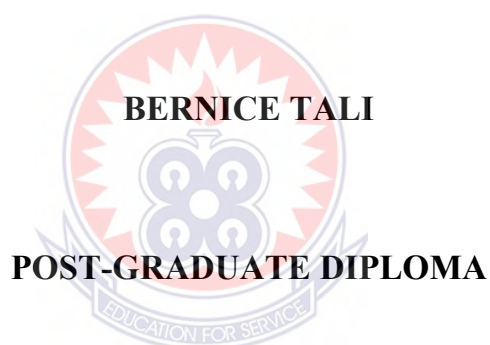


UNIVERSITY OF EDUCATION, WINNEBA

**FACTORS AFFECTING ACADEMIC PERFORMANCE OF SENIOR
HIGH SCHOOL STUDENTS IN CHEMISTRY IN THE AKATSI
SOUTH DISTRICT OF THE VOLTA REGION**



2022

UNIVERSITY OF EDUCATION, WINNEBA

**FACTORS AFFECTING ACADEMIC PERFORMANCE OF SENIOR HIGH
SCHOOL STUDENTS IN CHEMISTRY IN THE AKATSI SOUTH DISTRICT
OF THE VOLTA REGION**



**A dissertation in the Department of Educational Foundations
Faculty of Educational Studies, submitted to the School
of Graduate Studies in partial fulfilment
of the requirements for the award of the degree of
Post Graduate Diploma
(Education)
in the University of Education, Winneba**

JULY, 2022

DECLARATION

Student's Declaration

I, Bernice Tali, declare that, this dissertation with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted either in part or whole, for another degree elsewhere.

SIGNATURE:

DATE:

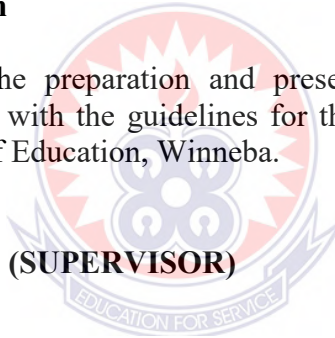
Supervisor's Declaration

I hereby declare that, the preparation and presentation of this dissertation was supervised in accordance with the guidelines for the supervision of dissertation laid down by the University of Education, Winneba.

Paul Kobina Effrim, Ph.D (SUPERVISOR)

SIGNATURE:

DATE:



DEDICATION

I dedicate this Project to the Almighty God who gave me knowledge, strength and direction and also to my family. Their support has been the source of my strength in writing this project.



ACKNOWLEDGEMENT

I give the Almighty God glory and honour for bringing me this far. Thank you, God. I am greatly indebted to my supervisor Dr. Paul K. Effrim for his guidance and inspiration. I am thankful for his technical support and encouragement.

I am deeply grateful to all the schools I visited to make this work a success and to the entire staff members of the University of Education, Winneba, who in diverse ways made this dream a reality.

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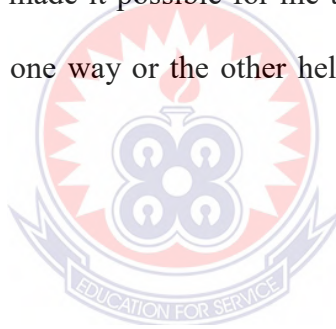


TABLE OF CONTENTS

Content	Page
DECLARATION	iii
DEDICATION	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
ABSTRACT	xi
CHAPTER ONE: INTRODUCTION	1
1.0 Overview	1
1.1 Background to the Study	1
1.2 Statement of the Problem	4
1.3 Purpose of the Study	5
1.4 Objectives of the Study	5
1.5 Research Questions	6
1.6 Significance of the Study	6
1.7 Delimitations of the Study	7
1.8 Limitations of the Study	7
1.9 Organization of the Study	7
CHAPTER TWO: REVIEW OF RELATED LITERATURE	8
2.0 Introduction	8
2.1 Education in Ghana	9
2.2 Senior High School Education	10
2.3 Senior High School (SHS) Curriculum	11



2.4 Senior Secondary/High School Grading System	13
2.5 Concept of Academic Performance	14
2.6 Factors that affect the quality of academic performance	14
2.7 The Concept of Poor Academic Performance	16
2.8 Causes of Poor Academic Performance	16
2.8.1 School factors that affect academic performance	17
2.8.2 Family Education Background and Socio-Economic Status	26
2.8.3 Family background and poor academic performance of the child	28
2.8.4 Factors affecting the child's academic performance and socialisation process in the family	29
CHAPTER THREE: RESEARCH METHODOLOGY	34
3.0 Overview	34
3.1 Research Design	34
3.2 Population	35
3.3 Sample and Sampling Techniques	35
3.4 Instrumentation	36
3.5 Validity and Reliability of Instruments	37
3.6 Data Collection Procedure	38
3.7 Data Analysis	38
3.8 Ethical Considerations	39
CHAPTER FOUR: PRESENTATION AND DISCUSSION OF FINDINGS	40
4.0 Overview	40
4.1 Background Characteristics of Respondents	40
4.1.1 Background Characteristics of teachers	40

4.1.2 Background Characteristics of students	42
4.2 Major Findings	42
4.2.1 Findings on WASSCE results in Chemistry	43
4.2.2 Findings on School factors that affect performance	44
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS	52
5.0 Overview	52
5.1 Summary of Findings	52
5.2 Conclusion	53
5.3 Recommendations	54
5.4 Areas for Further Research	55
REFERENCES	56
APPENDIX A	61
APPENDIX B	63
APPENDIX C: INTRODUCTORY LETTER	65



LIST OF TABLES

Table	Page
2.1: Current Senior High School (SHS) Grading System	13
4.1 Working Experience of Teachers	41
4.2: Analysis of 2020 Chemistry WASSCE results for one of the SHS in Akatsi south district	43



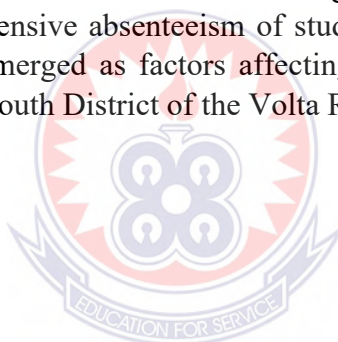
LIST OF FIGURES

Figure	Page
4.1: Analysis of 2020 Chemistry WASSCE results for Akatsi South district.	44
4.2: Students' response to friendliness of their Chemistry teacher	46



ABSTRACT

The purpose of the study was to find out the factors affecting the academic performance of students in Chemistry in the Akatsi South District. The study employed descriptive survey design. The population of the study was made up of all Senior High School students studying Chemistry as well as all chemistry teachers in the Akatsi South District. The sample comprised of four (4) teachers and one hundred and thirty-one (131) students who were selected using purposive and simple random sampling techniques respectively. Questionnaires were employed as the main data collection tool. Records of 2020 WASSCE results were also collected and analyzed. The instrument validity was established by expert judgement whilst its reliability was established through test-retest method yielding a Cronbach alpha Coefficient of 0.79. The collected data were analyzed quantitatively using frequencies and percentages. The study revealed among others that, the performance of students in Chemistry for 2020 WASSCE was very poor. School factors such as: use of limited of teaching methods, inadequate periods to cover a broad syllabus, failure of Chemistry teachers to be punctual and regular, inadequate laboratory and library resources were identified as the contributing factors to the poor performance. In addition to these, socio-economic factors such as low educational background of parents and financial problems resulting in extensive absenteeism of students from school and inadequate time at home to study emerged as factors affecting the performance of students in Chemistry in the Akatsi South District of the Volta Region of Ghana.



CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter provides an introduction to the research work. It comprises the following subtopics; background of the study, statement of the problem, significance of the study, objectives and research questions. It spells out the delimitations, limitations and the organisation of the study.

1.1 Background to the Study

The educational system of any nation is the mirror through which the nation can be seen, shaped and also likely to be shaped. Education, according to many authors, has been and will continue to be potential cause of change in any society. Education is also meant to develop manpower for different levels of the economy which is an ultimate guarantee to national self-reliance. Hence from the formulation and clarification of purposeful education must emerge the realities of life, taking into account the entire scope of human life and at the same time, considering specific needs of the individuals (Adell, 2002).

Senior High Schools offer a wide range of programme models to meet the needs of students. The current Senior high school (SHS) structure requires that all students take a core curriculum consisting of Integrated Science, English Language, Mathematics and Social Studies in addition to at least three elective subjects. Chemistry, Physics, Biology and Elective Mathematics are some of the elective subjects under the General Science course. Chemistry is one of the Science subjects from which technological breakthroughs emerge and is the pivot on which the wheel of science rotates. It was as a result of the recognition given to chemistry in the development of the individual and

the nation that it was made a compulsory subject for Visual Arts, Agriculture and Home Economics students at the senior high level in Ghana in 2008. Also, it is due to the achievements and contributions of chemistry to the well-being of mankind, that the United Nations General Assembly declared 2011 as the International Year of Chemistry (IYC 2011) with a broad theme “Chemistry-our life, our Future”.

Chemistry is defined as the science that studies the composition and structure of matter as well as its interactions. Chemistry is a popular subject among senior high school science students in Ghana because it is a major requirement for advanced programmes in the natural and applied sciences. It addresses the needs of mankind through its relevance and functionality in content, practice and application (Aremu, 2000). Chemistry is an essential basis for many facets of our everyday lives, and has many unforeseen potential benefits for our future. An understanding of chemistry allows us the opportunity to make sense of, and explain the world around us.

