# RELATIONSHIP AMONG EXTROVERSION, INTROVERSION AND ACADEMIC PERFORMANCE OF SENIOR SECONDARY SCHOOL STUDENTS IN SABON GARI LOCAL GOVERNMENT AREA, KADUNA STATE, NIGERIA

**BY**

**Francisca Omateyi OCHE**
**NCE (2008), B.Ed Education (ABU) - 2012**
**M.Ed Guidance & Counselling - P14EDPC8022**

**DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND COUNSELLING**
**FACULTY OF EDUCATION,**
**AHMADU BELLO UNIVERSITY,**
**ZARIA**

**SUPERVISORS:**

**PROF. M. I. ABDULLAHI**

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**APRIL, 2018**

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**A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY, ZARIA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER DEGREE IN GUIDANCE AND COUNSELLING**

**DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND COUNSELLING,**
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**PROF. S. SAMBO**

**APRIL, 2018**

## DECLARATION

I, Francisca Omateyi OCHE (P14EDPC8022) hereby declare that this research work has been written by me and that it is a record of my own work. It has not been presented in any previous application for higher degree. All quotations are indicated and the sources of information are specifically acknowledged by means of references.

_____ _____

**Francisca Omateyi OCHE** Date.

## CERTIFICATION

This dissertation titled, "Relationship among Extroversion, Introversion and Academic Performance of Senior Secondary Schools in Sabon Gari Local Government Area, Kaduna State" submitted by Francisca Omateyi OCHE (P14EDPC8022) meets the regulations governing the award of the Degree of Masters of Education of the Ahmadu Bello University, Zaria and is approved for its contributions to knowledge and literary presentation.

_____ _____

**Prof. M. I. Abdullahi** Date
Chairman, Supervisory Committee

_____ _____

**Prof. S. Sambo** Date
Member, Supervisory Committee

_____ _____

**Dr. A. I. Mohammed** Date
HOD, Dept of Educational Psychology & Counselling

_____ _____

**Prof. S. Z. Abubakar** Date.
Dean of Postgraduate Studies.

## DEDICATION

This Dissertation is dedicated to Almighty God who by His infinite mercy brought and granted me the privilege to acquire this higher degree. May His name be exalted forever. Also to my late parents, Mr. Oche Aboje and Mrs. Martha Oche and my sister and brothers.

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## OPERATIONAL DEFINITION OF TERMS

The following terms are operationally defined as used in this study:

**Extroversion:** The act, state or habit of being predominantly concerned or obtaining gratification from what is outside the self. Person's interests and attention is directed outward, who feel easy in social situations.

**Introversion:** The state of being predominantly interested in one's own mental self; inner directedness of someone who tends to withdraw from social situations.

**Academic Performance:** Learning outcome of students' results from either continuous assessment or examinations which determine their next step.

## ABSTRACT

The study determined the relationship among extroversion, introversion and academic performance of senior secondary school students, Sabon Gari, Zaria, Kaduna State. Correlational design was used for this study. Three objectives were raised, research questions, and null hypotheses were in line with the objectives. The population of the study was 1487 SS II students, proportional sampling technique was employed in selecting three hundred and fifty (350) SS II students from six selected senior secondary schools in Sabon Gari, Zaria, Kaduna State. Eysenck Personality Inventory was adapted to collect data for this study, objectives test in Mathematic and English was constructed to collect data on academic performance. The biodata were analyzed using frequency count and simple percentage, means and standard deviation were used to answer the research questions. Pearson Product Moment Correlation Statistic was used to test the null hypotheses one and two, while hypothesis three was tested using t-test. The results showed that, there is no significant relationship between extroversion and academic performance (r=.057, p=.235). However, introversion is correlated with academic performance (r=-.123, p=.047). There is significant difference between academic performance of extrovert and introvert students (t-cal = 50.195). From these findings, discussion was made and the researcher recommended that, extroverted students should be counselled on how to reduce social activities and pay more attention to their academics in order to improve their performance.

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background to the Study

Academic performance is an outcome of education and is commonly measured by examinations or continuous assessment through grading of students' scores or marks. The rate at which students achieved educational goals is measured by the academic performance attainment. The failure in examination of senior secondary school students' results has been pathetic and should compel government authorities, schools and parents to start thinking about an intervention measure to arrest the decline in academic performance. The National Policy on Education has been designed by the federal government as a way of achieving its educational objectives. This emphasized the preparation for useful living within the 'society and the preparation of students for higher education' (NPE, 1981, p16). Unfortunately, these may not be achieved if the present poor academic performance of senior secondary school students in Sabon Gari, Zaria persists. The increasing rate of poor academic performance has led the researcher to attribute these causes to extroversion or introversion in students.

Extroversion and introversion are typically viewed as personality traits. The extroversion and introversion traits are the central dimension of human personality theories. Introversion and extroversion were popularized by Jung (1995). Extroverted person feels energized in the midst of other people, and is more prone to boredom when he is alone. People who are high in extroversion tend to seek out social stimulation and opportunities to engage with others, also manifested in outgoing, talkative and energetic behavior. Introversion on the other hands, manifested in more reserved and often takes pleasure in

solitary activities such as reading, writing, using computers, hiking and fishing. Jung (1995) defined introversion as an ‘attitude-type characterized by orientation in life through subjective psychic contents’ (focus on one's inner psychic activity) which has type A and B; and extroversion as ‘an attitude type characterized by concentration of interest on the external object’ (the outside world).

The poor academic performance among senior secondary school students in Sabon Gari, Zaria needs counselling attention because, some of them do not know the relationship between their personality traits (extroversion or introversion) with academic performance. Due to their ignorance, they do not really belief that personality traits have any relationship with the academic performance. This is a vital aspect that the counsellor should look into, in order to improve students’ academic performance. The researcher consider it as an important aspect for counsellor to enlighten the students through organization of counselling/career programme in various secondary schools and ensure that the students understand themselves in such away that will help personal growth and development.

Academic performance and success rates of students revolve around the question of extroversion and introversion types that such student have. The increased in low academic performance of the students becomes a burden that has been the researcher’s concerned, which led her to embark on this research to investigate, the relationship of extroversion, introversion with academic performance among senior secondary school students.

## 1.2 Statement of the Problem

The researcher had been worried, what could be the cause of students' low academic performance. Could it be they were not well taught, or is it the result of unqualified teachers' effort which is not enough? In Sabon Gari Local Government Area of Kaduna State, many senior secondary school students who wrote their final year examinations in 2012 and 2013 failed in mathematics and English which are the general subjects and as a result of this, several of them rewrite more than two or three times before getting the requirements grade for entering university or any other tertiary institution.

The problem of poor academic performance of senior secondary school students in Sabon Gari Zaria, poses a great concern to parents, the nation and the society at large, due to huge investment on education, particularly on senior secondary education. This pathetic situation in low academic performance is a problem in Sabon Gari, Zaria. It is of necessity to understand that, there is a need to examine the relationship of extroversion, introversion traits with academic performance. Despite all the various efforts by parents, teachers, Federal and State Governments to improve academic performance, the results still remain poor. For example, the 2012 examination results were very poor, 80 percent of the candidates who sat for SSCE failed Mathematic and English (Adejor, 2012).

The numbers of candidates with their percentages who sat for WAEC examinations and obtained five credits including mathematics and English from 2011 to 2016 are: In May/June 2011 SSCE WAEC examinations, only 30.70% out of 472,906 candidates got the required credit grades. In 2012 only 20.04% out of 62,295 candidates, 38.30% out of 639,760 candidates in 2013, 31.28% out of 529,425 candidates in 2014, 38% out of

616,370 candidates in 2015 and 52% out of 878,040 candidates in 2016 got five credits and above including mathematic and English (Adejor, 2015).

This poor academic performance could be linked to attitudinal variables of introversion or extroversion which may constitute a vital input that may have direct relationship with academic performance of students. It is on this note that a research of this kind becomes imperative. This burden has been the researcher's concern, which led her to embark on this research to investigate, the relationship among extroversion, introversion and academic performance of senior secondary school students in Sabon Gari Local Government Area, Kaduna State.

## 1.3 Objectives of the Study

The objectives of the study were to determine:

i. the relationship between extroversion and academic performance among senior secondary school students in Sabon Gari Local Government Area, Kaduna State.
ii. the relationship between introversion and academic performance among senior secondary school students in Sabon Gari Local Government Area, Kaduna State.
iii. the differences between academic performance of extrovert and introvert students among senior secondary schools in Sabon Gari Local Government Area, Kaduna State.

## 1.4 Research Questions

The following research questions are raised.

i. What is the relationship between extroversion and academic performance among senior secondary school students in Sabon Gari Local Government Area, Kaduna State?

ii. What is the relationship between introversion and academic performance among senior secondary school students in Sabon Gari Local Government Area, Kaduna State?

iii. What is the difference between academic performance of extrovert and introvert students among senior secondary schools in Sabon Gari Local Government Area, Kaduna State?

## 1.5 Hypotheses

The following hypotheses were formulated to guide the study.

i. There is no significant relationship between extroversion and academic performance among senior secondary school students in Sabon Gari Local Government Area, Kaduna State.

ii. There is no significant relationship between introversion and academic performance among senior secondary school students in Sabon Gari Local Government Area, Kaduna State.

iii. There is no significant difference between academic performance of extrovert and introvert students among senior secondary schools in Sabon Gari Local Government Area, Kaduna State.

## 1.6 Basic Assumptions

The following assumptions are raised:

i. Extroversion may have significant relationship with academic performance,

ii. Introversion may have significant relationship with academic performance.

iii. It is assumed that academic performance of extrovert and introvert students differ.

## 1.7 Significance of the Study

This research is significant to the teachers, students, counsellors, principal of secondary schools, parents, SUBEB and curriculum planners for the following reasons:

This research study will help teachers to understand why there are differences in academic performance among the students and also identifies the variables that relate to the success and failure in academic performance of the students, it will help them to plan and employ the appropriate teaching methods. It will also eliminate the problems or obstacles that will be on the students' way as they learn in school. This will facilitate the task of the teachers in their preparation for teaching.

Increasing personal integrity is another significance of this study. Self awareness that comes from self study could help most of the students to discover who they are through this study. Therefore, understanding the relationship between introversion and extroversion in an individual will help the students being prepared to take their place in the world of work. It will also increase tolerance and understanding of others in the sense that, when students understood who they are and people's motives, perceptions and values with their traits, it will help them to relate easily.

The research results can also be used by counsellors as an integral part of counselling to improve on students' academic performance. This could be done by enlightening the students through organization of counselling programmes in the school premises.

Again, the identification of extroverted or introverted students will enable the principals of secondary school authorities to determine a line of action, in guiding the students on what subjects to choose/select based on their personality type in order to improve their academics performance. It is hoped that, the knowledge gotten from this research will create a link between the parents and the schools more than it has ever been, in the sense that the knowledge of these traits (extroversion or introversion) will enable the school principal to sensitize the parents of their wards.

This study is significance to the State Universal Basic Education Board (SUBEB) because, at the primary/secondary school level, if the students/pupils have the knowledge of the relationship of extroversion or introversion traits on academic, they can easily adjust themselves and starts working towards how to improve their academic performance.

The study will enable the curriculum planners to inculcate the awareness of extroversion and introversion into the curriculum, which will help the teachers to plan ahead of each lesson.

Another significance of this research is that, it would give the nation an insight on the relationship among extroversion, introversion and academic performance on how to

identify the person with any of these personality traits (extroversion or introversion) and assigned them on what they could do to attained their goals in life.

Furthermore, to formulate intervention measures and counselling objectives, results of this study results can be taken as one of the input. It may further help to develop an awareness and insight among senior secondary school students with regard to their extroversion and introversion traits and its relationship with academic performance. This could be done through organization of counseling programme in the schools.

## 1.8 Scope and Delimitation of the Study

The scope of this study is Sabon Gari Local Government Area, Zaria in Kaduna State and it covered six selected senior secondary schools both public and private schools. The study is delimited to only SS II male and female students of senior secondary schools. This research focus on SS II students because, they have already had the cumulative records that can be used to determine the level of their academic performance. Its excluded SS I and III because the major study is being done in SS II, when the students finished SS II and entered his/her final year (SS III), the only thing is just to prepare for the final examination and in most cases, the questions that usually comes out during final examination is from SS II work.

