read/Write and Kinesthetic. Visual learners dominantly learn through the aid of visual aids such as graphs, charts, pictures, diagrams, etc. When they receive instructions through this means, they tend to understand and retain such information for longer period compared to other means or methods. The auditory on the other hand learn better when they listen to lectures, tapes, discussions with peers, etc. This also enhances their reception and retention.

Some students are fond of reading texts, journals, notes and materials. They jot down notes and in most cases, enjoy forming personal notes to aid their understanding. This category learns best through Read/Write LS. The Kinesthetic learners include physical involvement in their learning activities (Kinsellla, 2005). This category of learners engages in physical activities such as field trip, dramatizing, interviewing and practical. Shashin and Mohammed (2013) supported the above explanation when they concluded that every individual learn in different ways. Some need to see things (Visual), some needs to hear (Aural/Auditory), some need to read and write (Read/Write) and some need to do something in other to learn (Shashin & Mohammed, 2013).

Using the VARK questionnaire, the data analyzed in the work of Bricheno and Younger (2004) revealed that no significant relationship existed between genders and preferred LS. Data from the study revealed that few boys apparently have preference and the proportion of boys and girls having kinesthetic LS were similar. Correlational analysis from the study of Shavin and Mohammad (2013) showed a positive relationship between VARK LS and students' performance at 0.01 level of significance. Also in the study, gender had no effect on students' preference of LS s.

Gender differences have been another variable that has been considered widely in academia. This is to see its influence on students' performance as well as on other variables. In their own view, Meltem and Serap (2007) confirmed that there is significant difference in the academic achievement of male and female students in favour of females. Females are said to have higher scores than males on both comprehension of information and evaluation of arguments (Rodney, Raymond, Lance & Tracey, 2008). Abdu-Raheem (2012) reported that poor performance of female students in Science and Science related courses in Nigerian secondary schools have to do with gender. An analysis using chi-square revealed that there was no significant difference between the performance of male and female students in Social Science subjects except in Economics. This showed there was notable and significant difference between male and female students' performance in Economics. This calls for further consideration by educational stakeholders.

Stakeholders like teachers, government, examination bodies, school counsellors, and curriculum planners are key determinant in policy administration especially in the educational sector. Curriculum planners as one of the major stakeholders may consider factors like gender, LS s, PT, anxiety and self-efficacy while preparing the curriculum and instruction in order to tailor instructional methods to accommodate students' diversities (Park & Lee, 2004; Sinnerton, 2014). Atta (2013) found gender differences in PT and LS s. According to him, students' gender varies when compared with their PT and LS s. On the contrary, Furnham (1999) believed there should be relationship between people's preferred LS and his/her personality.

Factors like students' PT and their preferred LS can be studied to enhance students' performance in Economics. Economics therefore has become an important subject in Nigerian education which has been realized for the past two decades. Economics is considered as a key subject among all social sciences. It is regarded as a required subject in Senior Secondary Certificate Examination (SSCE) syllabus and a pre-requisite to almost all social science courses in the university (Kayode, 2004). Thus, the teaching and learning of economics plays a predominant role in development of any country. Economics is known to have many definitions. Some scholars are interested in the monetary aspect while others, industrial business, welfare economic of international relation, etc. Scholars therefore define economics

to reflect their interest, but there is no definition of economics that is all embracing (Anyawocha, 2001).

The earliest definitions were in terms of wealth or material welfare. For example, Adam Smith laid the foundation of economics as a discipline. He saw his work as an enquiry into the nature and causes of wealth of nations (Anyawocha, 2001). The most accepted definition which is widely used globally is the one given by Lord Robbins definition in 1932 quoted by Anyawocha (2001) as the science which study human behavior as a relationship between ends and scarce means, which have alternative uses. This definition is seen to be analytical and most embracing. He analyzed economics as a social science since it studied human behavior, human want as unlimited, the limited resources with which to satisfy the unlimited want (Anyawocha, 2001). Considering therefore the importance of the subject, students with certain PT and LS may excel in Economics to different degrees depending on the match between their personality characteristics and the subject. LS therefore is related to individual characteristics. With this understanding, therefore, it is very important to investigate what differences these variables have on students' performance in Economics in south-west, Nigeria.

Empirical studies revealed differences in students' PT and learning preferences (Oxford & Ehrman, 2014). Such differences have been significant in students' way of learning which in turn influence their performance (Fowler, 2002; Contessa, 2005). Education will, therefore, be effective when diversities among

learners are well known and catered for by teachers. Students will retain more information when teachers use strategies that suit their LS (Tulbure, 2012). Teachers, therefore, need to be aware of students' dominant personality as well as LS so as to engage in teaching strategies which suits their preference in enhancing their educational outcome in subjects like Economics (Smith, 2002). PT and LS are important variables which determine students' academic performance. On the basis of the above, it can be claimed that PT and LS are important variables which determines students' performance. Several studies have considered PT and LS on performance of SSS. The research topic under consideration is, therefore, necessary to serve as complementary to existing knowledge in this area.

Statement of the Problem

The aim of this study was to investigate the differences in SSS' performance in Economics based on PT and LS in South-west, Nigeria. Students' performance is directly or indirectly linked to a country's social and economic development because of the role it plays in producing quality and efficient graduates who later become great leaders and agents of developments to the country (Mushtaq & Khan, 2012). SSS are expected to write external examinations at the end of their secondary education to further gain admission into universities and other higher institutions. This chain of progression is being frustrated by poor performance as seen in WASSCE examinations where large percentage of secondary school graduating

students are not meeting the expected requirements, hence, ineligible to seek and gain admission into higher institutions. This aberration caused many to re-enroll for external examination for years while some gave up, lost interest along the line and joined the league of dropouts. This is not good for a nation like Nigeria and therefore calls for urgent intervention to know the factors that influence students' performance among SSS.

South-west, Nigeria can be academically said to be one of the areas that are at the fore-front of academic advancement but WASSCE results over the years have revealed an unstable performance leaving many students at the poor performing class. A total of 674,718 candidates that sat for the 2016 WASSCE examination did not meet up with credit requirement in five subjects including English and Mathematics which is a major yardstick to progress academically. Different people had blamed students' poor performance to low retention, parental factors, association with wrong peers, low motivation and the likes (Aremu and Soka, 2003; Aremu and Oluwale 2001; Aremu, 2000), hence, slowing down the pace of academic advancement in the country. Could it be that there are important variables left un-noticed or being marginalized? This motivated the researcher to consider other variables like PT and students' LS.

Many studies have examined PT of students as well as LS individually to see how they influence students' performance. Adesina (2011) researched on the

influence of personality type and performance on the Academic Achievement of SSS students in Ibadan metropolis and found significant difference in the PT and performance of SSS adolescent students. Olawuyi, et al. (2015) worked on analysis of LS of undergraduates with hearing impairment in two states in Nigeria and Daniel (2014) in his own research submitted that Students' LS accordingly influenced students' performance in a number of academic disciplines. Based on the aforementioned, the issue of PT and LS cannot be said to have been adequately covered in terms of establishing its differences on students' academic performance. It is pertinent to note that countless researches are on PT and LS but many of these studies are based on states and not on geographic zones, that is, South-west, Nigeria. This study, therefore, tends to fill this gap by examining the differences in SSS' performance in Economics based on PT and LS in South-west, Nigeria, and the study is amply justified. The study will serve as complementary to existing studies.

Purpose of the Study

“The main purpose of this study was to determine the differences in SSS' performance in Economics based on PT and LS in South-west, Nigeria. Specifically, the purpose of this study was to:

- a. assess the profile of PT of SSS in South-West Nigeria;
- b. assess the profile of LS of SSS in South-West Nigeria;
- c. determine SSS' LS based on their PT in South-west, Nigeria;

- d. examine SSS' performance in Economics based on their PT in South-west, Nigeria;
- e. examine SSS' performance in Economics based on their LS in South-west, Nigeria;
- f. determine SSS' performance in Economics based on their personality and LS in South-west, Nigeria;
- g. assess the difference in SSS' performance in Economics based on PT and LS in South-west, Nigeria''.

Research Questions

“The researcher raised the following research questions in an attempt to proffer possible solutions.

- a. What is the profile of personality type of SSS in South-West Nigeria?
- b. What is the profile of LS of SSS in South-West Nigeria?
- c. What are SSS' LS based on their PT in South-west, Nigeria?
- d. What is the performance of SSS in Economics based on their PT in South-west, Nigeria?
- e. What is the performance of SSS in Economics based on their LS in South-west, Nigeria?
- f. What is the performance of SSS in Economics based on their PT and LS in South-west, Nigeria?

- g. Is there any difference in SSS' performance in Economics based on PT and LS in South-west, Nigeria?"

Research Hypotheses

The following hypothesis was formulated and tested in the study.

H₀₁: There is no significant difference in SSS' performance in Economics based on PT and LS in South-west, Nigeria.

Scope of the Study

This study investigated PT, LS and performance of SSS in Economics in South-west, Nigeria. The study was carried out among SSSs students in South-west states of Nigeria (Lagos, Ogun, Osun, Oyo, Ondo and Ekiti). South-west, Nigeria is seen as educationally advantaged but students still wallow in poor academic performance. Hence, the population for this study consisted of all SSS students (SSS I, II and III) in South-west, Nigeria.

The sample for the research were 1,080 SSS two (SS II) students out of 371,843 students presently offering Economics in the sampled schools. SSS II students are in their penultimate year in Secondary school and could serve as the best sample for the study. Multi stage sampling techniques was employed in the course of this research. These include simple random sampling technique, stratified sampling technique and incidental sampling technique. Past WAEC Economics objective test questions (2014 – 2017) reviewed based on SS I and II syllabus was adopted as the instrument for the study to test students' performance. Also, the Jung-

Meyer Briggs (1998) Typology questionnaire (JMBTQ) and the Visual, Aural/Auditory, Read/Write and Kinesthetic questionnaire (VARKQ) based on VARK theory by Flemings (2001) was the adopted instrument for this study. Descriptive statistics were used to examine the demographic characteristics of the respondents and to answer the research questions. The stated hypothesis was tested using ANOVA.

Operational Definition of Terms

The following terms are operationally defined in the context they were used in the study.

Academic Performance: scores of students in Economics test taken from Past WAEC Economics objective test questions (2014 – 2017) based on SS I and II syllabus. 0 to 49 (Low) and 50 to 100 (High).

LS: Different ways by which students prefer to learn what they are taught. LS are of four categories in this study namely, the visual learners, auditory learners, reading/writing learners and the kinesthetic learners.

PT: The students' individual unique and underlying behavioral characteristics. This includes type A and type B.

Type A Personality Type: This is a type in which a person has time urgency, that is, trying to achieve a lot of things in a very short period of time. They are aggressive, insecure and generally hostile, workaholic, always busy, driven, somewhat impatient, who sits on the edge of his seat when waiting and so on.

Type B Personality Type: The type in which a person is easy going, not competitive, pleasant, reserved or isolated.

Significance of the Study

The findings of this study should have advantage for students, school counsellors, educational psychologists, teachers, curriculum developers as well as educational decision makers through professional academic journal publications, counseling intervention strategies, and workshop, seminars presentations and feedbacks making reference to the study.

Data on the students PT should be needed to help the students have in-depth knowledge about their personality type and to know how to overcome the influence of such PT on their academic performance. Through counseling intervention strategies, it is anticipated that the findings of this study, therefore, might be of great significance to students as this study will help them to understand their personality differences and LS preferences. With this understanding, students should be able to

choose a befitting study plan which addresses their dominant personality type and LS.

The findings of this study might also be useful through feedback mechanisms and publications for teachers who might be enlightened through seminars on students' diversities in PT and LS. This might help them to vary their teaching techniques as well as materials to cater for all categories of learners hereby making their instructions effective. Education is said to be effective when diversities among learners are well known and catered for, especially, by teachers.

In addition, through the findings of this study, awareness might be created for government officials, decision makers in education and curriculum planners through periodical publications and seminars as feedbacks on the need to be aware of students' diversity in personality and LS. This will help to tailor instructional methods to accommodate students' diversities.