Chemistry is a very broad, universal and dynamical (historical development of scientific knowledge) non-descriptive science subject and serves as the interface to practically all other sciences. The main aims of teaching traditional chemistry in secondary schools are to prepare students for college chemistry, conceptualize the basic facts, introduce students to scientific methods, to develop their scientific mind, reasoning and approach, to stimulate their curiosity, interest, enjoyment and good attitudes towards the subject, to develop an understanding of the consequences of chemistry on humans and their environment (Aggarwal, 2001).

It develops basic knowledge of how to live in this world, to deal with the issues of daily life and how to make decisions concerning our actions as individuals. Examples are: how food changes when we cook it, how cleaning works and which cleaning

agent to choose for which purpose, how materials are produced and how we can use them with respect to their different properties. A few more examples are the functioning of medicine, vitamins, supplements, and drugs, or understanding potentials and risks of many modern chemistry related products and technologies. Besides, a lot of chemistry-related topics are essential to our lives and are also fundamental to the society in which we live. For example, responsible use (and consumption) of energy resources, guaranteeing sufficient and healthy nutrition, securing sustainability in drinking water supply, framing sustainable industrial development are areas (topics) that need the knowledge of chemistry for better understanding.

Clearly, these developments are important to all citizens who live and operate in a modern society and eventually (in the future) they will be asked to critically reflect upon these issues, to contribute to societal debates and to make important scientifically-based decisions. At the end of Senior High School i.e., three years, all students write the West African Senior Secondary School Certificate Examinations (WASSCE) in each of the seven or eight subjects studied. The minimum requirement for admission into tertiary institutions for Senior High School graduates is WASSCE grades A1-C6 in all subjects (Ministry of Education, 2010).

It is a common place these days for government officials, heads of schools, teachers and all people to declaim that the educational standard in Ghana is falling. This is quite evident because a good number of students of the West African Certificate Examinations hardly gain access to the tertiary institutions since their academic attainments fall short of the tertiary level admission requirements (Weiner, 2000).

This notion was confirmed by a survey which revealed that, fewer than 3% of SHS grades are A's, and 40% of students fail in at least one of their registered subjects.

There has been wide cry each year when WAEC releases their annual results as a result of students' poor performance, especially in the Science subjects. Candidates' performance at the West African School Certificate Examination (WASSCE) conducted by WAEC has consistently remained poor with Chemistry having one of the worst and poorest results over the years (Siaw, 2009). Despite numerous government interventions, the variance that appears between students pass rate in Chemistry is yet to be resolved. The attitude of authorities, communities and students towards effective and efficient teaching and learning of Chemistry need to be revisited and streamlined towards effective and efficient teaching and learning in Senior high school classrooms. In order to make teaching and learning of Chemistry meaningful and interesting so that what is learnt remains an integral part of the learner, teachers' and students' approaches and attitudes should be overhauled in order to give an overall knowledge of the subject.

1.2 Statement of the Problem

Education is a fundamental human right (Rivkin, 2007). The performance of student in the Chemistry examination conducted by the West African Examination Council over the years suggest that students' performance in Chemistry is on a decline (WAEC, 2012 & 2014). This is further suggested by the West African Examination Council (WAEC) report on Chemistry. (Chief Examiners's Report, 2014). The report enumerated the following observations;

1. Most students are weak in manipulative or mathematical skills.
2. Students or Candidate lack in-depth understanding of various concepts.
3. Students or Candidates have poor command of the English Language.
4. Students or candidates usually have problems of incorrect spelling of technical terms.

Research has also shown that, several factors affect the academic performance of students, especially in Chemistry as a subject. Due to the various challenges that students encounter in passing their Chemistry examinations, it is important to critically look at the various factors that affect the performance of students in the subject to minimize the challenges as identified in the report of the West African Examination Council by its Chief Examiner as captured in 2014.

1.3 Purpose of the Study

This study seeks to identify factors that are affecting the academic performance of Senior High School students in Chemistry in the Akatsi South District.

1.4 Objectives of the Study

Specifically, the objectives of the study are to:

1. analyze the performance rate of Senior High School students in Chemistry in the Akatsi South District;
2. assess school factors that affect students' performance;
3. investigate the effect of socio-economic status of parents on students' academic performance.

1.5 Research Questions

1. What is the performance rate of Senior High School students in Chemistry in the Akatsi South District?
2. What are the school factors that affect students' academic performance?
3. What are the effects of socio-economic status of parents on academic performance?

1.6 Significance of the Study

It is envisaged that, findings from the study may reveal factors that are affecting the academic performance of students in Chemistry in the Akatsi South District of the Volta Region in Ghana. It is hoped that the findings of this study would help the management of the schools as well as the teachers and students in the Akatsi South District to adapt workable measures or strategies that are likely to improve the performance of students in Chemistry. The study would provide information that is likely to be useful for the purposes of In-Service Training for teachers and other stakeholders in education in the district. It may also serve as a reference material for policymakers to consider in the design of programmes to pursue at the SHS level of education that might yield encouraging results. Finally, this study is likely to inspire other researchers to embark on similar studies into factors affecting academic performance of students in Chemistry in other Districts and Municipalities, so that more general information about factors that contribute to falling standards in education especially in Chemistry could be obtained and addressed to improve academic performance of students.

1.7 Delimitations of the Study

An investigation of this kind should have involved almost all the schools in the Akatsi South District. However, this study was delimited to the two public SHS in the Akatsi South district. The scope of this study was also delimited to teachers, students and parents. The study focused on the WASSCE results of the students.

1.8 Limitations of the Study

An investigation of this kind should have involved more than two schools in the Akatsi South District. However, this study was limited by the presence of very few SHS in the Akatsi South district. There are only two public SHS in the Akatsi South district in addition to one private SHS. The only private SHS in the district was not included because most of their students are attending SHS for the second time. Additionally, their students usually opt for the supplementary NOV-DEC examinations instead of WASSCE.

1.9 Organization of the Study

The study was organised into five chapters. Chapter One dealt with the introduction, the background to the study, the statement of the problem and the purpose of the study. The research questions, significance of the study as well as the delimitation of the scope and limitations of the study are also included in this chapter. Chapter Two focuses on the review of literature relevant to the study. It consists of both empirical and theoretical literature. The Third chapter dealt with the research methodology. This consists of the research design, population, sample and sampling procedure, research instrument, data collection procedures and data analysis. Chapter Four presents an analysis and discussion of the results while chapter Five covers the summary, conclusions as well as recommendations and areas for further research.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter reviews literature pertinent to the area of study. This will inform the researcher to know what other authorities have already said about factors that affect academic performance of students and guide the researcher to delve more into the topic under investigation. This is to ensure that the study is appropriately situated to fill the knowledge gaps relating to the area of the study. The researcher intends to use various materials including but not limited to books, the internet and journals among others.

Relevant materials were thus, reviewed under the following headings:

1. Education in Ghana
2. Senior High School Education
3. Senior High School Curriculum
4. Senior High School Grading System
5. Concept of Academic Performance
6. Factors that affect the quality of Academic Performance
7. Concept of Poor Academic Performance
8. Causes of Poor Academic Performance
9. School factors that affect Academic Performance
10. Family Education Background and Socio-Economic Status
11. Family background and poor academic performance of the child

2.1 Education in Ghana

Since education is one of the most significant tools for national development, it becomes the responsibility of any progressive government anywhere to make available, support and encourage sound educational policies as well as infrastructure that will aid her people to develop skills and attitudes that enables them to realize their potentials. However, McWilliams and Kwamena-Poh (1975) as cited in Eyiah (2004) stated that it was not until the last quarter of the 19th century that Ghana began to take the first steps towards a state-organized education. Before then informal systems of education had been the main way in which Ghanaian communities prepare their members for citizenship.

It is interesting to note that in Ghana the first school was the home: the teachers were parents and elders in the family. The curriculum was life and learning were by observation and practice. According to the authors, the first major purpose of education was the inculcation of good character and good health in the young members of the community. The second was to give them adequate knowledge of their history, beliefs and culture, thus enabling them to participate fully in social life. This suggests that the aim and objects of non-formal education in Ghana has been national development. Oduro (2000) indicates that the government of Ghana implemented broad reforms that touched on all levels of the education system and attempted to address recurring issues affecting the system.

The reforms reduced pre-university education in the country from 17 years to 12 years (six years of primary, three years of Junior Secondary and three years of Senior Secondary school). The Senior Secondary School (SSS) system began in 1990 and the first final examination were written in 1993. The middle school system which

preceded JSS education was phased out in 1989 when the last set of students took the middle school leaving certificate. The 'O' and 'A' level examination system which guided secondary education was gradually brought to an end in 1994 and 1996 respectively (Oduro, 2000).

2.2 Senior High School Education

The Senior Secondary School (SSS) system that began in 1990 was criticized as being overly bookish and removed from Ghana's development and manpower needs (Keteku, 1999 as cited in Quayson, 2006). A new SSS system was structured to offer opportunity to build on the foundation laid at the basic level and strengthen the general intellectual knowledge and skills required for employment for further education. Anderson (2000) established that the reformed SSS was structured to include a core curriculum to be followed by all senior high students alongside five specialized programmes, two or more of which were to be offered in each school.