# CHAPTER TWO

# REVIEW OF RELATED LITERATURE

## 2.1 Introduction

This chapter presents literature reviews and theoretical review of some related works under the following headings:

2.1.1 Conceptual Diagrams

2.1.2 Illustrations of Diagrams

2.2 Extroversion

2.2.1 Concept of extroversion

2.2.2 Characteristics of extroversion

2.2.3 Relationship between Extroversion and academic performance

2.2.4 Causes of extroversion

2.3 Introversion

2.3.1 Concepts of introversion

2.3.2 Characteristics of introversion

2.3.3 Relationship between introversion and academic performance

2.3.4 Causes of introversion

2.4 Differences between extroversion and introversion

2.4.1 Behavioural differences between extroversion and introversion

2.4.2 Nurturing and social condition

2.4.3 Feeling condition

2.4.4 Geographical variation

2.4.5 Implications of Introversion and Extroversion

2.4.6 Introvert and Extrovert Communication

2.5 Theoretical Frame Works

2.5.1 Eysenck theory

2.5.2 Jung's theory

2.6 Review of Empirical Studies

2.7 Summary

## Conceptual Work

The conceptual work in this study shows the illustration diagrams of extroverts and introverts hand signs manipulated by the researcher, which could be used to identifying them. Below are the illustrated hands signs.

**Hand Model for Recognizing Extroversion (Extroverts) & Introversion (Introverts)**

**Figure 2.1 Extrovert Hand Signs**




*Source: Eysenck's Palm Reading Perspectives (2013).*

Table 2.1 shows the explanations of the Six Hand Signs of extroverted person and its weight.

**Table 2.1 Hand Signs Explanation of Extroverts**

| S/N | Hand Shape | Indicative Weight |
|---|---|---|
| 1. | Short palm length (relative to palm breadth) | +0.04 |
| 2. | High hypothenar (= mount of moon) versus thenar (= mount of venus) ratio | +0.30 |
| | **Finger morphology** | |
| 3. | Short finger length (relative to palm breadth) | +0.26 |
| 4 | Low 2D:4D digit ratio | +0.05 |
| | **Major Lines** | |
| 5. | Sharply curved (upward: 40 degrees or more) distal transverse creases (= heart line) | +0.33 |
| 6. | Proximal transverse crease (= head line) connected with thenar crease (= life line) | +0.02 |
| | **Cumulative weight** | **+1.00** |

**Figure 2.2 Introvert Hand Signs**




*Source: Eysenck's Palm Reading Perspectives (2013)*

Table 2.2 shows the explanations of the Six Hand Signs of introverted person and its weight.

**Table 2.2 Hand Signs Explanation of Introverts**

| S/N | Hand Shape | Indicative Weight |
|---|---|---|
| 1. | Long palm length (relative to palm breadth) | -0.04 |
| 2. | Low hypothenar (= mount of moon) versus thenar (= mount of venus) ration | -0.28 |
| | **Finger morphology** | |
| 3. | Long finger length (relative to palm breadth) | -0.24 |
| 4 | High 2D:4D digit ratio | -0.05 |
| | **Major Lines** | |
| 5. | Simianesque curved distal transverse crease (= heart line) | -0.31 |
| 6. | Proximal transverse crease (= head line) not connected with thenar crease (= life line) | -0.08 |
| | **Cumulative weight** | **-1.00** |

## 2.2 Extroversion

### 2.2.1 Concepts of Extroversion

Extroversion is the act, state, or habit of being predominantly concerned with and obtaining gratification from what is outside oneself (Webster, 2018). It manifests in a person and makes him enjoy human interactions and to be enthusiastic, takes pleasure in activities that involve large social gatherings, such as parties, community activities, public demonstrations and political groups.

According to Eysenck, it is the degree to which a person is outgoing and interactive with other people. These behavioural differences are presumed to be the result of underlying differences in brain physiology. He further stated that, it is the combination of two major tendencies; impulsive and sociability (Eysenck, 1995).

Houghton (2011) defined extroversion as something that interested in or behaviour directed toward others or one's environment rather than oneself; a turning inside out as of an organ or part; the directing of one's interest out wards, towards social contacts. Collins (2003) defined extroversion as the act or state of being concerned primarily with the external environment rather than with one's own thoughts and feelings.

Random (2010) says, extroversion is the state of having thoughts and activities satisfied by things outside the self. Ologies (2008) stated that, it is the concern with things outside rather than with one's own thoughts and feelings. According to Jung, it is a dimension along which people can be divided into psychological types.

Extroversion is defined as the quantity and intensity of interpersonal interaction, sociability, encompassing traits such as assertiveness, activity and the tendencies to which one experience positive emotions (Costa & McCrae, 2013). Extrovert is a person whose interest or behaviour is directed toward others or one's environment rather than oneself. It is the act or states of being concerned primarily with the external environment rather than with one's thoughts and feelings.

According to Bhagat (2013), extroversion is being view by positive emotions, surgency, and the tendency to seek out stimulation and the company of others. The trait is marked by pronounced engagement with the external world. Extroverts enjoy being with people, and are often perceived as full of energy. They tend to be enthusiastic, action-oriented individuals who are likely to say 'Yes!' or 'Let's go!' to opportunities for excitement. In groups they like to talk, assert themselves and draw attention to themselves (Gallagher, 1990).

Extroversion indicates how outgoing and social a person is. They enjoy being with people, participating in social gatherings, and are full of energy. A person low in extroversion is less outgoing and is more comfortable working by himself or herself. Ryckman (2004) opine that, extroversion is perceived as socially desirable in Western Culture, but it is not always an advantage. For example, extroverted youths are more likely to engage in delinquent behaviour.

Cherry (2015) states that, in the big 5 theory of personality, extroversion is one of the five core traits believed to make up human personality. Extroversion is "the act, state or habit of being predominantly concerned with obtaining gratification from what is outside the self." Extroverts tend to enjoy human interactions and to be enthusiastic, and gregarious. Extroverts are energized and thrive off of being around other people. They take pleasure in activities that involve large social gatherings, such as parties, community activities, public demonstrations and business or political groups. They also tend to work well in groups.

Based on the research carried out, a person with extroversion trait is likely to enjoy time spent with people and find less reward in time spent alone. They tend to be energized when around other people, and they are more prone to boredom when they are by themselves. People who are high in extroversion tend to seek out social stimulation and opportunities to engage with others. These individuals are often described as being full of life, energy and positivity. In group situations, extroverts (extroverts) are likely to talk often and assert themselves (Feiler & Kleinbaum, 2015). Extroverts are often unfairly pegged as overly-talkative or attention-seeking. In reality, they simply gain energy from

engaging in social interaction. They gain inspiration and excitement from talking and discussing ideas with other people (Cherry, 2015).

According to Garima (2015), extroversion traits manifested in person who is actively involved in the world of people and things; they are socially active and more aware of what is going on around them. They like to be part of groups, communities and probable places where they get a chance to interact. The idea of being alone terrifies them, leaving them alienated from their inner selves.

### 2.2.2 Characteristics of Extroversion

How people interact in a group varies greatly. Some people are expressive and easygoing. They easily talk to others and enjoy social interaction and contributing in groups. Others are reserved and find it difficult to communicate in a group. Such individuals avoid contributing in social settings. These personality types are known as extroversion and introversion respectively. Extroverts like to communicate by thinking and working through a problem loud. They like to talk things through with others, and enjoy social activities such as study groups. They like being around and working with others and therefore feel comfortable in social situations and may make better leaders.

Cherry (2015) and Burruss and Kaenzing (2016) outlined the following as the characteristics of extroversion:

- Seeking novelty and excitement
- Gregariousness
- Enjoys being the center of attention
- Action-oriented

- Friendly
- Show energy and enthusiasm.
- Respond quickly without long pauses to think.
- Allow talking out loud without definite conclusions.
- Communicate openly - do not censure.
- Focus on the external world, the people and the things.
- Allow time for bouncing around ideas.
- Take words at face value.
- Social – they need other people
- Demonstrate high and noise
- Communicate with excitement and enthusiasm with almost anyone in the vicinity
- Draw energy from people; love parties.
- Are lonely and restless when not with people.
- Do not assume commitment or decisions made.
- Engage in lots of activities and have many interest areas.
- Have many best friends and talk to them for long periods of time.
- Are interested in external events not internal ones.
- Prefer face-to-face verbal communication rather than written communication.
- Share personal information easily.
- Establish multiple fluid relationships.

### 2.2.3 Relationship between Extroversion and Academic Performance

It is believed that most of secondary school students do not understand that extroversion have relationship with academic performance. Most especially, those who were

extroverted are proud of being extroverts not knowing its relationship with academic performance. A variety of factors have been taken into account to thoroughly examine the relationship of extroversion to/with students' academic performance. For example, Estabrook and Sommer (1966) cited in Essay, (2015) conducted an early and classic study; the results revealed that more extroverted students preferred to study in a leisure manner. That is, they liked to study in an informal space, such as on a bed or a couch. They also took frequent breaks and tended to study in a group setting, the results of the study revealed that the extroverts had a lower average compared to the introverts (Estabrook & Sommer). The individual with higher score in extroversion test had worse study habits, which might have contributed to its less satisfactory academic performance in secondary schools.

According to Morris and Carden (2013), students scoring high on the extroversion test may perform poorer than those who score low on extroversion. This result can be explained by a combination of factors. From the literature reviews, an extrovert tends to be social, energetic, and easy-satisfied, which may contribute to their poor academic performance through their peak activation time at night and ineffective and lazy studying habits. In addition, extroverts' high emotional levels may increase their tendency to be impulsive in reacting towards both successful and unsuccessful events. Therefore, the hypothesized result is that students who score high on extroversion test will have less successful academic performance than those who score low on the test and vice versa.

### 2.2.4 Causes of Extroversion

One of the causes of extroversion is the presence of more blood that flows in the anterior cingulate gyrus, temporal lobes, and posterior thalamus, which are involved in sensory and emotional experience *(*Johnson, Wiebe, Gold, Andreasen, Hichwa, Watkins, Boles & Ponto, 1999). This study indicated that introversion and extroversion is related to individual differences in brain function.

Johnson, *et al* (1999), found correlations between greater volume in the left prefrontal cortex and extroversion. In general, the left prefrontal cortex is connected with the encoding of new episodic memories and "approach" related behaviour, while the right prefrontal cortex is involved in the retrieval of episodic memories and behavioural inhibition/"withdrawal" related behavior. Extroversion has also been linked to physiological factors such as respiration, through its association with surgency *(*Shiner & Caspi, 2003).

According to Depue and Collins, (1999), extroversion has been linked to higher sensitivity of the mesolimbic dopamine system to potentially rewarding stimuli. This part explains the high levels of positive effect found in extroverts, since they intensely feel the excitement of a potential reward. One consequence of this is that, extroverts can be more easily learn the contingencies for positive reinforcement, since the reward itself is experienced as greater. It is also believed that, extroverts exhibit more activity in the anterior cingulate gyrus or temporal lobes and posterior thalamus. These areas are typically thought to be more involved in sensory processing such as listening, watching, or driving. These variations in brain activity suggest that a lot of our individual

differences have an underlying biological causes' of extroversion or introversion (USA Today, 2000).

## 2.3 Introversion

### 2.3.1 Concept of Introversion

Helgoe (2008) defined introversion as a state of being predominantly interested in one's own metal self. It enable person to expand through reflection and dwindle during interaction. It is the act of directing one's interest inward or to things within oneself; the state of being concerned primarily with one's own thoughts and feelings rather than with the external environment.

Introversion is manifested through people whose concentration is upon the inner world of thought; the act of directing one's interest inward or to things within the self. It has been described as typically concerned with one's own thoughts and feelings (Collins, 2003). Introversion is perceived as less socially desirable, it is strongly associated with positive traits such as intelligence and giftedness (Hoehn & Birely, 1988 & Gallagher, 1990).