The findings of this study might also be useful to school counselors and educational Psychologists in understanding the factors that contributes to students' academic performance, in this case, PT and LS. This might help them in encouraging and counseling students on the importance of recognizing their individual diversities in these variables and to explore relevant materials or strategies supported by their personality and LS.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This study investigated differences in SSS' Economics performance based on PT and LS in South-west, Nigeria. To achieve this, a critical review of related literature was examined under the following sub-headings:

- a. Concepts, Characteristics and Theories of Personality
- b. Concepts, Models and Theories of LS
- c. Differences in PT and LS
- d. Empirical Studies on Differences in PT, LS and Academic Performance
- e. Appraisal of Literature Reviewed
- f. Conceptual Framework for the Study

Concepts, Characteristics and Theories of Personality

Personality as a variable will best be understood with a brief explanation of its concept, characteristics and theories as related to this study.

Concept of Personality: There are several attempts by scholars to define the term personality but there seems to be no agreement on a single definition. Ogunlade (1995) reported that different professionals as well psychologists defined personality differently. Personality according to Mayor (2017) is explained as a system of organized and developing parts which is expressed in a person's action. The system of parts according to him includes components like motives, emotions, mental models, and the self.

According to Larsen and Buss (2005), personality is the organized and re-occurring traits within the individual, which determines how such an individual

reacts to his social environment. Also in his definition, Mayer (2007) asserts that personality is the organized, developing system within the individual that represents the collective action of such individual's major psychological subsystems.

In the work of Adeniyi, Adeniran and Okewole (2014), every individual possesses a unique personality which helps to determine the limits of their success, happiness and fulfilment in life. Based on the statement above, they proposed that Personality should, therefore, be seen as one of a person's most important assets. They viewed individual's personality as a unique way of thinking, emotion and behavior over time. Personality can also include an individual's thoughts, behaviour, feelings, emotions, attitudes, physique adjustment, unique learning, history, response patterns, habits and general poise (Denga, 2002; Jing, 2007). Arulmani and Arulmani (2004), defined personality as a unique and consistent way of behaving or reacting to situations and environments. It combines a person's abilities, interests, values, hopes, reaction patterns, likes and dislikes, preferences and habits that make a person unique. Anyin (2004) and Larsen and Buss (2005) in their own way asserted that it is a stable, consistent and organized character, temperament, intellect and physique of a person, which explains his/her unique adaptation to his environment. Denga (2002) stated that an individual's personality could be used to predict what a man will do when placed in a given situation.

Pervin, Cervone and Oliver (2005) also defined personality as a person's characteristics which account for consistent patterns of feelings, thinking, and

behaving. However, a definition of personality which has gotten general acceptability among psychologists is the one given by Allport (1963) who defined Personality as a dynamic organization, inside the person, of psychophysical systems that create the person's characteristic patterns of behavior, thoughts, and feelings. It is observed that all these definitions are very similar and interwoven. Basically, they all connote human characteristics which is unique and consistent in behavior as well as adaptation to their environment.

Personality type refers to the psychological classification of different types of individuals. Individuals in this term have their distinctive classification based on their uniqueness in behaviour, character and adaptation to environment. Personality type involves qualitative difference in human. Personality is about those aspects of each individual that are enduring, constant and stable (Fadipe, 2011). “An individual who is aggressive today, the odds are high will be aggressive tomorrow”. Someone who is shy now, will likely be shy the next morning. In this, Fadipe (2011) is talking about stable characteristics, and these are what psychologists' study using a variety of techniques under the heading of personality.

Personality is also, characterized by repeated and consistent occurrence. The behaviour should be shown in more than one stances.

Another explanation of personality is that the theory assumed individual's uniqueness (Adebayo & Fadipe, 2016). This is a basic and important factor for teachers to know about their students.

There is need to educate school teachers, government officials, curriculum planners and other stakeholders about what the real concept of personality. Personality psychologists can better assist these stakeholders to enrich their understanding of the concept and how other social psychology concepts, such as the self and attitudes, compare and contrast with the interests of personality psychologists.

Similarly, according to Williams (2001), the hostility component of Type A personality is the only significant risk factor. Thus, it is a high level of expressed anger and hostility, not the other elements of Type A behavior that constitute the problem. A study was performed by Williams (2001) that tested the effect of psychosocial variables, in particular personality and stress, as risk factors for cancer and coronary heart disease. In this study, four PT were recorded (Grossarth-Maticek, R., & Eysenck, H. J., & Vetter, H. 2001).

Several researches have been carried out recently to assert the level of students' personality. Adeniyi, Adeniran, and Okewole (2014) used all the fresh undergraduate students of OAU, Ile-Ife, Osun State, as the population for their study with a sample of 600 fresh undergraduates selected from six faculties out of the thirteen Faculties in the school, using simple random sampling technique. Their results showed that 64.4% of the fresh undergraduates possessed personality type A while the remaining 35.6% of students claimed that they had personality type B. This

result revealed that most fresh undergraduates in Obafemi Awolowo University had personality type A.

Findings above showed that the prevalent personality type among students is personality type A. Given the vast difference in human nature, individuals can still be viewed as having two contrasting personalities. The high-strung personality type A with its characteristics described by Baron and Richardson (2004) as hard-driving and competitive, having a high degree of time urgency, ambitious, rigidly organized, sensitive and highly conscious confirms the prevalence of this personality type. Typically, most students responded to be high-achieving workaholics who multi-task to ensure that their goals are met. This personality type serves as a force that drives them to do things and often become proactive and obsessed with time management. Other students that responded as personality type B possessor were relaxed, patient and easygoing.

In another research by Nwazuo (2011), it was opined that every individual falls into either of these characteristics and possess a unique characteristics but are not limited to one because an individual as well could exhibit the characteristics of both. He also asserts that individuals with personality type A characteristics are impatient and always having chronic urgency, full of competitive acts and hyperactive while on the other hand, type B personality individuals are easy going, relaxed and less aggressive.

According to Rosenman and Friedman (2004), type A personality is the direct opposite of type B personality. They identified some major characteristics of type A and B personality.

Type A personality is one who:

- a. Want to achieve quickly not realizing that a man's time can be exhausted by activities.
- b. Often has high desire for achievement, hereby, measuring his achievement in terms of energy and time spent.
- c. Feels insecure because he feels his achievement are judged by his peers and as such wants to increase his achievement all the time.

On the other hand, type B personality behavioural pattern includes:

- a. One who never cares to complete excessively or forms a race with time
- b. One who has general expression of relaxation, calmness and attention
- c. One who shows moderate pace of verbal response
- d. One who does not hurry in speech nor interrupt when others are speaking
- e. One who shows reluctance

- f. One who is always satisfied with his status
- g. Someone who never compete with anyone or rushes the pace of his work.

Theories of Personality

There are different approaches to the study of personality. “Many different descriptions are possible, but when most people use the term personality, they are using it for one or two purposes”. Fadipe (2011) explained that an individual is often identified in terms of the single and unique characteristic most obviously possessed. Trait Theory: this theory is also known as dispositional theory. This theory is majorly interested in measuring trait aspects of personality which can be said to be a quantitative measurement of personality. Trait theorists also measure individual's habits, emotion and thoughts (Kassin, 2003). According to his perspective, traits are relatively stable over time, differ across individuals. This explains why some individuals are outgoing and why some are shy.

Gordon Allport was pioneered the study traits dispositions. He opined that cardinal traits dominates and determine a person's behavior and passions for money, fame etc. On the other hand, central traits (honesty) emanates at various degrees in

everyone's life and finally, secondary traits can be found in certain circumstances (such as particular likes or dislikes that a very close friend may know), which may reveal a complete picture of human complexity. Eysenck's (1991) foundational work suggested that personality is reducible to three major traits: neuroticism, extraversion, and psychoticism.

Type theories: this theory explains different classification of people into types. Type theories categorizes people into introvert and the extrovert. "Type theory originated from Carl Jung's theoretical work (Sharp, 2007). Isabel Briggs Myers and Katharine C. Briggs developed Jung's work by constructing the Myers-Briggs Type Indicator" (Myers & Myers, 1995).

"Extroversion and Introversion are in "connection with two pairs of psychological functions which are the perceiving and judging functions. Perceiving functions includes sensing and intuition, which entails trust in concrete, sensory-oriented facts versus abstract concepts and imagined possibilities. Judging functions on the other hand deals" with thinking and feeling which explains logic decision making and its implication on the effect of people".

Pittenger (2003) said personality typology is closely related to trait theory: explaining behavior in terms of opposite fixed characteristics. People are divided into intuitive or sensing PT. The "N could be guided either by thinking or feeling and divided into the NT" scientist, engineer or NF (author, humanitarian)

temperament. An "S, in contrast, is assumed to be guided more by the judgment/perception axis and thus divided into the SJ" (guardian, traditionalist) or "SP" (performer, artisan) temperament. These four are considered basic, with the other two factors in each case (including always extraversion/introversion) less important.

Psychoanalytic theory: this theory of personality explains the dynamics of personality development which guides psychoanalysis, a clinical method for treating psychopathology. It was first postulated by Sigmund Freud in late 19th century (Kupfersmid, 2005). Sigmund Freud explained that personality can be examined using three different elements which are the “id, the ego and the super ego. The id is the initial system present at birth. All libidinal energy is deposited there. That is, the entire organism's personal activities are at first directed to satisfying the needs of the id. The id has to do with our most basic desires, and it cannot tolerate tension”.

The id as explained by Freud has internal and basic drive needs, full of instincts such as thirst, hunger and need for pleasure satisfaction such as sex or libido. The id loves pleasure and therefore avoids pain. The id is unaware of implication of actions. “The ego develops to monitor the id and to direct its impulsive desires. At first it serves only to satisfy the id's impulses. The ego stresses rationality and an awareness of the realities of our physical and social environment.

It operates at a conscious and preconscious level, mainly in terms of the reality principle.’’

The ego is full of reality. It works to strike a balance between id and superego. To this effect, it tries to please the drive that benefits the individual. It separates the real and realistic drives. It also set a realistic standard for the superego. Superego on its own has morality principle as its own standard. That is, morality of thought and action. It connects morality of both thought and action (Friedman & Schustack, 2011). The superego works in socially and morally acceptable ways. This personality can differentiate between wrong and right and not just instinctual as used by the id. ‘‘The superego is the last of the three to develop. It really doesn't begin to make its appearance until as late as the age of six or seven, though Freud was loath to assign age deadlines for developmental processes. The superego is thought to be composed of one's conscience (the values of one's parents) and to involve an ego-ideal’’.

Freud also explained the unconscious situation which reveals feelings, emotions and thoughts of the individual. Hypnosis, free association and dream analysis are the psychoanalytic techniques used in in accessing and understanding unconsciousness. According to Glover (2009), these techniques inform the individuals of complexes or disorders that may be under the surface of their personality.

Big Five Theory of Personality: “The Big Five are the ingredients or tests that make up each individual's personality. A person might be open, conscientious, and with an average amount of extraversion, more of agreeableness and nearly no neuroticism at all”. Or someone could be disagreeable, neurotic, introverted, conscientious and hardly open at all. Komarraju; Steven, Ronald and Alen (2011) attempted to establish a linkage between features of the body and personality.

““The early attempts came up dry, but with perseverance and the aid of factor analysis and computers, some encouraging, consistent results have begun to emerge””.

“Factor analysis is based on analyzing data such as personality test data or personality checklists. Modern research continues to suggest that a five-factor often called the Big Five-model of personality identifies the basic components of personality. These factors are agreeableness, conscientiousness, extraversion, neuroticism, and openness to experience. The last decade has yielded a widening array of studies in various cultures suggesting the stability of these factors in measures of personality from cultures all across the world””.

Social Learning Theory: In this theory, personality is linked with social learning principle. Behaviour is learned by observing and imitating others Badejo (2011). Learning according to this theory is a cognitive process which take place in a social context and can occur through observation and direct instruction even without reinforcement (Badejo, 2011).

“Theories of personality developed in more modern times have somewhat different emphases than did the trait theories or the psychodynamic theories”. Social learning theory stresses the importance of social cognitive factors as well as the role of observational models in determining behavior. According to social learning, behavior is determined primarily through learning, which takes place in a social context. Hence, personality is viewed as the sum total of the individual’s behavior rather than some hypothetical structure, such as ego and super ego (Oladele, 2010). A model in social learning is anyone who demonstrates behavior that others observe. Humanistic theories: in this theory, every individual have free will and this affects their character and behaviour. Humanistic psychologists focus on subjective experiences which gives everyone chances to determine their behavior (Stefaroi, 2015). “Abraham Maslow and Carl Rogers were proponents of this view, which is based on the phenomenal field theory of Combs and Snygg (2010).

