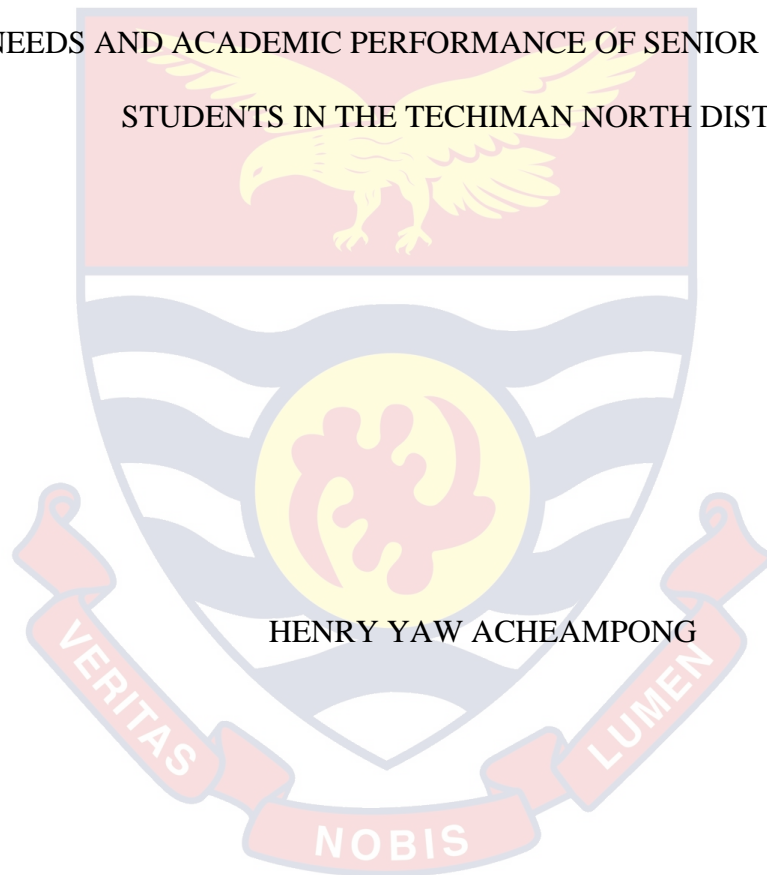


UNIVERSITY OF CAPE COAST

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STUDENTS IN THE TECHIMAN NORTH DISTRICT

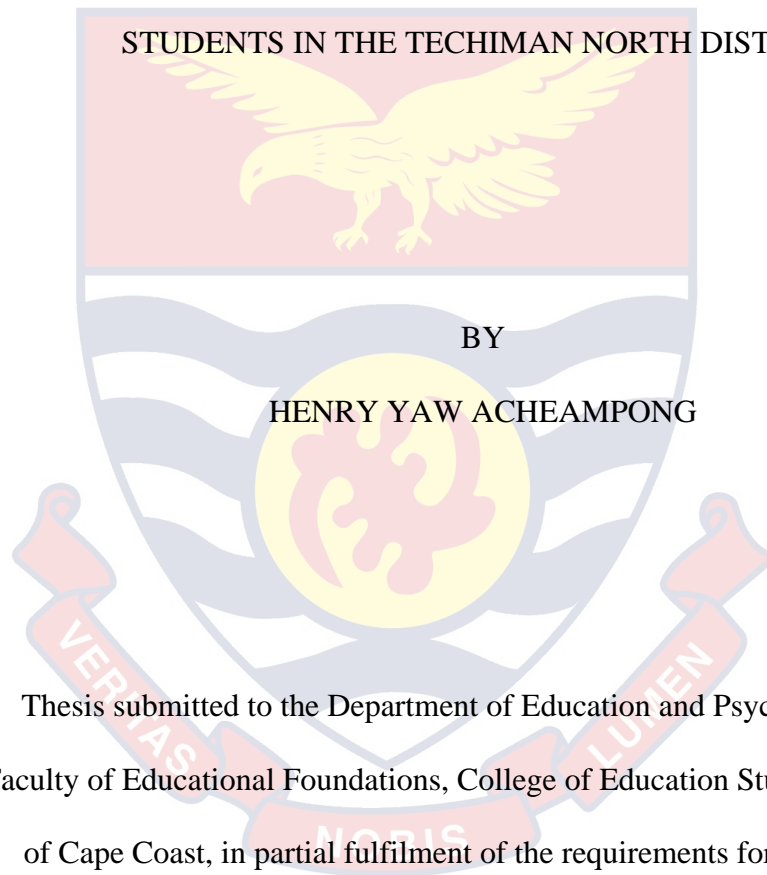


HENRY YAW ACHEAMPONG

2019

UNIVERSITY OF CAPE COAST

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STUDENTS IN THE TECHIMAN NORTH DISTRICT



BY

HENRY YAW ACHEAMPONG

Thesis submitted to the Department of Education and Psychology of the
Faculty of Educational Foundations, College of Education Studies, University
of Cape Coast, in partial fulfilment of the requirements for the award of
Master of Philosophy Degree in Educational Psychology.

JULY 2019

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature:..... Date:.....

Name:

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature:..... Date:.....

Name:

Co-Supervisor's Signature:..... Date:.....

Name:

ABSTRACT

The study investigated the relationship between students' perception of deficit needs and their academic performance in the Techiman North District. The study was nested in Maslow's Hierarchy of Needs Theory. In the quest of achieving the purpose of the study, correlational research design was adopted for the study. The targeted population was all the students from the five public Senior High Schools in the Techiman North District. The accessible population was the second year students from the five public SHS in the Techiman North District. The stratified and simple random sampling techniques were employed to sample 290 respondents from 1,171 students. Five Needs Satisfaction Measure Scale and test scores in the four core subjects were used to ascertain the perception of deficit needs and the academic performance of the respondents respectively. It was established that esteem needs and safety needs predicted the academic performance of students' more than other deficit needs. Results from the study suggested that psychological needs have a statistically significant positive but low relationship with academic performance. However, the study did not establish a statistically significant relationship between safety needs and the academic performance of students. A statistical significant relationship was established between the perception of esteem needs and academic performance. It is recommended that school authorities should place much emphasis on the physiological needs of students to help them improve on their academic performance as the study has established significant relationship between perception of Physiological needs and academic performance.

KEY WORDS

Academic Performance

Deficit Need

Esteem Needs

Love/Belongingness Needs

Motivation

Need

Physiological needs

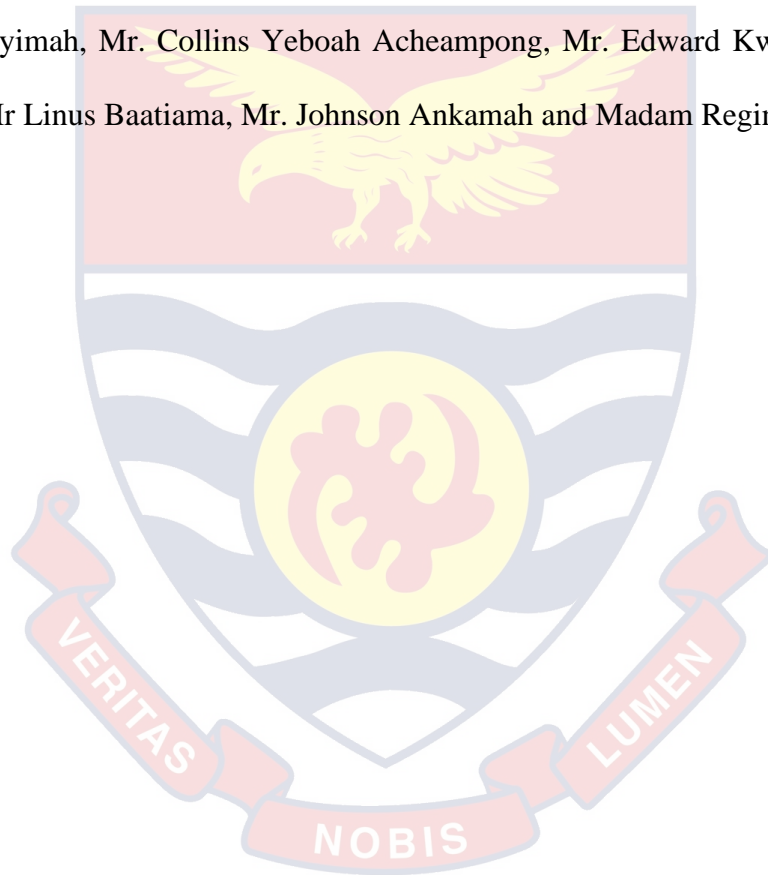
Safety Needs



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DEDICATION

To my wife: Georgina Acheampong



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LIST OF ACRONYMS

| | |
|---------|---|
| ASFA | Adoption and Safe Families Act |
| EFA | Education for All |
| FNSMS | Five Needs Satisfaction Measure Scale |
| GSS | Ghana Statistical Service |
| LI | Legislative Instrument |
| OECD | Organization for Economic Cooperation and Development |
| PHC | Population and Housing Census |
| SDT | Self Determination Theory |
| SHS | Senior High Schools |
| SPSS | Statistical Package for Service Solution |
| UBE | Universal Basic Education |
| UN | United Nations |
| USA | United States of America |
| WASSSCE | West Africa Senior Secondary School Certificate Examination |



CHAPTER ONE

INTRODUCTION

Background to the Study

The United Nations (UN) General Assembly declaration on human rights, (article 26) asserts that “everyone has the right to education” (UN, 1948). In line with this, education has become increasingly important on national agenda and thus has undergone thoughtful metamorphoses and reforms among states in the world for the past decades (Organization for Economic Cooperation and Development (OECD), 1999).

In Ghana, successive governments have pursued education as a tool to fast-track national developmental policies and programs (Mohan, Asante & Abdulai, 2017; Gunter & Mills, 2016; Robertson & Robertson, 2007). However, it has been realized that the type and quality of the educational system inherited from the colonial era has not addressed the country’s needs and critical problems of development and equity (Tanye, 2008; Leu, & Prince-Rom, 2006; Bah-Diallo, 1997). In relation to this, De Grauwe, (2008) in a study found that the relationship between education and economic development is not linear and that there is lack of systematic relationship between education and development, particularly in sub-Saharan Africa. The study further indicated that education is not totally absent in contributing to economic development but does so under certain circumstances which include the content and context.

In view of this, various education review committees have been instituted to reform the educational system to meet the requisite content and context that can satisfy the country's needs (Tagoe, 2014). Popular among these reform committees include; Kwapong review committee-1966, Dzobo Committee- 1974 and Anamuah-Mensah Committee-2007 (Adu-Gyamfi, Donkoh, & Addo, 2016).

All these educational review committees have focused on how to improve on the academic performance of students (Norviewu-Mortty, 2012). For many years, educators and researchers have debated the factors that have, in isolation or in combination with others, contributed to students' academic performance and have suggested factors such as class size (Mosteller, 1995; Glass, Cahen, Smith & Filby 1982), teacher qualification (Ferguson, 2017), school size (Stevenson, 2006), self-motivation, age of students, learning preferences (Sengodan & Iksan, 2012), class attendance (Marburger, 2006), family income (Mlambo, 2011), yet not much has been realized.

Contemporary researchers have found that satisfying students' needs is key to improving their academic performance (Gray, Chang & Anderman, 2015; Shaabani, 2014). These needs are things that motivate human behaviour Maslow, (1943). Needs are directly related to learning through motivation (McLeod, 2007). It has been argued that as students get more satisfied with their needs, the better the motivation and therefore the more learning that the student will experience (Ololube, 2006). When all levels of Maslow's Hierarchy of Needs are met, students reach their full potential to learn (McLeod, 2007). This is because each student has needs that must be met in order to maximize learning which can be found under the Maslow's Hierarchy

of Needs theory. As a student ascends on the hierarchy, the better the motivation and therefore the more learning that the student will experience. However, Chinyoka and Naidu (2014) in a study noted that some students from impoverished homes are able to excel in their academics despite the difficulties.

Motivating students with their needs is keystone which improves other aspects of their lives to enhance their holistic performance (Tucker, Zayco, Herman, Reinke, Trujillo, Carraway & Ivery, 2002; Zigler and Stevenson, 1993). Maslow's Hierarchy of needs therefore succinctly describes the various levels of needs in an individual's life from the most basic need to the ultimate need of life. The principal idea behind the theory is its motivation factor which constitutes the driving force to move up to the peak of the hierarchy. Kroth (2007), posits that the term "motivation" originated from the Latin word *movere* or *motum* which means to move.

Motivation has been described as what energizes, directs, and sustains behavior (Reeve, 2014). There are a number of sources for motivation including goals, values, need for achievement, biological needs, and relatedness, among many others (Reeve, 2009). Thus, a proper education system should help students to reach the very peak of the hierarchy and satisfy the transcendence needs. In his study Reshaping Maslow's hierarchy of needs to reflect today's education and managerial philosophies, Kiel, (1999) opined that Self-actualization should be the goal of learning, and education should focus on self-development.

Aming'a, (2015), asserted that the socioeconomic status of families has a close link with how students meet their needs. This is because students with

sound financial background usually get access to some basic needs and vice versa. More so, well-to-do families are likely to meet all the needs of their wards in school. Socioeconomic disempowerment has in its part interfered with the ability of households to meet basic human needs of their wards in school (Chinyoka, & Naidu, 2014; Jyoti, Frongillo & Jones, 2005).

It has also been observed that the quality of learning, as measured by learning outcomes, has tended to be low in the rural schools (Castro, & Rolleston, 2015; Chambers, 2014). Apart from the inadequate resources in these schools, most of the students are from impoverished homes where they are unlikely to get their needs met (Castro, & Rolleston, 2015). Shouse (1996), for instance in a study suggested that students from low socioeconomic homes are likely to be exposed to a socially therapeutic state rather than intellectually demanding values and activities and that their schools' efforts to boost performance will rather be diverted from academic goals.

Alternatively, progressive educators have contended that students will care about schools that care about them and that students will work harder to enhance their performance in contexts of safety, connection, and shared purpose (Schaps, 2003). Improving the social and emotional climate of schools together with their social and emotional soundness advances the academic mission of the schools in many ways (Zins, Bloodworth, Weissberg, & Walberg, 2004). Satisfying the needs of students actually increases their capacity and interest to learn thereby improving on their performance. More importantly, as schools place emphasis on feedback and standardized testing, need satisfaction plays important role in both the academic performance and the social aspects of development (Tian, Tian & Huebner, 2016). Thus,

satisfying students' needs has been recognized as one of the tools that offers unique entry point for students and other school workers to improve on performance, social and learning environments.

There have been numerous research findings associated with educating poor African American students who despite the odds still excel (Floyd, 1996; Barbarin, 1993). Thus, Barbarin, (1993) asserted that it is very real to see people describe these students using the terms "competent," "resourceful," "aspiring," or "motivated" in school. Yet, to focus primarily on the problems of any group of people in isolation from data that highlight possible solutions to their problems is to promote distorted and negative stereotypes that perpetuate defeat and pessimism (Garmezy, 1991).

Studies have shown that some students from poor backgrounds have achieved academically and that more of such children, given their natural abilities and intelligence levels, should be having academic success but are not (Edmonds, 1979). Indeed, as (Barbarin, 1993; Freiberg, 1993; Garmezy, 1993; Ritter, Mont-reynaud, & Dombusch, 1993) have indicated, many Black children and for that matter children with need problems learn and succeed in school despite circumstances that include low socio-economic status, minimal teacher expectations and inadequate representation of their successes. The finding that some African American students from impoverished backgrounds successfully emerge from high risk environments, has led many researchers to attempt to identify causes or elements that serve to assist them in coping with and overcoming dire circumstances (Brown, &, Rhodes 1991).

Studies that seem to suggest the difference between the academic success and failure among students with unmet needs often boil down to the

presence or absence of the character trait; resilience (Wang & Gordon, 1994; Freiberg, 1993). Resilient students are said to be those who beat the odds or bounce back under adverse circumstances (Wang & Gordon, 1994). In an attempt to address these concerns, it was prudent a study on the relationship between students' perception of needs and academic performance among Senior High Students in the Techiman North District be undertaken.

Statement of the Problem

Students have several needs that must be satisfied (Ringwalt, Ennett, Vincus, & Simons-Rudolph, 2004). These needs include, physiological, safety, love/belonging and esteem needs, which are all found under the deficit needs as Maslow posited (O'Connor & Yballe, 2007; Koltko-Rivera, 2006). Studies have established that in order to assist students excel in their academic pursuits these needs ought to be satisfied through motivation (Brophy, 2013; Cheung, 2013; Davis, 1999). Conversely, other researches have contended that a number of students with needs deficit also excel (Borman, & Overman, 2004; Luthar, Cicchetti, & Becker, 2000; Floyd 1996; Barbarin, 1993; Garnezy, 1993; Skutsch, Bierl & Calder, 1992). These contradicting reports worth interrogating as to whether the satiation of needs play any role in students' academic performance and if so, how exactly do they relate with performance.

Although research on need satisfaction is extensive (Deci, Ryan, Gagné, Leone, Usunov, & Kornazheva, 2001; Van den Broeck, Vansteenkiste, De Witte & Lens, 2008; Sheldon, & Elliot, 1999), few researchers have looked at students' needs in relation to the Maslow's Hierarchy of needs theory (Weiler, 2005; Huitt, 2001). Moreover, the few studies identified dwelt more on the needs of schools and teachers and how they can affect the teaching and

learning processes (Jussim & Harber, 2005; Harris, & Brown, 2009) but not much attention has been channeled to what really the need of students are in relation to their academic performance especially in the Techiman North District.

Additionally, amidst the studies conducted on need assessment in relation to the Maslow's theory, literature reveals that almost all the studies assessed need using the old version of the Maslow's theory (Hartje, 2016; Aming'a 2015; Gobin, Teeroovengadam, Becceea & Teeroovengadam, 2012). To give new understanding to the phenomenon, the researcher used the updated version of the Maslow's theory for the study. Specifically, the study was limited to the first four levels on the hierarchy Maslow referred to as deficit needs (physiological, safety, love/belongingness and esteem needs). Consequently, the researcher assessed students' perception of these needs (deficit needs) in relation to their academic performance. The reason for selecting the four levels for the study was reached on the assertion that few people will ever reach the last four levels on the Maslow's hierarchy (Kaur, 2013; Koltko-Rivera, 2006). Hence it was prudent to consider the first four levels that all individuals can realize. It is against this backdrop that this study aims to fill the gap in the literature by investigating into the relationship between students' perception of deficit needs and their academic performance in the Techiman North District.

Purpose of the Study

Needs are fundamental to human growth and survival. Deficiency in a need causes an adverse outcome: failure, dysfunction and even death. Thus, the intent of this study is to investigate into the relationship between students'

perception of deficit needs and academic performance among SHS students in the Techiman North District. Specifically, the study;

1. Assessed the relationship between students' perception of physiological needs and academic performance.
2. Ascertained the relationship between students' perception of safety needs and academic performance.
3. Find out the relationship between students' perception of love and belonging needs and academic performance.
4. Assessed the relationship between students' perception of esteem needs and academic performance.
5. Examined which of the deficit needs best predict academic performance.
6. Find out the difference between male and female students perception of needs.

Research Question

1. Which of the deficit needs predicts the academic performance of students?

Hypotheses

1. H₀: There is no significant relationship between students' perception of physiological needs and academic performance.
H₁: There is a significant relationship between students' perception of physiological needs and academic performance.
2. H₀: There is no significant relationship between the perception of safety needs and academic performance.