Introversion is the state of tendency toward being wholly or predominantly concerned with and interested in one's own mental life. They are typically more reserved or reflective. Helgoe (2008) viewed introversion as being manifested in people whose energy tends to expand through reflection and dwindle during interaction. This is similar to Jung's view, although he focused on mental energy rather than physical energy.

People with introversive personality types tend to be less likely to contribute in group environments. Social situations may cause them anxiety or even panic. For this reason

introverts prefer to work independently and remain silent in group environments even if they have something beneficial to contribute. Individual academic performance may be greatly influenced by an individual's personality type (Furnham, Forde & Cotter, 1998). Garima (2015) stated that, introversion is seeing in people who are more comfortable living alone and being by themselves. They depend on their "me time" to recharge; they become immersed in their inner world and run the risk of losing touch with their surroundings or their outer world. They also tend to be introspective and keep their social circle limited.

According to Gale (1998), people with introversion trait often take pleasure in solitary activities such as reading, writing, using computers, hiking and fishing. The archetypal artist, writer, sculptors, engineers, composers and inventors are all highly introverted. An introvert is likely to enjoy time spent alone and find less reward in time spent with large groups of people, though he or she may enjoy interactions with close friends. Trust is usually an issue of significance: a virtue of utmost importance to introverts in choosing a worthy companion. They prefer to concentrate on a single activity at a time and like to observe situations before they participate, especially observed in developing children and adolescents. They are more analytical before speaking (Marti, 2002). Introverts are easily overwhelmed by too much stimulation from social gatherings and engagement, introversion having even been defined by some in terms of a preference for a quiet, more minimally stimulating external environment (Cain, 2012).

### 2.3.2 Characteristics of Introversion

Meredith (2007) opined that mistaking introversion for shyness is a common error. Introverts prefer solitary to social activities, but do not necessarily fear social encounters like shy people do. The following underlisted can be found in introverts persons:

- They need introduction time to get to know you and trust you.
- Encourage responses with questions as, "What do you think?"
- Use polling techniques for input and decision making.
- Allow time for thinking before responding and decision-making.
- Make use of written responses where practical.
- Concentrate on one-on-one activities.
- Do not assume lack of interest.

In addition to Meredith (2007) listed characteristics, Burruss and Kaenzing (2016) also pointed out the following that are related to introverted person:

- Are territorial – desire private space and time.
- Are happy to be alone – they can be lonely in a crowd.
- Become drained around large groups of people; dislike attending parties.
- Need time alone to recharge.
- Prefer to work on their own rather than to do group work.
- Act cautiously in meeting people.
- Are reserved, quiet and deliberate.
- Do not enjoy being the centre of attention.
- Do not share private thoughts with just anyone.
- Form a few deep attachments.

- Think carefully before speaking.
- See reflection as very important.
- Concentrate well and deeply.
- Become absorbed in thoughts and ideas.
- Limit their interests but explore deeply communicate best one-on-one.
- Get agitated and irritated without enough time alone or undisturbed.
- Select activities carefully and thoughtfully.

### 2.3.3 Relationship between Introversion and Academic Performance

Henjum (2001) reported that introvert person especially type A introverts, related to academic positively because of their hardworking and seriousness about their academic and this earned them good success academically. Although, they choose to be reserved but due to their creative ability, they were able to react positively towards academics.

Despite being both admonished to follow difficult social practices and being overwhelmingly outnumbered, the introverts appear to be rather determined and adaptable group. Their achievements in many spheres of society are evident. As researcher Hejum (2001) states that "there is a positive relationship between introversion and achievement. It seems likely that the introvert's vigilance or "stick to the task" accounts for a great deal of academic success. Also, the introvert's self-sufficient, hard-working attitude and introspective, analytical style equips them very well for the demands of rigorous, abstract activities" in academic (Hejum, 2001). These comments corroborate similar observations put forth by famed personality theorist (Eysenck). He concluded that introverts appear to possess a greater capacity for concentrated work

which may translate into advantages in educational achievements (Eysenck 1967, cited in Michael, 2015).

The introvert tries to reduce the amount of outside stimulation by behaving in a passive manner and prefers fewer topics presented in more depth, he/she enjoyed the contrasting habits and settings, he/she needs more time to develop ideas and express them. Introverts prefer to work independently, but he may perform well in small groups. How much the introvert participates in the class will depend upon the temperament of the class members.

Our society encourages free expression of ideas and assertive behaviour. We are encouraged to be outgoing. Failure to mimic these social expectations generally results in the introvert being both misunderstood and ridiculed. Such is the plight of the introverts, who are minority in the regular population, but majority in the gifted population (Gallagher, 1990).

As evidence of the diversity possible within a given personality type, Hejum (2001) identified two categories of introverts as follows:

**Type A** introverts would include those self-sufficient, confident, hard-working, successful people who have firm goals are self-actualizing and are able to interact very well with people when they must or when they choose to do so. These people qualify as introverts because their general style could be described as “reserved” rather than shy. In other words, this type of person can function very adequately in social situations although on the whole he/she prefers activities that involve inner experience, introspection and subjectivity.

**Type B** introverts would include those people who are shy, timid and lacking in communication skills, very withdrawn and who have a low self concept. In other words, these are people who have been "wounded" and are at a real disadvantage in our society. They may have a strong fear of people and generally experience extreme dread when they must do something in front of others. Their self-consciousness and sensitivity contribute to their usual performance being below their apparent overall ability - this is particularly true when they are placed in a new situation (Hejum, 2001).

Based on this study, it is evident that some introverts have communication skills that are on par with the more socially-inclined extroverts. The Type A introverts tend to be good actors in social settings. Accordingly, they can readily discuss information and ideas in an ever-expanding number of circumstances. On the other hand, Type B introverts tend to suffer most terribly because of their communication deficiencies. They are relegated to the most extreme fringes of society and forced to observe in silence and pseudo contentment.

### 2.3.4 Causes of Introversion

Forsman, de Manzano, Karabanov, Madison and Ullén (2012) found that introverts have more blood flow in the frontal lobes of their brain and the anterior or frontal thalamus, these areas are dealing with internal processing, such as planning and problem solving. The study on regional brain volume found a positive correlation between introversion and grey matter volume in the right prefrontal cortex and rights temporal parietal junction, as well as a positive correlation between introversion and total white matter volume.

USA Today, (2000) found more conclusive signs of different brain activity in introverts and extroverts based on cerebral blood flow and personality studies. According to him, he examined 18 healthy individuals utilizing Positron Emission Tomography (PET) scans, which can generate a high-resolution image of the entire head. The scans revealed that introverts have more activity in the frontal lobes of the brain and anterior or front, thalamus. These areas are activated when a person's brain takes on internal processing such as remembering, problem-solving and planning.

Furthermore, Johnson *et al.* (1999) has shown that extroverts and introverts process information differently using different parts of the brain and different neurotransmitters. The extrovert draws upon small amount of information in his/her short term memory in developing his/her thoughts while the introvert recalls thoughts stored in his/her long term memory to build more complex associations. Based on these differences, we see that the extroverted students and the introverted students perform differently in the classroom.

The relative importance of nature versus environment in determining the level of extroversion and introversion is controversial and the focus of many studies. In terms of the environmental component, the shared family environment appears to be far less important than individual environmental factors that are not shared between siblings (Cain, 2012).

### 2.4 Differences between Extroversion and Introversion

Crow and Crow (1963) as cited in Durosaro (2014) puts the major distinction between introverts and extroverts more succinctly in tabular form which is shown in Table 2.3.

**Table 2.3 Differences between Extroversion and Introversion**

| Extroversion | Introversion |
|---|---|
| Fluent in speech | Better in writing |
| Free from worries | Inclined to worry |
| Not easily embarrassed | Easily embarrassed |
| Governed by objective data | More influenced by subjective feelings |
| Friendly | Better reserved |
| Likes to work with others | Likes to work alone |
| Neglectful of ailments | Careful of ailments |
| Flexible and adaptable | Lacking in flexibility |

*Source: Crow and Crow (1963)*

This is one of the factors in evaluating students that have been ignored as temperament. To better understanding a student's behaviour, we need to examine whether the student is an extrovert or an introvert. Since most people, including teachers, are extroverts; the introvert may not be understood and judged appropriately (Durosaro, 2014).

Eysenck proposed that, extroversion was caused by variability in cortical arousal. He hypothesized that introverts are characterized by higher levels of activity than extroverts and so are chronically more cortically aroused than extroverts. The fact that extroverts require more external stimulation than introverts has been interpreted as evidence for this study. Other evidence of the "stimulation" hypothesis is that introverts salivate more than extroverts in response to a drop of lemon juice. This is due to increased activity in their reticular activating system which responds to stimuli like food or social contact.

According to Isaacs (2009), the main difference between the extrovert and the introvert is how each receives his/her energy. An extrovert is energized by external sources, such as

people, activities and objects. His/her sources of stimulation are internal ones such as ideas, impressions and emotions. Extroverts and introverts also vary in their response to external stimulation. An extrovert thrives in an active setting and wants variety in the material presented.

According to De Raad and Schouwenburg (1996) as cited in Essays (2013), the personality factor that is most often linked to academic performance is Conscientiousness. It encompasses the drive to accomplish things, which contains the characteristics necessary to pursue it such as: hard-working, achievement-oriented, organized, persistent, and careful (Goldberg, 2006). People who achieve good academic results usually possess most of these traits Taylor (1964) as cited in Essays (2013) found that students who achieve good results are persistent and have the capacity to be hard-working for longer periods. Persistence is associated with conscientiousness.

### 2.4.1 Behavioural Differences between Extroverts and Introverts

Extroverts and introverts have a variety of behavioural differences. Sharma (1980) stated that, extroverts tend to wear more decorative clothing, whereas introverts prefer practical and comfortable clothes. Extroverts are likely to prefer more upbeat, conventional and energetic music than introverts *(*Rentfrow & Gosling, 2003). According to Gosling (2008), personality traits (introversion and extroversion) are influences how people arrange their work areas. In general, extroverts decorate their offices more, keep their doors open, keep extra chairs nearby and are more likely to put dishes of candy on their desks. These are attempts to invite co-workers and encourage interaction. Introverts, in

contrast, decorate less and tend to arrange their workspace to discourage social interaction.

In line with Gosling (2008), Fleeson and Gallagher (2009) stated that, *d*espite these differences in extroversion and introversion, there is a great deal of overlap in the way that extroverts and introverts behave. Fleeson and Gallagher found that extroverts regularly behave in an introverted way, and introverts regularly behave in an extroverted way. Indeed, there was more within-person variability than between-person variability in extroverted behaviours. The key feature that distinguishes extroverts from introverts was that, extroverts tend to act moderately extroverted about 5-10% more often than introverts. From this perspective, extroverts and introverts are not 'fundamentally different'. Rather, an 'extrovert' is just someone who acts more extroverted more often, suggesting that extroversion is more about what one 'does' than what one 'has' *(*Fleeson & Gallagher, 2009).

Humans are complex and unique and because introversion and extroversion varies along a continuum, individuals may have a mixture of both orientations. A person who acts introverted in one situation may act extroverted in another and people can learn to act in "counter-dispositional" ways in certain situations. For example, Brian Little's Free Trait Theory *(*Little, 1996 *&* Little, 2008) suggests that people can take on 'Free Traits', behaving in ways that may not be their "first nature", but can strategically advance projects that are important to them. This presents an optimistic view of what extroversion is. Rather than being fixed and stable, individuals vary in their extroverted behaviours

across different moments and can choose to act extroverted to advance important personal projects or even increase their happiness.

According to Furnham *et al.* (1998), individual differences in academic performance have been linked to differences in intelligence and personality traits (introversion and extroversion). Personality factors such as introversion and extroversion have a great influence on academic performances of students (Stumm, Hell & Chamorro-Premuzic, 2011).

Goff and Ackerman (2002) found negative relationship between extroversion and academic performance in high school and University. This could be the consequences of the difference in time spent acquiring knowledge between introverts, who spend more time studying and extroverts, who spend more time socializing (Rolfhus & Ackerman, 2012). Another aspect is that introverts may also be better in learning, coupled with better study habits and lower distractibility (Eysenck, 1967). Goff and Ackerman also found that the relationship of extroversion and academic performance are affected by age and level of education. Extroverted children before the age of 11-12 years old would generally perform better than introverted children. This correlation would change at secondary and University levels as introverts tend to perform better than extroverts in higher education. The reason for this change is because higher education involves more analytical skills and complex tasks, which would require more preparation than just interaction and socializing with people (Goff & Ackerman, 2002).