Maslow and Rogers proposed this theory in the Journal of Humanistic Psychology with a focus on viewing individuals as a whole, rather than focusing solely on separate traits and processes within the individual”. Maslow believed that every individual who believe in growth attains the self-actualization stage of life and possess a trend in dimensions of personality. According to Maslow (2000), these dimensions includes awareness, reality and problem centered, Acceptance and an unhostile sense of humour/democratic.

Biopsychological Theories: According Plomin, DeFries, McClearn, and Rutter (2010), nature cannot be underestimated when explaining individual's personality. According to them, nature is an essential contributor in the formation and development of personality. The focuses majorly on the role of genetic determinants in the development of individual personalities.

Concept, Models and Theories of LS

Concept of LS: Learning is said to be the process of acquiring new or existing knowledge which is responsible for change in behavior (Gross, 2015). Human as well as plants and animals have the ability to learn (Karban, 2015). Learning is a continuous process of acquiring knowledge, skills and information and can be conscious or unconscious. Learning according to Sara (2010) is the summation of an individual's life experiences which have survival value for him and which is relatively permanent. Learning can either be conscious or unconscious. Conscious learning occurs when a person learns deliberately while the unconscious learning is when learning is without deliberate effort.

Alade and Ogbo (2014) posited that when an individual's multidimensional characteristics are examined the person's LS can be identified. An individual's LS is the way the person begins to process, internalize and concentrate on a new material (Gremli, 2016). Webster (2008) said learning is the process of gaining knowledge or skill by studying, practicing, or experiencing something. Based on the principle

of individual difference, every student learns differently. This agrees with Alizera, Rahil, Habiba, Shafee and Jafer (2011) who stated that the first step in ensuring students' achievement is to understand the impact of their LS. According to Craig (2014), there are many ways by which humans and animals learn. This includes behavioural and humanistic approaches to learning. Craig further postulated that learning are ways by which a student can take in information, process such information and use it.

LS has been explained by many authors mostly as a signal for individual differences, which may reflect in style of living as well as PT (Zhang & Sternberg 2005). Kolb (2004), Honey and Mumford (2002) describe LS as a way or habit an individual has to receive, process and transform acquired knowledge. According to Kolb (2004), individual differences determines the particular way a person will learn. On the other hand, Keefe (2000) sees LS as cognitive, affective, and psychological traits that shows how individuals receive, perceive, interact with, and respond to learning environment. Moreover, Dunn and Dunn (2006) asserted that each individual's concentration on, mental processes, internalization and retain of new and difficult information stem from his specific LS. For Felder and Henriques (2005), the criterion for classifying learners is their perceptual behaviour.

LS were found to affect learners' learning behaviour. Learners behave in different way because they perceive, interact, and respond to the learning

environment differently. (Junko, 2001). Since learners have different LS, teachers need to understand these differences and use different teaching methods. This will help teachers become more effective in the classroom (Felder & Spurlin 2005).

LS is a well-known variable in educational psychology. Brown (2008) described LS as individuals' unique way of assimilating and processing information which have implication for academic performance. James and Gardner (2005) defined LS as a way in which learners learn effectively and efficiently. Keefe (2000) also defined LS as the cognitive, affective, and physiological factors that are relatively stable indicators of how learners perceive, interact with, and respond to the learning environment. These definitions connote variation and differences in ways, manners and approaches used by every individual when reading, processing or acquiring knowledge. LS can also be defined to be a range of competing and contested theories aimed to account for differences in individuals' learning (Coffield, Moseley, Hall, & Ecclestone, 2004). These theories propelled that every individual can be classified into distinct categories.

Individualizing LS have been in existence since 1970s and has since been found to influence education significantly (Coffield, 2004). Della-Dora and Blanchard (2010) defined LS as individual's personally preferred way of dealing with information and experiences for learning this definition laid emphasis on information processing. The definition by Claxton and Murrell (2010) on its own

focused on the sensory perception. It explains LS as a student's consistent way of learning.

According to Wikipedia (2004), LS are different ways that a person can learn. People have different way of interacting and receiving information. Psychologists have proposed several complementary taxonomies of LS. But other psychologists and neuroscientists have questioned the scientific basis for some LS theories.

Components of LS are the cognitive, affective and physiological elements, all of which may be strongly influenced by a person's cultural background (Acharya & Chandrama, 2002). A preferential mode, through which a subject likes to master learning, solve problems, thinks or simply react in a pedagogical situation (Allinson & Hayes, 2006). Also, LS can be defined as a set of cognitive, emotional, characteristic and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment (Keefe, 2000) according to Atherton (2005). Since students learn in diverse ways, it will be necessary for students LS preferences to align with the teachers' teaching style for excellent performance (Alade & Ogbo, 2014). An effective teacher plans and carry students along in their lessons using different teaching styles.

Felder (2003) identifies five different dimensions to LS which includes; perception (sensory or intuitive), input modality (visual-nonverbal, auditory or kinesthetic), organization (inductive or deductive), processing (active or reflective) and understanding (sequential or global). Felder, however, claimed that students do

not fall majorly into one category or style of learning but they possess different learning different LS at different situations.

Teacher's knowledge of students' LS will help in assisting the students to learn. Teachers will also be able to assist and prepare students for good academic performance. Students are also obliged to understand their LS preference, adopt appropriate learning strategies and learn the best strategy which will make them take responsibility for their learning and improve their learning. Chances are high that students' performance will be high when they understand and utilize the most preferred style of learning to learn.

Alade and Ogbo (2014) however recommended that students must recognize their preferred LS to achieve a life-long process of learning. If learners do not know the best way to process information based on their LS preference, information retention might be difficult. According to them, there is no right or wrong way of learning but when students understands how best to learn and processes information, then learning can be done in the most conducive and productive way.

Models of LS: Kolb (2000) asserted that effective learning is seen when a person progresses through a cycle of four stages which includes having a concrete experience, reflection on that experience, abstract concepts and generalizations resulting in new experiences used to solve future problems. In his explanations, learning has taken place when students are able to reflect on an experience and relate such experience to the real world in solving future problems. Individuals who

approach all four styles as proposed by Kolb may tend to develop strengths in one experience-grasping approach and one experience-transforming approach, leading them to prefer one of the four LS:

- a. Accommodator = Concrete Experience + Active Experiment: this category possess strong hands-on practical and excel in physical activities. (e.g., physical therapists)
- b. Converger = Abstract Conceptualization + Active Experiment: This category of learners are strong and vibrant in application of theories (e.g., engineers)
- c. Diverger = Concrete Experience + Reflective Observation: this categories are strong in imaginative ability and discussion (e.g., social workers)
- d. Assimilator = Abstract Conceptualization + Reflective Observation: they are strong in inductive reasoning and creation of theories (e.g., philosophers).

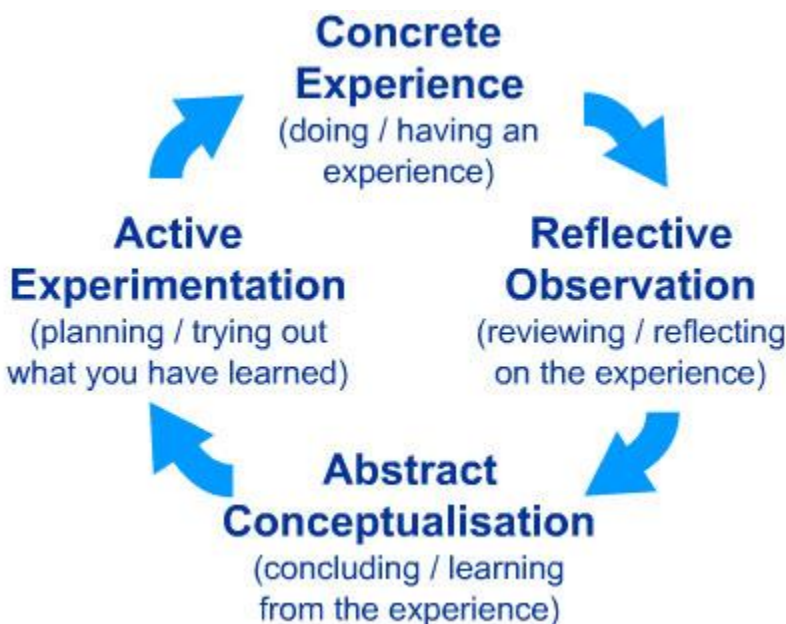


Figure 1: Kolb's (2000) Circular Model of LS

Several models however have been used to describe LS s, these includes Dunn and Dunn LS model (2004), Grasha and Riechman's style of learning (2006), Reinert's LS Model (2000) and Gregors's Learning model (2002). Barbe, Swassing and Milone (1999) also propounded learning modalities which are visualizing modalities, auditory modalities and kinesthetic modalities.

Table 2: Descriptions of Learning Modalities

Visual	Kinesthetic/tactile	Auditory
Picture	Gestures	Listening
Shape	Body movements	Rhythms
Sculpture	Object manipulation	Tone
Paintings	Positioning	Chants

Barbe, Swassing and Milone (1999).

According to Barbe, et al. (1999), each model can occur independently or in combination with another. This suggests possibility of an individual possessing multiple styles of learning. The most frequent modality according to these authors is Visual. Visual learning modality can stand independently and can also be merged with other modalities.

Leite, Svinicki and Shi (2010) in their research to validate the VARK learning inventory reported that Neil Flemmings expanded on the Barbe, et al.'s (1999) VAK learning modalities to build the VARK model. This VARK model, however, is of

importance to this study. Flemming (2001) is the propounder of the VARK system. There are four distinct LS in the theory. VARK stands for Visual, Aural/Auditory, Read/Write and Kinesthetic. VARK LS model has been selected for this study because of its recent widespread usage in research. Factors like students' PT and their preferred LS therefore can be studied to enhance students' performance at SSSs. Approximately 60 percent of the population is considered Multi-Modal, in Fleming's work meaning they exhibit preferences in several learning methods.

Flemming (2001) explained that visual learners have preference for seeing and learn best when instructional activities are directed towards their view. They welcome materials like video, graph, pictures, charts, diagrams, symbols, etc. Flemming (2001) suggests underlining or highlighting lecture notes or text books with different colors. He further explained that Aural or Auditory learners are the listeners who like to listen to lectures, audio tapes, discussions, etc. Aural/Auditory learners prefer attending lectures, class discussions and group discussions, and recall information presented in stories and anecdotes. Study for tests by listening to recorded lectures, or by explaining the information to another aural learner.

The read and write category according to Flemings (2001) are those who want to read books, journals, notes and other printed materials and write down in their own language. Reading/Writing learners work best with the written word. They prefer to learn with lists and dates, and appreciate well-written information in essays and books. Study for tests by writing essays or answers, and organizing information

into hierarchies and bullet points. Lastly, Flemings reported that the kinesthetic learners are those learners who are full of activities and are ready to learn through experience, touching, moving and doing. Kinesthetic learners prefer interacting with their information. Hands-on activities work best, such as performing experiments and collecting items.

Alade and Ogbo (2014) reported that using the Fleming's Model in pedagogy encourages teachers to prepare lessons and utilize teaching methods that address individual student's learning styles. The VARK model according to them enables students to identify their learning preferences and utilize such for better academic performance. Their work is in support of Leite, Svinicki and Shi (2010) as well as Fleming's (2001) with the opinion that visual learners process information best when the teacher uses visual aids like projectors, graphs, pictures, film, maps and charts. Auditory learners understand, process and retain information when they listen to lectures or presentations and partake in group discussions. According to them, audio lectures and webinars are of great benefits to auditory learners. Kinesthetic learners retain information most when they are active in the learning. This happens when they touch and do things like engaging in laboratory practical, field work or project works.

Alade and Ogbo (2014) however, encouraged teachers to have basic knowledge of various characteristic behaviours of students adopting different LS. Teachers should also use and adopt different teaching styles and instructional

strategies so as to match their teaching with the students LS. Experiential teaching, inquiry method, cooperative and collaborative learning, peer engagements and dramatization could be adopted by teacher to attend to students' various LS preferences. Teachers should use a wide variety of teaching styles to accommodate students of different LS in their classroom. This will not only improve teaching and learning but increase, the rate at which students retain acquired knowledge.