Keteku noted that the core curriculum originally consisted of seven subjects that were to be studied throughout the three-year senior secondary school period: English, Science, Mathematics, Agricultural and Environmental Studies, Ghanaian Language (nine different languages offered), life Skills (renamed Social studies in 1999) and Physical Education beginning with the class of 1998. The core curriculum was reduced to six subjects: Integrated science, English, Mathematics, Social Studies, Physical Education and Religious and Moral Education though students were examined only in the first four subjects. The Senior High School year used to run from January to December, for three terms and a total of forty weeks per year but currently the semester system is used.

Chemistry is one of the five branches of science, which is taught in SHS. Chemistry is taught at secondary level and at primary level, it is part of general science. Chemistry unlike other branches of science, like mathematics, is not compulsory but it is taken depending on the specialization of the students in science combination, which can be Physics, Chemistry and Biology; Physics, Chemistry and Mathematics; Physics, Chemistry and Geography; and Biology Chemistry and Geography (Hassan, 2015).

2.3 Senior High School (SHS) Curriculum

Curriculum has been defined in various ways. Ankomah (2005), in (Ochieng *et. al.*, 2019), defined curriculum as the experience a school system provides for its students. According to Trusty (2000), in (Ochieng *et. al.*, 2019), curriculum is an organised framework that sets out the content that children are to learn and the process through which the curriculum sets for them. Therefore, curriculum can be seen as all experiences students have under the guidance of the school in a school system. The Senior High School's curriculum is identical to the United States High School system in terms of structure with core and elective subjects yet the Ghana's SHS last only three years as a result of the numerous education reforms. The three-year period for SHS was extended to four years in 2007; however, it was reversed to three years in 2009. The curriculum ends on final examination known as the West African Senior School Certificate Examinations (WASSCE), formerly called Senior Secondary School Certificate Examination (SSSCE) before 2007.

The Ministry of Education (2010) has reported that the SHS structure demands that students study a core curriculum consisting of Integrated Science, English Language, Mathematics and Social Studies, in addition to choosing three or four Electives subjects from one of the seven groups. Sakyi (2012) identified the core subjects under

the current structure of SHS as Integrated Science, Core Mathematics, English Language, Social Studies and Physical Education. Chemistry is one of the electives and may be offered by students studying General Science, Agricultural Science, Home Economics as well as Visual Arts.

The Ministry of Education (2007), based on the importance of the chemistry curriculum, revised the SHS chemistry curriculum to reflect in-depth appropriateness and interrelatedness of curricula contents. Also, emerging issues/areas such as petrochemistry, oil and gas were infused into the relevant contents of the new SHS chemistry curriculum. The objective of the revised edition of the senior secondary education chemistry curriculum is expected among other things to enable students develop interest in the subject of chemistry and acquire basic theoretical and practical knowledge in order to meet the demands of the subject.

The topics studied under Chemistry at the SHS level may be largely grouped in to Organic chemistry, Inorganic chemistry and Physical chemistry. According to Dalgety *et. Al.* (2003) in (Ochieng *et. al.*, 2019), chemistry is not just a collection of knowledge, but more of a culture, with learned patterns for thinking and acting transmitted through theory, skills and values. A chemistry curriculum should therefore embrace the empirical nature of scientific chemistry knowledge, observation, inference and theoretical entities in chemistry, distinction and relationship between theories and laws, creative and imaginative nature of Chemistry, the theory-laden nature of Chemistry knowledge, the social and cultural emboldens of chemistry concepts, the myths, paradoxical aspects and its tentative nature.

2.4 Senior Secondary/High School Grading System

Until 2007, the Senior Secondary School ended with the Senior Secondary School Certificate Examinations (SSSCE), which assesses students' achievement with a grading system that ranged from A to E. In 2007, the SSSCE was replaced with West African secondary school certificate examination (WASSCE). These examinations are written Nationwide in April to June every year and the results are released in September of that same year. In WASSCE, a maximum of 24 points is generally required for SHS graduates to enter a Bachelor's degree programme at the University and students can also apply to Nursing Training Schools, Colleges of Education, Technical Universities and Technical institutions. The West African examination council (WAEC), a consortium of the five Anglophone West African countries (Nigeria, Sierra Leone, Gambia, Ghana and Liberia) is responsible for developing, administering, and grading this secondary school-leaving examination (Ghana Web, 2012). The current WASSCE grading system is explained in table 2.1 below.

Table 2.1: Current Senior High School (SHS) Grading System

WASSCE Grades Since 2007	Marks	Description
A1	100 – 80	Excellent
B2	79 – 70	Very Good
B3	69 – 65	Good
C4	64 – 60	Credit
C5	59 – 55	Credit
C6	54 – 50	Credit
D7	49 – 45	Pass
E8	44 – 40	Pass
F9	39 and below	Fail

Source: Ghana Education Service, 2007

2.5 Concept of Academic Performance

According to Otu (2007) academic performance is “what a student is capable of achieving when he is tested on what he/she has been taught”. It is how well a student meets standard set out to be attained in an educational institution. It implies that academic performance is determined after a student has been taught a specific course of academic studies or curriculum. Evaluation of specific areas of achievement and failure foster remedial teaching or learning process. Educational services are often not tangible and are difficult to measure because they result in the form of transformation of knowledge, life skills and behaviour modifications of the learner (Tsinidou, Gerogiannis, & Fistilis, 2010). So, there is no commonly agreed upon definition of quality that is applied to education field. The definition of quality education varies from culture to culture (Battle & Lewis, 2002).

2.6 Factors that affect the quality of academic performance

There is a range of factors that affect the quality of performance of students (Sander, 2001). A series of variables are to be considered when identifying the affecting factors towards quality of academic success. Identifying the most contributing variables in quality of academic performance is a very complex and challenging job. The students in public schools belong to a variety of backgrounds depending upon their demography. This diversity is vast and complex as ever before in Ghanaian culture. Keeping in view all these discussions, this study is to examine the effect of different factors on the academic performance of SHS in Chemistry in the Akatsi South District of Ghana.

Theory of Educational Productivity by Walberg (1981) determined three groups of nine factors based on affective, cognitive and behavioural skills for optimization of learning that affect the quality of academic performance: Aptitude (ability, development and motivation); instruction (amount and quality); environment (home, classroom, peers and television) (Roberts, 2007). The home environment also affects the academic performance of students. Educated parents can provide such an environment that suits best for academic success of their children. The school authorities can provide counselling and guidance to parents for creating positive home environment for improvement in students' quality of work (Marzano, 2003). The academic performance of students heavily depends upon the parental involvement in their academic activities to attain the higher level of quality in academic success (Barnard, 2004).

The environment and personal characteristics of learners play an important role in their academic success. The school personnel, members of the families and communities provide help and support to students for the quality of their academic performance. This social assistance has a crucial role for the accomplishment of performance of students at school (Goddard, 2003). Besides the social structure, parents' involvement in their child's education increases the rate of academic success of their child (Furstenberg & Hughes, 1995). The relationship between gender and the academic achievements of students has been discussed for decades (Eitle, 2005). A gap between the achievements of boys and girls has been found, with girls showing better performance than boys in certain instances (Chambers & Schreiber, 2004). Gender, ethnicity, and father's occupation are significant contributors to student achievement (McCoy, 2005).

2.7 The Concept of Poor Academic Performance

Poor academic performance according to Aremu (2000) is a performance that is adjudged by the examinee/testee and some other significant as falling below an expected standard. The interpretation of this expected or desired standard is better appreciated from the perpetual cognitive ability of the evaluator of the performance. The evaluator or assessor can therefore give different interpretations depending on some factors. Bakare (1994) described poor academic performance as any performance that falls below a desired standard.

The criteria of excellence can be from 40 to 100 depending on the subjective yardstick of the evaluator or assessor. For example, a 70% performance of SHS 3 students in JHS English Language examination is by all standards a very good performance. However, a cursory look at the performance and the individual examined and the standard of the examination he or she took could reveal that the performance is a very poor one. On the other hand, a JHS 2 student's performance of 37% in SHS 3 mathematics can be said to be a poor performance when in actual fact the performance is by all standards a very good one. This shows that the concept of poor academic performance is very relative and this depends on so many intervening variables.

2.8 Causes of Poor Academic Performance

Aremu and Sokan (2003) submit that the research for the causations of poor academic achievement is unending and some of the factors they put forward are: motivational orientation, self-esteem/self-efficacy, emotional problems, study habits, teacher consultation and poor interpersonal relationships. Bakare (1994) also made efforts to

categorise factors militating against good academic performance into four principal areas which are:

- i. Causation resident in the child such as basic cognitive skills, physical and health factors, psycho-emotional factors and lack of interest in school programme.
- ii. Causation resident in the family such as: cognitive stimulation/basic nutrition during the first two years; type of discipline at home; lack of role model and Finance
- iii. Causation resident in the school such as school location and physical building; interpersonal relationship among the school personnel.
- iv. Causation resident in the society such as instability of educational policy; under-funding of sector, leadership and job losses.

2.8.1 School factors that affect academic performance

School Location and Physical Building

The importance of these to a successful academic achievement cannot be overemphasised; where the school is located determines to a very large extent the patronage such a school will enjoy. Similarly, the entire unattractive physical structure of the school building could de-motivate learners to achieve academically. This is what Isangedighi (1998) refers to as learner's environment mismatch. According to him, this promotes poor academic performances.