H₁: There is a significant relationship between the perception of safety needs and academic performance.

3. H₀: There is no significant relationship between the perception of love and belonging needs and academic performance.

H₁: There is a significant relationship between the perception of love and belonging needs and academic performance.

4. H₀: There is no significant relationship between the perception of esteem needs and academic performance.

H₁: There is a significant relationship between the perception of esteem needs and academic performance.

5. H₀: There is no significant difference between male and female students' perception of needs.

H₁: There is a significant difference between male and female students' perception of needs.

Significance of the Study

Findings of this study will not only add knowledge to the current literature on the relationship between students' perception of needs in relation to academic performance but will also serve as a scholarly reference point for students and educators. The outcome of the study will help give the Ghana Education Service, the Government of Ghana, NGO's, parents and teachers an understanding of students' needs so they can create an enabling environment to enhance teaching and learning. Findings from the study can stimulate further studies. More importantly, the consequences of the study will advise stakeholders on how to handle students from impoverished homes or students with unmet needs to optimize their performance.

Delimitations

The study was confined to the Techiman North District and covered only the public Senior High Schools in the District. There are six Senior High Schools in the Techiman North District comprising five public and one private Senior High Schools. So in using all the six schools, the only private senior high school amongst them can introduce a bias. The study was delimited to deficit needs. These are the first four needs on Maslow's Hierarchy of Needs namely; Physiological, Safety, Love and belongingness and Esteem needs. The choice for the use of deficit needs was because studies have revealed that only few individuals will ever reach the other needs above the deficit needs (Kaur, 2013; Koltko-Riven, 2006).

Academic performance of the students was measured through a test in the four core subjects (English Language, Mathematics, Integrated Science and Social Studies). The four core subjects were chosen because they are compulsory for all students irrespective of their field of study. Also, only form two students were included in the study. This was because at the time of collecting data for the study, the form one students had just reported to the schools. The Form three students were also busy preparing for their West Africa Senior Secondary School Certificate Examination (WASSSCE).

Limitations

In using correlational research design, results obtained from the study do not establish cause and effect relationship between the variables. However, relationship between the variables were established. Despite the fact that, the research design was not capable to do an in-depth description of the phenomenon, the researcher used instruments that solicited detailed views of

respondents on the phenomenon so the findings could be generalized. Also, Five Need Satisfaction Measure Scale (FNSMS) as one of the instruments used to collect data, was very proficient yet could not elicit some important facts from the respondents. This was because it could not probe respondents for further information. In addressing this challenge, the researcher used insightful information to draft the questionnaire that helped him to draw some important facts about the phenomenon.

Definition of Terms

Needs: Needs are the basic requirements that motivate students to study.

Deficit needs: These are the basic needs for survival and security. They include; physiological, safety, love/belonging and esteem needs.

Growth needs: Growth needs are the type of needs that do not stem from lack of something but rather a desire to grow as a person. Growth needs comprise cognitive, aesthetic, self-actualization and transcendence needs.

Physiological needs: These are the basic needs in life required for human survival. Example, food, water and air.

Safety Needs: Safety needs comprise the need for security, protection, stability and freedom from fear and anxiety.

Love/Belongingness Needs: These needs deal with feeling are part of a social group which include; group work, family, affection, friendship, relationships etc.

Esteem Needs: Esteem needs concern the quest for recognition, and participation that offers the sense of contribution, and to feel self-valued.

Academic Performance: Students achievement in test scores for the four core subjects (English Language, Mathematics, Integrated Science and Social Studies).

Organisation of the Study

This study consists of five chapters. Chapter One introduced and provided the background to the study, presented the statement of the problem, the purpose of the study, hypotheses, significance of the study, delimitations, limitations as well as the definition of terms and organisation of the study. Chapter Two dwelt on the review of theories that underpinned the study and relevant literature in the discourse of perception of needs and academic performance. Chapter Three outlined the research methods that were used to achieve the purpose of the study. These included the research design, study area, population, sampling procedure, instruments, validity and reliability of the instruments, data collection procedure, and data processing and analysis. Chapter Four covered the data presentation and analysis, as well as the interpretation and discussion of the main findings whilst the final chapter, being chapter five presented the summary, conclusion, recommendations of the study and areas for further studies.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter presents a review relevant literature in the discourse of students' perception of needs and their academic performance. Maslow's Hierarchy of Needs Theory, Ecological Systems Theory and Person Centered Theory constitute the theoretical framework on which review was done. Review on the concept of deficit needs and on the various levels of deficit needs and how they affect academic performance is presented in this chapter. Additionally, literature on perception of needs and academic performance of male and female students was reviewed.

Theoretical Review

Maslow's Hierarchy of Needs Theory

Abraham Maslow conceived and developed the Hierarchy of needs theory between the 1940s and the 1950s in America. The Hierarchy of needs theory is relevant in contemporary times for comprehending human motivation, personal growth, and the academic performance of students with need deficit especially those from poverty-stricken homes. Maslow proposed a theory of needs based on a hierarchical model as a pyramid with basic needs at the bottom and higher level needs at the top. The most essential and basic four layers of the pyramid contain what Maslow called deficit needs or D-needs. At any of the deficit needs level, the individual does not feel anything if they are met, however feels apprehensive if they are not met (Snowman & Biehler,

2003). Needs above the D-needs are called growth needs or being needs. These, when fulfilled do not go away, instead they further motivate the individual.

The central idea in Maslow's theory is that people tend to gratify their needs methodically, starting from the basic physiological needs to transcendence on the top of the hierarchy. Maslow contended that the higher-level needs can only be met if the lower-level needs have already been satisfied. For instance, a hungry person is unlikely to be motivated to think about safety and affection until his or her hunger is satisfied. In his attempt to elaborate this, Rathus (2006) indicated that all the needs in the hierarchy are innate to humans, but those higher in the hierarchy are weaker. This signifies that individuals who have been satisfied with a need and are on top of the hierarchy only exhibit direct action when all the earlier needs have been satisfied. In simple terms, it is only when people have enough to eat, their physical safety guaranteed, that they will be motivated by the need to belong or the need for esteem.

Chinyoka, (2013) in a study elaborated Maslow's work by adapting an eight-stage Hierarchy of Needs Model. There is, however, some uncertainty as to how and when the additional three stages –stages six, seven and eight (cognitive, aesthetic and transcendence) – originated from as well as the propounder to the original Hierarchy of Needs Model. Meanwhile, many people acknowledged the five traditional stages of Maslow's Model to be the ultimate ones, and perfectly adequate (Tay & Diener, 2011). However, the present study aligns with the eight stages of Maslow's Hierarchy of Needs. The Hierarchy of Needs proposed that if people grew up in an environment in

which their needs were unmet, they would be less probable to function healthily and be well-adjusted individuals. Study and testing of Maslow's theory has sustained the distinction between the deficit and growth needs but indicated that not all people are able to fulfill their higher-order needs (Kaur, 2013). The first four levels (deficit needs) on the Maslow's eight tier theory are discussed below:

Physiological Needs

These constitute the basic requirements for human survival. These needs comprise the need for food, air, shelter and water. Kenrick, Griskevicius, Neuberg, and Schaller (2010) indicate that naturally the body strives to achieve homeostasis, equilibrium of different areas such as water content of the blood, salt, sugar, protein and constant blood temperature. For instance, physiological needs will occupy the highest priority even if all human needs are not met. In light of this assertion, the physiological needs are paramount and remain basic to the motivation of children and for that matter human. This means that Physiological needs are universal human needs as such, considered the first step in internal motivation according to Maslow's hierarchy of needs. This theory states that humans are compelled to fulfill these physiological needs first in order to pursue intrinsic satisfaction on a higher level Deckers (2018). He further indicated that if these needs are not achieved, it will lead to an increase in displeasure within the individual. In return to the increase in displeasure, the individual feels less motivated to perform in any task including school related tasks.

Until these needs are met, any other thing retreats (Kenrick et al., 2010). For instance, healthy hungry people think of nothing else but food (Ecker &

Nene, 2012; Ecker & Breisinger, 2012; Fanzo, 2012; Nabarro, Menon, Ruel, & Yosef, 2012). All the human capacities, comprising intelligence, memory, and dreams are put to work to seek psychological, as well as physiological comfort. Also, an appropriate way to obscure the higher motivations and to get a lopsided view of human capacities and human nature is to make the organism extremely and chronically hungry or thirsty (Tay & Diener, 2011). This implies that a child from a poor background has problems in respect of self-actualisation because of hunger. This, to some extent, affects his or her academic performance which when not fulfilled can affect the future life of the child.

Safety Needs

The essence of security comes into being in one's life after his/her physiological needs are satisfied and physiological needs are no more controlling his/her thoughts and behaviour. Safety needs comprise the need for security, protection, stability and freedom from fear and anxiety as well as for structure and limits in our lives (Snowman & Biehler, 2003). Berth (2010) also opined that safety and security needs comprise personal and financial security together with health and wellbeing. This need is more likely to predominate in children as they generally have a greater need to feel safe. Logue (1985), as cited in Kenrick, et al., (2010) also cited that children are particularly vulnerable to unfamiliar surroundings and as a result they seek refuge in routines, because too many open-ended and ambiguous experiences may constitute a threat to their safety.

For instance, when a child grows up within a happy and secure environment there is a high tendency for the development of a stable

psychological being, however, if he or she grows up within a setting where a sense of security is lacking, an unstable foundation results. Consequently, Tay and Diener (2011) indicate that sometimes the desire for safety outweighs the desire to easily satisfy physiological needs. However, in the case of acute danger, safety comes before aspects like stilling the hunger.

Love /Belongingness Needs

The love and belongingness needs constitute the third need on the hierarchy and deal with social dimension and involve feelings of belongingness. This need is really powerful among children, and can override the need for safety, as realized among children who cling to abusive parents which is sometimes known as “stockholm syndrome” (Tay & Diener, 2011). The absence of this component in Maslow’s theory can impact adversely on an individual’s ability to form and sustain emotionally-significant relationships such as friendships, intimacy, and with family members (Kenrick et al., 2010).

Human beings ought to feel a sense of belonging and acceptance and this can emerge from a large social group, from religious groups, or from small social connections, (family members, peers, and confidants). Humans need to love and to be loved in return by others. In the absence of these elements, they might be liable to loneliness, social anxiety, or depression (Tay & Diener, 2011). The need for belonging can often forego the physiological and security needs, depending on the magnitude of peer influence. For instance, an anorexic may ignore the need to eat, and the security of health due to a feeling of control and belonging (Tay & Diener 2011; Kenrick et al., 2010).

Esteem Needs

Esteem needs concern the quest to engage oneself in something or the other in order to gain recognition, and participate in an activity that offers that person a sense of contribution, and to feel self-valued, which can be in a profession or something else. Imbalances at this level can lead to low self-esteem, or inferiority complex. Persons with a low self-esteem need the respect of others and might require fame or glory, which again depends on others (Kenrick et al., 2010). Meanwhile, it is worthy of note that many people with low self-esteem will not be able to improve their view of themselves just by having fame, respect, and glory externally, but they have to first accept themselves intrinsically. Psychological imbalances, such as depression can also preclude the individual from having self-esteem at both levels (Tay & Diener, 2011).

Maslow identified two versions of esteem needs. These are lower and higher esteem needs (Tay & Diener, 2011). The lower one is the need for the respect of others, the need for status, recognition, fame, prestige and attention. However, the higher one is the need for self-respect, strength, competence, mastery, self-confidence, independence, and freedom. Deprivation of these needs among children can lead to inferiority complex, weakness and helplessness. It should also be noted that the esteem needs help to shape the self-concept of the individuals positively or negatively. More often than not, children having positive self-concepts are socially better adapted than children with negative self-concepts (Peens & Pienaar, 2006). A positive self-concept usually results in characteristics such as self-confidence, and the ability to

conceive oneself realistically, whereas a negative self-concept results in feelings of inadequacy which is manifested in the lack of self-confidence.

Cognitive Needs

At this stage, the need to know and comprehend is high; the child develops his or her cognitive potential. This is the level on which schools would prefer to operate, and it is actually the level on which many schools in comfortable neighbourhoods function, due to the fact that deficiency needs of their learners have already been addressed. At this point, the child is able to listen, speak and explore in his or her desire to gain deeper understanding and make meaning from the world around him or her. Maslow believed that all human beings have the need to increase their intelligence, and thereby pursue knowledge.

The cognitive needs imply the expression of the person's need to learn, explore, discover and create a better understanding of the world around him/her (Kenrick, et al., 2010). This growth need for self-actualisation and learning, when not achieved, might lead to confusion and identity crisis in the child. Also, it is directly related to the need to explore, or the openness of experience.

Aesthetic Needs

At the aesthetic stage, the individual approaches and appreciates symmetry, order, and beauty. He or she becomes able to invest emotion into learning at this point. Premised on Maslow's convictions, it reflects in the hierarchy that all humans need beautiful imagery or something new and aesthetically pleasing to continue towards self-actualisation. People have to refresh themselves in the sight and beauty of nature while cautiously

absorbing and observing their surroundings to extract the beauty that the world has to offer. It is as a result of aesthetic needs that teachers motivate their students to wear clean and appealing uniforms and even write clearly in their exercise books. At the same time, the learners should also ensure that their books are neatly covered. The child who cannot afford to do these may feel inferior and fail in the quest to self-actualise, because of inferiority complex.

Self-Actualisation

Self-actualisation is a term that originated from Kurt Goldstein and it is the instinctual need of a person to make the most out of his/her unique abilities and to strive to be the best he or she can (Tay & Diener, 2011). It implies the quest of reaching one's full potential as a person. Unlike the lower-level needs, this need is never fully satisfied because as one grows psychologically there are always new prospects to continue to advance. What a man can be, he must be (Kenrick et al., 2010) this forms the basis of the perceived need for self-actualisation. This level of need relates to what a person's full potential is, and identifying that potential. Maslow describes this desire to self-actualise as the desire to become more and more what one is (Kenrick et al., 2010).

In order to attain a clear understanding of this need, one must first not only achieve the previous needs, namely the physiological, safety, love, esteem, cognitive, and aesthetic needs, but also master these needs too (Tay & Diener, 2011). In essence, self-actualisation is the summit of Maslow's motivation theory. Maslow noted that only a small percentage of the population reaches the level of complete self-actualisation (Berk, 2007). Self-actualising people are self-aware, are fully concerned with their personal

growth, less concerned with the opinion of others, are interested in fulfilling their potential, and will therefore achieve high academic performances.

Transcendence

Maslow later divided the top of his triangle to include self-transcendence, which is sometimes known as spiritual needs. Spiritual needs are a bit distinct from other needs, being accessible from many levels. This need, when fulfilled, result in feeling of integrity and it takes things to another level of being (Tay & Diener, 2011). The common interpretation of Maslow's famous theory posits that once a need is fulfilled, the individual moves onto the next need, and to an extent, this is entirely right. As such, while it is true that people move up or down the hierarchy, it is dependent on what is happening to them. Maslow's theory is a guide which necessitate some interpretation and thought, given which, it remains extremely useful and applicable for understanding and explaining the psychosocial effects of poverty on the academic performance.

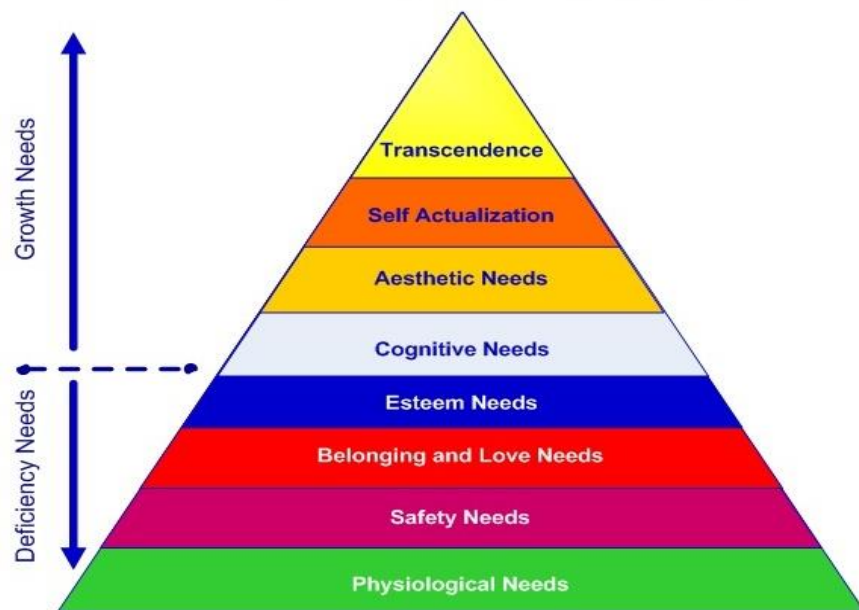


Figure 1: Maslow's Hierarchy of Needs (1990s Eight-Stage Model)

Source: Tay and Diener (2011)

In spite of the tremendous contribution of the Maslow's Hierarchy of Needs theory in understanding the interrelationship between needs and life achievements, it is worthy to note that it has some lapses which have been critiqued. For instance, Nadler, Hackman and Lawler (1979) cited in Graham and Messner (1998) critiqued the theory. They purport that the theory makes some unrealistic assumptions including the assumption that all individuals and situations are alike. They also criticize the theory for making the claim that there is only one best way to meet needs; that is the systematic movement on the hierarchy. Despite the critiques, the theory provides a useful theoretical framework upon which the various needs of the students and their academic performance can be investigated.

Ecological Systems Theory

This theory propounded by Bronfenbrenner purports that one's surroundings comprising his/her (home, school, work, church, neighbourhood, culture and government) exert influence on how one develops (Donald, Lazarus, & Lolwana, 2010; Woolley & Kaylor, 2006). The theory conceives child development in terms of the reciprocal influences between the child and the multiple levels of the surrounding environment Donald, et al., (2010); Berk, (2007); Rathus, (2006). Donald, et al. (2010) were of the view that the ecological theory is based on the interdependence between different organisms and their physical environment. The ecological perspective, as championed by Bronfenbrenner (2008), offers a framework from which multiple contextual factors inducing the academic performance of children can be understood.

Bronfenbrenner and Ceci (1994) suggest that individual's development is a product of multiple direct and an indirect influence, which either expedite

or obstruct the individual's potential. Within the scope of ecological theory, the linkages between organisms and their environment are noted comprehensively and as such all parts affect the system as a whole. In the intent of Bray, Gooskens, Khan, Moses and Seekings (2010), the system is greater than the sum of its parts. As such, how individuals think, feel, behave and develop as a person is inevitably related to the social grouping, forces and relationships that make up their environment such as families, peer associations, school and other social groupings such as the socio-economic forces, and the interpersonal, cultural, political and power relationships.

Similarly, changes or conflict within any particular layer will ripple throughout the other layers (Witt, 2012; Bray, et al., 2010). Bronfenbrenner (2008) conceived the ecological environment, or the context in which human development takes place, as a set of nested structures. Donald et al. (2010) also reported that occurrences in one part of the system have the tendency of inducing the other parts, and ultimately affect the entire ecological system.

Bronfenbrenner's ecological theory therefore suggests that development is better understood in terms of relationships, for instance, between a child and her environment (Boyd, Bee & Johnson 2006). Gaining insight about the interactions of these systems is the gateway to understanding how a child develops as well as what issues lead to his/her failure. It is worthy of note that studying diverse layers of influence, developmental processes and outcomes through life-course perspective, is cumbersome from a methodological and resource perspective, and as a result scanty research have utilized this model (Witt, 2012; Bray, et al., 2010).