### 2.4.2 Nurturing and Social Condition of Extroverts and Introverts

In addition to the biological connections to personality type, early social conditioning patterns also play a critical role in personality development. For children raised in supportive and nurturing environments, the prospects of venturing into the outer world are less intimidating. Love and encouragement are vitally important ingredients in the formation of healthy and balanced personality types. Unfortunately, the distribution of these ingredients is not uniformly spread throughout the lives of young children. As Friedenberg (1965) points out in his poignant book, "*The Vanishing Adolescent"*, 'In their encounters with society, youngsters are frequently badly hurt. They are sickened and terrified; they feel their pride break, cringe from the exposure of their privacy and are convulsed with humiliation as they realize that they cannot help cringing because their responses are pretty much beyond their control' (USA Today, 2000). In response to such inhumane treatment, many youngsters have no choice but to seek refuge and false security in the most remote corners of the inner world. Their eventual personality type is in large part, not of their own doing or preference. Biology and early social conditioning have provided significant clues.

Ogen (1990) stated that this difference is about the most challenging of modern Psychological theories. Many Psychologists have come to agree that personality affects learning. Ojelabi (1980) as cited in Durosaro (2014) contended that since introversion and extroversion is a function of the irousability of the central nervous system, there is the possibility of finding different tasks among introverts and extroverts.

### 2.4.3 Feeling Condition of Extroverts and Introverts

This is a feeling of satisfaction and enjoyment which makes a person to response to something. Kuppens (2008) showed that extroverts and introverts engage in different behaviours when feeling pleasant, which may explain underestimation of the frequency and intensity of happiness exhibited by introverts. Specifically, Kuppens found that arousal and pleasantness are positively correlated with extroverts, which means that pleasant feelings are more likely to be accompanied by high arousal for extroverts.

On the other hand, arousal and pleasantness are negatively correlated for introverts, resulting in introverts exhibiting low arousal when feeling pleasant. In other words, if everything is going well in an extrovert's life, which is a source of pleasant feelings, extroverts see such situation as an opportunity to engage in active behaviour and goal pursuit, which brings about an active, aroused pleasant state. When everything is going well for introverts, they see it as an opportunity to let down their guard, resulting into feeling relaxed and content in them (Kuppens, 2008).

Happiness is the state of feeling or showing pleasure; a person who is being cheerfully or unconcerned even when he/she is having problems. McCrae and Costa (1991) and Furnham and Brewin (1990) stated that, extroverts are often found to have higher levels of happiness and positive affect than introverts. There was a review article concluded that personality traits, specifically extroversion and emotional stability was the best predictor of subjective well-being *(*Diener, Suh, Lucas & Smith, 1999). As examples, Argyle and Lu (1990) found that the trait of extroversion, as measured by Extroversion Scale of the Eysenck Personality Questionnaire (EPQ), was positively and significantly correlated

with happiness, as measured by the Oxford Happiness Inventory. Using the same happiness and extroversion scales, Hills and Argyle (2001) found that happiness was again significantly correlated with extroversion. Similar results were found in longitudinal study by Diener, Sandvik, Pavot and Fujita (1992) which assessed 14,407 participants from 100 areas of continental United States. Using the abbreviated General Well-Being Schedule, which tapped positive and negative affects; the authors reported that extroverts experienced greater well-being. Furthermore, Larsen and Ketelaar (1991) showed that extroverts respond more to positive affect than to negative affect, since they exhibit more positive-affect reactivity to the positive-affect induction, yet they do not react negatively to the negative-affect induction.

Chamorro-Premuzic and Furnham (2003) did not find extroversion to be related to academic performance, only partly influenced. They found that extroversion was positively related to the final-year project results, but there was no relationship between extroversion and exam results. The relationship between extroversion and final-year project results can be explained by the interpersonal skills of extroverts, when students need to get along with their supervisors and group mates. Furnham, *et al.* (1998) suggested that the extroverts do better on timed test, while introverts tend to do better on longer and non-timed tests. The results suggests that extroversion does play some part in contributing to academic performance, with variables such as age measure academic performance affecting the prediction of academic results.

Kanekar and Mukerjee (1985) as cited in Todaro, (2013) found in India that forty students in the Arts including Social Sciences, were less intelligent, more extroverted and

more neurotic on the Eysenck Personality Inventory than a similar number of Science students. Also, Pressey (2010) in his study on the efficiency of praise and blame on students learning patterns indicated that children categorized as introverts were more adversely affected in their future efforts to obtain the expected result than extroverts when reproved. It was discovered that they latter reacted with greater efforts after reproof.

Furthermore, Isaacs (2009) states the condition of extroversion and introversion in the place of study that, in a lively classroom, the extrovert appears excited by the discussion and eager to participate, while the introvert seem unenthusiastic and unsociable. The introvert is so busy reflecting on the ideas that it does not occur to him/her to volunteer to answer questions.

### 2.4.4 Geographical Variation of Extroversion and Introversion

This is another important thing in the formation of personality traits of extroversion and introversion. Regional variation is very vital when considering introversion and extroversion matter, because, there are some regions that favoured these traits. Some claims that, Americans live in an "extroverted society" and that rewards extrovert behaviour and rejects introversion (Diamond, 2012). This is because, the US is currently a culture of external personality, whereas in some other cultures people are valued for their inner selves and their moral rectitude (Cain, 2012). According to Marti (2002), cultural differences predict individuals' happiness in that, people who score higher in extroversion are happier, on average, in particularly extroverted cultures and vice versa (Fulmer, Gelfand, Kruglanski, Kim-Prieto, Diener, Pierro & Higgins, 2010).

Fulmer, *et al*. (2010) found that people who live on islands tend to be less extroverted and more introverted than those living on the mainland and that people whose ancestors had inhabited the island for twenty generations tend to be less extroverted than more recent arrivals. Furthermore, people who emigrate from islands to the mainland tend to be more extroverted than people that stay on islands and those that immigrate to islands.

According to Rentfrow, Gosling and Potter (2008), in the United States, researchers have found that people living in the Midwestern states of North Dakota, South Dakota, Nebraska, Minnesota, Wisconsin and Illinois score higher on extroversion than the average U.S. Utah and the southeastern States of Florida and Georgia also score high on this personality trait. The most introverted States in the United States are people who live in the northwestern States of Idaho, Montana and Wyoming are also relatively introverted.

### 2.4.5 Implications of Extroversion and Introversion to the Students

An extrovert experienced poor academic results from their ineffective study habits and these results could trigger the development of negative attitudes towards his/her future academic experience in University. Morris and Garden (2013) suggested that, participants on high extroversion tended to be more emotional in problem solving or critical situations. In additional, if extroverted participants had external locus of control in dealing with problems, they had a higher chance of doing poorly. They are more emotionally stable and more likely to believe in their own abilities. This could be another reason why the extroverts have a higher chance of doing poorer than the introverts academically.

Furthermore, when the introverts constantly receive their academic feedback, he/she may be emotional oriented to rationalize their failure as not so important to them. As a result, not much improvement can be obtained in it. Moreover, as they have rationalized their behaviours, they may not contribute the poor result to personal reasons. That is, they are less likely to change their study habits to improve their mark. Another effect is their peak activation time at night; many social activities can draw their attention from their academic interests such as going to party and night club (Essays, 2015).

Introverted students tend to excel in blogging because they often have more to say which had not already been said by them in small group or class discussions. Extrovert students have trouble generating new or novel observations because they have already spent time talking with students about their ideas and they feel like they haven't already been said and heard by someone else.

Pavot, Diener and Fujita (1990) and Myers, (1992), found a correlation between extroversion and self-reported happiness. That is, more extroverted people tend to report higher levels of happiness than introverts. Other researchers has shown that being instructed to act in an extroverted manner leads to increases in positive affect, even for people who are trait-level introverts *(*Fleeson, Malanos & Achille, 2002).

This does not mean that introverts are unhappy. Extroverts simply report experiencing more positive emotions, whereas introverts tend to be closer to neutral. This may be due to the fact that extroversion is socially preferable in contemporary Western culture and thus introverts feel less desirable. In addition to the research on happiness, Swickert,

Hittner, Kitos, & Cox-Fuenzalida (2004) found that extroverts tend to report higher levels of self-esteem than introverts.

Cheng and Furnham (2003) suggested that such results reflect socio-cultural bias in the survey itself. Meyers claimed that happiness is a matter of possessing three traits: self-esteem, optimism and extroversion. Meyers bases his conclusions on studies that report extroverts to be happier; these findings have been questioned in the light of the fact that the "happiness" prompts given to the studies' subjects, such as "I like to be with others" and "I'm fun to be with," only measure happiness among extroverts (Laney, 2002). Also, according to Jung (1995) cited in Todaro, (2013), introverts acknowledge more readily their psychological needs and problems, whereas extroverts tend to be oblivious to them because they focus more on the outer world.

According to Ryckman (2004), extroversion is perceived as socially desirable in Western culture, it is not always an advantage. For example, extroverted youths are more likely to engage in delinquent behaviour. Conversely, while introversion is perceived as less socially desirable, it is strongly associated with positive traits such as intelligence and giftedness *(*Furnham, *et al.*, 1998). For many years, researchers have found that introverts tend to be more successful in academic environments, while extroverts may find boring. Counsellors often use personality traits, along with other factors such as skill and interest to advise their clients (Ateel, 2005).

Schaller (2011) stated that, behavioural immune system may influence gregariousness. Although extroversion is associated with many positive outcomes like higher levels of happiness, extroverted people are also likely to be exposed to interpersonally transmitted

infectious disease as they tend to contact more people. When individuals are more vulnerable to infection, the cost of being social will be relatively greater. Therefore, people are less extroversive when they feel vulnerable and vice versa.

Although neither introversion nor extroversion is pathological, psychotherapists can take temperament into account when treating clients. Clients may respond better to different types of treatment depending on where they fall on the introversion/extroversion spectrum. Teachers can also consider temperament when dealing with their pupils, for example acknowledging that introverted children need more encouragement to speak in class while extroverted children may grow restless during long periods of quiet study (Schaller, 2011).

According to Kreger (2013), introverts have the advantage of using some digital platform, and extroverts have the advantage of using others. She emphasized that, introvert students get more public recognition when discussing blog posts in class because, there are the ones that everyone has read. Those students then tend to participate more readily in class because they have had time to process their thoughts through their writing. The introvert feels strong in the sense that, he/she tend not to wear his/her hearts on the sleeves or need others to validate their being. He/she feel okay.

### 2.4.6 Ways of Improving Introverted Students in the Classroom

There are several ways in which the introverted students could be motivated to participate in class discussion. As instructors, we should be aware that the student sitting at the back may be an interested introvert and not an unmotivated student. The introvert is comfortable when allowed to observe and uncomfortable when pressured to perform.

In order to get this student involved, we must directly ask the student to respond. Designing rotations so that all students are asked to participate in order to makes the introvert more of a part of the class. Allowing the students to prepare questions at home by assigning the material for the next class discussion in advance can help (Isaacs, 2009).

According to Isaacs (2009), teaching and learning situation is what makes teachers' teaching very fulfilling and rewarding. It gives them full attention to deal with introverted students and this is very challenging. Different students have varied ways to handling them because of individual differences and learning styles. As a teacher, we need to be very patient, considerate, understanding and compassionate. If we love and enjoy our teaching, we should love and enjoy with our students.

### 2.4.7 Introvert and Extrovert Communication

The communication ramifications related to introvert and extrovert information exchanges within the context of the transactional model. Given that, communication exchanges can occur under virtually any set of circumstances due to mutual confusion and anguish, the interactions among these two may actually end before starting. The tragedy of this aborted communication attempt is that, these two humans do not get an opportunity to benefit from the life experiences of the other. The extrovert could learn much from the introvert and vice versa.