Among those variables that influence LS according to research is students' gender, their level of intelligence as well as their personal characteristics (Erden and Altun 2006). Study by Dobson (2010) revealed that a relationship exist among LS s, gender and students' performance. Also, Bidabadi and Yamat (2010) opined that there was no significant difference between the mean score of male and female students' LS preference. Aural/Auditory and Kinesthetic LS according to Mulalic, Mohd-Sha and Ahmad (2009) are more preferred. Students express minor preference for visual, and the Read/Write LS (Mulalic, Mohd-Sha &Ahmad, 2009). On the contrary, study by Wehrwein, Lujan and Dicarolo (2007) revealed significant difference in male and female students' LS.

Felder and Soloman (2012) in their explanation on active and reflective learners reported that active learners learn best by doing something or being active with what they learn. That could be by discussing or explaining it to another person. This act could be interpreted as an individual with type A personality who is always active with what they learn. Reflective learners according to the researchers prefer

to sit down and think quietly about what they have learnt. This could also explain the characteristics of a type B personality who is inward and reserved even while learning. Active learners tend to like group work more than reflective learners. Reflective learners prefer to work alone. Sitting through lecture without doing anything physical may be difficult for active learners.

Theories of LS

There are numerous theories of LS and categories of LS associated with the theories. “For example, some educators use Howard Gardner’s theory of Multiple Intelligences and derive nine LS from his nine intelligences. Others use Rita Dunn and Kenneth Dunn’s LS inventory, which focuses on the environmental, emotional, sociological, physiological and psychological aspects of learning. Their LS are derived from combinations of these aspects.

Bernice McCarthy’s LS theory is based on right brain, left-brain neurological science and David Kolb’s learning cycle work. Generally, the following nine LS, in pairs, are considered to be the most common. The most common test of LS is the 126 item Myers-Briggs Type Indicator (MBTI), Form G. The MBTI provides data on four sets of preferences (Kolb & Kolb 2005b). These preferences result in 16 LS s, resulting from combinations of Introversion versus Extraversion, Thinking versus Feeling, Sensing versus Intuition and Judging versus Perceptive.

Just as teachers will develop preferences for particular methods, students develop preferences for particular way of learning. Teachers and students, probably have preferred ways of perceiving and processing new information. These preferred ways are called LS s. Individuals have preferred ways of learning throughout the different stages of instruction (Brown, 2000). LS address the ways we perceive and process. Perceiving relates to the way we notice the world and the way we see reality.

Processing relates to the way we internalize an experience and make it our own. Some people prefer to perceive the world through concrete experience. These people perceive by sensing and feeling, and prefer to use intuition to solve the problems of a given task. They function well in unstructured situations. Other people prefer abstract conceptualization. They like to think things through, analyze and intellectualize. They function well in structured situations. Some people prefer to process new information by active experimentation. They like to roll up their sleeve and immerse themselves in the task. They look for practical ways of applying what they learn. Other people process through reflective observation. They like to watch and ponder the situation. They like to see tasks from several points of view. They value patience and judgment. Concrete experience, abstract conceptualization active experimentation and reflective observation are four general LS (Stephen, 2014).

Bernice McCarthy expanded on Kolb's learning cycle, and defined her four general LS as Imaginative, Analytic, Commons Sense and Dynamic. Imaginative

learners prefer to experience and reflect. Analytic learners prefer to conceptualize and reflect. Commons Sense learners prefer to experiment and conceptualize. Moreover, dynamic learners prefer to experiment and experience. (McCarthy, 2009). McCarthy stresses that all four of these learners should be accommodated in our activities or lessons'' (Cruikshank, Bainer & Metcalf, 2010). According to critical reports like Coffield, Moseley, Hall and Ecclestone (2004), many models popular with practitioners do not meet academic standards.

Differences in PT and LS

There are many variables to explore in attempting to understand how an individual best learns. For this study, among the variables of interest are PT and LS s. Knowledge of these factors plays a part in the processing of information and can assist in exploring individual strengths and weaknesses related to learning (Montgomery, Moody, & Sherfield, 2011). Learning theory and the application of LS has been studied extensively during the last decade (Dunn, 2000).

Academic achievement, a focal point in education, continually brings educators and researchers to consider new methods in the teaching-learning process. According to Gardner, Jewler, and Cuseo (2008), when students actually become involved with their academic studies, the student expend more mental energy and

this significantly enhance the learning process. The learning process has much to do with a student's personality and LS. Many research centers on the concept of LS. However, there is also related research that distinguishes between LS and students' personality. Briefly, the two viewpoints differ with regard to an approach to learning.

Personality type theory indicates that people can maximize their study and learning strengths and improve their personal weaknesses by being taught the proper techniques of study, which may also depend on their motivation for learning (Adeaga, 2010). The theory of LS relates more to the psychological aspect of learning. Researchers who advocate this approach to understanding learning argue that individual characteristics play a major role in how an individual perceives, makes sense of, and processes information (Adeaga, 2010). The way people think and feel as they encounter information is the emphasis in LS theory (Montgomery, Moody, & Sherfield, 2011).

The work of Katherine Briggs and Isabel Myers is utilized extensively in research relating learning to personality (Montgomery, Moody & Sherfield, 2011). Majority of studies have examined the relationship between personality and learning via the Myers-Briggs Type Indicator (MBTI). Fallan (2006) reported that a student's personality type cannot be neglected as it influences learning. Penney and Cahill (2002) conducted a research using 60 male adults using Holland's SDS (Form E), Kolb's LSI and a Career Counseling Preferences Questionnaire (CCPQ). The results revealed relationships between personality and leaning.

According to Erdal, Zeynep, Fatma and Sekerler (2014), students' PT and LS do not significantly vary according to their gender and academic performance. They also submitted that students' LS do not significantly vary according to their personality. It is however important for students to be aware of their own LS as well as their PT. This understanding will enhance their learning which in turn will positively influence their performance (Smith, 2002).

Researches therefore have shown individual differences in character, motivation, decision making, personality and learning preferences (Oxford and Ehrman, 2004). Models however have been designed to explain these differences (Cassidy, 2004). Education will therefore be effective when diversities among learners are well known and catered for. This agrees with Akbulut and Cardak (2012) who opined that instructions will not be effective when given in the same condition or techniques. Students will retain more information when teachers use strategies that suit their LS (Tulbure, 2012).

Most teachers now use a general method called lecturing method. This supports Timberlake' (2011) report that 89% of science professors use the lecturing method to pass instructions during their lessons. This method of instruction greatly assist one out of the four category of learners as propounded by Fleming (2001). The aural/auditory learners in this class are been catered for as the class does not require participation and students' involvement. In this case, students' attention span is minimal and retention of concepts thought might be minimal. According to Paulson

(2008), an active LS is capable of resulting to an average rate of 78% as against 38% when lecturing method is used. When students are engaged in their own learning, it assist them in selecting their most preferred leaning styles and encourage activeness and motivation to learn. Activities like group work, project work and peer discussion can be used to engage students actively in a lesson while catering for their individual differences.

Previous researches have shown that individual differences exist among students in terms of PT and LS. Busato (2009) found relationship between first year psychology students' PT and LS. Furnham (2001) also reported significant relationship between students' LS and PT of 223 students. A significant relationship between students' PT and LS was also reported by Drummond and Stoddard (2002). All students vary in PT and LS as they are not favoured the same way (Erdal et al. 2014). This suggests individual difference in learning process. Students need to be aware of their dominant personality as well as LS so as to engage in learning strategies which suits their preference in enhancing their educational outcome in subjects like Economics (Smith, 2002; Djigic and Kemple, 2014).

According to Daniel, Kamal and Do (2014) every individual possesses different personality as well as different LS which in turn have influences on students' academic performance. The researchers in their study to measure the impact of LS adopted an online Myers-Briggs Type Indicator (MBTI) test to ascertain students' personality differences and then used regression analysis to

determine the influence of LS diversities on students' performance. The research found several significant effect students' LS and personality on their academic performance.

In their study, Filbeck and Smith (2010) used 94 students in a corporate finance class to determine the influence or effect PT and LS could have on finance students' performance. They recorded that overall performance of students do not significantly correlate with any of the four LS dimensions, but that Sensing (S) students outperformed Intuitive (N) students. They also reported that Perceiving (P) students outperformed Judging (J) students and that Introversion (I) outperformed Extraversion (E) on multiple choice theory and open-ended quantitative questions.

On the contrary, Swope (2006) also conduct a research among Economics students at the United States Naval Academy. His results revealed that Judges (J) economics students significantly outperformed Perceiving (P) students. Another research by Ziegert (2000) used several measures of student learning and came up with a strong finding that Thinking (T) students outperformed Feeling (F) students in microeconomics. Results above is in agreement with Briggs (1995) who suggested that Intuitors and Thinker (NT) students will thrive in several academic areas.

Some studies revealed that students' performance is influenced by individual student's moderate adjustment and strong LS preferences. To support this claim, Fabian (2000) noted that when students shows a range of adjustment patterns

associated with cooperation, initiating interaction or assertion, and self-control, they are more likely to perform well in relating to their immediate environment. In the process of learning, there must be an awareness of how self-LS and how material is processed. That is, how individuals learn in a diverse way. Teachers can create this awareness for their students by enlightening them on various approach to learning (McClanaghan, 2000). A significant challenge, therefore, is how to assist students in perfecting their natural and most preferred LS.

Secondary School teachers should take note of this variables to differentiate instructional techniques to align with all four LS past research has shown that educators tend to teach the same way they were taught. The results of the study by Ajayi (2000) indirectly resemble past research on the relationship found between personality type and LS. It was further identified that an Accommodating person learns primarily from hands-on experience, and will rather work with things than people (Holland, 2007; Kolb & Kolb, 2005).

Empirical Studies on Difference in PT and LS on Performance of Students.

The empirical study on the differences in SSS' performance in Economics based on PT and LS in South-west, Nigeria was addressed under the following sub-headings:

- a. PT and Academic Performance
- b. LS and Academic Performance

PT and Academic Performance: Personality tests are increasingly becoming a part of Nigerian life, affecting decision making at the organizational, judicial, and even academic levels. As such, understanding PT can be an extremely useful tool. Stemming from the personal, social, and professional implications of personality testing, much of the research regarding personality has focused on performance (Ridgell & Lounsbury 2004). One area of particular interest is the differences between performance at the academic level and personality type. Kanna (2003) noted that the prediction of academic success in college has become a large scale operation. As is the case within the educational system, similar predictions are also important in industrial research, as recent studies indicate the predictive ability of grades in relation to job performance (Ridgell & Lounsbury, 2004).

Predictors of academic success usually consist of intelligence and non-cognitive measures including personality traits or cognitive measures relating to mental ability (Ridgell & Lounsbury, 2004). Results, while occasionally varied, have supported the conclusion that both cognitive ability and certain personality traits consistently predict academic performance. Though research utilizing the True Colors Research Word Sort with regards to this relationship is lacking, research using similar measures abounds (True Colors Inc., 2005).

Borg and Shapiro (2006) and Ziegert (2000) found that PT were correlated with students' performance in several principles of economic courses. The study showed significant difference between personality type and academic performance.

This research is necessary to determine whether or not PT and LS when engaged with appropriate teaching strategies will make a difference in term of academic performance. (Seiver, Haddad, & Do, 2014).

The results of differences between personality type (A and B) and academic adjustment of fresh undergraduates by Adeniyi, Adeniran, and Okewole (2014) showed that personality type A had mean and standard deviation values of 2.0457 and .53733 and personality type B possessed mean and standard deviation values of 2.0550 and .46815 respectively. The $r = 0.133$; $df = 564$ at $p > 0.05$ was found not to be significant. Hence, the findings of their research upheld the null hypothesis which was stated that there was no significant difference between PT and academic adjustment of fresh undergraduates of Obafemi Awolowo University, Ile-Ife.