Shonkoff, Phillips, and National Research Council (2000) presume that it is imperative to understand the multiple and interactive social, economic, cultural, and community-level factors, which alone and in combination influence the processes of development and the academic performance of the child. Bronfenbrenner conceptualized an ecological environment as consisting of five nested structures; namely the microsystems, mesosystem, exosystem, macrosystem and chronosystem (Donald, et al., 2010; Berk 2007; Rathus, 2006). These are explained in the proceeding paragraphs.

The Microsystem

According to Rathus (2006), a microsystem is an innermost structure involving the interface of the child and other people inherent in the immediate setting, such as the home, the school, the neighbouring community or peer group (Berk, 2007). Donald, et al. (2010) contended that microsystems are systems within which children are closely involved in proximal interrelations with other familiar people, such as the family members. Microsystems comprise roles, relationships and patterns inherent in daily activities that shape many aspects of the cognitive, social, emotional, moral and spiritual development. Structures in the microsystem comprise the family, school, neighbourhood or child-care environments (Engle & Black, 2008). Also, Boyd, Bee and Johnson, (2006) suggest another part of the microsystem as the child's biological content, which can also be described as the genetic make-up and development stage of a child.

Berk (2007) sustains that all relationships ought to be kept in mind as being bi-directional, for instance, a child from a poverty-stricken household is more probable to be affected by parenting styles, the type of school he/she

attends as well as peers thereby affecting his/her cognitive performance. Santrock (2009) noted that the learner is not to be seen as a passive recipient of experiences in settings, but someone who reciprocally interacts with others, and also aid to construct the setting. As such, the more encouraging and nurturing these relationships and places are, the better the child will be able to develop academically. Trawick-Smith, and Smith (2014) as cited in Bronfenbrenner, (2008) contend that parents under the stress of poverty might be less effective, more punitive and less warm with their children. This is because these parents mostly practice the authoritarian type of parenting, which adversely impacts on the psychosocial development of their children. Parental support on homework and general home environmental issues should be conducive in order for children to perform well and excel at school.

The Mesosystem

The second level in Bronfenbrenner's theory is the mesosystem. Bronfenbrenner (2008) defines the mesosystem as a set of interrelations between two or more settings in which the developing person becomes an active participant. Donald et al. (2010) indicate that the mesosystem is a set of microsystems that continuously interact with one another and following that what transpires in the family or peer group can affect how children respond at school, and vice versa. For instance, a child who is not supported by her family may experience care and understanding from a neighbour, peer or teacher and in this regard, although lack of support from her family thereby making her anxious and insecure. Interactions with the neighbours, the peer group or the teacher might, over time, change her sense of insecurity

(Mufanechiya, Mandiudza, Mufanechiya & Nyaradzo, 2012; Tope, 2012). As a result, this might alter the interactions she has at home.

The mesosystem is also conceived to be a relationship within the microsystem. For example, a child's scholastic performance is undoubtedly induced by the involvement of the parents at home, with the peers, the neighbours, and the teachers at school (Berk, 2007). The interrelationships between the systems play a fundamental role in explaining the academic performance of the child. Also, the coordination and collaboration between the home and the school enhances the learners' achievements and attitudes towards school (O'Neil, 2011). For instance, parents from poor families have problems in establishing these linkages due to inferiority complexes, and the fact that they may be working long hours in order to meet basic necessities of life (Grimm, 2011; Abebe, 2009).

The Exosystem

The exosystem is the setting that does not have the child as an active participant, instead one that can affect the child's immediate setting (Bray, Gooskens, & Khan, Moses en J. Seekings. 2010; Donald, et al., 2010). These settings have implications on the child's life, however, the child does not participate. They comprise school boards, the parents' workplaces, as well as community agencies. The home and the parents' workplaces are instances of common settings for the child and events that occur in the parents' workplaces can have consequences for the child in the home. The exosystem has a vital role in the child's development. For instance, if a parent loses his/her job or is frustrated by the working conditions, the parent have the tendency of transferring the frustration onto the family (Bronfenbrenner, 2008), and this

also affects their economic status and living conditions. This has a tremendous effect on a child who is bound to have to change schools, on his/her peers, and on the teachers.

Bee (2007) found that when a child's father is unemployed, he exerts enormous stress on the family, and marital conflicts may arise, resulting in symptoms of stress, anxiety, aggression, depression, and delinquency among children. This may negatively affect the academic performance of the child. For instance, a case study conducted by Santrock, Marini, Gallagher, & Pelter (2010) indicated that a respondent (Sam) lost his job as a mechanic while his wife, (Edith) was still employed. Sam blamed himself for his lack of education, and indicated that it was a man's job to support his family. The study reported that he spent much of his time drinking beer, sleeping less, and argued constantly with his wife. He also became much stricter on his children and sometimes paid no attention to them at all. In this regard, the children were much affected by their father's loss of his job and this manifested in their academic work. Given the above, teachers often have to consider, not only what happens in the classroom, but also what happens within their learners' families, the neighbourhood, peer groups, and factors not directly linked to the child.

The Macrosystem

According to Berk (2007), this is the outermost level of Bronfenbrenner's model, consisting of the cultural and sub-cultural values, laws, beliefs, expectations, and lifestyles. Donald et al. (2010) argued that the macrosystem involves dominant social and economic structures, as well as the values, beliefs, and practices that influence all the other social systems. For example,

cultural value will induce the proximal interactions in the child's microsystems and probably his/her whole mesosystem too. Equally, how the state distributes resources in society affects every level of the system. The macrosystem is equivalent to what is referred to as two systems, the wider community, and the whole social system (Boyd et al., 2006). Considering this, macrosystems refer to the consistencies in the other three systems (micro, meso and exo systems) which could have positive implications for society as a whole, and they form the basis on which individuals and families structure their lives.

The Chronosystem

This incorporates time-dimension into Bronfenbrenner's model, comprising consistency or change over the life-course. Changes such as parental divorce, historical events, or social conditions occur within the environment, and also changes, such as life transitions, within the developing person (Bronfenbrenner, 2008). Rathus (2006) described the chronosystem as the change in the environment that occurs over time, and thus has an effect on the child. The changes amend the existing relationships between the children and their environment, and create new ways of development. The focus is on how the environmental changes affect the academic performance of the child. The environment does not simply induce the child because children are as well active participants within their own development. For instance, if a child perceives his or her environment as threatening, he or she will be less probable to explore it, and even engage in interactions that might advance his/her development. Donald, et al. (2010) however asserted that children who are secure and confident in their settings engage in new situations.

To study a child's development and promote his or her academic performance, one must explore not only the child and his/her immediate environment, but additionally the interaction with the larger environment as well. This is because, in addition to being biological beings, they are social beings as well. It is therefore plausible to note that the impact of needs among students and their academic performance transacts across multiple contexts, including the family, the home, the neighbourhood, the school, and the larger community as a whole. It is important to understand the influence of one context on the other in order to identify strategies to counteract, for example, the adverse effects of poverty.

Research examining the link between the student's development and these factors is critical, because this understanding is necessary to inform policy development and the social, educational, and other services (Witt, 2012). While multiple environments and mechanisms are available, this particular research is interested in examining how students' perception of needs reflects in their academic performance. As such, the ecological systems theory is crucial and will be one of the cornerstone theoretical basis for this study.

Grounding my study into the Bronfenbrenner's ecological system theory, it could be reflected that the deficit needs (physiological needs, safety needs, love/belonging needs, esteem needs) are found in the immediate environment of students. This therefore suggest how the student actively interact with the environment will have a great influence on his/her needs.

Person Centered Theory

This is a theory propounded by Carl Rogers and emphasizes the essence of interrelationships as well as how people relate to one another as social beings. The fundamental concepts underlying the theory comprise genuineness, empathy, unconditional positive regard, self-concept and freedom of expression. At the same time, O'Neil (2011) opined that three necessary and sufficient conditions for the enhancement of learning are empathy, congruency/genuineness, and unconditional positive regard. Following this, students' academic output can be tied to the level of empathy, genuineness and unconditional positive regard they experience from their immediate environment such as the home, school and church. Santrock et al., (2010) also noted that the Rogerian principles of education include freedom of self-expression, teacher's unconditional positive regard, and the use of the discovery learning method.

Rogers (1995) as cited in O'Neil, (2011) conceived self-actualisation to be internally-embedded and actively striving for development. He was of the view that children are inquisitive to acquire new knowledge in the quest to utilise their potentials. Snowman and Biehler (2003) acknowledged that one essential Rogerian assumption which is positive regard or loving is a core human need. A person's self-actualising possibility can be thrown out of order anytime positive regard is withdrawn. Hayes (2008) also conceives positive regard as the love, attention, and respect that come from significant others as well as from those in authority. Rogers (1995) cited in Berth, (2010) further indicates that individuals naturally hold positive self-regard in high esteem.

Positive self-regard constitutes self-esteem together with positive self-image that reveal the values which are associated to a person by him or herself. Societies offer us what we need when we exhibit what is required in our society, as a result an individual regulates his/her behaviour on the premise of what offers acceptance and positive regard from others, unlike what may be satisfying to the individual him/herself (Berth, 2010; Sprinthall, Sprinthall, & Oja, 2006). This leads one to exhibit conditional positive regard, which might end up in misrepresentations of one's self-concept and overall personality. Consequently, a student considers the values and needs of significant others into his/her self-concept.

Positive regard might be conditional or unconditional (O'Neil, 2011). Unconditional positive regard means accepting, acknowledging and regarding someone irrespective of what he/she has achieved or not achieved. Both Santrock (2007) and Sprinthall et al., (2006) conceived unconditional positive regard as the acceptance of the person as a worthy being devoid of preconditions. The unconditional positive regard by Rogers presupposes that the teachers should accept students just as they are irrespective of their socio-economic status. A number of researchers have noted that children from low socioeconomic background, are side-lined, discriminated against, and labelled negatively. As a result, they mostly underperform in their academics (Chinyoka, & Ganga, 2011; Ganga & Chinyoka, 2010; Pleiss & Conley, 2009). Hayes (2008) also opines that someone with a positive self-regard is one who possess a positive attitude towards himself/herself, and is therefore not reliant on the positive evaluation of significant others. This manifests in the need to accept students unconditionally.

However, conditional positive regard implies the love and acceptance offered to an individual upon behaving in a particular way. As long as conditions are established for children of poor households, there is the possibility of positive regard, which is aligned with an uncondusive learning atmosphere which negatively affects the development of their self-concepts. Following this, teachers ought to handle children equally, be consistent in what they do, and show their love for their learners, irrespective of their social status, sex, or academic excellence. With this, issues such as socio-economic background, academic achievement, disciplinary behaviour, tribe, gender, and age must not be used as the basis for determining the conditions of positive regard.

Children from poverty-stricken homes usually feel stigmatised and again have inferiority complexes (Magagula, 2015; Chinyoka & Naidu 2014; Fujimura, 2002). The ideal self, denotes what one can best be, the real true self who is what one truly is, as well as self-image, which implies the person one thinks he/she is might tally (congruence) or differ (incongruence) (Chauhan, 2010). The variations between the individual's real self and the ideal self is often the origin of problems (Mwamwenda, 2010; Santrock, 2007; Sprinthall et al., 2006). Schultz, Roditti, and Gillette, (2009) posits that psychologically healthy individuals are able to recognise themselves and their environment (including other people) as they really are. The individual is considered to be a fully-functioning organism, whose attempts to self-actualise are not being hampered with.

However, the self-esteem agonises when there is a real variation between the ideal self and the self-image. Anxiety and defensiveness are

common when the self-image does not match the true self (Schultz et al., 2009). While conditional positive regard leads to incongruence, leading to denial, frustration, and maladjusted behaviour, unconditional positive regard leads to self-actualisation. As a result, the person becomes the real self. When he/she receives unconditional positive regard it implies that he or she is accepted as he or she is, with his or her specific needs which are strange to him or her, and which are not measured against others (Santrock, 2007).

Educators who are conscious of Rogers' concept of conditions of worth, which postulates that people might reject their true selves due to being approved by others, will encourage the pupils to believe in themselves. They will be motivated to appreciate individual differences, and to realize that others will ultimately welcome them if they first establish sound self-images. Evidence persists to support the notion that children whose parents are warm, loving, supportive, and full of respect for their children's opinions, have high self-esteem and a positive self-concept (Greco & Hayes, 2008). Various studies associating self-concept to academic achievement have been conducted in Africa. For instance, in Uganda, Mwamwenda (2010) came to the conclusion that a child who feels confident and self-assured will achieve better especially within primary learning examinations. Again, Mwamwenda (2010) posits that in Uganda academic performance will suffer due to the pupils' lack of confidence, and not due to their impoverished backgrounds.

Pajares and Schunk, (2001) similarly realized that a connection exists between self-concept and one's performance. They noted that underachievers think themselves as less adequate and less appreciable to others, and concluded that underachieving while capable at high school level vary

substantially from achievers in their thoughts of the self. Moreover, another study by Masque (in Mwamwenda, 2010) of 80 girls from Nigeria confirms that a student having positive self-concept have the tendency of performing better than a student having a negative self-concept. It is essential that educators have in mind that a positive self-concept is instrumental in improving quality education, and that teachers can play a great role in this regard.

In the case of the present study, the person centered theory is essential by helping to explore perception of needs especially self-esteem which facilitates or debilitates against one's academic performance. As this theory posits that people with positive self-concept stand a greater chance of performing well academically, it will help in exploring if that argument posited by Roger's Person Centered theory holds in the context of SHS students in the Techiman North District. Again, it cautions that teachers must treat all students equally irrespective of social status, sex or academic endowments and guided by this theory as to whether Teachers in the various SHS in the Techiman North District are also to behave same or otherwise will be known.

Empirical Review

The Concept of Deficit Need

The eight-stage model proposed by Maslow (1943) can be divided into deficit needs and growth needs. The first four levels are often referred to as deficit needs (D-needs), and the top level is also known as growth or needs (B-needs). The first four needs to note; physiological needs, safety needs, love/belonging needs, as well as esteem needs, are very essential for human

survival. If any person lacks any of these needs, that person certainly feels that something critical for survival is really missing in him/her. Aruma and Hanachor, (2017) pointed out that these needs are known as deficient needs. Deficit needs arise due to deprivation and are said to motivate people when they are not satisfied. In addition, the motivation to meet such needs will become stronger as the duration is denied. For example, the longer a person spends without eating, the hungrier they will be. Maslow (1943) initially stated that people must meet the needs of lower-level deficits before moving forward to meet the needs for higher-level growth. However, he later clarified that satisfying a need is not an "all or nothing" phenomenon, admitting that his earlier statements may have given "the false impression that a need must be met 100 percent before the next need". The need has been "more or less" satisfied, it will disappear and our activities will generally be directed towards the next set of needs that we still have to meet. These then become our outgoing needs. However, growth needs continue to be felt and can even be strengthened once they are committed.

Furthermore, Aruma and Hanachor (2017) affirmed that if any of a person's needs are missing, that person is likely to have a sense of loss in society. In fact, such a person will feel that something is missing. The irony of life is that people who have achieved virtually all of their deficit needs do not seem to have achieved a sense of satisfaction in society. In general, they feel neutral in life (Aruma & Hanachor, 1985). This is certainly part of the human characteristics in society.

Physiological Needs and academic Performance

Physiological needs are the most basic needs of human existence. These include; food, shelter, sleep, water, sex and more. Evidence suggests that students who are unable to meet these basic physiological needs are more probable to stay within environments that provide less motivation and limited resources for academic work (Chinyoka, & Naidu, 2014; Saito, 2011). More often than not, parents or guardians of students struggling to meet their physiological needs might be less likely to purchase books, calculators, computers and other learning materials relevant that enhance learning or offer them high-standard childcare (Yeung, Linver & Brooks-Gunn, 2002).

Socio-economic standing of families directly induces the level of material resources presented to children in their houses (Hanushek & Wößmann 2007). The satisfaction of physiological needs among students is however perceived as a direct consequence of socio-economic status of families in which they come from. Ferguson (2008), held that, educational outcomes are one of the key areas influenced by family incomes. The establishment of a motivating home environment, is as a result of the impact of income towards the cognitive development of school children, and might be the most promising pathway through which poverty functions. In poor countries where schools have limited educational resources, learning is extremely demanding (Chinyoka & Naidu, 2013). Children hailing from poor economic backgrounds are not usually given the same level of opportunities as compared to their colleagues from wealthy backgrounds. This constitutes one of the reasons why variations in vocabulary and reading ability are tied to wealth standing of families (Hanushek & Wößmann, 2007). Unfortunately,

poor families possess fewer resources which unableS them to resource their school going children to cope leading to poor performance and other aspects of life culminating in social variation, emotional, cognitive, and physical functioning (Chinyoka & Naidu, 2013). Other studies have added that socio-economic disempowerment has in its part interfered with the ability of parents to meet the basic human needs of their children (Chinyoka & Naidu, 2013; Jyoti, Frongillo & Jones, 2005).

Also, Jyoti et al., (2005) find out how food deprivation over time related to changes in reading and mathematics test performance, weight and BMI, and social skills in children, found that food insecurity was predictive of poor developmental trajectories in children before controlling for other variables. Food insecurity thus serves as an important marker for identifying children who fare worse in terms of subsequent development. Their study found that food insecurity is linked to specific developmental consequences for children, and that these consequences may translate into diminished academic performance. Also, Schoenthaler (1991) in a study in New York in the United States found that many students experienced some kind of malnutrition which is so marginal to observe yet affects their intelligence and academic performance. This impairment can be corrected through improved nutrition.

Adoption and Safe Families Act-ASFA (Curtis, & Denby, 2004) found that among fourth grade students, those having the lowest amount of protein in their diet had the lowest achievement scores. Again, iron deficiency (anemia) leads to shortened attention span, irritability, fatigue, and inability to concentrate which are proxy to low academic performance (Parker, 1989).

However, proper nutrition has been well documented to enhance academic performance. For instance, evidence from the introduction of school breakfast programs in the United States of America (USA), have shown the effective role of nutrition in enhancing academic performance (Curtis, & Denby, 2004). Studies also have it that School Breakfast Programs have helped schools to improve on performance thereby reducing hunger, absenteeism and truancy. It was also found to have increased composite mathematics and reading scores, improved student behavior, reduced morning visits to the sickbay, and increased student attendance and test scores (Murphy, Wehler, Pagano, Little, Kleinman, & Jellinek, 1998).

Wadan, (2012) hypothesized that there is no relationship between potable water and academic achievements in schools. In his study to understand the knowledge about quality drinking water and academic achievements in some selected schools in Ghana, Sierra Leone and South Africa, it was discovered that there is a strong positive relationship between potable water and academic performance. His results showed that portable drinking water improves academic achievements in schools irrespective of the location.

Quality sleep on its part as a physiological need has been found to have significant effects on cognitive performance and is influenced by multiple factors such as stress, dizziness, restlessness and more. Peters, Joireman, and Ridgeway (2005) identified 4 different sleeping patterns; self-rated satisfaction with sleep, sleeping during the day, difficulty sleeping at night, and oversleeping. However, Lowry, Dean and Manders (2010) noted that there have been many studies that link unhealthy sleep habits with decreased

cognitive functioning. Peters et al., (2005) in their study among college students at the University of Minnesota determined levels of sleep quality and sleep quantity and its impact on academic performance, surveys were administered to the students, sleep quality was assessed by the Groningen Sleep Quality Questionnaire, while aspects of sleep quantity included number of nights spent with less than five hours of sleep during the previous week as well as during an average week, number of hours of sleep obtained in an average night, as well as the number of *all-nighter's* the students had pulled in the past year. Outcome of the study indicated a significant positive correlation between amount of sleep per night with performance, and a significant negative correlation between average number of days per week that students obtained less than five hours of sleep and performance.