The introvert should consider the outer world point-of-view. Moreover, the extrovert would need to practice patience and empathetic listening. Giving the intellectual bent of many introverts, the knowledge base of the extrovert could be enhanced by making such efforts. To reduce the transmission of undesirable nonverbal cues, the introvert should

consider the SOFTEN technique, developed by Don Gabor, a recognized communication expert, the SOFTEN technique is designed to reduce the "soften" display of certain nonverbal behaviours. In the SOFTEN acronym:

- S stands for smile,
- O stands for open posture (no folded arms),
- F suggest adopting a forward lean during conversations ( to show interest),
- T stands for touch (such as a handshake),
- E stands for eye contact, and
- N stands for nodding which shows conversational interest (Gabor, 2001).

However, both extroverts and introverts could potentially experience fruitful information exchanges by recognizing the human bond that exists among them. An appreciation of this bond should generate a celebration of differences and promote greater understanding and acceptance.

## 2.5 Theoretical Frame Works

### 2.5.1 Eysenck Theory

Eysenck described extroversion and introversion as the degree to which a person is outgoing and interactive with other people. These behavioral differences are presumed to be the result of underlying differences in brain physiology *(*Eysenck, 1967). Extroverts seek excitement and social activity in an effort to heighten their arousal level, whereas introverts tend to avoid social situations in an effort to keep such arousal to a minimum. Eysenck designated extroversion as one of the three major traits in his Psychoticism Extroversion and Neuroticism (P.E.N) model of personality.

Eysenck originally suggested that extroversion was a combination of two major tendencies, impulsiveness and sociability. He later added several other more specific traits, namely liveliness, activity level and excitability. These traits are further linked in his personality hierarchy to even more specific habitual responses, such as partying on the weekend. He compared this trait to the four temperaments of ancient medicine, with choleric and sanguine temperaments equating to extroversion and melancholic and phlegmatic temperaments equating to introversion *(*Eysenck, 1967).

Furthermore, Eysenck (1995) as cited in Durosaro (2014) noted that introverts learn more social inhibitions than do extroverts. This in turn, affects their activities in social settings. Eysenck's extroverts then are described as social, lively and emotionally expressive. In contrast, introverts are quite, introspective and value oriented. Extroversion was typically defined as a turning outward of the mind unto people and objects in the outside world and introversion as "inner directedness" and a preference for abstract ideas rather than concrete objects. According to Odeleye (1985), extroversion also refers to impulsive sociable tendencies while introversion includes controlled and responsible behaviour.

Eysenck (1967) in Campbell and Hawiley (2016) used a technique called factor analysis. This technique reduces behaviour to a number of factor's which can be grouped under separate headings, called dimensions. He also found that, behaviour could be represented by two dimensions; introversion/extroversion (E), neuroticism/stability (N). He called these second order personality traits. According to Eysenck, the two dimensions of neuroticism (stable vs. unstable) and introversion-extroversion combine to form a variety of personality characteristics. Thus:

- Extroverts: are sociable and crave excitement and change, and thus can become bored easily. They tend to be carefree, optimistic and impulsive.
- Introverts: are reserved plan their actions and control their emotions. They tend to be serious, reliable and pessimistic.
- Neurotics/unstable: tend to be anxious, worrying and moody. They are overly emotional and find it difficult to calm down once upset.
- Stables: are emotionally calm, uncreative and unworried.

Eysenck later added a third trait/dimension.

- Psychoticism: lacking in empathy, cruel, a loner, aggressive and troublesome.

He related the personality of an individual to the functioning of the Autonomic Nervous System (ANS). Personality is dependent on the balance between excitation and inhibition process of the nervous system. Neurotic individual have an ANS that responds quickly to stress.

### 2.5.2 Jung's Theory

Carl Jung's perspective on personality is quite insightful; he wrote that, what appears to be random behaviour is actually the result of differences in the way people prefer to use their mental capacities. According to Jung (1995), there are two mutually exclusive attitudes extroversion and introversion. "Each person seems to be energized more by either the external world (extroversion) or the internal world (introversion)." The introvert is more comfortable with the inner world of thoughts and feelings, so they will see the world in terms of how it affects them, while the extrovert feels more at home with the world of objects and other people and is more concerned with their impact upon the world (Garima, 2015).

Jung's theory, stressed that we all think, feel, sense and experience the world in many different ways. He identified four essential psychological functions: thinking, feeling, sensation, and intuition**.** Each function may be experienced in an introverted or an extroverted fashion and one of the functions is more dominant in each one of us. Some of us depend on thinking and feeling rather than sensing and intuiting. Understanding this psychology could be quite fruitful to understand our world and people who influence our thoughts, feelings, senses and our inner voice (Garima, 2015).

#### 2.5.2.1 Jung's View of Introversion and Extroversion Attitudes

According to Jung, each person seems to be energized more by either external or internal world. He classified extroverts and introverts in the following ways:

- Introverts are more comfortable living alone and being by themselves. They depend on their "me time" to recharge; they become immensed in their inner world and run the risk of losing touch with their surroundings or their outer world. They also tend to be introspective and keep their social circle limited.
- Extroverts on the contrary, are actively involved in the world of people and thing, they are socially active and more aware of what is going on around them. They like to be part of groups, committees and probable places where they get a chance to interact. The idea of being alone terrifies them, leaving them alternated from their inner selves.

Jung (1995) noted that none of us is completely extroverted or introverted but we certainly connect to one of the other attitude. In all of us, lies an unconscious mind-one which is not conscious of feelings and thoughts all the time, but those feelings and thoughts are capable of affecting our lives. If you check an extrovert, you will found

his/her unconscious has an introverted quality, because, all the extroverted qualities are played out in his/her consciousness and the introverted are left in the unconscious (Jung 1995). If the extroverts develop to know how and when to bring their unconscious introversion into composition and similarly, when introverts know when to bring their unconscious extroversion into composition, they would have command over their mental space and not vice versa.

#### 2.5.2.2 The Functions: Perceiving and Judging

Jung observed that, one's preference for extroversion or introversion could not alone account for the many behavioural differences. He observed between two opposite mental functions that we used to take in information or perceive – the perceiving functions of sensing and intuition.

- Sensing perception: the process of collecting concrete data through using our five senses.
- Intuitive perception (intuition): the process by which we make connections and infer meanings beyond sensory data.

Jung also coined two opposite mental functions that we use to evaluate information or make decisions, ways to judge or the judging functions of thinking and feeling.

- Thinking judgment: the process we use for evaluating information by applying objectives and logical criteria.
- Feeling judgment: the process we use for evaluating information by considering what is important to me and you.

Jung determined that we have an innate predisposition to habitually use or prefer one of the four functions over the others (Golatz, 2016).

## 2.6 Review of Empirical Studies

Durosaro (2014) conducted a research on "relationship between introversion-extroversion and academic achievement among Secondary School Students in Oyo State, Nigeria". The study adopts a correlational survey design. The population consists of all the secondary school students in Oyo State. Stratified random sampling technique was used to select the four schools used. Thirty students were randomly picked from each school. One instrument, the adapted version of the Eysenck - Wilson Know Your Personality Scale, was used for the study. The academic reports of the students were collected and their scores in, English, Mathematics and Biology were recorded. The findings of the study showed that there was no significant correlation between students' academic performance and the introversion-extroversion dimension of their personality.

Essay (2013) conducted a research on extroversion and academic achievement in University of Western Ontario (UWO). The purpose of this study was to determine the relationship between extroversion personality and University academic achievement. There were 36 participants with age ranging from 18 to 27. The extroversion questionnaire and general information questionnaire was given to each participants. The extroversion score and the first-year average were obtained. A bivariate correlation design was used to determine the relationship between the two factors. A relatively significant result was generated. The results from the study yielded a statistical significance. Extroversion was found to be negatively related to academic achievement.

A research was conducted by Soleimani1 (2013) on Extroversion/Introversion and Test Performance of Iranian on Multiple-Choice. The Participants were 75 English learners

from different language institutes in Sari, Iran. The subjects were non-randomly selected using the availability sampling method. A version of Cambridge Placement Test was used to homogenize the participants in the study, comprising of 45 female and 30 male learners. Their age ranged from 14 to 26. 14 of them had to be excluded because they were not in the level of knowledge that the researcher wanted. After administering the Eysenck personality questionnaire, it became clear that, 11 subjects were at the medium level; as a result, their data were eliminated from the study. Finally, 50 subjects (17 males and 33 females) were considered. Due to practicality problems and the number of subjects needed, the sampling was a non-random one despite the probable external validity problems. An independent *t-test* was used to examine the difference between the two sample means. The analyses for hypotheses indicated that although there is a difference between performance of introvert and extrovert Iranian EFL learners on different test formats, the difference was not statistically significant. The mean of the introvert was 8.80 out of 12 and the mean of the extrovert was 8.08 out of 12. The findings revealed that there exists no significant difference between introversion/ extroversion dimension and participants' performance on the two types of tests, despite the fact that there was a small mean difference between are groups. Introverts can have an inner strength of trait that extroverts do not have.

Bhagat (2013) conducted a research on “Extroversion and Academic Performance of Medical Students at the University College of Science Education, Cape Coast, Ghana. The sample study group includes 70 students. The age of the sample varied from 17-23 years. Among the sample group, 49 were females and the 21 were males. The study used a cross-sectional survey methodology to determine a student's type preference and then

explored possible causal relationships involving introverted or extroverted preferences and academic performance. Their scores on this test were related to the only common academic measure among them, the intermediate examination in arts. Extroversion was found to be correlated significantly.

Beaulieu (1991) conducted a similar study on “the relationship of an individual's peak activation time, extroversion/introversion and academic performance.” Peak activation time is the time period in which, people tend to be more efficient in activities. Participants were a group of adults enrolled in a junior-level organizational behavior course. Along with their academic grades, a survey was also conducted to collect their extroversion score and sleeping habits. As a result, it was clear that extroverts tended to go to sleep late and had a peak activation time at night, while the introverts preferred to sleep earlier and had a peak activation time in the daytime. University courses are taking place in the day, the hypothesis predicted that introverts would do better than the extroverts given their daytime activation peak pattern. The result was consistent with the prediction - extroverts had poorer academic scores than the introverts. However, there were findings that extroverts paid less attention to academic activities, because they devoted more time engaging in social events given their social and energetic nature. Less attention might be paid to daily academic activities.

Marin, Adolph and Welse (2008) conducted a research on, “investigating a sample of unsuccessful Spanish students focused on their personalities.” According to them, unsuccessful students could be defined as students with low averages, high failing rates and potential to drop out. As discussed in the previous studies, Marin, Adolph and Welse

predicted that individuals scoring high on extroversion would be likely to experience poorer academic performance given their ineffective study habits. Similarly, this study revealed that extroverts had a higher chance to experience neuroticism, lack of motivation and low conscientiousness; they were more likely to result in academic failure in College, University and become pessimistic about their future. Thus, this result emphasized the fact that unsuccessful University students had a higher chance of being more extroverted. The study also illustrated a further relationship between the two variables, an extrovert experienced poor academic results from their ineffective study habits and the results could trigger the development of negative attitudes towards their future academic experiences in University.

## 2.7 Summary

According to this research, the academic performance and success rates of students, revolves around the question of extroversion and introversion. Students who were introvert tend to do better in college than extrovert, which supported the prediction that they also performed better academically. Studies have shown that introversion and extroversion persons perform differently academically. Whether you are a social extrovert or a quiet introvert can have influence on academic performance, the choice of subjects and the general progress of scholars throughout the whole range of secondary school education depend on the type of personality traits such students possessed.

It was discovered that, geographical variation also play a vital role in the formation of personality traits (extroversion or introversion) because, there are some region that favoured these traits. In the course of this research, it was found that people who live on

island tend to be more introverted than those living on the mainland. Also, those who emigrate from islands to the mainland tend to be more extroverted than people that stay on islands. Social condition patterns also play a vital role in personality development. It was discovered that, love and encouragement are very important ingredients in the formation of healthy and balanced personality types. This study also found that the relationship of extroversion or introversion and academic performance are affected by age, in the sense that, extroverted children before the age of 11-12 years old would generally perform better academically than introverted children.