Interpersonal relationship among the school personnel

Healthy interpersonal relationship among the personnel in the school setting will help to promote conducive environment for teaching-learning situation. The healthy relationships will attract and sustain the academic interest of the learners.

Teacher's attitude

It is obvious that the teacher is the pivot in the school setting. Teachers' support and participation are crucial to any programme that involves students or learners. One of the teacher's duties is to impart knowledge to students in order to bring desirable changes in them. According to Farrant (1989) the role of the teacher is to bridge the gap by helping the student to see how philosophy, psychology and sociology relates to what goes on in the classroom. Through the teacher, the student's educational horizons grow so that he/she is helped to see his/her work in perspective and understand the significance of its element. He/she is a manager, organising his/her students so as to accomplish set objectives.

The teacher is a resource person providing his/her students with information and able to guide them to other fruitful sources. The teacher stimulates and arouses the interest of his/her students so that they soon generate their own motivation. Farrant (1989) further states that to teach effectively, the teacher must be an example to his/her students of the style and methods they are to use. The teacher must therefore do what he preaches by using the methods he advocates. The implication is that if the advocate of a child is to be better, then this calls for teachers who are examples of good models to the children. Thus, in addition to proficiency in chemical knowledge and pedagogical training, the chemistry teacher should also have both cognitive and non-cognitive competencies, basic knowledge in chemistry related fields such as mathematics, physics and biology, technology, philosophy, sociology and psychology, language (English), reading and writing skills.

Essien (2004) support the above by saying that teacher is the person who implements the curriculum and he/she is more traditionally known person in our school's system. The teacher is a disciplinarian who parents rely on when their children are erring. That is why in time past when a child misbehaved at home, his parents threaten to report such undisciplined act to the teacher. The mere mention of the teacher's name could be enough to elicit the desired and expected behaviour from the child. Thus, chemistry teachers have very important roles to play, because they are the bridge between the curriculum and the students. Indeed, chemistry teachers are responsible for the effective implementation of the chemistry curriculum.

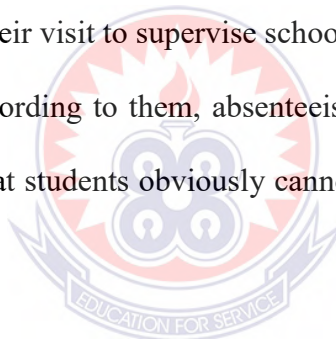
Musaazi (1985), contend that every educational system at every level depends heavily on teachers for the execution of its programmes, thus, maintaining and improving educational standards is possible through teachers. The teacher therefore is the most indispensable piece of equipment in the school. He/she is the greatest aid to learning. Thus, as far as possible he/she should be thoroughly trained and supported in his work, indeed high-quality teachers are the best assert. According to Ochieng (2019), among the factors which influence the quality of education and its contribution to National Development are the quality, competence, effectiveness and characters of teachers which undoubtedly are the most significant.

Constraints of teachers' attitude towards teaching and learning

Ankomah, Koomson, Bosu, and Oduro (2005) lamented that failure rate at the primary classes are related partially to poor teaching and the percentage of pass at the Senior High level have their origins in the primary classes. Agyeman (1993) states that quality of education in Ghana is generally found to be low, lower in public basic schools than in private schools. According to him, this was due to among others; poor

teaching, excessive loss of instructional time, lack of appropriate motivation of teacher and lack of trained teachers. According to Dampson and Dominic (2010) in their early research on students' low performance laments that it is common knowledge that female teachers in schools have taken to petty trading alongside teaching while their male counter parts have also taken to teaching extra classes in the urban areas and farming in the rural setting in a bid to make ends meet.

This behaviour affects students' achievement as much as time is spent on private schedules than looking for information on salient points for students. Broh (2002) made it clear that 'teacher absenteeism and lateness are prevalent in many developing countries. They cite Haber as reporting that in Nigeria, government officers complained that during their visit to supervise schools, teachers were absent or late for no apparent reasons. According to them, absenteeism is especially acute in the rural areas. They concluded that students obviously cannot learn from a teacher who is not present in class.



The teacher is the key to the child's academic performance; yet, today most teacher trainees have no interest in teaching but merely see the teaching profession as a stepping stone or spring to the other professions. Many of such students do not take their studies serious as such they come as trained teachers yet lack the requisite skills for teaching. Unknowingly, teachers contribute significantly towards producing school drop-outs through their failure to use instructional materials in their teaching (Essien, 2004). Essien therefore recommend that in order to get good teachers in the schools the right people should be recruited to be trained as teachers. The regular in-service training of teachers who are already in the job should be given the desired attention.

Adell (2002) reported that a teacher who does not have both the academic and professional teacher qualification would undoubtedly have negative influence on the teaching and learning of his/her subject. However, he further stated that a teacher who is academically and professionally qualified, but work under unfavourable conditions of service may be less dedicated to his/her work thus less productive than a teacher who is academically and professionally unqualified but work under favourable conditions of service. Gyakari (2005) a circuit supervisor in the Nkawie district, noted that the provision of quality education could fully be achieved and sustained if the service conditions of teachers were relatively improved. Teachers, he said are vital component for meaningful development and must therefore be accorded the utmost recognition and support.

This typically is the situation in the Akatsi South District of Volta Region, where during raining season some areas which have uncontrollable roads and where trained teachers will not accept posting to get flooded. Therefore, the few untrained teachers in those areas have taken to farming. This coupled with unfavourable conditions such as; no materials to teach, inadequate trained teachers, classrooms are crowded, no ceiling fans, no staff common rooms for teachers to sit and mark students' exercises or relax during break time. Other missing facilities include inadequate furniture, textbooks, place of convenient like toilet, urinal, canteen etc. the vocational and science teachers find it difficult to do practical because of lack of laboratories, workshops and importantly libraries. Also, for effective teaching to take place there is the need for good lesson notes to be prepared and vetted. Some teachers continue to use old lesson notes for a long time without revising them to be abreast with new educational ideas and methods (Broh, 2002). Broh (2002) mentions that most teachers rely on their old lesson notes because they handle such classes for a long time. This

attitude of teachers affects the academic performance of students both internal and external in the district.

Teachers' Method of Teaching

The means or strategies employed by teachers in an attempt to impart knowledge to the learner are referred to as methodology. Aremu and Sokan (2003) see teaching method as the strategy or plan that outlines the approach that teachers intend to take in order to achieve the desirable objectives. It involves the way teachers organise and use techniques of subject matter, teaching tools and teaching materials to meet teaching objectives.

Sometimes when a teacher teaches and at the end of the lesson, evaluation is carried out and it is discovered that students are unable to carry out the behavioural or instructional objectives what the teacher needs to do is to examine his teaching methods rather than looking at students as the causes. Most untrained teachers point accusing fingers on students rather than on themselves when the students are unable to carry out expected behaviour at the end of the lesson or in examinations. Therefore, teachers planning should include:

- i. Choice of appropriate teaching material
- ii. Choice of appropriate teaching method
- iii. (234 European Journal of Social Sciences – Volume 13, Number 2 (2010))
- iv. Intensive research on the topic to be taught
- v. Determination of the objectives for the lesson

Different approaches have been put in place for teaching instructions in order to induce and promote direct learning in chemistry. Instructors can impart knowledge using any teaching technique from the continuum of teaching methods depending on

the education level, nature of the student, environmental factors and guided by the laid curriculum strategies (Ochieng *et. al.*, 2019). All these teaching techniques have their own pros and cons. Chemistry is an experimental discipline therefore, science process and problem-solving skills should be measured during the laboratory phase, not just their understanding. Thus, there is the need of an adequate laboratory otherwise practical illustration of laid theoretical findings may not agree with the stipulated chemical theories as described in the textbooks.

Classroom Management

The classroom is that space bounded by the wall and roof where a teacher houses his pupils/students for the purpose of giving instruction to such pupils/students. In other words, it is a shelter for both teachers and learners so as to engage in educative activities. Management on the other hand can be seen as the process of designing and maintaining any setting in which people work in groups for the purpose of accomplishing pre-determined goals. The idea of ‘any setting’ equally indicates that management is applicable to all establishments which do not exonerate education. Adequate and well-prepared instructional materials determine the amount of learning that can be placed in a learning setting. Good quality materials can motivate interest, maintain concentration and make learning more meaningful. The need for the use of instructional materials by the subject teacher in this modern age cannot be overemphasised; the traditional method of talk and chalk approach is no longer applicable.

Learning Environment

The uncondusive atmosphere in our schools’ learning environment also contributes to the poor academic performance of students. SHS are experiencing astronomical

increase in population to the extent that some classes use more than one registers for a class. In such situations, teacher-student ratio becomes so high. Knowing students by name even becomes a problem and this does not create a good condition for learning which can lead to poor academic performance of students. According to Aina (2012) in (Ochieng *et. al.*, 2019), the science laboratory is a setting in which students can work supportively in small groups to investigate scientific occurrences. To achieve the desired objective of effective teaching of chemistry in secondary schools, operational chemistry laboratory equipment has to be provided, but it is disheartening to note that most of our schools do not have functional laboratories. Sam (2009) in (Ochieng *et. al.*, 2019) observed that infrastructure is often stressed as a result of the insufficient or incomplete laboratory equipment in most of our schools.