However, in spite of the overwhelming consequences of physiological needs on students' academic performance, there are several examples of pupils who have excelled despite the deficit of these needs (Luthar, Cicchetti, & Becker 2000). Carbonneau, Rutter, Silberg, Simonoff and Eaves (2002) in a twin studies have shown individual variability in adaptation that existed even when two children with the same genetic make-up were raised in the same context.

Safety Needs and academic Performance

After physiological needs have been satisfied, people now work to meet their needs for safety, security, protection, stability, and freedom from fear and anxiety, and also for structure and limits in their lives (Snowman & Biehler, 2003). Safety is the feeling people get when they know no harm will befall them, physically, mentally, or emotionally. Safety is also the feeling

people get when their fears and anxieties are low. How then does this relate to students in the school situation? Safety at the school can be affected by many factors. The presence of gangs and drug users can negatively affect students' perceptions of school safety (Schreck & Miller, 2003). In an attempt to evaluate reasons students feel unsafe at school, Akiba (2010) in a study identified, characteristics such as, violence, bullying and poor teacher-student relationship among others. School administrators' approach to security surveillance, and other preventative measures can also increase or decrease students' feelings of safety within their schools (Kitsantas, Ware, & Martinez-Arias, 2004; Schreck & Miller, 2003). Schools that have smaller enrolment are more likely to foster feelings of safeness than schools with larger enrolment (Bowen, Bowen, & Richman, 2000).

The environment where a school is located also has profound implications on perceptions of school safety. For instance, Bosworth, Ford, & Hernandez, (2011), in a study found that neighbourhood surroundings have effect on students' perceptions of safety. Schools that are located in neighbourhoods that have high poverty and high crime rates have been shown to have influence on perceptions of school safety (Laub & Lauritsen, 1998). Also, most students' perception of safety is carried on into the school from their home situations. Children who come from homes with deficit of safety needs are less likely to get academic materials from their parents or guardians that can optimize their learning to improve on their performance (Yeung, Linver & Brooks-Gunn, 2002). This is because the little resources at the family level is always channeled towards protection and security but not on academic materials.

Donald, Lazarus, and Lolwana, (2010) noted that students battling with safety needs may be residing at places that are not secure for outdoor play. That is, within most societies their residential circumstances are usually not conducive for learning. These manifest in lack of lighting, having no desk or table to work on, devoting much time on domestic chores and not having the needed books and other academic materials at home. Such circumstances might lead to emotional stress and anxiety, which might be accelerated by violence and abuse among girls in some households (Donald et al., 2010). Such setbacks within poor communities, in addition to the impact of lower attitudes of parental or guardian's possible low educational attainment, could resort to the children having little or no support as far as homework and motivation to study effectively are concerned (Donald et al., 2010).

Milam, Furr-Holden, and Leaf, (2010), in a study posited that increasing perceived safety at the school increased achievement on standardized mathematics and reading tests for Baltimore elementary schools in Maryland. They further explained that schools in which students have lower academic scores, their student population do not feel safe at schools. Conversely, schools that have higher academic scores tend to have a student population that feel safe within their schools.

Contrary to the above assertions, Litz (2005) opined that student safety does not occur only at school. The time before and after school may be the times when students' are bullied and that there are more bullying incidents on the bus than in the classroom. This brings into the conversation many different areas where a student has to deal with safety issues. In a similar research conducted to study how schools have implemented school safety features,

Grover (2015) indicated how schools have fixed security cameras, remote access doorways, metal detectors, scan cards, electronic databases, and other devices there is no clear evidence of these preventing school violence and to a large extent increasing academic performance. Another concern that arises under the idea of safe schools and performance is the different perceptions that students, teachers, and administrators have on the issue. Studies show that students, teachers, and school administrators see things very differently when it comes to security matters at school. In one study, a section of students in a school reported seeing knives, drugs, or alcohol at school at a much higher rate than was reported by other colleagues and teachers in the same school (Booren, 2007).

Love/Belongingness Needs and Academic Performance

The third tier of the hierarchy (Love/Belongingness need) describes the person's need for love and/or belongingness. This level of needs is characterized by the desire to be loved by others or belong to a group. Needs at this level are geared towards building relationships or satisfying the social wellbeing of the individual. These relationships may occur with an individual or a group. This could be anything from the immediate family to a club, class, team, or even a gang (Poston, 2009). This social need is particularly stronger among children, and have the potency to override the need for safety, as evidenced within children who cling to abusive parents which is sometimes also known as "Stockholm syndrome" (Tay & Diener, 2011). In the absence of the component of love/belongingness need, individuals' can hardly form and sustain emotionally-significant interrelationships like intimacy, friendship as well as relationship with family members (Kenrick, Griskevicius, Neuberg &

Schaller, 2010). Human beings ought to have a sense of belonging and acceptance, either it hails from large social group, religious groups, or from small social connections such as family members, friends and confidants (Chinyoka & Naidu, 2014).

When the sense of belongingness and being loved are attained at school, students will have sound mind to comprehend and assimilate whatever they will be taught thereby enhancing their academic performance.

Zhou, Main and Wang, (2010), in a study found how the effects of positive emotions such as love and the sense to belong manifest into academic performance through cognitive processes like (memory, problem solving, strategic thinking), motivational mechanisms (including engagement, school liking, and staying on task), and interpersonal resources (such as relationships with teacher and peers). Some researchers have posited that negative emotions like anger reduces achievement partly because they negatively affect higher order cognitive processes such as (memory, problem solving and strategic thinking) and focus attention on a narrow set of behavioral options (Blair, 2002; Fredrickson, 2001; Pekrun, Elliot & Maier; 2009). Evidence has it that cognitive processes are strongly related to achievement; thus, evidence that negative emotions are linked to these processes is consistent with the notion of mediation. Both anxiety and anger may disrupt students' ability to recall relevant material (Linnenbrink, 2007; Rice, Levine, & Pizarro, 2007; Linnenbrink, Ryan, & Pintrich, 1999). Blair (2002) noted that students characterized by negative emotionality are likely to have a hard time applying higher order cognitive processes simply because their emotional responses do

not call for reflective planning and problem solving, so these skills are underused and underdeveloped.

Csikszentmihalyi (2000) suggested that one fundamental factor to human motivation is the need to love and the need to be loved by the people they meet in life and so do students. When these elements are non-existent, they may become gullible to loneliness, social anxiety, or depression which will adversely influence their academic performance at school (Tay & Diener, 2011). The need to be loved or belong can usually lead to the neglect both physiological and security needs as a result of issues such as magnitude of peer pressure, or an anorexic foregoing the need to eat as well as security of health, for a feeling of control and belonging (Tay & Diener 2011; Kenrick, Griskevicius, Neuberg & Schaller 2010) and all these Chinyoka & Naidu, (2014) observed have implications on holistic academic wellbeing of students and for that matter their school success.

Children whose sense of love/belonging needs is adequately met usually involve themselves actively in school activities. Again, students who attain much love benefit because their families and schools establish appropriate behaviour pattern for them reiterate to children at home and at school (Juma, Simatwa & Ayodo, 2012; Hill & Taylor, 2004). Chinyoka and Naidu, (2014) noted that parents with fulfilled belongingness and love need are more probable to be involved in their children's school life thereby facilitating their academic work than parents without such needs fulfilled.

Esteem Needs and Academic Performance

Every human being has a need for self-respect and self-esteem which in principle refers to as esteem needs. However, if a child is deprived of this

need, he/she can remain helpless in his entire life Tay and Diener, (2011). On the other hand, esteem need functions effectively when complemented by the three most basic needs (physiological, safety, love/belonging).

Hill and Taylor (2004) indicated some of the approaches by which having esteem needs especially from parents can influence academic prowess of children. Studies have indicated that the sense of esteem by students close to their parents, bosom friends and their involvement at school possess a positive impact on school-related outcomes. Such affection urges the parents to support their children within school-related activities. At the same time, these close relatives and friends become conscious of the students' expectations with respect to academic behaviour and homework.

Children and students with positive self-concept adapt well in all spheres of life typically academically and socially as compared to children with negative self-concepts (Peens & Pienaar 2006). Peens and Pienaar (2006) further argued that children with low self-concepts find it difficult to meet the expectations of their peer groups and academic pressures. A positive self-concept culminates in traits such as self-confidence, self-appreciation as well as the ability to view oneself realistically which are recipes for academic excellence. However, an adverse self-concept culminates in feelings of insufficiency and inferiority manifesting in lack of self-confidence insecurity and such feelings do not promote academic performance of students (Chinyoka & Naidu, 2014). It is of essence to acknowledge that development of a child's self-concept (either positive or negative) is induced by his or her interrelationship with his or her parents, other family members, educators, and friends (Chinyoka & Naidu, 2014).

According to the Self Determination Theory (SDT), the classroom environment (included teaching strategies) ought to be planned in order to offer students' psychological fulfillments as it promotes intrinsic support for learning by empowering students to build their self-esteem. Prospero and Vohra-Gupta (2007) acknowledged that to what extent a student is intrinsically motivated for an activity depends on how far this activity and the related context can meet these needs. Consequently, it can be conceived that positive perceptions of students concerning esteem is aligned with their learning approaches and outcomes.

Perception of needs and Academic Performance of male and female students

Gender describes how society assigns different roles, duties, behaviours, and mannerisms to the two sexes, (Mangvwat, 2006). Labey (2003) however defined gender as a psychological experience of being a male or female. Perception refers to the way in which sensory information is consciously organized, interpreted and experienced (Montemayor & Haladjian, 2017). As Maslow (1954) established, needs are associated to learning through motivation. Self-determination theorists (SDT) further added that needs-satisfaction and for that matter (motivation) is universal, inclusive, and unchanging among the sexes (Ryan & Deci, 2009). On the other hand, a number of studies have suggested that needs-satisfaction varies across gender perception of needs, which in principle, would manifest itself in varying levels of motivation and subsequently academic performance (Stevens, Olivárez, & Hamman, 2006; Vallerand, & Ratelle, 2002). Alternately, they indicated that school environments may satisfy the needs of a particular sex more fully than

for others. Significantly, needs-satisfaction is dependent on the gender perception of the individual irrespective of the sex. Thus; all needs are satisfied insofar as they are perceived to be satisfied (Vallerand & Ratelle, 2002).

However, school programmes are not gender fair as the curriculum and its contents basically addresses the concerns of males; careers portraying masculine; and more still, female suffer discrimination from teachers overtly and covertly, knowingly and unknowingly (Okeke, 2007). These actions and inactions spontaneously put girls in a disadvantaged position to perform in the classroom (Okeke, 2007). The launch of the Universal Basic Education (UBE) and the global declaration of Education for All-EFA (2006), which Ghana is a party, underscore the importance of good education for all irrespective of sex (Allele-Williams, 2000). In this dispensation, some elites still believe that women education ends in the kitchen not to participate in any intelligent social action (Sadker & Sadker 2010; Wing & De Carvalho, 1995).

Onekutu (2002) in a study showed that boys and girls in their early ages at school perform equally in all subjects including English language but as they grow to higher classes, the girls begin to get more interested in Language and Arts, while the boys take more to Sciences and Social Sciences. However, the issue of gender and students' academic performance has remained a controversial one. While some studies support the argument that males perform better than females in academics, others argue that the reverse is the case. Vernon (2002) also reported that, many comparisons show average scores of boys and girls to be the same on general intelligence test. He further

added that, girls do a little better on most verbal tests and on tests involving rote memory than boys.

Gessell (2004) asserted that girls under the age of fourteen years usually perform better in English language than boys of the same age. In addition, after that age, the boys usually overtake the girls. Powell (2004) held the opinion that girls do better at all levels than boys in achievement even in areas such as language and arithmetic where boys seemed to excel, girls seem to have better grades. Studies done in an attempt to find out the differences between girls' and boys' academic performances has clearly demonstrated that male students are superior to their female colleagues (Cal-smith 2007). Ayayo (2007) in a study spanning twelve industrialized countries on the ability of male and female students' general academic performance indicated that males were superior over females.

Denga (1998) posited that no evidence is clear as to whether differences exist between males and females in academic achievement. He however stated that, girls tend to do better than boys in language Arts like English language and music while the boys tend to outperform the girls in Mathematics and Sciences. In the same vein, Clark Bickerstaff (2005) pointed out that attempting to relate specific intellectual abilities to achievement in specific subject areas is prone to considerable problems. Gender differences in intellectual abilities can be as a result of gender role stereotyping.

It is obvious from the literature that the role of gender in the academic performance of students is a controversial issue. This is because while some research findings revealed that gender plays an active role in students' academic performance, others revealed otherwise. Coupled with this, Stevens

et al. (2006) and Vallerand and Ratelle (2002) have suggested that needs-satisfaction varies across gender. Thus, there is the need to investigate the relationship between gender perception of needs and academic performance among secondary school students.

Girls are less likely to complete secondary school than boys in Ghana and many fewer of such from poor and rural families start secondary education at all (Casely-Hayford, 2011). Child labor is closely related to dropping out (temporary or permanent) and girls are more likely to drop out of school. Greenstreet, (1971) opined that although the Ghanaian Labor Decree of (1967) allows teenagers to perform "light" work indefinitely, there is strong evidence that more girls are involved in household chores which happen to be an undefined 'light' work than boys and more effective in high school. This automatically puts girls at a disadvantage over their male counterparts at school. In addition, Riggio, Valenzuela, and Weiser, (2010) in a study supported the debate by noting that household chores have added to many factors that can be combined to explain the early end of girls' education in Ghana.

Most Senior High Schools in Ghana do not have enabling environment that promotes teaching and learning (Ameyaw, 2011). However, it is important to note that girls see this as a problem than boys. In response to the promotion of girl child education in Ghana, existing situations in infrastructure expansion, boarding facilities, water and sanitation facilities to create enabling and gender-sensitive environments, especially in arid and semi-arid areas are being improved to create equal opportunities for boys and girls (Holmes, & Jones, 2010).

Customs, cultural practices and some circumstances in the Ghanaian society lead to a variety of consequences that cause differences in school outcomes between boys and girls. The Perception that gender inequality caused by our culture and being a natural phenomenon still continue to linger in the Ghanaian society (Alhassan, & Odame, 2015). For example, at the time of the 2010 population census in Ghana, 36 percent of all boys over 6 years of age attended school, compared with 38 percent of girls (GSS, 2012). Dolphyne (1991) argued that all these forms of inequalities in society have much to do with the theory of the hegemony of Antonio Gramsci, which is a large number of people who agree to believe the same things and who disagree because they are forced or tortured to do it, but because their consent is mobilized. In other words, they come to believe through socialization that their particular system, especially the inequality between individuals and between boys and girls, is natural and the only way to live and that they will defend their cultural way of living to the death.

Roemer (1998) suggested that gender biases and sexist stereotypes are internalized by boys and girls through the process of socialization in Ghanaian schools. Thus, the social structures that defend gender inequality continue to exist. For example, Asante, (2010) in a study found that gender differences in mathematical performance among high school students in Ghana, reported that there is a significant relationship between the performance of boys and girls in mathematics. The performance in mathematics showed reliable and clear sex differences in favor of boys.

In his attempt to discover which gender performs best in the history essay examination among SHS students in the Cape Coast, Oppong (2013)

found that girls performed better than their male counterparts. This finding is consistent with many previous studies of (Bridgeman, 1991; Bolger & Kellaghan, 1990).

The interest of girls in Science and Technology and Mathematics in Ghana is very low consequently, affecting the performances of the few girls pursuing such courses (Opare, 2011). Several attempts have been put in place to raise the morale of girls and further break some of the myths that surround mathematics, science and technology education. In response to this, Opare, (2011) gave a report at the Science and Technology and Mathematics clinics (STME) on how to improve the perception and performance of girls in science and technology through role models and study trips at the Accra Technical Training Center.

Chapter Summary

The reviewed literature gave ample evident to emerge ideas that students' deficit needs of students have a structural impact on academic performance of students. However, the striking issues is that, most of the gathered evidences in the literature only point to foreign and western issues. To get more local works are the reason for this study.

CHAPTER THREE

RESEARCH METHODS

Introduction

This section presents the various approaches that were utilized in the conduct of the study. Specifically, the section explains the research design, study area, population, sample and sampling procedure. Again, the section presents the research instrument, data analysis and the ethical protocols observed in the conduct of the study.

Research Design

The study utilized the correlational research design. This research design is a correlation research based on positivist tradition (Cresswell, 2012). It is used to determine whether, and to what degree, a relationship exists between two or more variables within a population or a sample (Fife-Schaw, Breakwell, & Hammond, 1995). The design, further presents a picture of a situation as it has occurred in its natural setting without any manipulation (Frankfort-Nachmias & Nachmias, 2007). Also, it makes use of logical methods of inductive-deductive reasoning to arrive at generalizations (Punch, 2013).

Thus, the reason for selecting correlational research design for the study was reached on these assumptions; the researcher did not have to worry about manipulating the independent variable. Another reason for the use of correlational research design was that, the statistical relationship of interest is

thought to be causal, but the researcher could not manipulate the independent variable because it was impossible.

Fraenkel and Wallen (1993) described a correlational design as a research design that allows the researcher to find out whether two or more variables associate and to establish the relationship between the variables. The investigator does not manipulate any independent variables rather one simply measures two or more variables and then determines if a correlation relationship exists between them. This design, however, has some shortcomings. One pronounced shortcoming of this design is that results obtained from its analysis do not allow for strong findings to be made concerning a cause and effect relationship between variables and that it does not reflect an in-depth description of the phenomenon (Frankfort-Nachmias & Nachmias, 2007).

Study Area

The study area was the Techiman North District. According to the Ghana Statistical Service Report, (GSS, 2012), Techiman North District is among the 46 Districts created in 2012 by Legislative Instrument (LI 2095). The District is situated in the central part of Brong Ahafo Region and covers an area of 389.4 km². The District lies between longitudes 1°49' East and 2°30' West and latitude 8°00' North and 7°35' South. It shares political and administrative boundaries with the Techiman Municipality in the South, Wenchi Municipality in the North-west, Kintampo South District in the North and Nkoranza North District in the North-east.

Techiman North District has a population of 59,068, representing 2.6 percent of the total population of the Brong Ahafo Region. The District can

boost of 5 Public and 1 Private Senior High Schools which are; Akumfi Ameyaw SHS, Tuobodom SHS, Krobo Community SHS, Effah Guakro SHS, St. Francis Seminary/SHS and Calvary SHS meanwhile figures from the 2010 Population and Housing Census (PHC) says 26.7% of children of school going age are illiterates Ghana Statistical Service, (GSS, 2012). This is the primary reason for the choice of the district as a study area. Also, Techiman North District is a cosmopolitan area with people from different backgrounds but predominantly inhabited by the Akan ethnic group with other significant ethnic groups including Mole Dagbani, Grusi, Guan, Ewe, Mende, Gruma, Dagarti and Kusase. The natives, Bono's constitute about 75 percent of the Akan ethnic group with their own unique traditions and culture.

Agriculture and its related activities constitute the major economic activity in the District. A significant proportion of the economically active population is also engaged in the service sector while a handful of the population is engaged in the manufacturing and commerce sectors.