In a lively classroom, the extrovert appears excited by the discussion and eager to participate, while the introvert may seem unenthusiastic and unsociable. In general, extroverts decorate their offices more, keep their doors open and keep extra chairs nearby. These are attempts to invite co-workers and encourage interaction while introverts, in contrast, decorate less and tend to arrange their workspace to discourage social interaction.

In the review of this research, it was observed that, there are communication problems between extrovert and introvert students and misunderstanding of introverted person as a shy person by the teachers or people. This study brought the introvert and extrovert students to the level of understanding each other's personality traits that manifested in one's behaviour. Also, this study intends to enlighten the students on how to relates with one another and enable the teachers to carry along introverted students in the classroom while teaching. In the course of this study, the researcher discovered that, introverts students perform better academically due to their hardworking and seriousness in

studying their books than extroverts. This study will also enlighten the extroverted students to reduce the level of their social activities and pay more attention to their academics. This could be achieved through organization of career programmes in various schools. This research filled the gap that has been in Sabon Gari Local Government Area, Zaria in the sense that, other researches that have been carried out is only on general personality traits but not on extroversion and introversion traits.

# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

This chapter deals with the methods researcher employed to collect the data for the study. The research design and the population were determined, sample and sampling techniques were discussed. These involved instrumentation, validity and reliability, procedure for data collection and procedure for data analysis.

## 3.2 The Research Design

The research design used for conducting this study was correlational design. The purpose of using correlation in this research is to find out which variables are related. This is done by looking for variables that seem to interact with each other, so that when the researcher sees one changing and then will have an idea of how the other will change. This design according to Waters (2016), is a quantitative method of research in which you have two or more quantitative variables from the same group of subject and you are trying to determine if there is a relationship between the two variables.

## 3.3 Population of the Study

The population of this study was made up of SS II, male and female senior secondary schools from six selected secondary schools in Sabon Gari Local Government Area, Zaria. The entire number of the population is, one thousand four hundred and eighty seven (1487) students, which comprise both public and private schools. Table 3.1 describes the population of the study.

**Table 3.1 Distribution of the Secondary Schools by School Type and Population**

| Schools Name | School Type | Population |
|---|---|---|
| Government Commercial College, Zaria | Govt. | 75 |
| Aminu Senior Government Secondary School, Zaria | " | 400 |
| Government Secondary School, Muchia Senior, Zaria | " | 387 |
| Therbow Secondary School, PZ, Sabon Gari, Zaria | Private | 300 |
| Comprehensive College, Sabon Gari, Zaria | " | 180 |
| Destiny International Secondary School, Angwan Maigodo, Zaria | " | 145 |
| **Total** | | **1487** |

Source: *Zonal Office, Ministry of Education, Zaria (2016)*

### 3.4 Sample and Sampling Technique

The proportional sampling technique was employed to select three hundred and fifty (350) SS II students comprising of male and female out of one thousand four hundred and eighty seven (1487) populations of SS II senior secondary school students in Sabon Gari Local Government Area, Zaria. This sampling selection is inline with Abdullahi's (2015) prescription on the expected percentage for any given population that, a population of 100 people/subjects will be 10 percent. This method was employed because, schools differ in population and to ensure equitable distribution of the sample, proportionate sampling will be appropriate. However, the research targeted SS II senior secondary school students only with the age range of 14 to 17 years. Its excluded SS I and III because the major study is being done in SS II, when the students finished SS II and entered his/her final year (SS III), the only thing is just to prepare for the final examination and in most cases, the questions that usually comes out during final examination is from SS II work.

Table 3.2 below shows the sample size of the schools selected.

**Table 3.2 Distribution of Sample by School**

| Schools | Population | Sample size |
|---|---|---|
| Government Commercial College, Zaria | 75 | 38 |
| Aminu Senior Government Secondary School, Zaria | 400 | 101 |
| Government Secondary School, Muchia Senior, Zaria | 387 | 68 |
| Therbow Secondary School, Sabon Gari, Zaria | 300 | 55 |
| Comprehensive College, Sabon Gari, Zaria | 180 | 45 |
| Destiny International Secondary Sch. Angwan Maigodo, Zaria | 145 | 43 |
| **Total** | **1,487** | **350** |

## 3.5 Instrumentation

The Eysenck Personality Inventory was adapted from Eysenck (1967) to collect data for this study. The biodata consists of three questions which gives the information about the respondents' school name, gender and age. The adapted instrument that was used to collect data for the study consists of twenty four (24) questions, which are classified into two sections. Twelve (12) items each was used to measure the feeling and act of the extrovert students and another one was used to measure the likes and dislike of the introvert students. These aimed at finding out how the respondents study, behave, feel and act. Section B of the instrument measure how the extrovert students feel and act while section C measure the likes and dislike of the introverted students. The students who scored high in extroversion test was placed as extroverted students and those who scored high in introversion test was placed as an introvert students. Each question has four Likert point of: "Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD)" rating 4, 3, 2 and 1 respectively (see Appendix 3 and 4).

**Academic Performance**

The objectives test in Mathematics and English was constructed to collect academic performance of the respondents, this aimed at finding the academic performance of extrovert and introvert students. This instrument consists of twenty (20) objectives questions in Mathematics and English (10 for each). These questions have four options (A to D) where respondents were instructed to choose one answer and the scores were computed. These subjects are compulsory and were offered by all the students.

### 3.5.1 Validity of the Instruments

The face validity of the instrument was done by three lecturers in the Department of Educational Psychology and Counselling, Faculty of Education, Ahmadu Bello University, Zaria. Their suggestions and observations included that, it is not compulsory to use the adopted instrument since it is not of recent and the researcher could change the information to suit the present research. The adopted instrument was restructured based on their suggestions and observations to gain the face validity of the instruments. For example, the adopted instrument which says: "Do you feel bad about your school results even when it is moderate?" Yes or No. was changed to I don't feel bad about my school results even when it is moderate – Strongly Agreed (SA), Agreed (A), Strongly Disagreed (SD) and Disagreed (D).

### 3.5.2 Pilot Testing

The adapted copy of the instrument was administered to forty (40) students of Demonstration Secondary School, Ahmadu Bello University, Zaria, with the permission of the principal of the school. The school was not part of the schools selected for the

study but share the same characteristics with the selected schools. The participants responded to each item by ticking one answer only, to ensure that their opinions are clearly expressed. The researcher pilot tested the instruments in order to ensure internal consistence of the instruments.

### 3.5.3 Reliability of the Instruments

The test was administered to forty (40) SS II students of Demonstration Secondary School, Ahmadu Bello University Zaria once. The researcher divided the test into two equal parts (split-half) then used Cronbach's Alpha correlation coefficient to test the reliability and reliability index of (.985) was obtained. This confirms to Robert, Kurtz, Yamagata and Terraccianos (2011) view that, the magnitude of the coefficient compared to a fixed standard is .70. This indicated that, the instrument was reliable to collect data for the research.

## 3.6 Procedure for Data Collection

Before going to the research area, the researcher collected introductory letter from the Department of Educational Psychology and Counselling, Faculty of Education, Ahmadu Bello University, Zaria to the Head of Department, Planning Research and Strategies (PRS), Zonal Office, Ministry of Education, Zaria, where the researcher was given another letter to the various secondary schools earmarked for the study. When the researcher took introductory letter to the principals of the various schools on the first day, some principals accepted it immediately and gave permissions, some asked the researcher to come back the following day, while others after three weeks. The permission of the principal of each school was obtained and the total number of three hundred and fifty

(350) questionnaires was administered to the respondents by the research assistant and the researcher along with the objectives test in Mathematics and English. The researcher established rapport with the students and urged them to try and respond to all the items. After their responses, the questionnaires were collected and analyzed.

### 3.7 Procedure for Data Analysis

The data collected from the study were analyzed using descriptive statistical tools. Frequency counts and simple percentages were used for biodata, means and standard deviation was used to answer the research questions. The scores from the test which were administered to the students in Mathematics and English were analyzed using means and standard deviation, while Pearson Product Moment Correlation and Independent Sample t-test were used to test the hypotheses. The null hypotheses were tested using SPSS Version 20 at 0.05 level of significant. That is, if p-value is higher than 0.05 level of significant, the null hypothesis is retained and if it is lower/equal to 0.05, then the null hypothesis is rejected.

# CHAPTER FOUR

# RESULTS AND DISCUSSION

## 4.1 Introduction

This chapter presents the analyses of the data collected in the course of this study. The data obtained in this study were statistically analyzed and the results were presented in the Tables. The null hypotheses for the study were tested using Pearson Product Moment Correlation, Independent Sample T-test, summary of the major findings and the discussions of the results were presented in relation to the research questions and objectives raised in the study.

## 4.2 Demographic Data of the Respondents

Table 4.1 shows the demographic data of the respondents.

**Table 4.1 Distribution of the Respondents by Gender**

| Gender | Frequency | Percentage (%) |
|---|---|---|
| Male | 213 | 60.9 |
| Female | 137 | 39.1 |
| **Total** | **350** | **100.0** |

The Table 4.1 shows that 60.9% of the respondents were male while 39.1% were female. This shows that males were more in the study area than females.

**Table 4.2 Distribution of the Respondents by Age**

| Age | Frequency | Percentage (%) |
|---|---|---|
| 14 years | 21 | 6.0 |
| 15 years | 62 | 17.7 |
| 16 years | 115 | 32.9 |
| 17 years and above | 152 | 43.4 |
| **Total** | **350** | **100.0** |

Table 4/2, 6.0% of the respondents were 14 years, (17.7%) 15 years, (32.9%) 16 years and (43.4%) 17 years and above. This means that majority of the respondents in the study area were between the ages of 16 and 17 years and above.

### 4.3 Analysis of the Research Questions

The answers to research questions were presented as follows:

**Research question 1:** What is the relationship between extroversion and academic performance among senior secondary school students?

The mean scores and standard deviation on extroversion and academic performance of the students is presented in Table 4.3.

**Table 4.3: Mean and Standard Deviation on Relationship between Extroversion and Academic Performance of the Students**

| | N | Mean | SD | SE |
|---|---|---|---|---|
| Extroversion | | 32.98 | 4.217 | .329 |
| Academic Performance in Math & Eng. | | 11.51 | 4.128 | .322 |
| | 164 | | | |

From the Table 4.3, extroversion mean scores was 32.98, SD of 4.217 and academic performance mean of 11.51, SD of 4.128 indicated the relationship between extroversion and academic performance of the students.

**Research Question 2:** What is the relationship between introversion and academic performance among senior secondary school students?

**Table 4.4: Mean and Standard Deviation on Relationship between Introversion and Academic Performance of the Students**

| | N | Mean | SD | SE |
|---|---|---|---|---|
| Introversion | | 34.41 | 4.585 | .336 |
| Academic Performance in Math & Eng. | | 19.10 | 7.128 | .523 |
| | 186 | | | |

The Table 4.4 revealed introversion mean scores of 34.41, SD of 4.585 and academic performance mean of 19.10, SD of 7.128 shows the relationship between introversion and academic performance of the students.

**Research Question 3:** What is the difference between academic performance of extrovert and introvert students among senior secondary schools?

**Table 4.5: Mean and Standard Deviation on Differences between Academic Performance of Extrovert and Introvert Students**

| | N | Mean | SD | SE |
|---|---|---|---|---|
| Academic Performance of Extrovert Students | 164 | 11.51 | 4.128 | .322 |
| Academic Performance of Introvert Students | 186 | 19.10 | 7.128 | .523 |
| | 350 | | | |

In the Table 4.5, extroverts academic performance mean of 11.51, SD of 4.128 while introverts academic performance mean of 19.10, SD of 7.128, indicated the differences between their academic performances.

## 4.4 Testing of Hypotheses

Three hypotheses were raised in this study. These were aimed at finding the relationship between the extroversion, introversion and academic performance. The null hypotheses were tested as follows:

**Hypothesis 1:** There is no significant relationship between extroversion and academic performance among senior secondary school students.

The Pearson Product Moment Correlation was adopted in testing this hypothesis.