Malomo (2018) stated that PT A students performs better in verbal language exercise while their personality type B counterparts excel in quantitative exercises. Also, Abdullah (2004) claimed superiority to PT A in all kinds of language materials while type B PT are superior in mathematics and sciences. In contrast, Nwazuoke (2011) reported that Personality type B who are quality oriented are more interested in reading exercises than Personality type A. Eliot (2017) supported the claim above when he reported that A' level students with type A personality characteristics out performed students with type B characteristics. On his own study, Benard (2014) examined personality type and as factors in general performance using 300 students

selected randomly from fifteen (15) schools in 3 states in Nigeria. He found that personality type has no significant on students' academic performance.

Clark and Riley (2001) evaluated the differences between university students' self-tested Jungian personality type, using the MBTI, and their performance in two beginning level chemistry classes. The study population comprised of 407 students in a freshmen sequence of eight General Chemistry course sections. Scores for each student, based upon the average and standard deviation for each class, were calculated and pooled into a single group. The research found that the INTJ (Introverted; Intuition; Thinking; Judging) students' class average was nine points higher than the pooled student group's class average and nearly 14 points higher than the lowest group (ESFP-Extraverted; Sensing; Feeling; Perception) (Clark, Riley, 2001).

Overall, the INTJ students significantly out-scored all other students and had a nearly four times greater chance of receiving an A and no chance of performing as poorly as the bottom 10 percent. In contrast, the ESFP students were nearly two and a half times as likely to be in the bottom 10% and had no chance to receive an A (Clark & Riley, 2001). Clark & Riley (2001) stated that the high achieving students (INTJ) demonstrating these personality traits can be best described as being most comfortable and productive studying by themselves, recognizing the class as being beneficial to their goals, and being comfortable handling abstract ideas. These students also prefer to reach conclusions based on logic deductions and are well

organized and punctual in completing studious tasks. They also note that though some may say these are simply the characteristics of a good student, the fact that these characteristics stem from personality must not be overlooked with regards to academic performance.

Similar results were found by O'Brien (2008) through an analysis of the performance and personality type (as measured by the MBTI) of 83 undergraduate engineering students enrolled in a Mechanical Engineering course, researchers concluded that the ISTJ (Introverted; Sensing; Thinking; Judging) and the INTJ (Introverted; Intuition; Thinking; Judging) were the most predominant PT of students scoring in the highest percentiles. Though there was a significant difference noted between the number of students with the Sensing dimension (72%) and the Intuition dimension (23%), it did not underscore the larger relationship that existed between the Introverted, Thinking, and Judging personality dimensions and academic success.

Hence, research suggests that personality may be a factor worth considering when predicting academic success, but it also lends support for the successful application of the True Colors Research Word Sort to this area of interest. Specifically, the success of the INTJ (Introverted; Intuition; Thinking; Judging) group in Clark and Riley's (2001) study suggests that perhaps the Green and Gold PT, which share many common characteristics with the INTJ group, may also lead to higher chances of academic success. The opposite can be said for the ESFP

(Extraverted; Sensing; Feeling; Perception) and the ENFP (Extraverted; Intuition, Feeling; Perception) groups, which were the two lowest scoring groups, both of which share many common characteristics with the Orange and Blue True Colors PT. The support for convergent validity between the MBTI and the True Colors Personality Inventory, as provided by Honaker (2003), supports this expectation.

In contrast, a study conducted by Ridgell and Lounsbury (2004) that utilized the Big Five personality traits yielded a different interpretation of this relationship. These researchers found that, with the exception of Extroversion, the Big Five personality traits were not significantly correlated with performance as measured by overall GPA or grade in a psychology course. Mayegun (2016) concluded that three Big Five traits predict academic success (Conscientiousness, Openness, and Agreeableness). Ridgell and Lounsbury (2004) determined that the potential explanation for the results of this study might be related to the composition of the sample (73% freshmen).

It is possible that course grade and GPA may initially be influenced more by factors such as maturation, study habits, involvement in other activities, and settling into the role of student than personality traits (Ridgell & Lounsbury 2004). As the research suggests, there is a clear link between personality and academic performance. Ultimately, the relationship between performance and personality is important because it provides the foundation upon which a framework for predicting academic risk can be built. While utilizing the MBTI instrument, Nourayi and

Cherry (2013) compared the performance of students in seven different accounting courses and their individual personality preferences. The results revealed that students categorized as sensing (S) type outperformed intuitive (I) types in the three courses: Tax, Auditing and Intermediate II.

In their research, Borg and Stranahan (2002) admitted that personality type is an important determinant of students' performance in economics. Similarly, introverted students performs better in than extroverts. Also, students with SJ temperaments performs better than identical students with SP temperaments. Their results showed that gender and PT together will result in producing students who outperform other students.

Similarly, Bisping and Eells (2006) examined whether the different PT perform better in microeconomics and macroeconomics. In microeconomics, the results indicated that ISTJs performed significantly better than INTJs while ISFJs performed worse. The researchers also found that NTs performed worse than SJs in microeconomics. In macroeconomics, ISTJs performed better than INTJs while ISFJs performed worse. ENTJs performed worse than INTJs. I-types tended to perform better than Es and Ss performed better than Ns. Similarly to microeconomics, NTs performed worse than SJs. NFs were also found to be at a disadvantage in macroeconomics but not in microeconomics. The results were very similar for both macro and microeconomics. Therefore, the researchers did not find

significant differences in performance in microeconomics as compared to macroeconomics.

LS and Academic Performance: There are numerous studies on LS and academic performance. Many researchers have shown great interest in seeking to know what differences this variable have on students' academic performance. Students' LS according to Daniel (2014) influences students' performance in a number of academic disciplines, although, every discipline has unique and distinctive elements which may favor some LS over others.

Often, LS is linked directly to academic achievement. Dunn, Beaudry and Klavas (2009) asserted that both low and average learners learn better and achieve higher when instructions given meets their LS. Agboola (2017) discusses the importance of LS as being not only necessary, but also important for individuals in academic settings.

Most students with preferred style of learning have the capacity to retain what they have learnt when taught using those styles. Studies revealed that students retain 10% of what they read, 26% of what they hear, 30% of what they see, 50% of what they see and hear, 70% of what they say, and 90% of what they say as they do (Chuah Chong-Cheng, 2011). Each LS has its own strengths and weaknesses. Some students learn in various ways, while others might only have one or two LS. Students with multiple LS retains more and performs better than those with one style (Dunn, Beaudry & Klavas 2009). Additionally, differences in LS have also been reported

among different learning abilities including the gifted, underachievers, average achievers and among special education students. It was also, noted among different school types (Dunn & Dunn 2000). Some special students favour kinesthetic instruction, such as experiential, active and hands-on, while many others are more auditory and visually oriented (Dunn 2000).

Dunn and Dunn (2000) also believe that low achievers tend to have poor auditory memory. Although they often want to do well in school, their inability to remember information through lecture, discussion, or reading causes their low achievement especially in traditional classroom environment where teachers dominate and students mostly listen or read. It is not only that low achievers learn differently from the high achievers, they also vary among themselves. Impulsive students for instance, when compared to reflective ones, show poor academic achievement (Arifayo, 2017). Similar to the views above, Ajayi (2000) opined that students learn more when information are given using different methods (Riding & Cheema 2000).

Reports from Alade and Ogbo (2014) hypothesis testing agrees with the above statement. This hypothesis was tested using the χ^2 square statistical analysis of LS preferences and students' performance in CAT in the public schools. The calculated chi-square value of 173.95 is greater than the critical (table) chi-square value of 5.99 with 2 degrees of freedom at 0.05 level of significance. This rejected the stated null hypothesis which that there is no significant influence of LS preferences on the

students' performance in public schools. This shows that students' choice of LS did affect their performance in the public school. Visual LS was also found to be most preferred among students in both public and private school.

The same hypothesis was also postulated for private schools and it was reported that LS preferences influenced the students' performance also in the private schools. This shows that students' LS preference is very important as it was found significant in both public and private schools. "A significant difference was also found between the LS preferences of students in public and private schools". The result of the research by Alade and Ogbo (2014) also explain an existence of a significant gender difference in the learning preference of male and female students within the sample population with a calculated Chi-square value of 277.59 which is greater than the critical value of 5.99 at 0.05 level of significance. Their research also revealed gender difference in LS preference as female students preferred the visual LS .

Adeosun (2012) on the other hand noted that there was no significant difference in the achievement score between males and females. His study investigated the influence of gender on secondary schools students' performance in South-West, Nigeria. Results of 2003/2004 to 2007/2008 West African School Certificate Examinations (WASCE) were collected from 10 from 5 south-western State secondary schools in Nigeria. The samples consisted of 2,305 students. The

study revealed that male and female students performed equally in English language. Males performed better than females in Mathematics, Science and Social Science subjects including Economics while females also did better than males in Arts except in Yoruba. This diversity in students' performance based on gender requires stakeholders' attention. Overall, it was concluded that a student's choice of learning affects his/her performance.

Appraisal of Literature Reviewed

This chapter reviewed studies on PT, LS and students' academic performance. The study found out the differences in SSS' performance in Economics. From the literatures reviewed, Stumm, Hell and Chamorro-Premuzic (2011) asserted that personality as an individual difference is directly linked to students' academic performance. This supports Phillip, Davis, Miller, and Naglieri's (2008) assertion in their work titled Exercise and Children Intelligence, which reported that physical activities which connotes kinesthetic LS can increase neural activities in the brain which can influence performance positively. This makes it necessary to conduct a research in this area to ascertain the differences in SSS' performance in economics in south-west, Nigeria.

Also from the review, the concept of personality is said to be the integrated dynamic organization of the physical, mental, moral and social qualities of the individual as it manifest to other people. On the other hand, the reviewed literature revealed that the study on personality type and LS is very important because each

individual learner is unique, different and special as they learn in different ways. Learning will therefore be a success when learners learn in their own way.

While utilizing the MBTI instrument, Nourayi and Cherry (2013) compared the performance of students and their individual personality preferences and found that students categorized as sensing (S) type outperformed intuitive (I) types in the three courses: Tax, Auditing and Intermediate II. Also, Bisping and Eells (2006) indicated that ISTJs performed significantly better than INTJs while ISFJs performed worse. The researchers also found that NTs performed worse than SJs in microeconomics. It was observed that the results were very similar for both macro and microeconomics which connotes no significant differences in performance in microeconomics as compared to macroeconomics. This corroborated with Borg and Shapiro (2006) and Ziegert (2000) who found that PT were correlated with students' performance in several principles of economics courses. The study showed significant difference between personality type and academic performance.

However, Fallan (2006) reported the importance of student's personality type and its connection to effectiveness in learning which cannot be ignored. It was reviewed also that PT and LS of students do not significantly vary according to their gender and performance (Erdal, Zeynep, Fatma and Sekerler, 2014). They also opined that LS do not significantly vary according to students' personality. However, it is important for students to have sufficient knowledge of their own

personality and LS. This, according to Smith (2002) will improve their learning and positively influence their performance.

The reviewed literature showed that the issue of PT and LS is controversial. Few of these studies have dealt with the two variables (personality and LS) in South-west, Nigeria to see their interactive influence on students' academic performance. In light of the above, the researcher considered carrying out a research on the differences in SSS' performance in Economics based on PT and LS in South-west, Nigeria and the findings might throw more light on problems of students' academic performance. The researcher, therefore, considered the study a complementary study to the existing knowledge and it is amply justified as research worthy. The conceptual framework of this study is based on the review of literature as shown in the diagram in Figure 2.