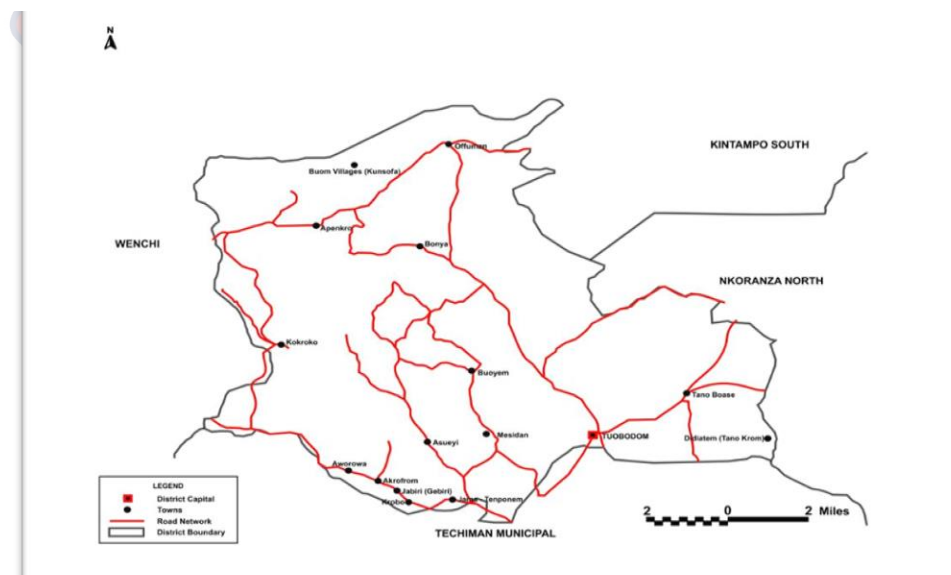


Figure 2: Map of Techiman North District

Source: Ghana Statistical Service, (2012): 2010 PHC

Population

There are five Public and one Private Senior High Schools all making six Senior High Schools in the Techiman North District. The study targeted the SHS students from the five public Senior High Schools in the District. Records from the Techiman North Education Directorate has it that the entire SHS students' population in the District which happens to be the target population for the study was 3,669 students. Senior High school students were selected for the study because their age bracket usually coincides with the adolescence period where their quest for material things and peer influence are always on the ascendency (National Research Council, 2002).

The accessible population for the study was the second year students in the five public SHS totaling 1,171 students (Techiman North Education Directorate, 2018). The choice for this year group was because apart from the third year students who had gained some level of experience at the school but were busy preparing for their WASSCE examination, the second years were the next batch of students who have stayed longer in the schools and possibly have been confronted with need problems which might result in a high or a low academic performance. Records from the District Education Directorate further indicated that there were 579 boys and 592 girls' second year students in the five Public Senior High Schools selected for the study.

Sampling Procedure

To test the theoretical expectation of any relationship, a wide range of variables of interest are required as far as possible (Laguna, Mielniczuk, Razmus, Moriano & Gorgievski, 2017). However, it was impossible to engage all the second year SHS students in the Techiman North District to solicit their

views on the phenomenon considering the timeline of the study. The study therefore restricted itself to a representative portion of the accessible population. Israel (1992) asserted that before the sample of an unknown population can be determined, certain parameters including the margin of error, confidence level and the standard deviation must be established. By this, at 95% confidence level and 5.0% margin of error, the study used the following sampling techniques to reach out to the participants for the study.

Two probability sampling techniques were employed in the selection process namely; stratified sampling technique and simple random sampling technique. Stratified sampling technique was used to segregate the schools and gender within the schools into strata so the large numbers could easily be worked on.

Using the Krejcie and Morgan (1970) table for sampling size determination as a guide, a sample of 290 students was selected using the simple random sampling technique. In using the simple random sampling technique specifically, the lottery method, YES and NO inscriptions were written on pieces of paper and then kept in a bowl. In the bowl, they were mixed thoroughly after which the students were made to hand pick them in turns. The number of YES inscriptions was equal to the number of boys and girls to be selected from each school as the Krejcie and Morgan's table has directed and the rest were for NO inscriptions. At each school, the boys were subjected to the exercise before the girls. After determining the number of boys and girls in each school, they were put together as the representative sample of the school. As a student picked from the bowl, the paper was replaced with a fresh sheet with no inscription so as to maintain the credibility

of the probability. This exercise continued for all the boys and girls in the schools. After the picking exercise was done, the sheets were then opened and the number of students with YES inscriptions was selected as the sample for the study. In view of this and taking the actual population into consideration, the table below indicates how the respondents were distributed. Table 1 present the sample distribution of the students.

Table 1: *Sample Distribution of the Students*

| Schools | Accessible Population | | Total | Sample Population | | Total |
|---------------------------|-----------------------|------------|--------------|-------------------|------------|------------|
| | Boys | Girls | | Boys | Girls | |
| Guakro Effah SHS | 48 | 48 | 96 | 12 | 12 | 24 |
| Krobo Day SHS | 110 | 186 | 296 | 27 | 46 | 73 |
| Tuobodom SHS & Tech. | 183 | 138 | 321 | 45 | 34 | 79 |
| St. Francis Seminary /SHS | 29 | 23 | 52 | 7 | 6 | 13 |
| Akumfi Ameyaw SHS | 209 | 197 | 406 | 52 | 49 | 101 |
| Total | 579 | 592 | 1,171 | 143 | 147 | 290 |

Source: Techiman North District Education Directorate (2018)

Data Collection Instrument

The main instruments used for the study were questionnaire and tests. The instruments were used to assess both the students' perception of needs and academic performance respectively. The Five Needs Satisfaction Measure Scale (FNSMS) by Taormina and Gao, (2013) with the reliability coefficient of (0.87) was adapted to collect data for the study. The instrument which designed on a five point Likert scale type consisted of 51 closed ended items. The questionnaire was divided into 2 main parts- 'Part One' and 'Part Two'. Part one which was made up of 4 items focused on the bio data of respondents

while part two which was made up of 47 items was categorized into 4 sections (A, B, C and D). Section 'A' which was made up of 12 items was used to collect data on student's perception of physiological needs, Section 'B' which consisted of 17 items focused on student's perception of safety needs, Section 'C' which was made up of 9 items was used to collect data on student's perception of love/belonging needs, Section 'D' which was made up of 10 items collected data on student's perception of esteem needs. Thirty (30) minutes was used by respondents to complete the questionnaire. Since the questionnaire was adapted, some useful modifications were made that best suited the content of the new study. The original 60 item scale was summarized to 48 item scale. Under the Physiological needs, items on the original scale that wanted to find out "the quality of air I breathe every day" and "the amount of sex I am having" were all ignored because they had no link with educational needs and the rest were modified to fit in the current study. On the safety needs, items like "How secure I am from disasters", "The protection that the police provide for me", "How safe I am from destructive terrorist acts" and "How safe I am from acts of war" on the original scale were totally ignored because they didn't have any relevance in the school situation. For love/belonging needs, items on the original scale like, "The love I receive from my spouse/partner" and "How much I am cared for by my spouse/partner" were abandoned and the remaining were carefully integrated into the current study of student's needs. On the esteem needs, all the items on the original scale were relevant to the study however, the 15 items on the scale were summarized to 10 items which still maintained the standards.

The tests were also used to measure the academic performance of the respondents. Subject teachers of the four core subjects (English, Mathematics, Integrated Science and Social studies) from the schools were engaged in the item preparation and scoring. In all, there were 25 multiple choice items each for a subject making 100 items which were completed within 2 hours. The items were scored over (100) –that is; 1 mark each for an item.

Validity and Reliability of the Instrument

To ensure the validity of the instruments, the questionnaire was given to two experts at the Department of Education and Psychology of University of Cape Coast who ascertained the content validity of the items. Also, the test items were given to experts (subject coordinators) at the education directorate who determined their validity. The experts' inputs were used to modify the items on the instruments which were not clear.

To ensure the reliability of the Five Needs Satisfaction Measure Scale, it was pilot tested using 35 students at Kwarteng Ankomah SHS in the Techiman Municipality using test retest method within a period of two weeks intervals. The instrument was first administered on July 3, 2018. Exactly two weeks after, ie July 17, 2018 the instrument was again administered to the same students who responded to them. The data on these two occasions were subjected to computer analysis using the Statistical Package for Social Science (SPSS) to determine the internal consistency reliability co-efficient of the subscales. Table 2 shows the reliability coefficient of the subscales.

Table 2: *Internal Consistency Measures of Subscales in the Five Needs Satisfaction Measure*

| Section | Subscale | Internal Consistency Reliability | Test-retest Reliability (Two weeks interval) |
|---------|----------------------|----------------------------------|--|
| A | Physiological Needs | 0.75 | 0.8 |
| B | Safety Needs | 0.65 | 0.65 |
| C | Love/Belonging Needs | 0.80 | 0.70 |
| D | Esteem Needs | 0.85 | 0.90 |

Source: Field Data, 2018

After the analysis using SPSS, the overall reliability coefficient of the scale was found to be (0.76). This reliability coefficient was above the minimum acceptable reliability alpha value of (0.60). On this basis, the (FNSMS) was used to collect data for the study.

Data Collection Procedure

The proposal including the instruments was submitted to the Institutional Review Board of the University of Cape Coast to scrutinized for ethical clearance. Afterwards, an introductory letter and consent form were collected from the Department of Education and Psychology to the Headmasters of the selected Senior High Schools in the Techiman North District for approval before the data collection exercise. Before the actual data collection exercise, the researcher engaged the District Education Directorate for introductory letter to the Headteachers. The researcher personally submitted both letters to the Headmasters to verbally explain the purpose of the study and ascertained the convenient time of the student that would not disturb normal school program. At a sitting, the respondents were first made to respond to the questionnaire. This was done within 30minutes. The respondents were made to answer the written tests from the four core subjects

namely; English Language, Mathematics, Integrated Science and Social Studies. Each of the test items had 30minutes allotted time. The average score generated from the test was used as proxy for respondents' academic performance. The principles of anonymity, confidentiality and privacy were strictly ensured. Due to the cumbersome nature of the work, the researcher recruited and trained four assistants who helped him to gather the data.

Data Processing and Analysis

In order to give meaning to the data collected, multiple linear regression was used to analyze research question one. Also, taking into effect the type of variables involved in hypotheses 1, 2, 3, and 4, Pearson Product Moment Correlation was used to test these hypotheses. This was because, each of the independent variables was continuous in nature and the dependent variable was also continuous. Taking into account the type of variables involved in hypotheses 5, independent sample t-test was deemed appropriate to test this hypothesis. This statistic was used because the researcher wanted to find out whether male and female students differed in their perception of needs.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter presents the results, interpretation and discussion of the study. The main purpose of the study was to investigate into the relationship between students' perception of deficit needs and academic performance among SHS students in the Techiman North District. The study design was correlational research design. The study established the relationship between students' perception of physiological needs and academic performance, love/belongingness and academic performance, safety needs and academic performance, esteem needs and academic performance, deficit needs and academic performance and finally gender perception of needs and academic performance. The analysis and the interpretations were based on the demographic data, perception of needs and the test scores of the respondents. The response rate was 290 (100%) of the sample size.

Demographic Data of Respondents

This section relates to the background information of the students who responded to the questionnaires. The excerpt from the data was analysed using frequencies and percentages to indicate how the demographic data represented the students. In an attempt to understand the dynamics of a given population, Socio-demographic profile of the population is considered very paramount (Grix, 2010). The demographic data was useful in the study because they had the tendency of influencing the responses of the participants.

These demographic characteristics included schools under the study, courses read, gender and Age.

Table 3: *Schools under the Study*

| Variables | Frequency (No) | Percentage (%) |
|---------------------------|----------------|----------------|
| Schools under the Study | | |
| Akumfi Ameyaw Senior High | 101 | 34.83 |
| St. Francis Seminary/ SHS | 13 | 4.48 |
| Krobo Day SHS | 73 | 25.17 |
| Tuobodom Senior High | 79 | 27.24 |
| Guakro Effah Senior High | 24 | 8.28 |
| Total | 290 | 100 |

Source: Field Data, 2018

On the basis of percentages, 34.83% were students from Akumfi Ameyaw Senior High, 27.24% came from Tuobodom Senior High. A significant proportion 25.17% and 8.28% came from Krobo Day SHS and Guakro Effah Senior High respectively with only 4.48% of the student schooling at St. Francis Seminary/ SHS.

Table 4: *Courses Read by Students*

| Variables | Frequency (No) | Percentage (%) |
|----------------|----------------|----------------|
| Courses Read | | |
| General Arts | 144 | 49.66 |
| Business | 31 | 10.69 |
| Science | 25 | 8.62 |
| Agric | 30 | 10.34 |
| Home Economics | 27 | 9.31 |
| Technical | 21 | 7.24 |
| Visual Arts | 12 | 4.14 |
| Total | 290 | 100 |

Source: Field Data, 2018

Out of the 290 students predisposed to the study 49.66 percent of the respondents were reading General Arts follow by 10.69 percent of the students reading Business. The table further showed that 10.34 percent of the students read Agric while 9.31 percent read Home Economics. Also, 8.62 percent were reading Science. Few of the respondents representing 7.24 percent were reading Technical while a few (4.14%) of the students were reading Visual Arts. This implies that most of the SHS students in the District prefer reading General Arts to other courses.

Table 5: *Gender Distribution of the Students*

| Variables | Frequency (No) | Percentage (%) |
|---------------|----------------|----------------|
| Gender | | |
| Male | 143 | 49.31 |
| Female | 147 | 50.69 |
| Total | 290 | 100 |

Source: Field Data, 2018

On the basis of percentages, 50.69 percent of the students were females with 49.31 percent representing males.

Table 6: *Age Distribution of the Students*

| Variables | Frequency (No) | Percentage (%) |
|--------------|----------------|----------------|
| Age | | |
| 12-15years | 10 | 3.45 |
| 16-20years | 262 | 90.34 |
| 21 and above | 18 | 6.21 |
| Total | 290 | 100 |

Source: Field Data, 2018

The ages of the respondents ranged from 12 to 21 and above. Majority (90.34%) of the students were between the ages of 16-20years followed by those aged 21 years and above (6.21%) with only 3.45% of the respondents

aging 12-15 years. This implies that most of them were in the teens and could engage in various economic activities to earn a living for themselves and family members.

Research Question One

Which of the deficit needs predict the academic performance of students?

Multiple regression was used to find out the deficit needs predict academic performance of students. The multiple regression was utilised to show the direction and magnitude of the effects and relationship that exist between the deficit needs (physiological needs, safety needs, esteem needs and love/belonging needs) and academic performance. Prior to conducting multiple regression, certain assumptions must be met which include normality test, and multicollinearity. The researcher checked for these assumption before conducting the regression test. The graph and the scatterplot below show the normality tests for the variables.

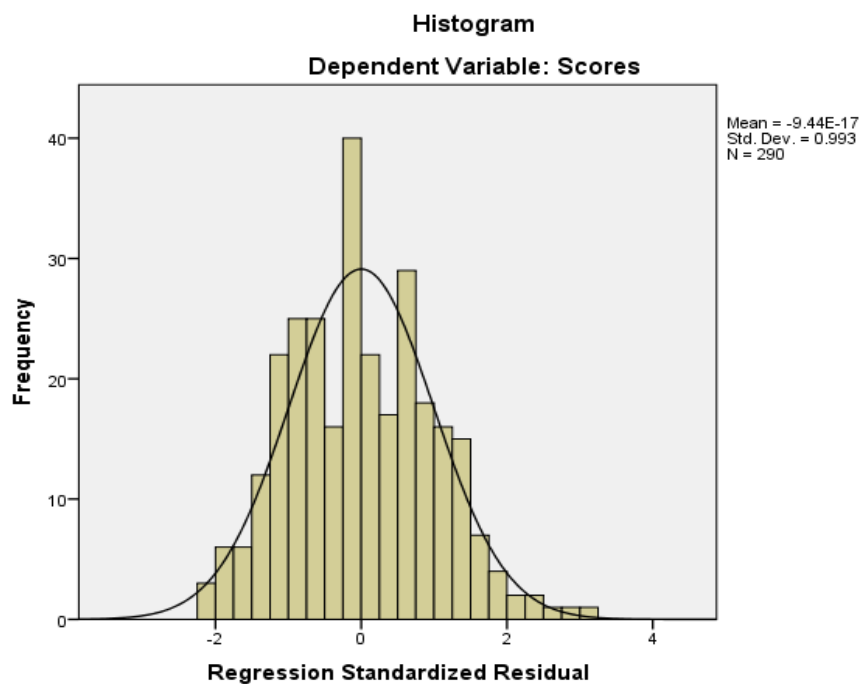


Figure 3: Q-Q plot for normality test

Figure 4 presents the normality of the study variables. The movement of the variables along the diagonal line shows that the variables were normal and multiple regression could be performed.

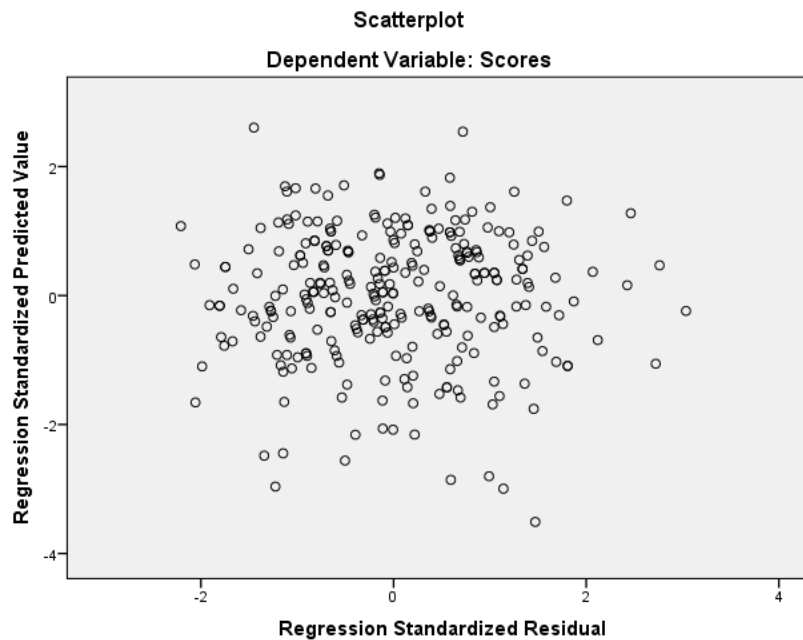


Figure 4: Scatter Plot

The scatterplot of standardised predicted values versus standardised residuals, showed that the data met the assumptions of homogeneity of variance and linearity and the residuals were approximately normally distributed. Table 7 presents the results of the mean and standard deviation of the predicted variables (deficit needs).

Table 7: Descriptive Results of the Independent Variables (Deficit needs)

| Deficit Needs | Mean | Std. Deviation | N |
|----------------------|---------|----------------|-----|
| Physiological Needs | 38.9552 | 6.33669 | 290 |
| Safety Needs | 57.9759 | 9.05745 | 290 |
| Love/belonging Needs | 31.3483 | 5.04163 | 290 |
| Esteem Needs | 41.2414 | 6.44516 | 290 |

Source: Field Data, 2018

(n=290)

Table 7 presents the descriptive analysis of the independent variables (deficit needs). The results from the descriptive analysis show that there were differences in the means scores of the predictors/independent variables (physiological needs, safety needs, esteem needs and love/belonging needs). From the Table, Safety Needs recorded the highest mean score (M=57.9759, SD=9.05745). Esteem Needs followed with a mean and standard deviation of (M=41.2414, SD=6.44516). Physiological Needs recorded the third highest mean and standard deviation (M=38.9552, SD=6.33669). The last variable (Love/belonging Needs) recorded the least mean and standard deviation (M=31.3483, SD=5.04163).