**Table 4.6: Pearson Product Moment Correlation on Relationship between Extroversion and Academic Performance of the Students**

| Variable | N | M | SD | df | r | p |
|---|---|---|---|---|---|---|
| Extroversion | 164 | 32.32 | 4.383 | 162 | .057 | .235 |
| Academic performance | | 11.51 | 4.128 | | | |

The result of correlation coefficient tested, r = .057 and p = .235, in this result, the p-value is higher than alpha value of 0.05 level of significance which means, there is no significant relationship between extroversion and academic performance of the students. Therefore, the null hypothesis one is retained.

**Hypothesis 2:** There is no significant relationship between introversion and academic performance among senior secondary school students

**Table 4.7: Pearson Product Moment Correlation on Relationship between Introversion and Academic Performance of the Students**

| Variable | N | M | SD | df | r | p |
|---|---|---|---|---|---|---|
| Introversion | | 34.41 | 4.585 | | | |
| | 186 | | | 184 | -.123* | .047 |
| Academic Performance | | 19.10 | 7.128 | | | |

*. Correlation is significant at the 0.05 level (1-tailed).

Outcome of the correlation in Table 4.7 revealed, r = -.123 and p = .047, the p-value is lower than alpha value of 0.05 level of significance which means, there is significant relationship between introversion and academic performance of the students. Hence the null hypothesis is rejected.

**Hypothesis 3:** There is no significant difference between academic performance of extrovert and introvert students among senior secondary schools

**Table 4.8: T-test Analysis on Differences between Academic Performance of Extrovert and Introvert Students**

| Variables | N | M | SD | SE | df | t-cal | p |
|---|---|---|---|---|---|---|---|
| Extroverts Academic Performance | 164 | 11.51 | 4.128 | .322 | | | |
| | | | | | 348 | 50.195 | .000 |
| Introverts Academic Performance | 186 | 19.10 | 7.128 | .523 | | | |
| | 350 | | | | | | |

Table 4.8 shows significance difference in the performance of extrovert and introvert students (t = 50.195, p = .000) in favour of introverts. Further examination of the result

revealed academic performance mean scores of extrovert and introvert students to be 11.51 and 19.10 respectively. This means that, performance of introvert students is higher than extrovert students. Therefore, the hypothesis which says, there is no significant difference between academic performances of extrovert and introvert students is rejected.

## 4.5 Summary of the Findings

The findings from the analyzed data are summarized as follows:

a. The study revealed that, there is no significant relationship between extroversion and academic performance of senior secondary school students.
b. The result showed that, there is significant relationship between introversion and academic performance of senior secondary school students.
c. There is significant difference between academic performance of extrovert and introvert students ($t = 50.195$, $p = .000$) in favour of introverts. This shows that introvert students performed better academically than extrovert students.

## 4.6 Discussion

The findings of the study showed that, hypothesis one was retained while hypotheses two and three were rejected. The discussions of this research finding are as follows:

There is no significant relationship between extroversion and academic performance of the students. This finding agreed with Durosaro (2014), Essay (2013) and Beaulieu (1991) findings that extroversion and academic performance are not related. Morris and Carden (2013) also agreed that extroversion with external locus of control tends to do poorer academically. The study agreed with Marin, Adolph and Welse (2008) finding that, unsuccessful students had a higher chance of being more extroverts due to their

ineffective study habits. This research disagreed with the finding of Bhagat (2013) who conducted a research on extroversion and academic performance of medical students and found that extroversion was correlated with academic performance. Extroversion has negative relationship with academic performance, because of engagement in social activities and lazy study habit in leisure time of the extrovert students, which made them to have poor performance.

There is significant relationship between introversion and academic performance. This finding agreed with Hejum (2001) and Eysenck (1995) cited in Michael, (2015) who indicates positive relationship between introversion and academic performance of students. Entwistle (2011) stated that, as far as academic performance is concerned the introvert is superior. In line with this, Cattel (1973) cited in Heffinerd (2014) agreed with this finding. Durosaro (2014) argued that personality type is not significantly relates to learning. Contrary to his finding, the results of this study has shown that among the two subjects of the study, there is significant relationship between introversion and academic performance, due to their hard-working through thorough study with seriousness which lead to academic success.

There is significant difference between academic performance of extrovert and introvert students. This confirmed the prediction of Marin, Adolph and Welse (2008) that, individual scoring high on extroversion would be likely to experience poorer in academic performance. The study disagreed with Soleimanil (2013) findings that, there is no significant difference between extroversion-introversion dimension and their academic performance even though there was a small mean difference between them. It also

disagreed with the finding of Durosaro (2014) that, there is no significant correlation between students' academic performance and introversion/extroversion dimension.

This study also showed that, the reason why there are differences in the academic performance between extrovert and introvert students was that, the extroverts have short term memory which they draw small information from, in developing thought while on the other hands, the introverts recalls thoughts stored in their long term memory to build more complex associations. It was found that, the relationship of extroversion or introversion with academic performance are affected by age, in the sense that, extroverted children before the age of 11-12 years old generally perform better academically than introverted children.

# CHAPTER FIVE

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

This chapter covered the summary of the whole research study. It also include conclusion drawn from the results of the findings, contributions to knowledge, recommendations and suggestions for further studies based on the findings of the study.

## 5.2 Summary

This study focused on the relationship among extroversion, introversion and academic performance among senior secondary school students, Sabon Gari Local Government Area, Zaria, Kaduna State. The population consists of 1,487 SS II students from six selected senior secondary schools. Three hypotheses was formulated, related literature were reviewed, the research design was correlational, data were collected, analyzed, interpreted and the major findings was stated.

Chapter one stated the background to the study, statement of the problem, three objectives of the study were raised and tested in this research, which aimed at finding out the relationship among extroversion, introversion and academic performance, research questions, null hypotheses, basic assumptions were raised in line with the objectives. The study is significance to the counsellors, students, principal of secondary schools, SUBEB and curriculum planner, the scope of the study is Sabon Gari, Zaria and is delimited to SS II students both male and female from six selected secondary schools. Chapter two reviewed the related literatures on extroversion and introversion, conceptual framework revealed illustrated diagrams on the concepts of extroversion and introversion, theoretical

framework comprised of Jung and Eysenck theories of personality and the review of empirical study.

Chapter three stated the methodology of this study. The research design is correlational and was aimed at looking for the variables that are related, population of the study was 1487, consist of SS II male and female students from six selected schools, 350 students was sampled using proportional sampling techniques, procedure for data collection and the data was analyzed using descriptive statistical tools. Chapter four revealed the results from data analyzed, summary of the major findings and discussions. Chapter five stated the whole summary of the research work, conclusion and the recommendations was that, the extrovert students should be counselled on how to reduce social activities and pay more attention on academics which will improve their academic performance.

## 5.3 Conclusion

Based on the research carried out on relationship among extroversion, introversion and academic performance, the following conclusions were made:

The result of the finding revealed that, extroversion and academic performance are not correlated, because extroversion made students to have more interest in social activities which reduced the level of their performance academically. It has been said that extroversion has positive relationship with academic performance but this study nullifies the prediction.

The finding shows that, introversion is related to academic success. For this reason, those who have this trait (introversion) are found to be effective in their study by seriousness and hard-working students, which made them to perform better academically.

There is significant different between academic performance of extrovert and introvert students. From the results, academic performance of extrovert and introvert students differed in the two subjects (Mathematics and English). This shows that introverted students are superior in academic success.

## 5.4 Contributions to Knowledge

This research study will contribute another dimension of knowledge to students, counsellors, teachers and the society as followings:

- The students who were high in extroversion traits have poor academic performance.
- Introversion trait is related to success in academic performance of the students.
- Academic performance of any student revolved on the type of personality traits (extroversion or introversion) such students possess.

## 5.5 Recommendations

Based on the findings of this study, the researcher wish to make the following recommendations:

1. The extrovert students should always be counselled on how to change their attitude towards their academic and also reduce their engagement in social activities in order to pay more attention to their studies. In line with this, every school, both public and private should try as much as possible to create counselling time on the school time table to enhance the counsellors meet with the students and enlightening them to understand who they are regarding their

personality traits, which will enable them become serious about their academic and improve their performance.

2. The counsellors, parents/teachers should not see introvert children/students as being academically inferior to their extroverted counterparts for their inability to participate in the classroom discussion.
3. The students should be helped by providing teaching aids that will improve their academic performance, especially extrovert students.

## 5.6 Suggestions for Further Studies

There are other unexploited areas which are still open for other researches to take place. Few suggestions are:

2. This research work covered only extroversion and introversion, but research can be conducted on neuroticism.
3. This research can be carried out in the rural areas in order to enable the students understand the relationship among extroversion, introversion and academic performance.

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**APPENDIX 1**

**INTRODUCTORY LETTER FROM THE DEPARTMENT**

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND COUNSELLING
FACULTY OF EDUCATION,
AHMADU BELLO UNIVERSITY, ZARIA

Our Ref: _____ Date: 22/02/2016

THE ZONAL DIRECTOR
ZARIA ZONE

Dear Sir,

STUDENTS' FIELD RESEARCH

The Department of Educational Psychology and Counselling, Ahmadu Bello University, Zaria requires each student working for a Degree to complete a research project/ Thesis/Dissertation. They are therefore required to collect data for the research studies.

Most of them will need to be allowed access to certain relevant documents and some valuable information which you may have.

Please accord them all the necessary assistance.

TOPIC OF RESEARCH:

INFLUENCE OF EXTROVERSION AND INTROVERSION ON ACADEMIC PERFORMANCE AMONG SENIOR SECONDARY SCHOOLS, SABON GARI LOCAL GOVERNMENT AREA, ZARIA – KADUNA STATE

Thank you for your continued cooperation.

Yours Sincerely,

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND COUNSELLING A.B.U. ZARIA

Research Adviser

**APPENDIX 2**

**INTRODUCTORY LETTER FROM THE ZONAL OFFICE**

Ministry of Education Science and Technology,

Zonal Office Headquarters,

Zaria.

Date 16/02/2017

The Principal/Proprietor,

Govt Sec. Sch. Muchia

Senior, Zaria

**LETTER OF INTRODUCTION**

Oche Francisca O.

The bearer is a M.Ed (G&C) in the department of/from Educational Psychology & Counselling and wish to conduct a research in the following areas:-

1. Relationship of Extroversion, Introv
2. With Academic Performance Among Sen
3. Secondary School, Sabon Gari, Zaria
4. Kaduna State
5. 

I am directed to request you to allow him/her the use of your facilities accordingly please.

H. O. D. PRS
E. J. USMAN (MRS)
Ministry of Education
Zonal Office, Zaria.
H O D, PRS

For: Director

## APPENDIX 3

## QUESTIONNAIRES ON HOW THE RESPONDENTS FEEL, ACT, BEHAVE, LIKES AND DISLIKE

### Part A

**Instruction**

Please, kindly respond to the information below by writing and ticking (√) the appropriate spaces and columns represents your usual way of acting or feeling.

**Section A: Biodata**

1. Name of your School_____
2. Gender: Male [ ] Female [ ]
3. Age: 14 [ ], 15 [ ], 16 [ ], 17 and above [ ]

Use the keys below to answer the items in section B to E.