Practical work allows students to have experiences that are consistent with the goals of science literacy and have been used in natural science to teach students or many age spans in different cultural and classroom contexts. Thus, laboratory experience shoulders distinctive importance for assisting students/learners to think through chemical concepts and enlighten them as well. Onafo (1993) in (Ochieng *et. al.*, 2019), had observed that equipment, materials and chemicals are not stocked specifically for the teaching of chemistry and the outcome of such a situation is that most chemistry teachers handle the subject negligently and superficially.

Peer Group Influence

Generally, peer group means a group of equals. But sociologists apply it to groups made up of persons who are of the same age and often to groups of children or of adolescents. They play a normal part in the process of socialisation as they provide experiences to those who are growing up, a type that are not available in their own

families. The adolescents take solace in interacting with their peers and they prefer to keep longer time with them than with their parents. The peer group therefore has tremendous influence on the Adolescent's pattern of behaviour especially on their attitudes, interests, value system, emotional expressions and interactions patterns and so on. However, the peer group's norms/standards in many cases may run foul to that of the community or society at large.

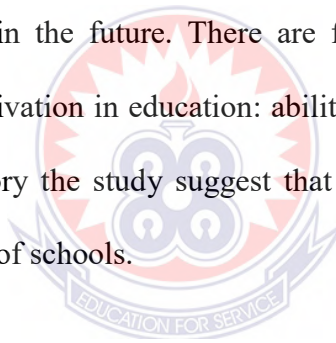
Attribution Theory

Attribution theory (Weiner, 1980, 1992) cited in Weiner (2000) is probably the most influential contemporary theory with implications for academic motivation. It incorporates behaviour modification in the sense that it emphasises the idea that learners are strongly motivated by the pleasant outcome of being able to feel good about themselves. It incorporates cognitive theory and self-efficacy theory in the sense that it emphasises that learners' current self-perceptions will strongly influence the ways in which they will interpret the success or failure of their current efforts and hence their future tendency to perform these same behaviours.

According to attribution theory, the explanations that people tend to make to explain success or failure can be analysed in terms of three sets of characteristics: First, the cause of the success or failure may be internal or external. That is, we may succeed or fail because of factors that we believe have their origin within us or because of factors that originate in our environment. Secondly, the cause of the success or failure may be either stable or unstable. If we believe the cause is stable, then the outcome is likely to be the same if we perform the same behaviour on another occasion. If it is unstable, the outcome is likely to be different on another occasion. Thirdly, the cause of the success or failure may be either controllable or uncontrollable. A controllable factor is

one which we believe we ourselves can alter if we wish to do so. An uncontrollable factor is one that we do not believe we can easily alter.

An important assumption of attribution theory is that people will interpret their environment in such a way as to maintain a positive self-image. That is, they will attribute their successes or failures to factors that will enable them to feel as good as possible about themselves. In general, this means that when learners fail to succeed at an academic task, they are likely to want to attribute their failure to factors over which they have no control, such as bad teaching or bad luck. The basic principle of attribution theory as it applies to motivation is that a person's own perceptions or attributions for success or failure determine the amount of effort the person will expend on that activity in the future. There are four factors related to attribution theory that influence motivation in education: ability, task difficulty, effort, and luck. On the basis of this theory the study suggest that pupil's academic performance is determined by the nature of schools.



2.8.2 Family Education Background and Socio-Economic Status

These two are lumped together because they are related and one may rightly say that they are married and hence should not be 'divorced'. Kerlinger (1973) said that social class or status could be defined more objectively by using such indices as occupation, income and education. It is assumed that the society is divided into different strata based on the possession of social and economic amenities. The stratum which an individual occupies in this socio-economic stratification represents his social class. Status based on socio-economic factors represents one of the major systems of stratification.

Social stratification arises out of the recognition that in all societies, people are ranked or evaluated at a number of levels. Social class is common to most societies, ancient or modern. Following the idea of Maxweber, socio-economic status is usually determined by wealth, power and prestige. Generally, when comparing and evaluating people we rank those who are wealthy in terms of material possessions, type and size of house, area of relevance and number of cars, quality of clothes etc.

Wealth is strongly correlated with education and occupation and when socio-economic status is measured these other factors are usually included. Hence in any society, there is social stratification that is the organisation of society in hierarchical order which deals with inequality in society in terms of services, obligations, power and prestige (Jeynes, 2001). Above and beyond the other demographic factors, the effects of socio-economic status (SES) are still prevalent at the individual level (Capraro & Wiggins, 2000). The SES can be deliberated in a number of different ways; it is most often calculated by looking at parental education, sector, leadership; job losses, occupation, income and facilities used by individuals separately or collectively. Parental education and family SES level have positive correlations with the student's quality of achievement (Caldas & Bankston, 1997; Jeynes, 2002). The students with high level of SES perform better than the students with low level of SES (Garzon, 2006; Kirkup, 2008).

The achievement of students is negatively correlated with the low SES level of parents because it hinders the individual in gaining access to sources and resources of learning (Duke, 2000; Eamon, 2005). Low SES level strongly affects the achievement of students, dragging them down to a lower level (Sander, 2001). This effect is most visible at the post-secondary level (Trusty, 2000). It is also observed that the

economically disadvantaged parents are less able to afford the cost of education of their children at higher levels and consequently they do not work at their fullest potential (Rouse & Barrow, 2006). Krashen (2005) concluded that, students whose parents are educated score higher on standardised tests than those whose parents were not educated. Educated parents can better communicate with their children regarding the school work, activities and the information being taught at school. They can better assist their children in their work and participation at school (Fantuzzo & Tighe, 2000).

2.8.3 Family background and poor academic performance of the child

The family is the primary socialising agent of which a child is a member since it is in the family the child is born. One may rightly say that the family is the informal socialising agent since all its members are blood relations. At this junction, it must be clearly known that families differ vastly in (European Journal of Social Sciences – Volume 13, Number 2 (2010)) terms of their significance in social order as some have more prestige, dignity, money and power than others. However, despite these differences in families, a child in the family remains exactly alike for the following reasons:

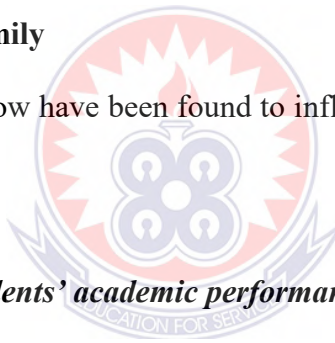
1. The people surrounding the child here are generally adults full of experience
2. The child lives his early life in the family and equally develops his first language.
3. Since they are of the same blood, they all work together to mould him in a way that he will perfectly fit into the society.
4. For the same reasons given above they will not intentionally misdirect him.

5. There is free interaction among the family members which promotes better understanding.
6. There is imposition of the social norm on the child through punishment and praises.
7. A child in the family is having his primary exposure to the world and hence he is totally guided by the adults in his family most especially the parents.
8. Finally, a child in the family is immune to all the social ills in the society under normal conditions or in an ideal situation.

2.8.4 Factors affecting the child's academic performance and socialisation

process in the family

The factors discussed below have been found to influence learning at home and in the school.



Types of Family and students' academic performance

The major types of family are nuclear or monogamous, compound or polygamous and traditional or extended families. Studies performed by people proved that each type has its influence on the academic achievement of a child. Many research studies have indicated that children from nuclear families perform better in school than children from the compound or polygamous families (Ajala & Iyiola, 1988). The following reasons are responsible for this:

1. The children have more time for their studies in most cases because there are less people to send them on errands. The reverse is the case in a polygamous family.

2. Children from polygamous and broken homes have tendency to be social deviants due to lack of adequate supervision and care.
3. Since there are more people in a polygamous family, they exert a lot of pressure or influence on the child. If it happens that a lot of such influences are bad then this will adversely affect the child (Ajala & Iyiola, 1988).

Family size and position in the family

Family size refers to the number of children in the reference family. The larger the family the less the attention and devotion to each child by the parents and the more the difficulties encountered by the parents in meeting the needs of the children both physically and emotionally particularly in this austerity period when the prices of food and commodities are high.

The position a child occupies in a family equally plays a significant role in his development and academic achievement. Generally, the first child enjoys most particularly among the middle class and the 'rich'. The parents are excited and determined to give him all he needs. They are generally overprotected and have tendency to become spoilt due to the type of family they come from. Due to some of the facts stated above, some of them that are undetermined hence achieve low academic excellence. In few cases, particularly among the 'poor', they labour seriously to achieve academic excellence and hence pave way for those behind them. The last born are generally 'rotten' in that they (European Journal of Social Sciences – Volume 13, Number 2 (2010)) are adequately provided for not only by their parents but equally by their brothers and sisters. The mere fact that their brother is a lawyer and their sister is a doctor; blindfold them to the extent that they themselves will not

work hard. In other words, they are relaxed by their elders' achievements. However, there are exceptional cases to this.

Types of Discipline at Home

Research works have shown that nature of parental discipline affect academic output of children (Aremu, 2000). Parents in their bid to discipline their children have been found to be authoritative, democratic or permissive. Children whose parents are authoritative more than not, live in constant fear of such parents and may most likely transfer such a fear to significant others in the school environment. Such children have low self-worth, insecurity and may find it difficult to consult with teachers. Aremu and Oluwole (2000) found that the degree of self-efficacy and anxiety manifest by learners determine their academic performance.