Table 8: *Multiple Linear Regression Analysis between the Deficit Needs and Academic Performance*

| Variables | Unstandardized | | Standardize | t-value | p-value | Decision |
|----------------------|----------------|------------|---------------|---------|---------|----------|
| | Coefficients | Std. Error | | | | |
| | B | | (β) | | | |
| (Constant) | 29.061 | 4.614 | | 6.299 | .000 | |
| Physiological Needs | .105 | .108 | .067 | .980 | .328 | Not sig. |
| Safety Needs | -.141 | .082 | -.128 | 1.731 | .084 | Not sig. |
| Love/belonging Needs | .222 | .152 | .112 | 1.461 | .145 | Not sig. |
| Esteem Needs | .268 | .116 | .173 | 2.309* | .022 | Sig. |
| Multiple R value | | | F value | | | 4.264 |
| R Square value | | | P value | | | .002 |
| Adjusted R Square | | | Durbin-Watson | | | 1.211 |

Predictors: (Constant), Esteem Needs, Physiological Needs, Safety Needs, Love/belonging Needs

Dependent Variable: Students' Academic Performance

Source: Field Data, 2018

*Significant, p< 0.05

Table 8 indicates the result of the multiple linear regression analysis between independent variables (physiological needs, safety needs, esteem needs and love/belonging needs) and dependent variable (students' academic performance). The result of the multiple regression analysis shows that the multiple correlation coefficient is 0.238. This measures the degree of relationship between the predictors and predicted value of the students' academic performance. This indicates that there is a positive relationship between the independent variables and students' academic performance.

From Table 8, the R^2 (R-square) of .056 measures the goodness-of-fit of the estimated regression model in terms of the proportion of the variation in the students' academic performance as explained by the fitted sample regression equation. Thus about 0.56% of the variation in students' academic performance is explained and accounted for by the predictors (physiological needs, safety needs, esteem needs and love/belonging needs) and R^2 value is significant at 5 percent confidence level. The Durbin-Watson statistic is 1.211 and it tests for autocorrelation in the residuals from a statistical regression analysis, thus, it informs whether the assumption of independent errors is tenable and in this data the value is close to 2, hence the assumption has almost been met. The Durbin-Watson statistic is 1.211 and it is between the two critical values of $1.5 < d < 2.5$, therefore, the researcher assumed that there is no first order linear auto-correlation in the multiple linear regression data, thus, there is no autocorrelation in the sample (Refer to Figure 3 and Figure 4).

Again in Table 8, the multiple linear regression coefficients (p-values) indicate the relationship between students' academic performance and each of

the predictors (independent variables). The constant of the regression model is 29.061 which means that even when the independent variables (deficit needs) are held constant or zero, still, students' academic performance will be 29.061.

The multiple linear regression coefficient of esteem needs is ($\beta=.173$, $t=2.309$, sig. 0.022) representing the effect that Esteem Needs as a deficit need have on students' academic performance, holding other independent variables as constant. The relative effect of esteem needs as a deficit need on students' academic performance is significant ($p=0.022^*$) at 5% confidence level because the t-value is 2.309. Therefore, it could be said that Esteem Needs made a valuable and significant contribution to the students' academic performance.

With respect to safety needs, the results show that safety needs also predicted the academic performance of SHS students in the Techiman North District. The multiple linear regression coefficient of safety needs is ($\beta=-.128$, $t=-1.731$, sig. 084) representing the effect that safety needs had on students' academic performance, holding other independent variables as constant. The relative effect of safety needs on students' academic performance was not significant at 5% confidence level because the t-value is -1.731. Therefore, it could be said that safety needs made appreciated and significant contribution to the students' academic performance. From these results and magnitude of the t-statistic, it is concluded that esteem needs and safety needs had extremely more impact or effect and predict on students' academic performance than all other deficit needs.

Research Hypotheses One

H₀: There is no significant relationship between students' perception of physiological needs and academic performance.

To assess the relationship between physiological needs of students and their academic performance, Pearson product moment correlation was used. The choice of this statistical test was influenced by the fact that both physiological needs and academic performance were continuous variables. The results are presented in Table 9.

Table 9: *Relationship between Students' Perceptions of Physiological Needs and academic performance*

| Variables | | Students' Perceptions of Physiological Needs | Academic Performance |
|--|---------------------|--|----------------------|
| Students' Perceptions of Physiological Needs | Pearson Correlation | 1 | 0.132* |
| | Sig. (2-tailed) | | 0.025 |
| | N | 290 | 290 |
| Physiological Needs | Pearson Correlation | 0.132* | 1 |
| | Sig. (2-tailed) | 0.025 | |
| | N | 290 | 290 |

Source: Field Data, 2018

*Significant, $p < 0.05$ (2-tailed)

Table 9 presents the Pearson product moment correlation coefficient of students' perception of physiological need and the academic performance of the students. The results show that psychological needs have a statistically significant positive but low relationship with academic performance ($r=0.132$, $p=0.025$). From the analysis, the results therefore suggest that students' perception have low association with their physiological need but statistically significant. Based on the results, the null hypothesis that there is no significant relationship between students' perception of physiological needs and academic performance is rejected.

Research Hypotheses Two

H₀: There is no significant relationship between the perception of safety needs and students' academic performance.

Safety needs comprise the need for security, protection, stability and freedom from fear and anxiety as well as for structure and limits in our lives (Snowman & Biehler, 2003). This made the researcher to assess the relationship between the perception of safety needs and academic performance. The results are presented in Table 10.

Table 10: *Relationship between Students' Perception of Safety Needs and Academic Performance*

| Variables | Perception of Safety Needs | of Academic Performance |
|----------------------------|----------------------------|-------------------------|
| Perception of Safety Needs | Pearson Correlation 1 | 0.054 |
| | Sig. (2-tailed) | 0.361 |
| | N | 290 |
| Academic Performance | Pearson Correlation 0.054 | 1 |
| | Sig. (2-tailed) | 0.361 |
| | N | 290 |

Source: Field Data, 2018 * Significant, $p < 0.05$ (2-tailed)

Table 10 presents the Pearson product moment correlation coefficient of perception of safety needs and academic performance. The results revealed that, there is no statistically significant correlation between safety needs and academic performance of the students ($r=0.054$, $p=0.361$). From the analysis, it can be concluded that students' perception of their safety needs did not have any relationship with their academic performance. Based on this findings, the null hypothesis that there is no significant relationship between perception of safety needs and academic performance of students is accepted.

Research Hypothesis Three

H₀: There is no significant relationship between the perception of love/belonging needs and academic performance of students.

To test this hypothesis, the Pearson product moment correlation coefficient statistic was used. The results are illustrated in Table 11.

Table 11: *Correlation between Perception of Love/Belonging Needs and Academic Performance of Students*

| Variables | Perception of Love/ Belonging Needs | Academic Performance |
|--|--|-------------------------|
| Perception of Love/ Belonging Needs | 1 | 0.177* |
| Pearson Correlation | | |
| Sig. (2-tailed) | | 0.003 |
| N | 290 | 290 |
| Academic Performance | 0.177* | 1 |
| Pearson Correlation | | |
| Sig. (2-tailed) | 0.003 | |
| N | 290 | 290 |

Source: Field Data, 2018 * Significant, $p < 0.05$ (2-tailed)

The results as shown in Table 11, there is a low but a significant relationship between Love/Belonging needs and academic performance of SHS students in the Techiman North District ($r=0.177$, $p=0.003$). From the analysis, it can be inferred that students' perception of love/belonging needs have a low positive influence with their academic performance. This implies that the null hypothesis that there is no significant relationship between the perception of love/belonging needs and academic performance of students is rejected.

Research Hypothesis Four

H₀: There is no significant relationship between the perception of esteem needs and academic performance of students.

The last deficit need that was tested is perception of esteem needs. The researcher assessed the relationship between the perception of esteem needs and academic performance. Pearson Product correlation was used for the analysis. The results are presented in Table 12.

Table 12: *Correlation Matrix (Pearson) Between the Perception of Esteem Needs and Academic Performance of Students*

| Variables | Perception of Esteem Needs | of Academic Performance |
|----------------------------|----------------------------|-------------------------|
| Perception of Esteem Needs | 1 | 0.199* |
| | Sig. (2-tailed) | 0.001 |
| | N | 290 |
| Academic Performance | Pearson Correlation | 0.199* |
| | Sig. (2-tailed) | 0.001 |
| | N | 290 |

Source: Field Data, 2018 * Significant, $p < 0.05$ (2-tailed)

As illustrated in Table 12, the results suggest that there was a statistical significant relationship between the perception of esteem needs and academic performance of SHS students in the Techiman North District ($r=0.199$, $p=0.001$). As shown in the table, it can be concluded that students' perception of esteem needs has a positive relationship with the academic performance of the students. On account of this findings, the null hypothesis that there is no significant relationship between the perception of esteem needs and academic performance of students is rejected.

Research Hypothesis Five

H₀: There is no significant difference between the perception of needs of male and female students.

To test this hypothesis, the independent sample t-test was deemed appropriate for the analysis. The results are presented in Table 13.

Table 13: *Results of t-test Comparing Gender Difference on the Perception of Needs*

| Gender | Mean | SD | t-value | Df | Sig-Value | Decision |
|--------|---------|--------|---------|-----|-----------|----------|
| Male | 68.4266 | 22.264 | -.862 | 288 | .390 | Accepted |
| Female | 70.5850 | 20.369 | | | | |

Source: Field Data, 2018 (n=290)

Table 13 presents t-test comparing gender difference on perception of needs of SHS students in the Techiman North District. From Table 13, the Means and Standard deviation gives indication that female students (M=70.5850, SD=20.369) perceived more needs than male students (M=68.4266, SD=22.264). But, inferring from the *t* and *p*-values from the table, the result did not establish any statistically significant difference between males and females with respect to their perception of needs. The independent sample t-test results of (t (288) =-862, p = .390, p>0.05, n=290, 2-tailed). This implies that both gender groups (male and female students) have similar perception of needs. I therefore fail to reject the null hypothesis.

Discussion of Results

Needs are fundamental to human growth and survival. Deficiency in a need causes an adverse outcome: failure, dysfunction and even death. Thus, the intent of the study was to investigate the relationship between students' perception of deficit needs and their academic performance.

Physiological needs comprise the need for food, shelter, sleep, water etc. Findings of the study revealed that physiological needs have a statistically significant positive relationship with academic performance. This finding is consistent with the results of a study conducted by (Kenrick, Griskevicius, Neuberg & Schaller, 2010). In their study, Kenrick, et al., (2010) found that physiological needs were very paramount and remained basic to the motivation of students to improve on their academic performance. They further indicated that even if all human needs were not met, physiological needs occupy the highest priority. Significant evidence from literature also suggests that students who stayed in environments that provided physiological needs were always motivated to learn to improve their performance (Chinyoka, & Naidu, 2014; Saito, 2011). To further ground the current study with the empirical studies, Yeung, Linver and Brooks-Gunn (2002) shared the common idea that, more often than not, parents or guardians of students struggling to meet their physiological needs might be less likely to provide books, computers and relevant resources that enhance learning or to offer them high-standard childcare, these to a large extent can compromise the academic performance of students and their future prospect. Ferguson (2008) also reaffirm Yeung, Linver and Brooks-Gunn, (2002), Chinyoka and Naidu, (2014) and Saito, (2011) position on how physiological needs play in students' academic performance. He further added that educational outcomes are one of the key areas influenced by family incomes. In consonance to the findings, a study by Schoenthaler (1991) at New York in the USA found that many students experienced some kind of malnutrition which is so marginal to observe yet affects the intelligence and academic performance of students. In a

similar result, Curtis and Denby (2004) found that among fourth grade students, those having the lowest amount of protein in their diet had the lowest achievement scores. Again, iron deficiency (anemia) leads to shortened attention span, irritability, fatigue, and inability to concentrate which are proxy to low academic performance (Parker, 1989).

In spite of the importance of physiological needs on students' academic performance, Luthar, Cicchetti and Becker, (2000) in a study reported otherwise. In their study, they identified some significant individuals in the society who have excelled despite the absence of this basic physiological needs. Also, Carbonneau, Rutter, Silberg, Simonoff and Eaves (2002) in a twin study showed the difference in the academic performance of identical twin raise under the same context. This they explained may be due to individual variability in adaptation even if they have the same genetic make-up.

Safety need was found to have no significant relationship with academic performance. In line with this findings, Litz (2005) opined that student safety does not occur only at school; the times before and after school may be when students are bullied and that there are more bullying incidents on the bus than in the classroom or school. This however draws attention to many different areas where students have to deal with safety issues. A study by Grover (2015) supports the finding of the study stating that, there are more school variables that seek to predict academic performance other than safety/security issues. This is informed by the fact that many schools are security cautious yet can record low performance. Also, Booren (2007) in a study indicated how individual's perception and for that matter individual

differences influence student's perception of safety needs. In this wise, performance in relation to safety is seen to be student specific. His findings therefore concur with the current findings that safety needs have no significant association with performance.

Contrary to these findings, (Milam et al., 2010; Donald et al., 2010; Yeung, Linver & Brooks-Gunn, 2002) in their studies found safety needs as a requirement that improved students' performance. This could be due to the fact that students were not well informed about the concept and measures of safety needs. For instance, issues of poor lightening systems, location in neighbourhoods that have high poverty and crime rates and presence of gangs and drug users may not be perceived by some students as hindering security needs.

The third tier on the Maslow's hierarchy (Love/Belongingness need) describes the person's need for love/belongingness. This level of needs is characterized by the desire to be loved by others or belong to a group. Focusing on building relationships and social wellbeing of an individual improves academic performance (Poston, 2009). It was therefore not misplaced that, findings of the study revealed that Love/Belongingness needs had a statistically significant and positive relationship with academic performance. This therefore confirms literature that loving and being loved by others helped boost academic performance (Chinyoka & Naidu, 2014). To support this, parents and guardians are also positioned to be accommodating, loving and caring so they can assist their wards to learn (Tay & Diener, 2011). Evidence shows that, deficit or the absence of love/belongingness needs do not permit students to work in groups and more importantly cooperate with peers

at school (Kenrick, Griskevicius, Neuberg & Schaller, 2010). However, when love/belongingness needs are fostered, students will have sound mind to comprehend and assimilate whatever they learn thereby enhancing their academic performance. This confirms the assertion of ecological systems theory where one's surroundings comprising his/her (home, school, work, church, neighbourhood, culture and government) exert influence on how one develops (Donald, Lazarus, & Lolwana, 2010; Woolley & Kaylor, 2006).

Also, O'Neil (2011) in an attempt to explain person centered theory, emphasized the essence of interrelationships with one another as social beings. Zhou, Main and Wang (2010) further asserted that when love/belonging needs are on the ascendancy, positive emotions come to play in the individual. Evidence however has it that positive emotions like love, joy, happiness, serenity increases performance because they positively affect higher order cognitive processes such as (memory, problem solving and strategic thinking) and focus attention on behavioral options (Blair, 2002; Fredrickson, 2001; Pekrun, Elliot & Maier; 2009).

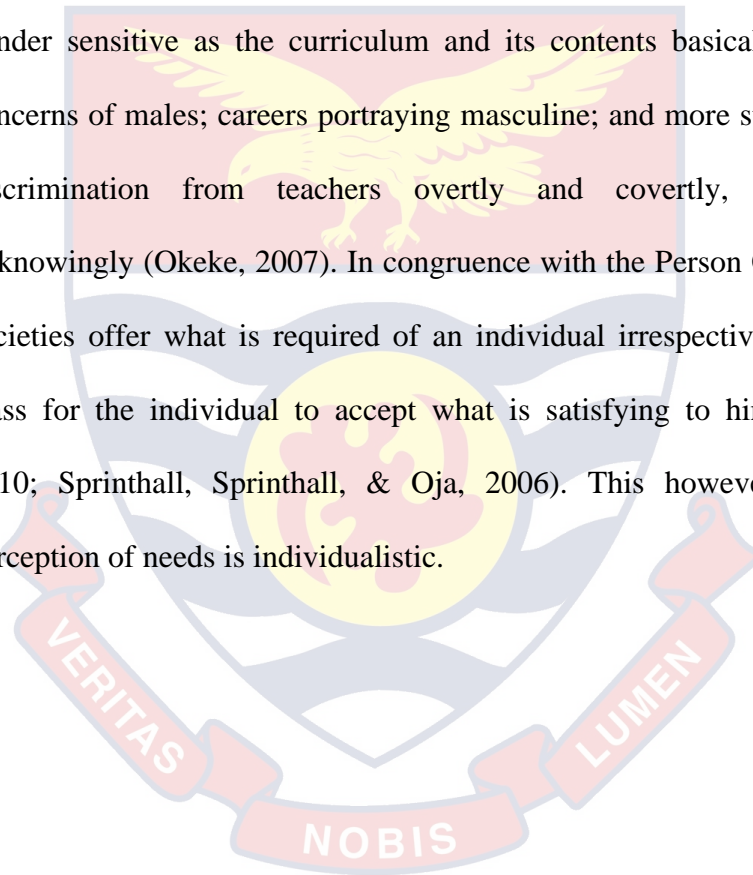
Self-esteem needs which indicated respect, fame, recognition, attention and prestige on the part of the students had a significant relationship with academic performance. This finding supports the findings of Hill and Taylor (2004) that esteem needs especially from parents influence academic prowess of children. Similarly, a study by Pienaar and Peens (2006) confirms the findings that self-esteem need is positively associated with academic performance. They further argued that students with low self-concept find it difficult to meet the expectations of their peer groups and academic pressures. Chinyoka and Naidu, (2014) discussed that the development of a child's self-

concept (either positive or negative) is induced by his or her interrelationship with his or her parents, other family members, educators, and friends. This finding also corroborates Maslow's theory as positive perceptions of students concerning self-esteem is aligned with their learning approaches and outcomes. All these assertions are in congruence with the person centered theory as Snowman and Biehler (2003) acknowledged the importance of one Rogerian assumption that positive regard or warmth is a core human need. Hayes (2008) also conceived positive regard as love, attention, and respect that come from significant others which all affirms esteem.

In determining which of the deficit needs predict academic performance, findings of the study revealed that esteem needs had the highest prediction. Placing the results in empirical evidence, it could be inferred that deficit needs especially esteem needs are critical for general well-being of every individual. Thus, if an individual is deficient in any of these needs in particular, he/she will not be motivated to pursue any of the needs in the succeeding levels. It is however not misplaced that three out of the four needs are statistically significant. Snowman and Biehler, (2003) in a study to explain Maslow theory, indicated that an individual feels apprehensive if the deficit needs are not satisfied. Kangas (2010) admitted the importance of students' perception in understanding their potential to improve on their performance and school satisfaction as this study also confirms.

On the other hand, no difference was found between male and female students' perception of needs. This supports a study by the Self-determination theorists (SDT) that needs-satisfaction and for that matter (motivation) is universal, inclusive, and unchanging among sexes (Ryan & Deci, 2009).