Figure 2: Conceptual Framework

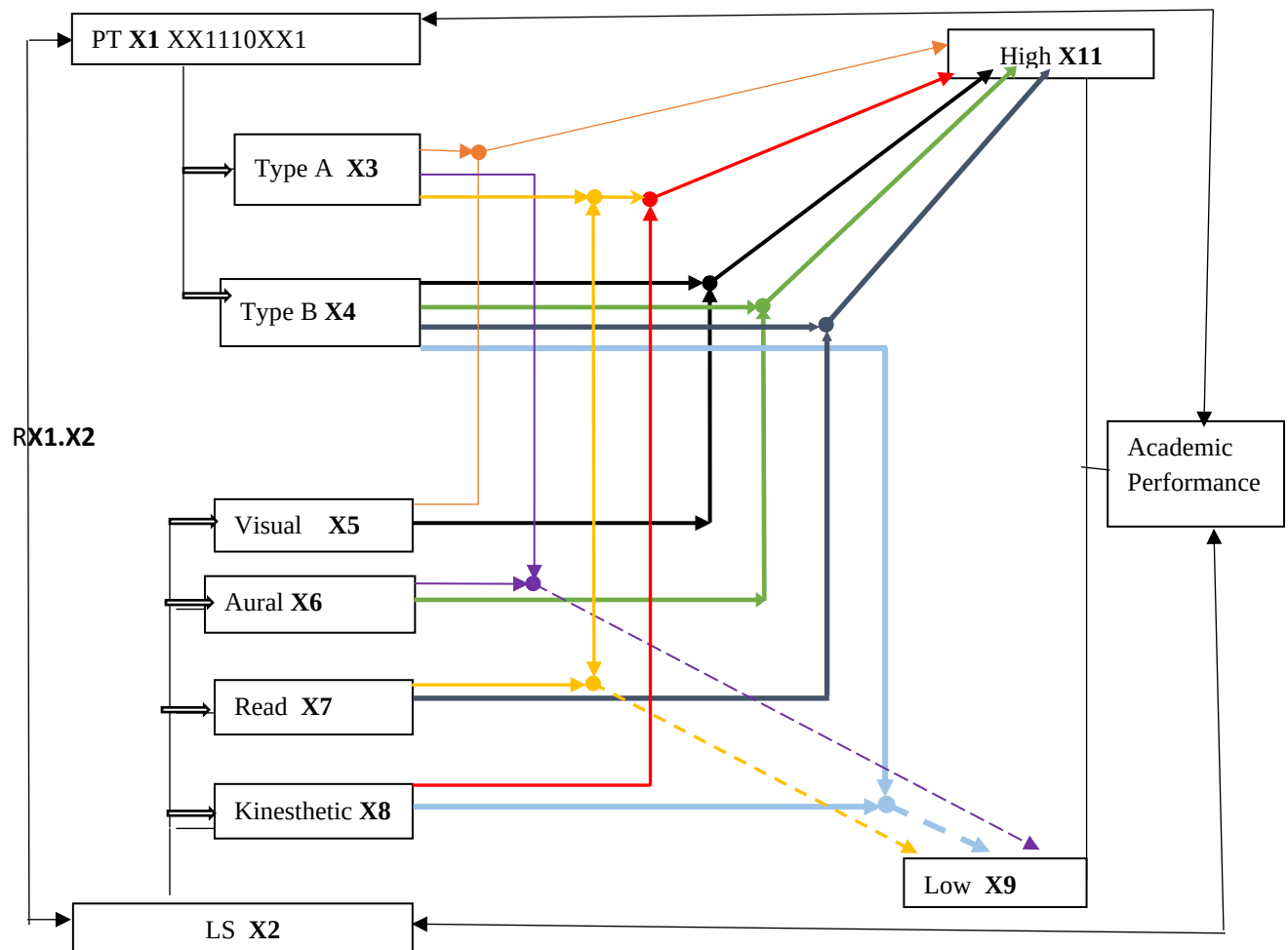


Fig. 2. Adegoke (2017).

Conceptual Framework for the Study

In order to understand the differences in SSS' performance in Economics based on PT and LS in South-west, Nigeria, it is needful to utilize a good conceptual framework which accounts for explanation based on previous studies. A conceptual framework is the researcher's knowledge or idea gained from the review of literature on the variables in the study. It is the understanding of the relationship among the variables chosen for the study, in this case, PT, LS and Academic performance.

In the conceptual framework model above, variables X1 and X2 (PT and LS) are treated (for statistical purpose) as exogenous variables (i.e variables whose variations are assumed to be determined by causes outside the conceptual framework). It means that exogenous variables are not considered in the model. Variables X3, X4, X5, X6, X7, and X8 (type A, type B, visual, aural/auditory, read/write and kinesthetic) are treated as endogenous variables meaning they are the ones whose variations are explained by the exogenous variables in the model.

The differences between exogenous variable is indicated by a straight line with arrow head at both ends, thus indicating that the study does not conceive of variable X1 as the cause of variable X2. It further means the difference between the exogenous variables is indicated by RX1.X2 and they are not analyzed in the study.

Individual arrows are drawn from the variables taken as independent to the variables taken as dependent. The presentation in this model was limited to the recursive model meaning that the difference flow in the model is unidirectional. It is, however, assumed in the conceptual framework that the endogenous variables do influence one another, and that they may also differ on the dependent variable (academic performance) individually and collectively.

In this, type A personality might achieve high performance when connected to Visual, and Kinesthetic styles of learning. This is represented by the thick lines. This same set of personality (type A) might, however, might achieve a low

performance when connected with the Aural/Auditory LS. This illustration is represented with broken lines. Low performance might also be achieved when students with personality (type A) utilize Read/Write LS. This is also represented with broken lines in the diagram.

On the other hand, the type B personality as discovered in the model might achieve high performance (represented with thick lines) when connected with visual, aural/auditory, and the read/write LS s. However, students with personality type B might end up with low performance when their lesson is being taken or given with techniques that appeal to the kinesthetic LS. This connection is shown with the broken lines. It is, therefore, believed that the outcome of students' level of personality and preferred LS might determine their academic performance. For the purpose of this study, only the identified variables are of interest to the researcher and thus form assumptions for the conceptual frame work model.

This conceptual framework can be explained below:

- a. type A personality in connection to the visual LS might lead to high academic performance. This means students with type A personality might attain high performance when they utilize materials that appeals to their visual and kinesthetic LS.

- b. type A personality in connection with the aural/auditory LS might lead to low academic performance. This means students with type A personality might maintain low performance when they utilize aural/auditory LS
- c. type A personality in connection with the read/write LS might lead to high academic performance. This means students with personality type A might achieve high performance when they use the read/write LS.
- d. type A personality in connection with the kinesthetic LS might lead to high academic performance. This means students with personality type A might achieve high performance when they use the kinesthetic LS.
- e. students with type B personality might achieve high performance when they are exposed to materials that appeals to their visual, Aural/auditory and Read/write LS.
- f. type B personality when connected with the kinesthetic LS as shown in the diagram might lead to low academic performance. This means Personality type B students might be at the danger of low performance when they try to learn using the kinesthetic LS.

CHAPTER THREE

RESEARCH METHODOLOGY

This study investigated the differences in SSS' performance in Economics based on PT and LS in South-west, Nigeria. This chapter examined the methods used in carrying out the research under the following sub-headings listed below:

- (a) Research Design
- (b) Population, Sample and Sampling Techniques
- (c) Instrumentation
- (d) Procedure for Data Collection
- (e) Data Analysis Techniques

Research Design

The research design adopted for this study was descriptive survey design. According to Shields, Patricia and Rangarajan (2013), descriptive research helps to determine the characteristics of a population being studied, examines accurately the phenomenon of the study and empirically reports what the researcher observed. For this study, therefore, descriptive survey method was considered appropriate because the researcher is interested in finding out the differences in SSS' performance in Economics based on PT and LS in South-west, Nigeria.

Population, Sample and Sampling Techniques

The population for this study consisted of all SSS students in South western, Nigeria. South-west zone in Nigeria comprises Ogun, Osun, Oyo, Ondo, Lagos and Ekiti state. The target population was all senior school II students.

Data collected from the Ministries of Education in each of the South-west States revealed that there are total of 6,509 SSSs spread all over the six states with a total enrolment of 1,961,505 students. The information gathered further revealed a total of 371,843 SSS II (SS 2). In conformity with the provision of the Research Advisors (2006), 1080 SSS II Students was selected as sample for the study.

Multi stage sampling procedure was employed in the course of this research. These include, simple random and stratified sampling technique used at different stages. Simple random sampling is a procedure in which each unit or element of the population has an equal chance of been included in the desired sample (Creswell, 2014). At the first stage, simple random sampling technique was used to select three states out of the 6 states in the South-west zone that was involved in the study. This was done by writing the name of the 6 states on different sheets of paper, folded and mixed together, and three picked randomly. Selecting three states using this method accorded all the states equal chance of being selected without bias. Each state has three (3) senatorial districts. All 9 districts in the 3 selected states were covered in the study.

At the second stage, stratified sampling techniques was used to select schools based on school type (public and private). SSSs in each of the Senatorial Districts in the selected states was grouped into strata (Public and Private). Creswell (2014) defined stratified sampling technique as a process whereby variables are classified into groups according to desired characteristics of the variables.

The third stage of the sample selection featured the use of simple random sampling techniques. Using simple random sampling techniques, 6 schools (3 schools from public and 3 schools from private stratum) were selected from each of the three senatorial districts of the (three) selected states (6 schools multiply by 3 senatorial districts multiply by 3 states) to make a total of fifty four (54) secondary schools. Furthermore, incidental sampling procedure was adopted in selecting the first 20 Senior School (II) Economics students the researcher come across and who were willing to participate in each of the selected schools. These served as participants for the study. By this process, a total of 1080 students were selected to participate in the study.

Instrumentation

Research instruments for this study were questionnaires and Economics test. The adapted questionnaire for personality test was based on Jung-Myers-Briggs Typology. The instrument was adapted by removing items that are not relevant to the category of students involved in this study. The test measured the personality

type of each student. The adopted VARKQ based on VARK theory by Fleming (2001) as explained in the literature review was used to measure students' LS .

The personality test by Myers-Briggs in Germany was originally developed by Katharine Cook Briggs and was revised as the Jung-Myers-Briggs Typology Inventory (JMBTI) in 1998. The JMBTI Manual, which reports test-retest correlations for the items in the instruments range from .83 to .97 in three different samples over a one-month time period (Myers et al., 1998). Nancy and Nicole (2009) further reported the correlations of the preferences ranging from .80 to .90 in a three weeks interval test re-test indicating good reliability. The JMBTI is one of the most trusted and universally used measures of personalities available today (Quenk, 2009). The JMBTI is a reliable and valid assessment of personality and may be applied to a variety of topics of interest in education, including curriculum development and classroom instruction, student performance and occupational counseling, and for researching of issues and problems in all facet of life.

The personality questionnaire was divided into two sections. Section A elicits the demographic data of the respondents while section B contains forty items to elicit responses which were used to categorize respondents into PT. Students are required to tick either ‘‘Yes’ or ‘No’ in response to each item. Students who responded positively to the first twenty items were considered as Type A personality and vice versa. On the other hand, those who responded positively to the last twenty items were categorized as Type B personality and vice versa’’.

The second instrument is the VARK questionnaire (VARKQ) which was adopted to access students' preference on the four dimensions of the Fleming's (2001) LS preference: Visual, Aural/Auditory, Read/Write and Kinesthetic. The researcher adopted the VARK LS (VLS) questionnaire for use in this study because of its universality.

In the VARK questionnaire, each question carries the four characteristics of LS that are applicable to this study i.e. the Visual, Aural/Auditory, Read/Write and Kinesthetic (VARK). Students were asked to circle the letters next to the answers which best explains their preference of learning. The most chosen LS was assumed to be the student's most preferred LS.

The third instrument for this study was the performance test which consists of 50 objective questions adopted from WAEC Economics objective questions to test students' performance. This was done by picking out questions from past WAEC objective examination based on SS I and SS II syllabus. This is however a standardized test. Each item of the objective test will attract two (2) marks to make a maximum mark of one hundred (100) marks. Scores from fifty percent (50%) and above were considered passed (High academic Performance) while scores below fifty percent (50%) were considered failed (Low academic Performance). The scores of the students on this test were used to determine their performance in Economics and was compared to their response on the questionnaires. Questionnaires are

therefore considered appropriate for this study because they allow the researcher to collect required information from a large number of people at the same time.

The VARK LS (VLS) questionnaire by Flemming (2001) is a standardized instrument in which Zywno (2003) stated that its validity and reliability meet acceptable standards. However, the researcher ascertained the face and content validity by giving copies to experts in the Department of Social Sciences Education, University of Ilorin. Moreover, according to Flemming (2001), the test re-test reliability of the VLS questionnaire ranges from 0.73 to 0.81 after four (4) weeks. Jimoh (1995) defined validity as the extent to which the instrument can be relied upon to do what it purports to do accurately. Thus, the reliability of an instrument is the degree to which it yields the consistent results when it is administered over a number of times. Considering differences in geographical location, a pilot study was conducted to ascertain the reliability of the instruments. This was to test the internal consistency of the instruments. Internal consistency according to BrckaLorenz, Chiang and Nelson (2013) is the extent to which a group of items measures the same construct, as evidenced by how well they vary together, or inter-correlate. A high degree of internal consistency will enable the researcher to interpret the composite score as a measure of the construct (Henson, 2001).