SA: Strongly Agreed
A: Agreed
D: Disagreed
SD: Strongly Disagreed

**Section B:**

| S/No | What I like most | SA | A | D | SD |
|---|---|---|---|---|---|
| 1 | I prefer studying in my leisure time | | | | |
| 2 | I take frequent breaks while studying in the school/class | | | | |
| 3 | I prefer studying in group setting than studying alone in the school. | | | | |
| 4 | I do things and say things quickly without stopping to think in school/classroom | | | | |
| 5 | I don't feel bad about my school results even when it is moderate | | | | |
| 6 | I likes going for party a lot in the school | | | | |
| 7 | If people shout at me, I can shout back at them | | | | |
| 8 | I study mostly on my bed not at school | | | | |
| 9 | I always enjoy myself in a lively school/classroom | | | | |
| 10 | I enjoy social interaction | | | | |
| 11 | Other people always tells me that am very lively | | | | |
| 12 | I can easily forget what I have been taught | | | | |

**Section C:**

| S/No | What I like to do | SA | A | D | SD |
|---|---|---|---|---|---|
| 1 | I performed better in writing than speaking academically. | | | | |
| 2 | I cannot freely contribute in class discussion | | | | |
| 3 | I can suddenly feel shy when I want to talk in the school/classroom | | | | |
| 4 | I often worry about things I should have done or said in the school/classroom | | | | |
| 5 | I need more time to develop ideas before expressing myself in the class | | | | |
| 6 | I can easily recall whatever I have been taught | | | | |
| 7 | I prefer studying alone than group setting in the school/class | | | | |
| 8 | I take pleasure in solitary activities such as reading my book/using computers | | | | |
| 9 | I prefer to have few and special friends in school | | | | |
| 10 | I like to observe activities in school before I participate | | | | |
| 11 | I am quiet when am with others in the school/class | | | | |
| 12 | I prefer looking into the book to understand things than telling someone to explain to me | | | | |

*Source: Adapted from Eysenck Personality Inventory*

## APPENDIX 4

## QUESTIONNAIRES ON ACADEMIC PERFORMANCE OF THE STUDENTS IN MATHEMATICS AND ENGLISH

### Part B

**Instruction**

Please, kindly respond to the information below by ticking (√) the appropriate options.

**Section D: Mathematics**

**Instruction: Answer all the questions**

1. Evaluate $\frac{3524}{0.05}$, correct to 3 significant figures

   (a) 705 (b) 70000 (c) 70480 (d) 70500

2. Convert $1011_{two}$ to base ten

   (a) 12 (b) 11 (c) 10 (d) 9

3. Find the value of 25% of N300

   (a) N75 (b) N50 (c) N25 (d) N5

4. List all the factors of 35

   (a) 1, 5, 7, 25 (b) 1, 3, 5, 35 (c) 1, 5, 7, 35 (d) 1, 5, 7, 15

5. Simplify (-10) – (-5)

   (a) +10 (b) -10 (c) +5 (d) 0.-5

6. Calculate the total amount (loan and interest) to be paid on a loan of N1000.000, borrowed for 2 years at a simple interest rate of 10% p. a.

   (a) N2,000:00 (b) 2,200:00 (c) 1,000:00 (d) 1,200:00

7. Find the additive inverse of the following +0.27

   (a) -0.27 (b) +0.27 (c) -0.3 (d) +0.3

8. Factorize bx + by

   (a) b(x + y) (b) $b^2xy$ (c) 2bxy (d) bxy

9. Solve the inequality $-3(x - 2) < -2(x + 3)$

   (a) $x > 12$ (b) $x < 12$ (c) $x \geq 12$ (d) $x < -12$

10. Find the perimeter of a circle whose radius is 14cm. (Take $\pi = \frac{22}{7}$)

    (a) 44cm (b) 66cm (c) 88cm (d) 188cm

**Section E: English**

From the list of words lettered A to D, choose the one that is Most nearly opposite in meaning to the underlined word and that will at the same time, correctly fill the gap in the sentence.

1. I am very hopeful about the outcome of the talks, but some of my _____ friends think they're a waste of time.

   (a) Realistic (b) extremist (c) egoistic (d) pessimistic.

2. Extra-curricular activities are obligatory; only for the sick are they _____

   (a) Ignored (b) optional (c) exceptional (d) occasional

3. These leaders earn huge sums of money while their followers receive _____ wages. (a) Common (b) medium (c) paltry (d) ordinary.

From the words lettered A to D, choose the word that best completes each of the following sentences

4. He claimed that they _____ known each other for three years

   (a) Had (b) has (c) have (d) did

5. _____ pen is that?

   (a) who's (b) whose (c) which (d) whom

6. Akilu's _____ allowed the thieves to cart away many boxes of drinks.

   (a) Negligence (b) negligent (c) neglect (d) negligency

From the words lettered A to D choose the word that contains the sound represented by the given phonetic symbol

7. / e /

   (a) Grateful (b) breakfast (c) great (d) mete

8. / dʒ /

   (a) Yam (b) George (c) gauge (d) yarn

9. /ɔ: /

   (a) Hat (b) last (c) sun (d) short

10. / i /

    (a) Tea (b) dim (c) shape (d) child

**Academic Performance Results in Mathematic and English for Extroverts Students**

| Math | English | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 6 | 4 | 4 | 6 | 4 | 4 |
| | | 4 | 4 | 4 | 4 | 4 | 2 |
| 4 | 4 | 4 | 2 | 8 | 4 | 6 | 2 |
| 8 | 4 | 6 | 2 | 12 | 10 | 4 | 6 |
| 12 | 10 | 4 | 6 | 4 | 2 | 4 | 2 |
| 4 | 2 | 4 | 2 | 10 | 6 | 6 | 6 |
| 10 | 6 | 6 | 6 | 8 | 6 | 4 | 6 |
| 8 | 6 | 4 | 6 | 8 | 6 | 4 | 4 |
| 8 | 6 | 4 | 4 | 8 | 4 | 4 | 4 |
| 8 | 4 | 4 | 4 | 12 | 2 | 2 | 4 |
| 12 | 2 | 2 | 4 | 8 | 4 | 4 | 0 |
| 8 | 4 | 4 | 0 | 2 | 6 | 4 | 0 |
| 2 | 6 | 4 | 0 | 8 | 6 | 8 | 4 |
| 8 | 6 | 8 | 4 | 6 | 4 | 10 | 2 |
| 6 | 4 | 10 | 2 | 12 | 2 | 4 | 8 |
| 12 | 2 | 4 | 8 | 10 | 8 | 4 | 8 |
| 10 | 8 | 4 | 8 | 12 | 8 | 10 | 4 |
| 12 | 8 | 10 | 4 | 10 | 6 | 8 | 8 |
| 10 | 6 | 8 | 8 | 12 | 6 | 10 | 6 |
| 12 | 6 | 10 | 6 | 16 | 6 | 10 | 2 |
| 16 | 6 | 10 | 2 | 14 | 6 | 8 | 6 |
| 14 | 6 | 8 | 6 | 12 | 10 | 6 | 4 |
| 12 | 10 | 6 | 4 | 8 | 0 | 6 | 4 |
| 8 | 0 | 6 | 4 | 10 | 8 | 6 | 4 |
| 10 | 8 | 6 | 4 | 6 | 2 | 6 | 6 |
| 6 | 2 | 6 | 6 | 8 | 6 | 4 | 6 |
| 8 | 6 | 4 | 6 | 6 | 2 | 4 | 4 |
| 6 | 2 | 4 | 4 | 6 | 4 | 4 | 4 |
| 6 | 4 | 4 | 4 | 8 | 2 | 4 | 4 |
| 8 | 2 | 4 | 4 | 14 | 4 | 2 | 2 |
| 14 | 4 | 2 | 2 | 12 | 0 | 6 | 2 |
| 12 | 0 | 6 | 2 | 4 | 6 | 8 | 2 |
| 4 | 6 | 8 | 2 | 6 | 2 | 14 | 0 |
| 6 | 2 | 14 | 0 | 2 | 6 | 10 | 2 |
| 2 | 6 | 10 | 2 | 6 | 2 | 6 | 6 |
| 6 | 2 | 6 | 6 | 6 | 4 | 6 | 4 |
| 6 | 4 | 6 | 4 | 4 | 2 | 14 | 2 |
| 4 | 2 | 14 | 2 | 6 | 4 | 4 | 6 |

**Academic Performance Results in Mathematic and English for Introverts Students**

| Math | English | | | | | | |
|---|---|---|---|---|---|---|---|
| 10 | 6 | 18 | 14 | 14 | 6 | 6 | 6 |
| 10 | 6 | 16 | 14 | 10 | 6 | 18 | 14 |
| 12 | 14 | 6 | 8 | 10 | 6 | 16 | 14 |
| 16 | 10 | 14 | 6 | 12 | 14 | 6 | 8 |
| 14 | 10 | 8 | 4 | 16 | 10 | 14 | 6 |
| 12 | 8 | 8 | 10 | 14 | 10 | 8 | 4 |
| 12 | 10 | 8 | 10 | 12 | 8 | 8 | 10 |
| 14 | 10 | 20 | 12 | 12 | 10 | 8 | 10 |
| 14 | 12 | 8 | 4 | 14 | 10 | 20 | 12 |
| 14 | 8 | 18 | 14 | 14 | 12 | 8 | 4 |
| 6 | 8 | 12 | 16 | 14 | 8 | 18 | 14 |
| 12 | 10 | 12 | 6 | 6 | 8 | 12 | 16 |
| 18 | 12 | 12 | 8 | 12 | 10 | 12 | 6 |
| 14 | 10 | 8 | 8 | 18 | 12 | 12 | 6 |
| 8 | 4 | 10 | 2 | 14 | 10 | 8 | 8 |
| 16 | 8 | 8 | 4 | 8 | 4 | 10 | 2 |
| 12 | 8 | 8 | 6 | 16 | 8 | 8 | 4 |
| 14 | 12 | 12 | 10 | 12 | 8 | 8 | 6 |
| 10 | 4 | 12 | 2 | 14 | 12 | 12 | 10 |
| 10 | 8 | 6 | 4 | 10 | 4 | 12 | 2 |
| 18 | 12 | 6 | 4 | 10 | 8 | 6 | 4 |
| 10 | 8 | 14 | 8 | 18 | 12 | 6 | 4 |
| 18 | 14 | 14 | 6 | 10 | 8 | 14 | 8 |
| 8 | 6 | 18 | 8 | 18 | 14 | 14 | 6 |
| 6 | 8 | 8 | 6 | 8 | 6 | 18 | 8 |
| 20 | 14 | 10 | 10 | 6 | 8 | 8 | 6 |
| 10 | 6 | 12 | 4 | 20 | 14 | 10 | 10 |
| 12 | 6 | 8 | 10 | 10 | 6 | 12 | 4 |
| 12 | 10 | 12 | 6 | 12 | 6 | 8 | 10 |
| 18 | 12 | 12 | 10 | 12 | 10 | 12 | 6 |
| 18 | 12 | 16 | 8 | 18 | 12 | 12 | 10 |
| 14 | 8 | 12 | 10 | 18 | 12 | 16 | 8 |
| 18 | 12 | 10 | 4 | 14 | 8 | 12 | 10 |
| 16 | 12 | 10 | 10 | 18 | 12 | 10 | 4 |
| 4 | 10 | 12 | 8 | 16 | 12 | 6 | 6 |
| 18 | 12 | 14 | 6 | 4 | 10 | | |
| 6 | 6 | 14 | 6 | 18 | 12 | | |

## Hypothesis 1

**Correlations**

**Descriptive Statistics**

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Extroversion | 32.32 | 4.383 | 164 |
| Academic Performance | 11.51 | 4.128 | 164 |

**Correlations**

| | | Extroversion | Academic Performance |
|---|---|---|---|
| Extroversion | Pearson Correlation | 1 | .057 |
| | Sig. (1-tailed) | | .235 |
| | N | 164 | 164 |
| Academic Performance | Pearson Correlation | .057 | 1 |
| | Sig. (1-tailed) | .235 | |
| | N | 164 | 164 |

## Hypothesis 2

**Correlations**

**Descriptive Statistics**

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Introversion | 34.41 | 4.585 | 186 |
| Academic performance | 19.10 | 7.128 | 186 |

**Correlations**

| | | Introversion | Academic performance |
|---|---|---|---|
| Introversion | Pearson Correlation | 1 | -.123* |
| | Sig. (1-tailed) | | .047 |
| | N | 186 | 186 |
| Academic performance | Pearson Correlation | -.123* | 1 |
| | Sig. (1-tailed) | .047 | |
| | N | 186 | 186 |

*. Correlation is significant at the 0.05 level (1-tailed).

## Hypothesis 3

**T-Test**

**Group Statistics**

| | Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Academic Performance of | Extrovert Academic Performance | 164 | 11.51 | 4.128 | .322 |
| | Introvert Academic Performance | 186 | 19.10 | 7.128 | .523 |

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | |
|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
| Extro. & Introv Academic Perform. | Equal variances assumed | 50.195 | .000 | -11.970 | 348 | .000 | -7.585 | .634 |
| | Equal variances not assumed | | | -12.352 | 302.761 | .000 | -7.585 | .614 |