On the other hand, children from permissive homes are too complacent, unmotivated and lack personal will to succeed. The democratic style of parenting has been found to be very helpful to teaching-learning situation. Here, children receive punishment that is commensurate with the offence committed. Such children are strong willed and ready for success. Aremu (2000) observed from a study that undergraduates that receive democratic type of parenting perform better than their counterparts from autocratic homes.

In Nigeria the pupil's home upbringing tends to affect their attitudes to authority. It is one of co-operation and passive submission. Children seem to have a natural tendency to explore, find out and collect objects. According to Lawis and Eddy (1967) in Inbina (2012), too much restriction can have a lasting effect on the learner to the extent that he becomes afraid to experiment and explore in chemistry and later in life when encouraged to find out for himself or make individual contribution he may be too

inhibited to do so. Kahl (1961) in Inbina (2012) has shown that parental attitudes were more important in predicting aspiration of pupils towards continuing their schooling and successes in school than status. Parents should not expect too little or too much from their children. Too much pressure can lead to failure and dislike of chemistry. Critical remarks can encourage lukewarm attitude towards chemistry. They should therefore discuss the progress of their children with the teachers so as to assist the learners in their areas of difficulty (Inbina, 2012).

Attitude towards class attendance and academic performance

Interest in schooling as Hanushek (1996) held, comes from a policy perspective which depends on several sources; schooling is perceived as an important determinant of individual productivity and learning. Thus, schooling is considered as an instrument for affecting both the national economy and the individual income and earnings. And hence schooling may be considered as an important tool for economic growth of the nation along with functioning of democratic norms which justify for an important component of public investment.

However, student attendance in this context also is a major concern to the educators. Brauer held the view that absence on the part of the student “creates a dead, tiresome, unpleasant classroom environment that is uncomfortable and irritates the professor (teacher)” (Bandaglesh e-Journal of Sociology, Volume 7, Number 2. July 2010). Therefore, good attendance and prompt arrival to school and or in class is expected to achieve the aims and objectives as mentioned above. Poor attendance not only hinders academic achievements but also promotes a poorly educated society and thus leads to many negative social issues. Some educational experts argue that students who have not acquired an association between academics and life experiences do not feel that

good school attendance is relevant to their future (Hanushek, 1996). Students with high self-efficacy seem to be more successful in maintaining consistent attendance (Hanushek, 1996). A domino effect results which starts with poor attendance, proceeds to low achievement, increases the dropout rate, and amplifies a host of social problems.



CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Overview

This chapter of the study provides the methodology of the study. It captures areas such as research design, population, sample and sampling technique, instrumentation, validity and reliability of data instrument, data collection procedure, data analysis and ethical considerations.

3.1 Research Design

This study employed the non-experimental design in the form of descriptive research which involved the use of questionnaires and examination of records. This enabled the researcher to find out existing situation or phenomenon, likely causes and differences in the status or behaviour of individuals. The descriptive design describes and interprets the descriptive sample study. It is concerned with condition or relationships that exist, opinions that are held, processes that are going on, effects that are evident, or trends that are developing. It allowed the researcher to obtain the opinion of the representative sample of the target population in order to infer the perception of the entire population.

This method was used since the study aimed at investigating the problems confronting academic performance of SHS students in Chemistry in the Akatsi South District. Furthermore, the descriptive design is the most convenient and reliable research design for such a study. In the view of the researcher, it also offered respondents the opportunity to freely express their opinions. The method (design) is indicative of prevailing conditions.

3.2 Population

David (2004) defined population as the sum aggregate of totality of the phenomena of interest to the researcher. He further states that, population is the entire group of people, objects, animals, institutions establishment which the researcher intends to study. The target population for study consisted of all students offering Chemistry in SHS in the Akatsi South District, as well as their teachers which comprises mainly of 267 students and four teachers.

3.3 Sample and Sampling Techniques

As explained by Dampson (2010) a sample denotes a small and representative proportion of the population. Sampling enables the researcher to study a relatively small number of units in place of the target population and to obtain data that is representative of the whole population. Cohen, Manion and Morrison (2004) suggest that a sample size of thirty is held by many to be the maximum number of cases if researchers plan to use some form of qualitative analysis on their data. However, the writer cautions that the size of the sample would depend on the relationship researchers want to explore within the sub-groups of the entire sample.

The two public SHS in the district were selected. The sample size of respondents was four (4) teachers and one hundred and thirty-one (131) students. Combinations of stratified and simple random sampling methods were used for selecting the participants for the study. Simple random sampling technique which provides participants with equal opportunity to be randomly selected was used to select the students. Numbers 1 – 3 were written on pieces of paper including blank papers for the students in each of the combined (Form 1, Form 2 and Form 3) classes in each school to pick. All those who picked the number '1' formed part of the sample.

Random sampling was used in order for the sample method to be free from preconception and unfairness (Sidhu, 2002). All the Chemistry teachers in the schools were purposively selected for the study since they were not many.

3.4 Instrumentation

WASSCE results of 2020 of the two schools in Chemistry were collected. Questionnaires were also employed as the additional data collection tool. A questionnaire is a tool of data collection which consists of a number of questions printed or not in definite order on a form or set of forms (Eamon, 2007). It is a technique of data collection in which the respondent completes it at his/her convenience. This technique enables the researcher to collect a lot of information over a short period of time. It is also suitable for large populations and information collected are easily described in writing. The questionnaires consisted of both open ended and closed ended questions.

Questionnaire for students was to assess school factors that affect students' performance in Chemistry and also to investigate the effect of socio-economic status of parents on students' academic performance. Thus, it had three Sections where Section A collects data on the student's background characteristics, Section B collected data on the school factors that affect academic performance and Section C was for data on family education background and Socio-Economic Status of the student's parents or guardian. The teachers' Questionnaire was to assess school factors that affect the teaching of Chemistry in both schools as this plays a major role in student's performance. It had two Sections; Section A collected data on teacher's Background Characteristics whiles Section B was on School Factors that affect academic performance of Students.

3.5 Validity and Reliability of Instruments

Essien (2004) define validity as the accuracy and meaningfulness of inferences, which are based on research results. Validity is assessed depending on the purpose, population and environmental characteristics in which measurement takes place (Macmillan and Schumaker 2001). Reliability is the measure of the degree to which research instrument yield consistence results or data after repeated trials (Mugenda and Mugenda 2003). That is how consistent the scores are for each individual from one administration of an instrument to another and one item to another. To ensure validity and reliability, the instruments was reviewed under the guidance of the supervisor to check for language, clarity, relevance, and comprehensiveness of the content.

Orodho (2005) recommends that questionnaires be pre-tested in schools outside the considered sample to establish whether the questions are measuring what they are intended, whether wording is clear, whether the questions are ambiguous and whether the questions provoke response. The research instruments were pretested with a selected sample identical to the actual sample to be used. The pre-test data was collected through personal contact, which familiarized the researcher with problems likely to be encountered in the field during the main study. The results collected from the pre-testing indicated that the data collection instruments are valid. The aim of this review is to check effectiveness of the instruments in tapping the required information for the study. Necessary modification based on findings from the review were be made. The questionnaires were then distributed to the respondents. Cronbach co efficient alpha was used to establish the reliability of 0.79.

3.6 Data Collection Procedure

A letter of introduction was obtained from the Department of Educational Foundations, University of Education, Winneba. The letter spelt out the purpose of the study, the need for individual participation, anonymity as well as confidentiality of respondents' response. The necessary contact was established with the headteachers of the selected schools and with their permission, the instruments were administered to sampled students and teachers. The purpose of the study and procedure for responding to the questionnaire were explained to respondents. The questionnaires were administered personally during normal school time in order to ensure clarity of the process. This was to ensure that, students and teachers cooperate and participate and helped greatly in obtaining the required information. The researcher used 15 days to collect data from the respondents.

3.7 Data Analysis

Quantitative analysis was used in the study. To allow for quantitative analysis, data was first converted into numerical codes representing measurements of variables. The collected data were analysed quantitatively using frequencies and percentages. Level of performance by the two schools in the 2020 WASSCE was analysed. School factors that affect academic performance including student-teacher relationship, teacher's attitude to teaching, learning environment, teachers' teaching method, availability of teaching and learning resources were also analysed. Finally, the effects of socio-economic status of parents on academic performance was investigated mainly considering economic background of the students' parents as well as educational background, type and size of family, type of discipline at home, level of absenteeism and its cause.

3.8 Ethical Considerations

According to Given (2008) ethics in research which is currently often associated only with the relationship of the researchers to those they study, is an integral aspect of all decision making in research, from problem formulation to presentation of result. Due to this essential element, it is very important that the researcher does critical analysis and identify the various ethical issues that would arise in the conduct of the research and address them appropriately. An introductory letter which introduced the researcher to both schools was obtained and used to seek permission to conduct the research in the selected area. Conscious efforts were made by the researcher to ensure that, the privacy of the respondents in the research was totally guarded and the enough freedom and respect was given to the respondents. Confidentiality was guaranteed as identifiable codes were used instead of respondent's names. Respondents were made to understand, into details that, the purpose of the study was purely academics in order to pave the way for the researcher to do his work. The researcher disclosed his identity to the respondents and was not judgmental or complacent. Respondents were by no means inconvenienced since participation was voluntary.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF FINDINGS

4.0 Overview

This chapter presents the procedure and analysis of data collected through questionnaires. Also, discussions on the findings of the research which seek to answer the research questions and objectives are contained in here.