Hence, to establish the internal consistency of the instruments, a split half method of reliability was used. To do this, the instruments were administered to 40 students who were not part of the selected sample for the study. Thereafter,

instruments were retrieved and each copy of the instrument for the students was analyzed using split half method. The outcome revealed reliability coefficients for Personality test questionnaire as 0.83, LS (0.81) and that of students' Economics performance test was 0.79, indicating that these instruments are reliable for the study.

Procedure for Data Collection

The researcher administered the questionnaires and the test to the selected schools with the permission letter from the Department of Social Sciences Education. Before administering the test, the researcher sought for the assistance of the school counselors and Economics teachers in each of the selected schools. They were trained to serve as research assistants for the study alongside two other colleagues of the researcher. For ethical considerations and control purpose, the researcher informed the respondents that all their answers will be treated confidentially. In line with this, no student was asked to write his/her name or any means of identification except the number given to trace and link each questionnaire with their scores (known to the researcher and research assistants alone). All instructions were read by the researcher or research assistants to the respondents. Any doubts that the respondents might have regarding any question were clarified on the spot.

The researcher scheduled the visitation and administration of test and questionnaires for a period of three months with the help of teachers and counselors

in the selected schools as well as twenty seven trained research assistants (3 NYSC corps members in each senatorial districts). They assisted in administering the test and questionnaires to students and ensured accurate collection of instruments from respondents. This enabled the researcher to cover all the selected schools. The advantage of administering the questionnaires and test alongside research assistants was to ensure complete collection and proper arrangement of all the tests and questionnaire.

Ethical Consideration

In the course of the research, ethical issues were catered for. The researcher ensured zero tolerance for plagiarism in the work by citing and referencing adequately, authors who had contributed directly or indirectly to the research. The researcher collected a letter of introduction from the Head of Department, Social Sciences Education, University of Ilorin to seek the consent and approval of the authority of selected schools for the use of their students. Permission was also sought from the participants in the selected schools to ensure voluntary participation. Participants were informed on the purpose of the study and then gave their permission to participate in the study. This was to ascertain and fulfil informed consent. Participants were also informed that they have the right to withdraw from the study at any time if they wish to and their data will not be used in the study. Furthermore, respondents were assured of confidentiality as their response was not

traceable to them. Also, participants were assured of protection. That is, leaving in the same physical and psychological state in which they were before the study.

Data Analysis Techniques

Frequency counts, percentage, cross tabulation, mean and standard deviation were used to describe the demographic characteristics of the respondents and to analyze **research questions 1 and 2**. The stated hypothesis was tested using ANOVA. Analysis of variance (ANOVA) is a collection of statistical models and their associated procedures such as variation among and between groups. This can help to analyze the differences among group means. In ANOVA, observed variance in a particular variable is divided into components with different sources of variation. Two-way ANOVA suggests there are two independent variables. This technique allowed the researcher to look at the individual and joint effect of two independent variables on one dependent variable. Hence, the hypothesis was tested at 0.05 alpha level of significance and decision to reject and not to reject the stated hypothesis was made.

CHAPTER FOUR

DATA ANALYSIS AND RESULT

This chapter is concerned with the results and interpretation of the findings based on the research questions and hypothesis formulated in chapter one. The

selection was analyzed using data collected from respondents with the MBTI Questionnaire, the VARK Questionnaire and students' performance in the Economic examination conducted by the researcher. The data were analyzed using Two-Way ANOVA.

Table 4: Demographic Data of the Respondents

Variables	A	Total	%	B	Total	%	C	Total	%	Grand Total
Age	12-14	231	21.4%	15-17	724	67%	18 & Above	125	11.6	1080
Gender	Male	540	50%	Female	540	50%				1080
School Type	public	540	50%	Private	540	50%				1080

Results in Table 4 showed that out of 1080 respondents sampled for this study, 231 (21.4%) of them were between the range of 12-14 years of age while 724 (67%) of the respondents were between the range of 15 – 17 years. Also, there are 125 students with ages 18 years and above with 11.6%. “The results further revealed that 540 (50%) of the respondents were male while 540 (50%) of the total respondents were female”. Public and private school students both had 540 (50%) respondents each.

Research Questions

To answer the research questions, responses on PT and LS were coded and subjected to descriptive analysis. The analysis is presented below..

Research Question 1: What is the profile of personality type and LS of SSS in South-West, Nigeria?

Table 5: Profile of PT and LS of SSS.

Variables	Levels	Frequency	Mean	SD	Percentage
PT	Type A	610	48.96	14.014	56.5%
	Type B	470	50.48	16.804	43.5%
	Total	1080			
LS s	Visual	39	48.97	17.98	3.6%
	Aural/Auditory	442	48.17	14.66	40.9%
	Read/Write	291	50.93	17.29	26.9%
	Kinesthetic	308	50.55	13.65	28.5%
	Total	1080			100%

From the results in Table 5, 610 SSS are Type A personality out of the total number of 1080 respondents sampled. This therefore constituted 56.5% of the total percentage while on the other hand, 470 SSS belong to Type B Personality which account for 43.5%. Furthermore, Type A personality had a mean performance of 48.96 while their counterparts with Type B personality had a mean performance of 50.48.

Furthermore, results in Table 5 revealed that 39 (3.6% of the total percentage) are visual learners. 442 SSS (40.9% of the total percentage) are Aural/Auditory learners. Read/Write learners had a frequency of 291 which formed 26.9% of the total percentage. Likewise, SSS who prefer the kinesthetic LS had a frequency of 308 (28.5% of the total percentage). Lastly, the mean performance of the visual learners is 49.97, Aural/Auditory learners is 48.17, Read/Write learners is 50.93 and Kinesthetic learners is 50.55.

Research Question 2: “What are SSS’ LS on the basis of their PT in South-west, Nigeria?

Table 6: SSS’ LS on the basis of their Personality types’.

PT	LS s				Total
	Visual	Aural/Auditory	Read/Write	Kinesthetic	
Type A	21(3.4%)	258(42.3%)	150(24.6%)	181(29.7%)	610(100.0%)
Type B	18(3.8%)	184(39.1%)	141(30.0%)	127(27.0%)	470(100.0%)
Total	39(3.6%)	442(40.9%)	291(26.9%)	308(28.5%)	1080(100.0%)

From the results in Table 6, 258 (42.3%) students with personality type A are Aural/Auditory learners which form the highest percentage. 181 (29.7%) are kinesthetic learners, 150 (24.6%) are Read/Write learners while 21 (3.4%) are visual learners. On the other hand, 184 (39.1%) personality type B students are Aural/Auditory learners, 141 (30%) are Read/Write learners, 127 (27%) are kinesthetic learners and 18 students with 3.8% out of the total percentage of type B students are visual learners.

Research Question 3: “What is the performance of SSS in Economics on the basis of their PT in South-west, Nigeria”?

Table 7: Performance of SSS in Economics on the basis of their PT.

PT	N	Academic Performance	
		Mean	SD
Type A	610	48.96	14.014
Type B	470	50.48	16.804

Table 7 revealed that “students with type B personality have the highest mean performance of 50.48 and standard deviation of 16.80 than personality type A students with mean performance of 48.96 and standard deviation of 14.01”. Students with personality type B, however, outperformed their type A counterparts.

Research Question 4: “What is the performance of SSS in Economics on the basis of their LS in South-west, Nigeria?”

Table 8: *Performance of SSS in Economics on the basis of their LS*”.

LS	N	Academic Performance	
		Mean	SD
Visual	39	48.97	17.98
Aural/Auditory	442	48.17	14.66

Read/Write	291	50.93	17.29
Kinesthetic	308	50.55	13.65

From the results in table 8, Read/write learners outperformed other learners with a mean of 50.93 and standard deviation of 17.29, followed by kinesthetic learners with a mean of 50.55 and standard deviation of 13.65. Visual learners were third with mean of 48.97 and standard deviation of 17.98. Aural/Auditory learners had the lowest mean performance of 48.17 and standard deviation of 17.29.

Research Question 5: “What is the performance of SSS in Economics on the basis of their PT and learning styles in South-west, Nigeria?”

Table 9: *Performance of SSS in Economics on the basis of their PT and LS*”.

Type A vs LS s	Academic Performance	Frequency (f)	Percentage (%)
Type A + Visual	Low	16	76.2
	High	5	23.8
	Total	21	100.0
Type A + Aural/Auditory	Low	153	59.3
	High	105	40.7
	Total	258	100.0

Type A + Read/Write	Low	71	47.3
	High	79	52.7
	Total	150	100.0
Type A + Kinesthetic	Low	69	38.1
	High	112	61.9
	Total	181	100.0
Type B vs LS			
Type B + Visual	Low	8	44.4
	High	10	55.6
	Total	18	100.0
Type B + Aural/Auditory	Low	91	49.5
	High	93	50.5
	Total	184	100.0
Type B+ Read/Write	Low	65	46.1
	High	76	53.9
	Total	141	100.0
Type B + Kinesthetic	Low	75	59.1
	High	52	40.9
	Total	127	100.0

Results in table 9 revealed that 76.2% of personality type A students with visual LS had low performance, 59.3% with Aural/Auditory LS also had low performance. On the other hand, A larger percentage of personality type A students with Read/Write LS(52.7%) had high performance in Economics as well as personality type A students with Kinesthetic LS (61.9%).

It was further revealed that students with personality type B performed better with Visual LS (55.6%), Aural/Auditory LS (50.5%) and Read/Write LS (53.9%). However, 59.1% of SSS with type B personality who preferred kinesthetic LS had a low performance.

Hypothesis Testing

H₀₁: there is no significant difference in students' performance in Economics on the basis of PT and LS in South-west, Nigeria.

Table 10: Two-Way ANOVA Showing Differences Between Performances of Students' Performance in Economics on the Basis of PT and LS

Source	Sum of Squares	df	Mean Square	F	Sig.	Decision
Corrected Model	11430.759 ^a	7	1632.966	7.257	.000	
Intercept	1134788.346	1	1134788.346	5043.225	.000	
Per_Type	2141.578	1	2141.578	9.52	.002	
Ler_Style	1072.149	3	357.383	1.588	.191	
Per_Types*L_St	9179.598	3	3059.866	13.60	.000	Rejected
Error	241213.351	1072	225.012			
Total	2911899.000	1080				
Corrected Total	252644.110	1079				

a. R Squared = .045 (Adjusted R Squared = .039)

Note: Per_Type = PT
Ler_Style = LS
Per_Types*L_St = PT * LS

Results in Table 10 showed that there was significant difference in students' performance in Economics based on personality type and LS in South-west, Nigeria. This is evident in the F-calculated value of 13.599 with p-value of 0.000 and df 3 which is less than 0.05 level of significance ($0.000 < 0.05$). Since the p-value is less than 0.05 level of significance, the null hypothesis was not accepted. The results in the table also showed a significant difference in students' performance in Economics

based on personality type but not for LS in South-west, Nigeria. This is evident in the F-calculated value of 9.518, p-value of 0.002 and df 1 for personality type which was significant at 0.05 level of significance, and F-calculated value of 1.588, p-value of 0.191 and df 3 for LS which was not significant at 0.05 level of significance. The null hypothesis was not accepted on the basis of personality type and was not rejected on the basis of LS s. To ascertain where the difference lies between the PT, the mean score of performance of Type A and B personality of students were observed. The result is reported in Table 7.

Table 11: Mean Score of Performance of Type A and B Personality of Students

Personality	Frequency	Mean
Type A	610	48.96
Type B	470	50.48
Total	1080	

As shown in Table 7, the significant difference noticed in Table 6 was majorly contributed by students with type B personality who had the highest mean score of 50.48 followed by type A personality who had the least mean which was 48.96.

Summary of Findings

The results obtained from the data analysis and hypothesis tested are summarized below:

1. SSS with personality Type A (56.5%) outnumbered their type B (43.5%) counterparts, students with Aural/Auditory LS have the largest percentage of 40.9% followed by the kinesthetic learners with 28.5%. Read/Write learners

are third with 26.9% and lastly, the visual learners with 3.6%. Aural/Auditory learners have the largest percentage while the visual learners have the lowest percentage.