Significantly, needs-satisfaction is dependent on the individuals' perception irrespective of gender. Thus; all needs are satisfied insofar as they are perceived to be satisfied by the individual in question (Vallerand & Ratelle, 2002). On the other hand, Stevens, Olivárez, and Hamman, 2006; Vallerand, and Ratelle, 2002 have suggested that needs-satisfaction varied across gender perception of needs, which in principle, would manifest itself in varying levels of motivation. This could be the fact that most school programmes are not gender sensitive as the curriculum and its contents basically addresses the concerns of males; careers portraying masculine; and more still, female suffer discrimination from teachers overtly and covertly, knowingly and unknowingly (Okeke, 2007). In congruence with the Person Centered Theory, societies offer what is required of an individual irrespective of age, sex, or class for the individual to accept what is satisfying to him/herself (Berth, 2010; Sprinthall, Sprinthall, & Oja, 2006). This however indicates that perception of needs is individualistic.



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents the summary, conclusions and recommendations of the study. It first summarizes the entire work and presents the key findings of the study. The chapter also captures conclusions and recommendations of the study.

Summary of the Study

The study investigated the relationship between students' perception of deficit needs and academic performance of SHS students in the Techiman North District. Specifically, the study sought to find out which of the deficit needs predicted academic performance. Also, the study assessed the relationships between students' perception of; physiological needs and academic performance, safety needs and academic performance, love/belongingness needs and academic performance and esteem needs and academic performance. Lastly the difference between males and females students' perception of needs was examined.

Correlational research design was used for the study. The targeted population were all students from the five public Senior High Schools in the Techiman North District namely; Akumfi Ameyaw Senior High, Tuobodom Senior High, Krobo Day SHS, Guakro Effah Senior High and St. Francis Seminary/ SHS. The accessible population was the second year students in the named schools. Because it was difficult to use all the second year students for

the study, two sampling techniques were employed to select 290 students as the sample for the study. These were; the stratified sampling and simple random sampling techniques. Five Needs Satisfaction Measure Scale and tests in (Mathematics, English Language, Integrated Science and Social Studies) designed by the subject teachers and validated by subject coordinators at the District Education Directorate were used to solicit the perceptions of needs and the academic performance of the respondents respectively. One research question and five hypotheses were formulated to guide the study. Multiple Linear Regression was used to analyze research question 1, while Pearson Product Moment Coefficient was used to test hypothesis 1, 2, 3 and 4. Finally, t-test, was used to test hypothesis 5.

Key Findings

The results from the research question showed that some of the deficit needs predicted academic performance higher than others. The analysis showed that Esteem and safety needs predicted the academic performance of students more than love/ belonging needs and physiological needs.

Results from the study revealed that physiological needs had a statistically significant positive but low relationship with academic performance.

Results from the study revealed that there was no statistically significant relationship between safety needs and academic performance of the students.

The results of the study however showed a statistically significant positive relationship between love/belongingness needs and academic performance of SHS students in the Techiman North District.

Similarly, the findings of the study revealed a statistically significant relationship between perception of esteem needs and academic performance of SHS students in the Techiman North District.

Finally, the results did not reveal a statistically significant difference between male and female students' perception of needs.

Conclusions

The results of the study indicated that there was no significant difference between gender perceptions of needs. This may be due to the fact that all needs are satisfied insofar as they are perceived to be satisfied by the individual as literature has suggested.

Physiological needs are important components of human existence. It is however not surprising those findings of the study showed statistically significant relationship between physiological needs and academic performance.

Contrary to most literature, results of the study indicated no statistically relationship between safety needs and performance. This could be as a result of the individual difference among respondents.

The sense of love/belongingness needs provide students with a sound mind to comprehend and assimilate whatever they are taught thereby enhancing performance. In terms of the relationship between love/belongingness needs and academic performance, findings of the study clarified that love/ belongingness needs have significant relationship with academic performance.

Findings of the study indicated a significant relationship between esteem needs and academic performance. This however concur with literature

that the sense of esteem by people close to students such as parents, bosom friends and their involvement at school possess a positive impact on school-related outcomes.

It can again be concluded that, not all the deficit needs predicted academic performance of students. It could be inferred from the analysis that safety and esteem needs had the highest prediction.

Recommendations

The following recommendations are hereby made based on the findings of the study:

1. Since physiological needs have a statistically significant positive relationship with academic performance of the students, the researcher recommends that school authorities should place much emphasis on the physiological needs like food, water, rest, ventilated classroom etc. of students to help improve their academic performance.
2. There was a positive statistically significant relationship between love/belongingness needs and academic performance of SHS students in the Techiman North District. Based on this, it is recommended that more room be created to foster student-teacher relationship and student-student relationship for students to have a sense of belongingness. In order to do this, teachers can adopt group work and other teaching strategies that encourage students to work together
3. There was statistical significant relationship between the perception of esteem needs and academic performance of SHS students. In this regard, it is recommended that teachers and parents

recognize and acknowledge the achievements of students. This will help boost their ego to feel that their achievement matters to others around them.

Suggestion for Further Studies

1. Further research on the perception of students' needs and their academic performance can be done in other Districts and include private Senior High Schools since the study was limited to public SHS and Techiman North District to ascertain the reliability of the results for generalization.
2. It would be important to conduct a similar study in the primary school pupils to determine their perception on the deficit needs since primary education is the foundation of higher learning.
3. Additionally, another study can be done to include all the 8 levels of need on the Maslow's hierarchy.
4. Another area worth studying is the determination of direction of influence among the various deficit needs on their effects on academic performance.

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APPENDICES

APPENDIX A

UNIVERSITY OF CAPE COAST

DEPARTMENT OF EDUCATION AND PSYCHOLOGY

FIVE NEEDS SATISFACTION MEASURE SCALE

Informed Consent

I am an MPhil. Student of the University of Cape Coast and as part of my programme, I am conducting a study among SHS students. It is only for academic purpose and that I assure you of absolute confidentiality and anonymity as far as this study is concerned. Your responses will not be disclosed to any third party without your consent. Also, you are also not under any compulsion to respond to any question you are not comfortable to answer. Kindly sign in the space provided below if you are ready to participate in the study.

Respondent's signature.....

Date.....

Thank you.

Part One:

Demographic Data

1. What is the name of your School?
 - i. Akumfi Ameyaw Senior High []
 - ii. St. Francis Seminary/ SHS []
 - iii. Krobo Day SHS []
 - iv. Tuobodom Senior High/Tech []
 - v. Guakro Effah Senior High []

2. What course are you reading?
- i. General Arts []
 - ii. Business []
 - iii. Science []
 - iv. Agric []
 - v. Home Economics []
 - vi. Technical []
 - vii. Visual Arts []

3. What is your Gender?
- i. Male []
 - ii. Female []

4. How old are you?
- i. 12-15 years []
 - ii. 15-20 years []
 - iii. 20 and above []

Part Two:

Relationship between Perceived Needs and Academic Performance

THE FIVE NEED SATISFACTION MEASURES

On a 5-point Likert scale ranging from 1-5 as indicated below, the first four levels of needs as theorized by Maslow is measured using an adopted five need satisfaction measure.

Please indicate with (√) on how you agree or disagree with the statement (the items in the list) on the scale. 1 (*Strongly Disagree- SD*), 2 (*Disagree- D*), 3 (*Neutral- N*), 4 (*Agree-A*) to 5 (*Strongly Agree-SA*).

Section A: Physiological Needs

(Physiological needs: They are the basic we things required or wanted for survival. eg. air, food, water, rest, sleep etc).

| | Statements | SD | D | N | A | SA |
|-----|--|-----------|----------|----------|----------|-----------|
| 5. | It is easy transporting myself to and from school | | | | | |
| 6. | I get enough and nutritious food to eat at school everyday | | | | | |
| 7. | I get enough and nutritious food to eat at home everyday | | | | | |
| 8. | My classroom is conducive for teaching and learning | | | | | |
| 9. | I have a conducive environment to learn at home | | | | | |
| 10. | The nature of my home chores make me tired when I get to class | | | | | |
| 11. | The nature of my home chores make me tired to learn at the house | | | | | |
| 12. | I get potable water to drink everyday | | | | | |
| 13. | My guardians provide me with all my learning materials | | | | | |
| 14. | I am physical healthy | | | | | |
| 15. | I get enough break time to relax at school | | | | | |
| 16. | I get enough time to sleep at home | | | | | |

Section B: Safety Needs

(Safety needs refers to the need for security and protection which include; protection from elements, security, order, law, limits, stability etc)

| | Statements | SD | D | N | A | SA |
|-----|---|-----------|----------|----------|----------|-----------|
| 17. | I become happy when my colleague students go on demonstrations | | | | | |
| 18. | I have enough safe place to keep my learning materials at school. | | | | | |
| 19. | I have enough safe place to keep my learning materials at home. | | | | | |
| 20. | Students in my school relate very well with one another | | | | | |
| 21. | Students living in and around my house relate very well with one another | | | | | |
| 22. | My school has rules and regulations that guide my movement and studies | | | | | |
| 23. | I have rules and regulations that guides my movement and studies at the house | | | | | |
| 24. | I entertain some kind of fear at school | | | | | |
| 25. | I entertain some kind of fear when at homes | | | | | |
| 26. | I feel safe from contracting any diseases at school | | | | | |
| 27. | I feel safe from contracting any diseases at the house | | | | | |

| | | | | | | |
|-----|---|--|--|--|--|--|
| 28. | I feel protected by the rules and regulations at the school | | | | | |
| 29. | I feel protected by the rules and regulations at home | | | | | |
| 30. | I feel protected by my teachers and colleagues at school | | | | | |
| 31. | I feel protected by my parents at home | | | | | |
| 32. | I feel safe and secured when I am in school | | | | | |
| 33. | I feel safe and secured when I am in the house | | | | | |

Section C: Love/Belonging Needs

(Love/belonging needs refers to psychological or the emotional connectedness of the individual which include; group work, family, affection, friendship, relationships etc.)

| | Statements | SD | D | N | A | SA |
|-----|---|----|---|---|---|----|
| 34. | I have good friends at school | | | | | |
| 35. | I have good friends at the house | | | | | |
| 36. | There are teachers and colleagues that I can go to if I need help at school | | | | | |
| 37. | There are people that I can go to if I need help at home | | | | | |
| 38. | I feel like a member of a family when I am at school | | | | | |
| 39. | I feel like a member of a family when I am at home | | | | | |
| 40. | My school (teacher & peers) values me as a students | | | | | |
| 41. | My family and community value me as a students | | | | | |

Section D: Esteem Needs

(Esteem needs refers to the need for respect, self-esteem and self-confidence)

| | Statements | SD | D | N | A | SA |
|-----|---|-----------|----------|----------|----------|-----------|
| 42. | My school teachers care about my success | | | | | |
| 43. | My guardians care about my academic performance at school | | | | | |
| 44. | I have a positive attitude towards school | | | | | |
| 45. | I am in good terms with my teachers and peers | | | | | |
| 46. | I am in good terms with my parents | | | | | |
| 47. | People respect me at school | | | | | |
| 48. | School authority welcome students' suggestions | | | | | |
| 49. | My parents welcome my suggestions and contributions in the family | | | | | |
| 50. | People respect me at house | | | | | |
| 51. | I believe in my abilities | | | | | |

THANK YOU

APPENDIX B

ENGLISH LANGUAGE (FORM TWO)

Answer all questions

Choose the correct answer by circling the correct options lettered A-D

1. Collins did very in the final examination.
(a) Bad (b) worse (c) worst (d) badly
2. Hardly a day goes by I don't think about my husband
(a) when (b) that (c) as (d) which
3. If Iyou, jump at the chance of a job like that
(a) am (b) were (c) had been (d) have been
4. The boys attacked Robert and made.....with his wallet
(a) up (b) away (c) over (d) out
5. My father didn't taketo my coming home late last night
(a) kind (b) kinder (c) kindly (d) kindness
6. Although Sammy and Ben have the same parents they have different talents
(a) all (b) each (c) either (d) both
7. Of the ten finalists, Sampson was adjudged the Sculptor
(a) talented (b) talent (c) more talented (d) most talented
8. Many affidavits have been As evidence in the case
(a) sworn in (b) sworn with (c) sworn at (d) sworn to
9. Benin,is reputed to be a historical city, is the capital Edo state
(a) what (b) where (c) that (d) which
10. stolen the goods, the ran away
(a) Having (b) On (c) After (d) Since

What is the grammatical name for the underlined part of the sentence?

11. The poor, who eventually find their way up the financial ladder do not read enough

- (a) Adjective clause (b) Noun clause
(c) Adverb clause (d) Noun phrase

12. The British official realized that there was danger looming and took a very wise decision

- (a) Nominal clause (b) Noun phrase
(c) Adverb clause (d) Adjective clause

13. One would assume they would never have anything to do in common

- (a) Verb phrase (b) Adjective clause
(c) Noun clause (d) Adverbial clause

What is the grammatical function of the underlined part of the sentence?

14. The unusual energy that goes into the achievement any art or sport should function finally to help the individual increase his own powers and perfect his abilities

- (a) Object of the noun “energy”
(b) Subject of the verb “Should function”
(c) It qualifies the noun “energy”
(d) Compliment of the verb “Should function”

15. When he came back, those who had wished him the worst got the shock of their lives

- (a) Subject of the verb “had wished” (b) Subject of the verb “got”
(c) Modifies the verb “got” (d) Modifies the verb “wished”

Literature

16. The dominant idea in literally work is called.....
- (a) Technique (b) Content
(c) Theme (d) Menu
17. When a word is used in a superficial manner, it is said to have been used in its
- (a) Figurative sense (b) Connotative sense
(c) Literally sense (d) Literal sense
18. The main antagonist in a play is referred to as
- (a) Buffoon (b) villain
(c) hero (d) protagonist
19. In a play the list of actor and actresses is called
- (a) cast (b) dramatist
(c) personages (d) play players
20. The term used in describing an effective choice of words in a literally work is
- (a) diphthong (b) diction
(c) denotation (d) dialogue
21. The moment of heightened tension in a play is called
- (a) denouement (b) denotation
(b) conflict (d) climax
22. The principal aim of drama is to.
- (a) Educate and entertain us (b) Educate us
(c) Entertain us (d) Strengthen and beautify us

23. Poetry is focused on one of the following:

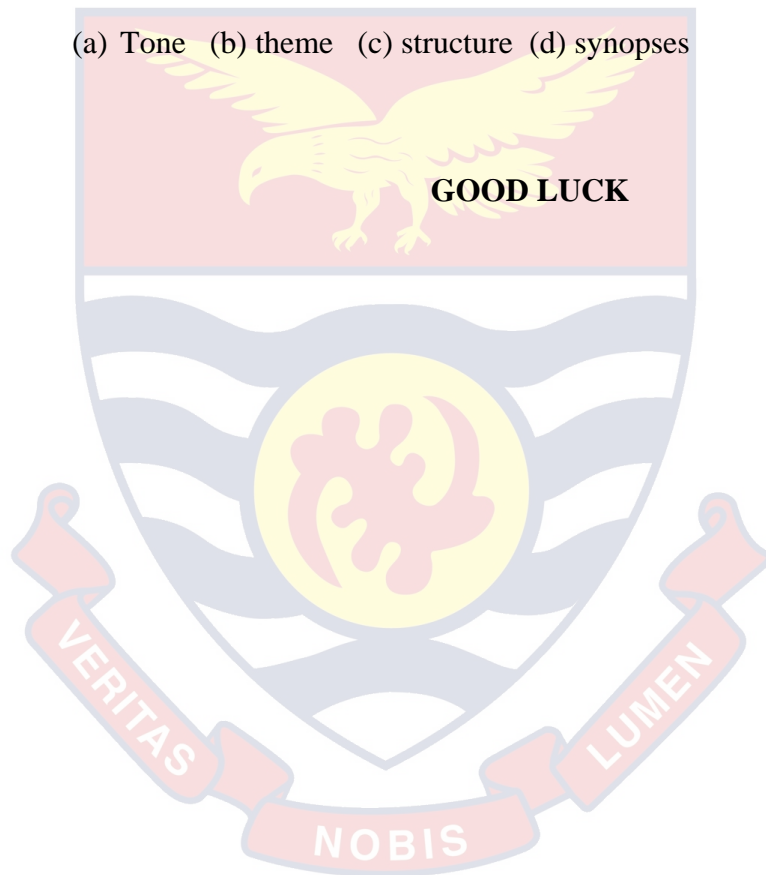
- (a) Emotion and ideas
- (b) Beauty only
- (c) Emotion only
- (d) Ideas only

24. Drama differs from poetry because it

- (a) Involves many characters
- (b) Deals with tragic experiences
- (c) Uses elevated language
- (d) Exist mainly in action

25. determines the atmosphere of a poem

- (a) Tone
- (b) theme
- (c) structure
- (d) synopses



APPENDIX C

INTEGRATED SCIENCE (FORM TWO)

30MINUTES

1. Diseases like polio and chicken pox are caused by

- a) Bacteria
- b) Fungi
- c) Virus
- d) Worms

2. Examples of Multicellular Microorganism are

- a) Algae, Bacteria
- b) Bacteria and Fungi
- c) Bacteria and Viruses
- d) Algae and Fungi

3. Some medicines obtained from micro-organisms are applied to kill or stop the growth of disease-causing micro-organisms. Such medicines are called.....

- a) Antibodies
- b) Antibiotics
- c) Antiseptics
- d) All of the above

4. A common preservative used in jam and pickles is

- a) Sodium benzoate
- b) Nitric acid
- c) Sodium Chloride
- d) Copper Sulphate

5. The process of conversion of sugar into alcohol by yeast is called

- a) Fermentation
- b) Pasteurisation
- c) Alcoholism
- d) All of the above

6. The microbe for Malaria is carried by.....

- a) Male Anopheles mosquito
- b) Female Anopheles Mosquito
- c) Male Aedes mosquito
- d) Female Aedes mosquito

7. Polythene and PVC are examples of

- a) Bio degradable substance
- b) Thermosetting plastics
- c) Thermoplastics
- d) Rayon

8. Plastics which when molded once, cannot be softened by heating are called.....

- a) Polythene
- b) Thermoplastics
- c) Polyster
- d) Thermosetting plastics

9. The 4 R Principle is

- a) Reduce, Reuse, Recycle, Recover
- b) Remember, reduce, Recycle, Rejoice
- c) Repeat, Rejoice, recycle, reduce
- d) None of the above

10. is an example of natural polymer

- a) Rayon
- b) Cellulose
- c) Nylon
- d) All of the above

11. The property of metal by which it can be drawn into wires is called.....

- a) Ductility
- b) Sheatability
- c) Metallic
- d) Malleability

12. The metal found in liquid state is

- a) Iron
- b) Aluminium
- c) Mercury
- d) Gold

13. Naphthalene balls used to repel moth and insect is derived from

- a) Petroleum
- b) Sugar
- c) Coal tar
- d) LPG

14. The earth's temperature is increasing due to Global warming due to

- a) The Sun giving out more heat
- b) The Earth slowly moving toward the sun
- c) Increased use of fossil fuel
- d) Less duration of winter every year

15. A chemical process in which a substance reacts with oxygen to give off heat is called

- a) Conduction
- b) Conjunction
- c) Combustion
- d) Confusion

16. Fuel may be.....

- a) Solid only
- b) Solid, Liquid or gas
- c) Liquid only
- d) Gas only

17. Deforestation means

- a) Planting more trees
- b) Designing a forest
- c) Demanding a forest
- d) Clearing of forests and using that land for other purposes.