4.1 Background Characteristics of Respondents

This section presents the demographic characteristics of the teachers and students used for the study. This information is necessary as it has a strong influence on teaching and learning which in turn affects students' performance. The respondents were required to indicate their sex and age range.

4.1.1 Background Characteristics of teachers

The total number of Chemistry teachers in both schools was four. Gender imbalance was observed with number of Chemistry teachers in the schools who are all respondents, three of those four teachers (representing 75%) being males and one being (25%) females. Males clearly dominated teachers' population in the study area. This shows a clear gender imbalance in favour of male teachers when it comes to the teaching and learning of chemistry in the SHS in the Akatsi District of the Volta Region. Teaching is both an art and a science. Hence the academic and professional training for the acquisition of both the art and science of teaching by teachers is very crucial for effective and efficient teaching. The discussion of findings from the analysis of the data collected on the academic and professional qualification of the respondent teachers is of paramount importance in this study.

All teacher respondents in the study area have a minimum of a first-degree qualifications and out of the four teacher respondents, only two (50%) are professionally trained. The remaining two non- professional teachers would have to go for training because the rules and regulations of Ghana National Association of Teachers (GNAT, 2008) stipulates that, all teachers in GES should have an adequate professional and minimum standard for admission to the professional grade should be Teachers' Certificate 'A'. This deficiency is likely to negatively affect the students' performance in Chemistry. This is because both academic and professional training have great influence on teaching and assessment of students' behaviour, attitudes and values towards achieving standard academic performance. In support of this, Aggarwal (2001) stresses that scholarship and professional training are the first two essential requirements for teachers to effectively teach students and to bring the right attitudinal changes among students in relation to improving their academic performance effectively their professional responsibility of teaching. This is in support of Rivkin, Hanushek and Kain (2005) who wrote that, beginning teachers are not as effective as teachers with more years of teaching experience.

Table 4.1 Working Experience of Teachers

Years of work experience	School frequency	Percentage (%)
Less than 5 years	1	25
6 – 10 years	3	75
11 – 15 years	0	0
16 – 20 years	0	0
21 years and above	0	0
Total	4	100

Source: Field Survey 2021.

4.1.2 Background Characteristics of students

Male and female students constituted the study respondent. The 131 student's respondents selected consisted of 72 males (55%) and 59 females (40%). The gender imbalance was also observed with number students studying Chemistry in the SHS in the Akatsi District. Males clearly dominated the students' population in the study area. This shows a clear gender imbalance in favour of male students. Students in the study area comprised of Form 1, Form 2 as well as Form 3 students and majority of them (60%) were in the 15-18 years age group. This was followed by students above the age of 18 years representing 27% whereas those below the age of 15 years made up the smallest group, representing 13%. This indicates that the majority of the respondents were matured and provided relatively accurate responses.

4.2 Major Findings

The main objective of the research is to analyse the performance rate of SHS students in Chemistry in the Akatsi South District, assess school factors that affect students' performance and investigate the effect of socio-economic status of parents on students' academic performance. The school factors assessed involve findings on the teaching methodologies employed by teachers, adequacy of teaching periods, availabilities of teaching and learning materials and the teaching and learning environments in and outside the school. Socio-economic status of parents was determined through findings on their occupation, educational background, family size, type of discipline at home, level of absenteeism of student and its causes.

4.2.1 Findings on WASSCE results in Chemistry

Table 4.2: Analysis of 2020 Chemistry WASSCE results for one of the SHS in Akatsi south district

Grade	Boys	%	Girls	%	Total	%
A1-B3	8	72.7	3	27.3	11	11.5
C4-C6	22	71.0	9	29.0	31	32.3
D7-F9	32	59.3	22	40.7	54	56.3
Total	62	0	34	0	96	100

Research question one sought to establish the level of performance of the students in the Akatsi South District based on the 2020 WASSCE results released by West African Examination Council (WAEC). The researcher had access to the analysis of the results from the two SHS in the district and the performance of students in the Chemistry subject at the WASSCE level was not an encouraging one in the Akatsi South District and this has been a major worry for the teachers and the Heads of the Science departments. A total of 117 candidates' results were analysed (21 candidates from one school and 96 from the other).

For one of the schools, only twenty-one (21) Agricultural Science students were presented for the 2020 WASSCE and they recorded 100% failure as all the 21 students had F9. The teacher mentioned that, there were many contributing factors for the mass failure. For example, the school was a new school and its Chemistry laboratory was not equipped until these students were in the third year and in addition the students had very poor academic backgrounds as they scored very poor grades in Junior High School. The second school however presented a total of 96 candidates of which 62 were boys and 34 were girls. Out of this, 12% i.e., 11 candidates comprising 8 boys and 3 girls obtained grade A1-B3, 32% i.e., 31 candidates comprising 22 boys and 9 girls obtained grades C4-C6 and the remaining 56% i.e., 54 students made up of 32 boys and 22 girls obtained grades D7-F9.

Since the required grade in Chemistry for one to be able to enter any tertiary institution is C6, it therefore means that only 42 of the 121 candidates presented by the districts qualify to continue their education in the tertiary level. It is also evident that, boys perform better in Chemistry than girls in the study area (Table 4.2). This is similar to a study conducted by Danquah (2000) which reported that boys performed better in WASSCE than girls in the area of Science and Mathematics. The Heads of the Science Departments of both schools admitted that the Chemistry syllabus is very broad and thus requires careful use of appropriate strategies of teaching the subject, effective use of the limited TLMs and instructional time. Figure 4.1 summarizes performance of students in Chemistry in the district of interest in 2020.

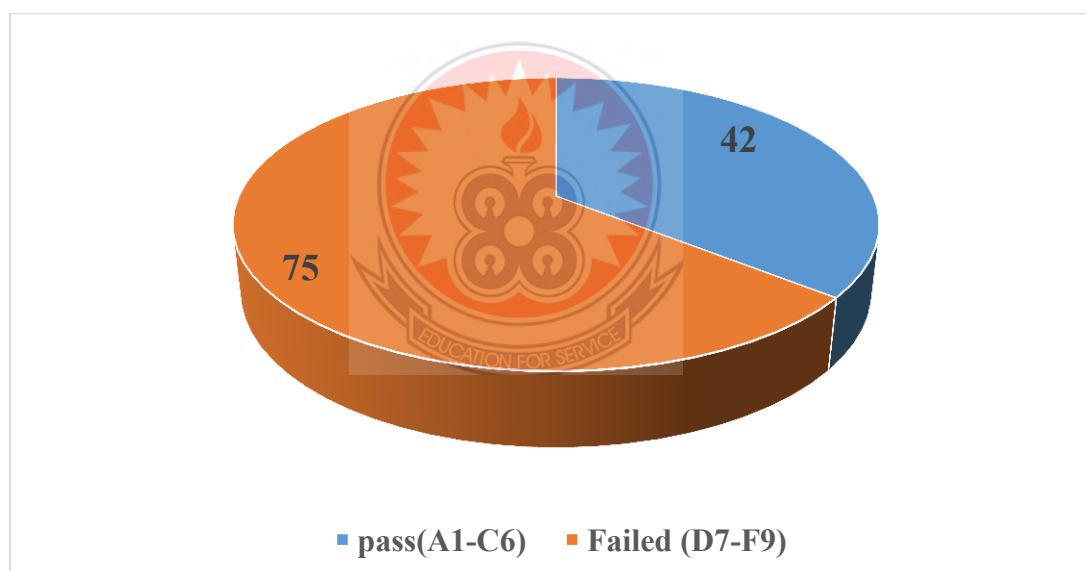


Figure 4.1: Analysis of 2020 Chemistry WASSCE results for Akatsi South district.

4.2.2 Findings on School factors that affect performance

Research question two: What are the school factors affecting students' academic performance in the Akatsi South District? Information or data relating to this research question was gathered from student and teacher respondents. Identification of the processes involved in the teaching of Chemistry in the schools was based and discussed on the following pointers:

- ✓ the teaching and learning environments in the school
- ✓ teaching methodologies employed by teachers
- ✓ adequacy of teaching periods
- ✓ availability of teaching and learning materials

The teaching and learning environments in and outside the school

Data collected with questionnaire as well as observation was used for this pointer. Most of the students (63%) strongly agreed that their Chemistry teacher relates with them friendly and is available to help with extra tutoring. Of the remaining 37%, 23% agreed to the same thing and only 14% disagreed with the above statement. It can be inferred from Figure 4.2 below that, the four teachers in the two SHS in the district of interest were easily approachable.

This plays a vital role is the creation of a positive and a conducive atmosphere for learning. Some of the students and teachers however mentioned that, the teaching and learning atmosphere in and outside the school could be further improved if the teachers were leaving close to the school. This would enable them to interact better with the students and their parents but this is a challenge since one of the schools in the district is a community day school without boarding facilities as well as accommodation for teachers. The second school, despite having boarding facilities, lacks accommodation for teachers. Lappen and Theule-Lublenski (1994) cited in Ayaaba (2006) contend that when teachers are in the classroom, it is their attitude and beliefs that take centre stage in what is taught and passed on to student students. In similar vein, Cohen, McLaughlin and Talbert, (1993) opine that the attitudes teachers come to with will have an impact on what students learn.