2. 42.3% of personality type A students are Aural/Auditory learners, 29.7% are kinesthetic, 24.6% are Read/Write learners while 3.4% are visual learners. Personality type B students with 39.1 on the other hand are Aural/Auditory learners, 30% Read/Write, 27% are kinesthetic while 3.8% are visual learners.
3. Students with personality type B with a mean performance of 50.48 outperformed their type A (48.96) counterparts.
4. Read/Write learners outperformed other learners with a mean of 50.93 followed by kinesthetic (50.55), visual (48.97) and lastly, Aural/Auditory learners (48.17).
5. Personality type A students with Visual and Aural/Auditory LS had low performance while those with Read/Write and Kinesthetic LS had high performance. Students with personality type B on the other hand who preferred Visual, Aural/Auditory or Read/Write LS had low performance.
6. There is significant difference in students' performance in Economics based on personality type and LS in South-west, Nigeria.

CHAPTER FIVE

Discussion, Conclusion and Recommendations

This chapter deals with the Discussion, Conclusion and Recommendation. The researcher further wrote on Implication, Limitations and Suggestions for further studies based on the Findings of the study.

Discussion of the Findings

The study examined the differences in SSS' performance in Economics based on PT and LS in South-west, Nigeria. The Jung-Myers-Briggs Typology

questionnaire for personality test was adapted to measure the personality type while the adopted version of VARKQ based on VARK theory by Fleming (2001) was used to measure students' LS s. The study was a descriptive survey research that involved 1080 participants out of 371,843 SSS II Students in South-west, Nigeria. Descriptive and inferential statistical methods were used to answer the research questions and test the null hypotheses generated for the study respectively. The major findings were as follows:

The demographic data obtained revealed that higher proportion of SSS II Students were between the range of 15-17 years and they constituted 724 (67%) out of 1,080 participants. 231 (21.4%) students were within the range of 12-14 years while 125 (11.6%) students were of ages 18 and above. SSS students whose age was above 16 years of age could either have repeated some classes along the line or started schooling late. This agreed with Onyeaso and Achalu (2016) who reported that SSS students in Nigeria were between the ages of 15-19 years.

It was further revealed that students with Personality type A constituted 56% and they outnumbered their type B (43.5%) counterparts. Significant to note was that, students with type A personality were usually extroverted and active while type B students were introverted and reserved in nature. This report corroborated Adeniyi, Adeniran, and Okewole (2014) who reported that 64.4% of students possessed personality type A while the remaining 35.6% of the total 600 students

claimed that they had personality type B. The report revealed that most SSS had personality type A. Kaewkatorn and Lynch (2017) in terms of PT also corresponded with the report involving 107 respondents selected using multi-stage sampling techniques. Almost all the students were reported to be extraverted. Similarities in these researches might be as a result of comparable techniques in sampling and data analysis.

In the LS, students with Aural/Auditory had the largest percentage of 40.9%, followed by the Kinesthetic learners with 28.5%. Read/Write learners ranked third with 26.9% while Visual learners were 3.6%. Aural/Auditory learners learn best by hearing or listening to explanations, Kinesthetic learners learn best by practicing what they have learnt over time, Read/Write learners would prefer to read, jot down some points and read through the points or notes for better understanding while the visual learners learn best when teaching methods and materials appeal to their visual aid. It appeared, therefore, that respondents were made up of introverted and extroverted personalities as well as Visual, Aural, Read and Kinesthetic learners. This required that teachers in this class must involve methods of teaching that caters for individual differences if and only if these respondents were to perform to the best of their ability.

This report was in line with Mulalic, Mohd-Sha and Ahmad (2009) who opined that students expressed minor preference for visual while Aural/Auditory

styles were their most preferred LS. This agreement might be possible due to the use of the same LS model and instrument (VARK) to elicit response from respondents. On the contrary, Felder and Soloman (2005) reported that active and reflective learners dominated and learnt best by being active with what they learnt. Adegoke's (2015) finding also contradicted this report with Kinesthetic learners taking the lead among 300 SSS sampled in Oyun, Kwara State. The difference observed in these reports might be as a result of different sample size, geographical location and method of statistical analysis.

The result of the study also showed that there was a significant difference in students' performance in Economics based on personality type but not for LS s. The difference observed based on personality type was mainly contributed by students with type B personality that outperformed their type A counterparts with the highest mean score of 50.48. Students with personality type B were introverted, quiet and reserved. These characteristics might have enhanced their attention span and in turn contributed to their higher performance. This report was in line with Oxford and Ehrman's (2004) finding which showed individual differences in character, motivation, decision making, personality and learning preferences. Such differences in human disposition had shown significant differences in students' way of learning as well as their performance (Contessa, 2005). This finding, however, was in contrast with Erdal, Zeynep Fatma and Sibel's (2014) work who examined the LS and PT of Undergraduates in University of Istanbul' involving 320 undergraduate students,

and reported that students' PT did not significantly vary according to their academic performance. The difference observed might be as a result of different location and sample size involved in both studies.

On the LS, there was no significant difference observed. This might be due to availability of technology gadgets being used by many students especially in some South-western states. Some states in South-west Nigeria, had introduced electronic devices loaded with educational materials (Opon-Imo) to aid students' learning abilities which might have contributed to their performance. This report negated the finding of Shahrill, Mahalle, Matzin, Hamid, and Mundia (2013) who involved 135 Brunei SSS selected by random technique and found that high Mathematics achievers were better and more efficient users of the text book reading, note-taking, and memory study strategies than low achievers. This explained the Read/write learners outperforming their counterparts in Mathematics. This difference might be as a result of different geographical location and size of population selected for both studies.

The result further showed that there was no significant difference in students' performance in Economics based on personality type and gender in South-west, Nigeria. This finding might not be a surprise because respondents were taught in the same environment by the same quality of teachers using the same infrastructural facilities. Unless otherwise, differences between the students should not be significant. The finding was similar to Oguntayo (2011) who reported that although,

personality type played important role in academic performance, there was no statistically significant difference between the personality Type A and Type B students since the students were taught the same. This was shown in his work, *Personality and Students' Performance in Ibadan Metropolis* when he used t-test statistical method to analyze the data. The same geographical location used in these studies might have contributed to the similarity observed.

In contrast to the finding, Clark and Riley (2001) conducted their research to examine the difference between 407 university students' personality type and their level of performance in Chemistry and found that Personality Type B students outperformed those with personality Type A. He reported that personality type B students could best be described as being comfortable and productive in studying by themselves especially the female respondents than male. Similarly, Atta (2013) also found gender differences in PT and LS. According to him, students' gender varied when compared with their PT and academic performance. The difference in the results might be due to statistical error, method of data analysis, number of students' population and the environments where the researches were carried out.

It was also found that there was no significant difference in students' performance in Economics based on personality type but for school type in South-west, Nigeria. One significant issue that had never been resolved by scholars in education is whether school type constituted a difference in academic performance. Lawrence and Lawrence (2014) claimed that school type and personality type were

variables of importance that created differences in school performance. Lawrence and Lawrence (2014) reported calculated t-value of 3.31 greater than the table value of 1.66 at 0.05 level of significance, hence, rejecting their stated null hypotheses.

In the school type, the significant difference noticed was majorly in private school students who had the highest mean score of 52.48 followed by public school students who had the least mean which was 46.93. This might be due to differences in teacher-students ratio and availability of learning resources as it differed in both public and private schools. Alimi, Ehinola and Alabi (2012) involved 50 teachers and principals in Ondo State public and private schools. They used t-test statistical method to analyze the data collected and found that there was no significant difference in students' performance in public and private school. This contradicted the finding that there was significant difference in the performance of students in public and private schools. The difference in these results might be due to statistical error, method of data analysis, and variation in selected population.

The researcher further investigated whether there was significant difference in students' performance based on LS and gender. The result was that, there was no significant difference in students' performance in students' performance in Economics based on LS and gender. Frankly speaking, in an environment where education is taken as an industry, particularly in South-west, Nigeria, students' LS might not be different because parents were concerned with their children's performance in school. A causal observation revealed that parents normally arranged

extra moral lessons for their children especially at the secondary school level. Such extra-moral classes might have influenced male and female students not to have significant difference in their LS as well as their performance.

In agreement with this report, Bidabadi and Yamat (2010) opined that there was no significant difference between the mean score of male and female students' LS preference. Also, Munir and Siti (2015) reported that there was no significant difference between male and female students' performance based on their preferred learning. On the contrary, however, Alade and Ogbo (2014) disagreed with this kind of finding and explained that there was significant difference in performance and learning preference of (200) male and female in Chemistry. Their research revealed gender difference in LS preference as female students preferred the visual LS .

This research work would not have been concluded without due consideration to the variables of LS and school type. The interaction effect of these variables showed that there was no significant difference in students' performance in Economics based on personality type whereas, there was a difference with respect to school type in South-west, Nigeria. The significant difference noticed was mainly contributed by private school students who outperformed their public school counterparts with the highest mean score of 52.48. This report was supported by the fifth finding of this study which revealed significant difference in students' performance majorly contributed by private school students.

In line with the findings also, Alade and Ogbo (2014) investigated the LS preferences of chemistry students in both public and private secondary schools in Lagos metropolis using Chi-square statistical analysis to analyze data collected from 200 SS 2 students. Their result revealed that there was a significant relationship between LS preferences of students and their performance in the Chemistry achievement test in both public and private schools. Considering the fact that these researches were carried out in the same location, that is, South-west, Nigeria, the same result found might be justified. Considering the research report, however, it appears that LS and PT are worthy variables to be considered in a research concerning SSS.

Conclusion

Based on the findings and discussion, it was concluded that PT and LS were significant variables that made impact in students' performance especially if the variables were carefully handled by the teachers that are directly involved in teaching and learning process at the secondary school level.

The researcher is of the humble opinion that the issue of personality type, LS and students' performance is still controversial amongst scholars of educational researches, because contradictory results had been reported. This should be of concern to all education stakeholders (i.e. teachers, counselors, educational psychologists, school administrators, parents, and students) in an attempt to improve

students' academic performance. This claim could be centered on the basis of severally reported significant differences in students' performance on the basis of variables of the study.

Implications of the Findings of the Study

The implication of this findings is that PT and LS are variables which cannot be ignored in the quest to improve students' academic performance. Thus, it becomes necessary for all education stakeholders, particularly, teachers, school psychologists, and parents to take these variables into cognizance when implementing educational programmes, syllabus and teaching materials aimed at improving students' performance particularly in Economics. In addition, the findings of this study had revealed the need for teachers to be mindful of these two variables in their teaching/ learning situation.

Recommendations

It was recommended that teachers should be aware of students' individual differences in personality type as well as learning preference in the teaching/learning process. With this understanding, they would prepare teaching materials that would support all learners in the school system, particularly, classroom environment. This might improve the performance of students they teach.

Contribution to Knowledge

These findings showed that variables of personality type and LS are important in the teaching-learning process. And teachers should take cognizance of these variables in their day to day teaching. This is, therefore, a contribution to knowledge.

Limitations of the Study

There is no study without its limitations and this study could therefore not be an exception. The study was limited to a few schools which are selected based on reflective criteria from three out of six states in a geopolitical zone in Nigeria. Nonetheless, further studies could be conducted in more schools, states and geopolitical zones which might produce different results. Furthermore, focusing on Economics only might not be a sufficient criterion for evaluating students' academic performance. Thus, attention could be paid to other school subjects or a combination of school subjects. However, despite the limitations, it is claimed and rightly too that the findings of the study would assist in improving the quality of students' performance in Economics.

Suggestions for Further Studies

This study focused on the differences in SSS' performance in Economics based on PT and LS in South-west, Nigeria. In view of the findings and scope of this study, the researcher suggested that further studies could be carried out as follows:

- (a) The study locale should be expanded to other geo-political zones in Nigeria.

- (b) The factors considered as variables could be increased. Thus, PT, LS and Economics performance might not be sufficient criteria for evaluating students' academic performance. Several other variables might be included.
- (c) Furthermore, attention might be given to tertiary institutions instead of SSSs which this study was based on.