18. Ill effect of deforestation is it

- a) Increases temperature of earth
- b) Increases pollution level
- c) Increases CO₂ level of atmosphere
- d) All of the above

19. Increased level of carbon dioxide in the atmosphere traps the heat rays reflected by the earth causing an increase in the temperature on the earth. This is

- a) Local warming
- b) House warming
- c) Global warming
- d) Country warming

20. Part of the earth which supports life where living beings exists is called.....

- a) Atmosphere
- b) Biosphere
- c) Biology
- d) Biodiversity

21. The egg of the Hen is

- a) An organ
- b) A Single cell
- c) A tissue
- d) none of the above

22. A cell without organized nucleus is called

- a) Prokaryotic cell
- b) Eukaryotic cell
- c) Virus
- d) None of the above

23. Jelly-like substance present between the cell membrane and the nucleus is called?

- a) Water
- b) Nucleoplasm
- c) Cytoplasm
- d) oil

24. The first menstrual flow is called

- a) Menstruation
- b) Mensuration
- c) Menarche
- d) Menopause

25. Gravity is.....

- a) Repulsive
- b) Attraction + Repulsive force
- c) Attractive force
- d) Not a force

GOOD LUCK

APPENDIX D

SOCIAL STUDIES (FORM 2)

Answer all questions

30MINUTES

1. The payment of the bride wealth by the family of the groom signifies....
 - (a) The social status of the woman's family
 - (b) The token of appreciation to the woman's family
 - (c) A healthy relationship existing between the two families
 - (d) The acceptance of the marriage by both families
2. A natural factor which most often cause breakdown of marriage in the traditional society is called?
 - (a) Incest
 - (b) Death
 - (c) Bareness
 - (d) Sickness
3. The family acts as an agent of education through training the child to
 - (a) Generate income
 - (b) Acquire social values
 - (c) Perform household chores
 - (d) Know working values
4. Primary socialization is the exclusive responsibility of the....
 - (a) Extended family
 - (b) Nuclear family
 - (c) School
 - (d) Church

5. The breakdown of traditional family system is the results of.....
- (a) High cost of living
 - (b) Assisting needy family members
 - (c) Increasing religious activities
 - (d) Urban development
6. Apart from birth, one can also become a member of a family through...

- 
- (a) Registration
 - (b) Adoption
 - (c) Legislature
 - (d) Naturalization

7. Aggregate segment of lineage in traditional society form a....

- (a) Kinship
- (b) Clan
- (c) Family
- (d) Kingship

8. Traditional rule is based on.....

- (a) Dictatorship
- (b) Conscientious building
- (c) Chieftaincy
- (d) Autocracy

9. Separation of powers is always associated with.....

- (a) The rule of law
- (b) Checks and balances
- (c) Delegated legislation

- (d) Autocracy
10. For a peaceful co-existence, multi-party democracy needs to operate on the virtue of.....
- (a) Tolerance
 - (b) Faithfulness
 - (c) Honesty
 - (d) Timidity
11. The doctrine which ensure that no two governmental institutions are entrusted to the same person or group is known as.....
- (a) Checks and balances
 - (b) Separation of powers
 - (c) Constitutional rule
 - (d) Rule of law
12. Which of the following is feature of a democratic government?
- (a) Heads of states cannot be removed until death
 - (b) Some of the legislation has large membership
 - (c) Some members of the executive are elected by the council of state
 - (d) Representatives are elected
13. One of the major functions of the electoral commission is?
- (a) Appointing members of parliament
 - (b) Nominating cabinet ministers
 - (c) Making arrangements for the conduct of elections
 - (d) Swearing in of elected members

14. The practice of the separation of powers under a democratic government prevents...

- (a) Dictatorship
- (b) Corruption
- (c) Transparency
- (d) Loyalty

15. Which of the following leadership styles grants complete freedom to followers

- (a) Paternalistic
- (b) Laissez-faire
- (c) Democratic
- (d) Autocratic

16. The most important pre-condition for nation building are.....

- (a) Infrastructural facilities
- (b) Skilled and unskilled labor
- (c) Availability of resources
- (d) Peace and stability

17. Which of the following measures can help prevent coup de tat in Ghana?

- (a) Good governance
- (b) The existence of a written constitution
- (c) Banding locally made fire arms
- (d) Promoting rule of law

18. What leaders require from their followers in order to achieve success is to?

- (a) Sing their praises
- (b) Avoid criticizing them
- (c) Be loyal and cooperative
- (d) Be rebellious

19. One attribute of a good leader is?

- (a) Self-centeredness in decision making
- (b) Insistence on followers to abide by his decisions
- (c) Reliance on followers for direction
- (d) Effective organization of followers

20. Ais anything a society recognizes to be useful for the production of goods and services to benefit mankind

- (a) Renewable resources
- (b) Resource
- (c) Biomass
- (d) Non-renewable resource

21. The difference between capital and natural resource is that

- (a) Natural resource are many while capital resource is small
- (b) Capital resource are used for further production while natural resource are not
- (c) They are the same
- (d) None of the above

22. The low level of Science and Technology in Ghana can be attributed mainly to

- (a) Superstitious beliefs of the people
- (b) Peoples disregard for Science and Technology
- (c) Poor foundation for the development of Science and Technology
- (d) Poor teaching of Science at the basic level

23. The application of modern technology by the entrepreneur helps him

- (a) Increases the prices of goods
- (b) Employ more skilled personnel
- (c) Reduce his cost of production
- (d) Enjoys monopoly in production

24. The factors which generally militates against scientific researches in Ghana is?

- (a) Apathy of Government
- (b) Lack of scientists
- (c) Inadequate funding
- (d) Brain drain

25. All the following are benefits of the study of Science except?

- (a) Reliable weather forecasting
- (b) Production of arms for war
- (c) Improvement in Agricultural technology
- (d) Efficient dissemination of information.

GOOD LUCK

APPENDIX E

CORE – MATHEMATICS (FORM TWO)

Answer all questions

30 minutes

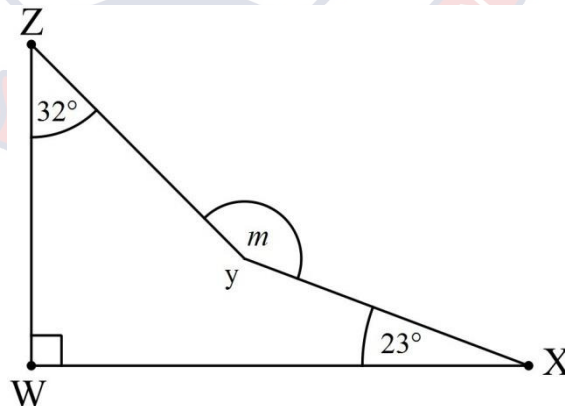
1. A straight line which divides one or more lines and angles into two equal parts is called

- A. Transversal
- B. Divisor
- C. Tangent
- D. Bisector

2. A point P moves in space such that A is always at a constant distance from a fixed point Q. What is the locus of P?

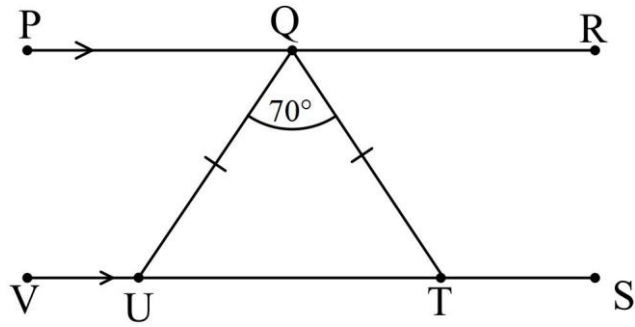
- A. A sphere with centre Q
- B. A circle with centre Q
- C. An arc of circle
- D. Concentric circles with common centre Q.

3. In the diagram $\angle WZY = 32^\circ$, $\angle YXW = 23^\circ$, $\angle ZWX$ is a right angle and $\angle ZWY = m$, find the value of m.



- A. 135°
- B. 145°
- C. 154°
- D. 165°

4. In the diagram $PR \parallel VS$, $|QU| = |QT|$ and $\angle UQT = 70^\circ$. Find $\angle PQU$



- A. 55° B. 65° C. 70° D. 84°

5. If $T = \frac{a-m}{1+am}$, find a in terms of T and m

A. $a = \frac{Tm}{1-Tm}$ B. $a = \frac{T+m}{1-Tm}$

C. $a = \frac{T-m}{1-Tm}$ D. $a = \frac{T+m}{1+Tm}$

6. Solve $\frac{2}{3}(x - 1) > \frac{1}{2}(1 - 2x) + \frac{1}{2}$

- A. $x > 10$ B. $x > 1$ C. $x > -1$ D. $x > -10$

7. Simplify $\frac{\frac{1}{3} \times \frac{2}{3}}{\frac{1}{4} \div 1\frac{1}{2}}$

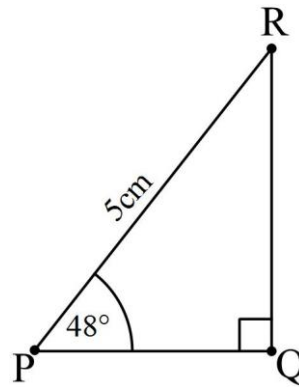
- A. $\frac{4}{27}$ B. $1\frac{2}{9}$ C. $5\frac{1}{3}$ D. $6\frac{1}{4}$

8. Factorize $7 - 6x - x^2$

A. $(x - 7)(1 - x)$ B. $(x - 1)(x - 7)$

C. $(x + 7)(1 - x)$ D. $(x - 1)(x + 7)$

9. In the diagram PQR is a right angled triangle, $\angle RPQ = 48^\circ$, $|\overline{PR}| = 5\text{cm}$. find $|\overline{PQ}|$.



- A. 3.35 B. 3.72 C. 5.55 D. 7.47

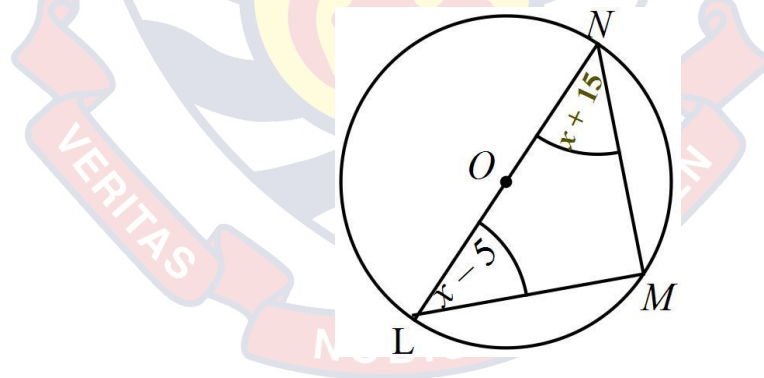
10. Evaluate $\log_2 8 + \log_k k^3 + \log_3 9$

- A. 3 B. 5 C. 8 D. 10

11. The diagram shows a triangle inscribed in a circle of centre O. If \angle

$\angle LNM = (x + 15)^\circ$ and

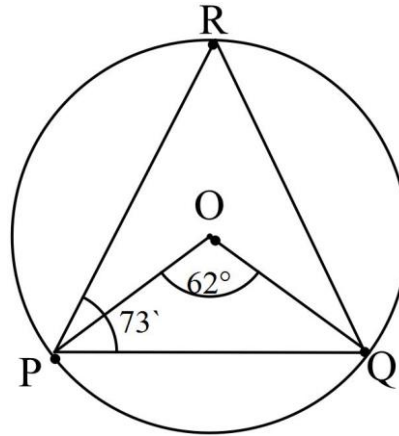
$\angle NLM = (x - 5)^\circ$. Find the value of x



- A. 35° B. 40° C. 45° D. 50°

12. In the diagram, O is the centre of the circle PQR, $\angle RPQ = 73^\circ$ and

$\angle POQ = 62^\circ$. Calculate $\angle RQO$



- A. 15° B. 14° C. 17° D. 31°

13. If $\cos x = \frac{1}{\sqrt{2}}$ $0^\circ \leq x \leq 90^\circ$, evaluate $2\tan x + \sqrt{2} \sin x$

- A. 3 B. $2 + \frac{\sqrt{2}}{2}$ C. 2 D. $1 + \frac{\sqrt{2}}{2}$

14. A man is twice as old as his son. Five years ago, the ratio of their ages was 9:4. Find the son's present age

- A. 15years B. 20years
C. 25years D. 40years

15. Solve $2^{3x} = 0.25$

- A. $x = -1\frac{1}{2}$ B. $x = \frac{-2}{3}$ C. $x = \frac{2}{3}$ D. $x = 1\frac{1}{2}$

16. Express $\log_y b = x$ in the index form

- A. $a^y = b^x$ B. $y^x = a^b$
C. $y^x = b^a$ D. $y^b = a^x$

17. In a class of 45 students, 28 offer chemistry and 25 Biology. If each student offers at least one subject, find the number of students who offer chemistry only.

- A. 8 B. 20 C. 17 D. 45

18. If x varies inversely as y and y varies directly as z , what is the relationship between x and z

- A. $x \propto z$ B. $x \propto \frac{1}{z}$ C. $x \propto z^2$ D. $x \propto \frac{1}{z^2}$

19. Simplify $\sqrt{2}(\sqrt{6} + 2\sqrt{2}) - 2\sqrt{3}$

- A. 4 B. $\sqrt{3} + 4$ C. $4\sqrt{2}$ D. $4\sqrt{3} + 4$

20. Kofi, Kate and Lucy share an amount of Ghc 4747.00 in the ratio 20:15: 12 respectively. What is Kate's share?

- A. Ghc 2020.00 B. Ghc1515.00
C. Ghc 1212.00 D. Ghc1010.00

21. An elephant can drink all the water from a reservoir in 4 days. The rhinoceros can drink all the water from the same reservoir in 12 days. How long will it take to empty the reservoir, if the elephant and the rhinoceros drink together.

- A. 1 B. 2 C. 3 D. 4

Use the addition and multiplication tables for modulo 5 shown below to answer question 22 and 33.

| | | | | | |
|---|---|---|---|---|---|
| + | 0 | 1 | 2 | 3 | 4 |
| 0 | 0 | 1 | 2 | 3 | 4 |
| 1 | 1 | 2 | 3 | 4 | 0 |
| 2 | 2 | 3 | 4 | 0 | 1 |
| 3 | 3 | 4 | 0 | 1 | 2 |
| 4 | 4 | 0 | 1 | 2 | 3 |

| | | | | | |
|---|---|---|---|---|---|
| × | 0 | 1 | 2 | 3 | 4 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 1 | 2 | 3 | 4 |
| 2 | 0 | 2 | 4 | 1 | 3 |
| 3 | 0 | 3 | 1 | 4 | 2 |
| 4 | 0 | 4 | 3 | 2 | 1 |

22. Find the truth set of $(n \times 4) + (n \times 4) = 1 \pmod{5}$

- A. {0, 2} B. {2} C. {3} D. {1}

23. Find the truth set of $n \times n = 4 \pmod{5}$

- A. {1} B. {3} C. {2, 4} D. {2, 3}

Use this information to answer questions 24 and 25.

The dimensions of a rectangle are 11_2 cm and 10_2 cm.

24. Find the area of the rectangle

- A. 101_2cm^2 B. 110_2cm^2 C. 111_2cm^2 D. 1010_2cm^2

25. Find the perimeter of the rectangle.

- A. 1010_2cm B. 1100_2cm C. 1001_2cm D. 101_2cm

GOOD LUCK

APPENDIX F

MARKING SCHEME

ENGLISH LANGUAGE (1mark each=25marks)

| | | | | |
|-----|------|------|------|------|
| 1 D | 6 D | 11 A | 16 C | 21 D |
| 2 A | 7 D | 12 A | 17 C | 22 A |
| 3 B | 8 A | 13 C | 18 B | 23 A |
| 4 B | 9 D | 14 C | 19 A | 24 D |
| 5 C | 10 A | 15 C | 20 B | 25 A |

INTEGRATED SCIENCE (1mark each=25marks)

| | | | | |
|-----|------|------|------|------|
| 1 B | 6 B | 11 A | 16 B | 21 B |
| 2 D | 7 C | 12 C | 17 D | 22 A |
| 3 B | 8 B | 13 C | 18 D | 23 C |
| 4 A | 9 A | 14 C | 19 C | 24 C |
| 5 A | 10 B | 15 C | 20 B | 25 C |

SOCIAL STUDIES (1mark each=25marks)

| | | | | |
|-----|------|------|------|------|
| 1 D | 6 B | 11 B | 16 D | 21 B |
| 2 C | 7 A | 12 D | 17 A | 22 A |
| 3 B | 8 B | 13 C | 18 C | 23 C |
| 4 B | 9 B | 14 A | 19 D | 24 C |
| 5 D | 10 A | 15 B | 20 B | 25 B |

MATHEMATICS (1mark each=25marks)

| | | | | |
|-----|------|------|------|------|
| 1 D | 6 A | 11 B | 16 C | 21 C |
| 2 B | 7 C | 12 A | 17 B | 22 C |
| 3 B | 8 C | 13 A | 18 B | 23 D |
| 4 A | 9 A | 14 C | 19 A | 24 A |
| 5 C | 10 C | 15 B | 20 B | 25 A |

APPENDIX G
GES NOTICE FOR DATA COLLECTION
GHANA EDUCATION SERVICE
TECHIMAN NORTH DISTRICT

In case of reply the number and date of this letter should be quoted

Tel. No: +233-206749184
Email: technorthedu2012@gmail.com



Republic of Ghana

Post Office Box 3,
Tuobodom, B/A,
Ghana.

27th June, 2018

My Ref. No GES/TND/86/Vol./
Your Ref. No:

HENRY YAW ACHEAMPONG
ABOABO D/A PRIMARY
POST OFFICE BOX 15,
TECHIMAN-

PERMISSION TO CONDUCT RESEARCH

Following your letter dated on 11th June, 2018, the Directorate wishes to inform you that you have been permitted to undertake your research in the district. I therefore ask that, the Head of Institutions should offer him any assistance to support the research.

A handwritten signature in blue ink, appearing to read 'Akangare', written over a dotted line.

A. A. AKANGARE (MR)
DISTRICT DIRECTOR OF EDUCATION
TECHIMAN-NORTH, B/A

APPENDIX H

ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
ETHICAL REVIEW BOARD

UNIVERSITY POST OFFICE
CAPE COAST, GHANA



Our Ref: *CES-ERB/ucc.edu/v2/18-35*
Your Ref:

Date: *Jan 21, 2018*

Dear Sir/Madam,

ETHICAL REQUIREMENTS CLEARANCE FOR RESEARCH STUDY

Chairman, CES-ERB
Prof. J. A. Omotosho
jomotosho@ucc.edu.gh
0243784739

Vice-Chairman, CES-ERB
Prof. K. Edjah
kedjah@ucc.edu.gh
0244742357

Secretary, CES-ERB
Prof. Linda Dzama Forde
lforde@ucc.edu.gh
0244786680

The bearer, *Henry Yaw Acheampong* Reg. No. *ED/PPE/16/0007* is an M.Phil. / ~~Ph.D.~~ student in the Department of *Education and Psychology*..... in the College of Education Studies, University of Cape Coast, Cape Coast, Ghana. He / She wishes to undertake a research study on the topic:

Relationship between students' perception of needs and academic performance in the Techiman North District

The Ethical Review Board (ERB) of the College of Education Studies (CES) has assessed his/her proposal and confirm that the proposal satisfies the College's ethical requirements for the conduct of the study.

In view of the above, the researcher has been cleared and given approval to commence his/her study. The ERB would be grateful if you would give him/her the necessary assistance to facilitate the conduct of the said research.

Thank you.
Yours faithfully,

A handwritten signature in black ink, appearing to be 'Linda Forde'.

Prof. Linda Dzama Forde
(Secretary, CES-ERB)