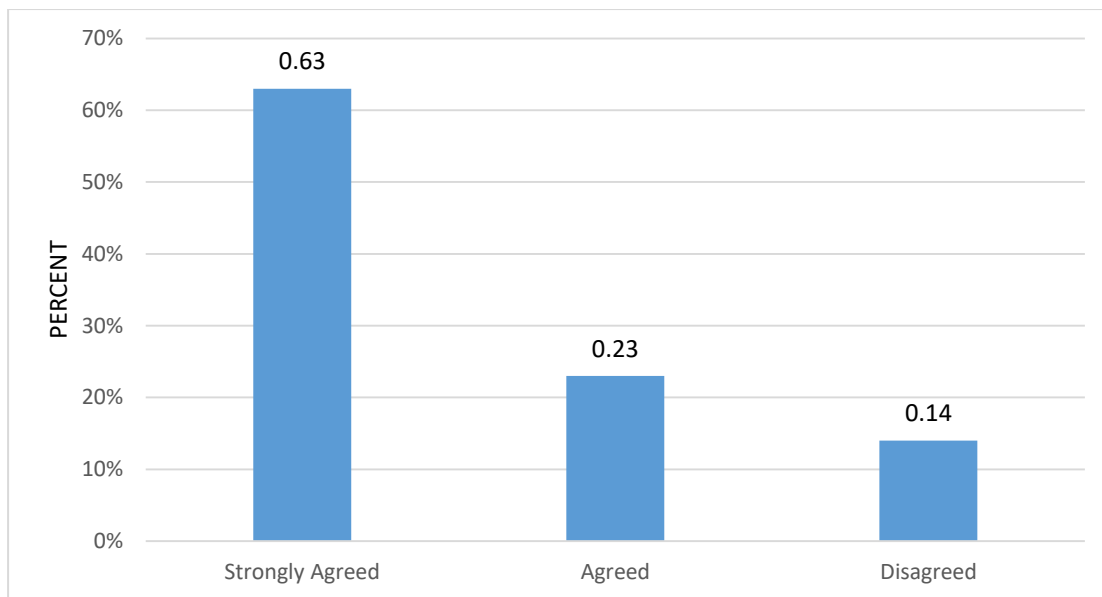


Figure 4.2: Students' response to friendliness of their Chemistry teacher

One of the schools, being one of the newly established E-block (Community Day schools) had classrooms and furniture such as table and chairs in abundance. Some were not even in use and they had very small class sizes. The same thing could not however be said for the second school as they had limited no. of classrooms, large class sizes and student had to sometimes carry tables and chairs from one class to the other. This tends to stress students and consequently reduce their attention span. Teachers are not exempted from the negative impacts of large classes either as it reflects in how often they assess students and give feedback.

Batchford, Russell, Bassett, Brown, and Martin (2006) state that the importance teachers attach to an individual as a basis for effective teaching suffers in large classes. They stressed that smaller class students are more likely to get focus and attention than students in a large class. They again observe that large class size lowers the quality of teaching and learning because it is not easy for teachers to spot problems and give feedback, identify specific needs and gear teaching to meet them, set individual targets and be more flexible and adventurous in the use of different

styles of teaching. Again, in lamenting about large class size Anderson (2000) writes that in a large class, there is limited amount of time spent on each student during instructions.

Teaching methodologies employed by teachers

Quality of teaching and the ability or competency of the teacher to achieve the set objectives is predominantly dependent on teacher's knowledge of the subject matter; teacher's preparedness; and the teacher's teaching methods and techniques. It is important to note that, one cannot discuss teaching methodologies without mentioning teacher's knowledge of the subject matter and teacher's preparedness for the class. This is because, good knowledge in the subject matter ensures mastery and control over the topics in the syllabus resulting in an effective and efficient teaching. Additionally, a teacher with mastery in the content knowledge is more likely to vary the teaching methods and solve a wide range of students' questions. Such a teacher is also able to effectively manage the classroom.

Wenglinsky (2000) states that what teachers know have a direct impact on the quality of students' learning. This is corroborated by Muijs and Reynolds (2000) cited in Toh (2006). Toh (2006) further refers to Usiskin (2001) stating that in order to teach well, a teacher must know a great deal of the subject in addition to having a thorough mastery of the content knowledge of the material in the existing curriculum. He stresses that, teachers need to know more content knowledge than their students. Their knowledge includes generalisation and extension from what is required in the syllabus.

To continue with, teachers who prepare well and plan their lessons adequately tend to improve on the quality of teaching and are more likely to have a better understanding and control of the topic before they come to class. Also, they will be in a better position to identify and gather relevant teaching and learning materials needed to enhance the delivery of the lesson. Again, such a teacher will be able to appropriately choose methods and techniques to suit each objective and practice or rehearse well before going to class. Finally, a prepared teacher is able to predict possible questions students may ask and prepare adequately towards them before going to class and hence not feel threatened by questions posed by students.

Of the 131 student's respondents selected for the study, only 13% strongly agree that their Chemistry teacher always comes to class and on time. Another 20% agree to the same thing while 63% disagree the above statement and the remaining 4% strongly disagree. It can therefore be inferred that, most of the Chemistry teachers in the Akatsi South District are not punctual and regular. Of the 131 samples students, 91% strongly agree and the remainder also agree that their teachers ask questions when teaching and allows them to also ask questions or make contributions when teaching in class. None of them disagreed to these. According to data collected from teacher respondents, all four teachers said they have methods they employ in teaching Chemistry, some of which include lectures, discussion and brainstorming, but all four of them said they prefer the lecture and brainstorming methods because it saves time as they have a lot to cover in a limited time.

Striking differences were however noted between the two schools when it came to teachers' ability to pay attention to the needs of individuals, assess students and give feedbacks. It was not surprising that all the students in the school with the small class

sizes strongly agreed that their teacher pays attention to their individual needs, always gives exercises to check their understanding of what is taught and give prompt feedbacks. In contrast, 94% of the students of the second school, where the class sizes are large strongly disagree that their teacher pays attention to their individual needs, always gives exercises to check their understanding of what is taught and give prompt feedbacks. The remaining 6% also agree with them.

Adequacy of teaching periods

Allotted periods (4 hours a week) on the time table seemed inadequate for Chemistry lessons. According to all the student and teacher responds, no special period is allocated for practical. Thus, practical sessions must also fall within the 4 periods allocated for Chemistry weekly. All the four teachers in the study area said in their opinion, the main factor that hinder students' success in Chemistry is that the period allocated to the study of Chemistry is too small taking into consideration the knowledge content to be covered. 97% of the total student respondents also agreed to the above statement.

Availability of teaching and learning materials

According to the data collected, both schools have laboratories and the school makes money available for the purchase of learning materials. All four teachers however gave inadequate laboratory resources and inadequate provision of teaching and learning materials as the main factors that hinder students' success. The deduction from this is that, though the laboratories exist, they are not well equipped and some reagents are not made available for practical sessions. 33% of the students gave non-existent of teaching and learning materials in the classrooms as one of the factors hindering their success. All the students of the community day school claimed that,

the absence of a well-stocked library is the number one factor causing the massive failure in Chemistry in the school.

Research question three: What are the Socio-economic factors affecting students' academic performance in the Akatsi South District? Information or data relating to this research question was gathered from student respondents. Identification of the Socio-economic factors affecting students' performance in Chemistry in the Akatsi South District was based and discussed on the following themes:

- ✓ educational background of parents
- ✓ family size and type of discipline at home
- ✓ level of absenteeism of student and its causes

Educational background

Thirty-four (34) students representing 26% of the respondents revealed socio-economic factors such as educational background of parents, financial problems etc. are some of the factors that hinder students' performance. Further data collected on Educational Background of family and socio-economic status revealed most (74%) of the students had parents that were either uneducated or only ended at Junior High School and for that matter, they were not motivated or encouraged to take their wards' schooling seriously and because of that some students had to provide their own school needs. Data revealed that 56% of the student respondents had parents or guardians who could not adequately provide their basic and school needs.

Family size and type of discipline at home

58% of the students lived homes made up of parents and extended family members. Many research studies have indicated that children from nuclear families perform

better in school than children from the compound or polygamous families (Ajala & Iyiola, 1988). This is because the children have more time for their studies in most cases because there are less people to send them on errands. The reverse is the case in a polygamous family. Only 24% said their parents were strict. According to Lawis and Eddy (1967) in Inbina (2012), too much restriction can have a lasting effect on the learner to the extent that he becomes afraid to experiment and explore in chemistry and later in life when encouraged to find out for himself or make individual contribution he may be too inhibited to do so.

Level of absenteeism of student and its causes

With regards to those who go to school every day, only 47% of the student respondents either strongly agreed or agreed. This implies that, majority of the students are not regular in school. Dominant among the reasons why they absent themselves from school was the fact that they skip school for menial jobs in order to raise money for their needs. Other reasons included sickness and the need to skip school to look after younger ones in order for their parents to go and work. This in turn affects their academic performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Overview

Chapter Five is the summary of the findings, conclusions and recommendations. This chapter summarizes the findings of the study and makes conclusions and recommendations based on the findings of the study.

5.1 Summary of Findings

The performance of students in the Chemistry subject at the WASSCE level is not an encouraging one in the Akatsi South District. The research identified that the teaching and learning environments in and outside the schools were conducive for the learning of Chemistry except for one school which had large class sizes. Additionally, the schools had Chemistry teachers who were well qualified and have adequate experience to teach Chemistry. The study discovered that, limitation of teaching methods to Lecture, Discussion and Brainstorming only hence not meeting the diverse needs, abilities, backgrounds and learning styles of students is one of the paramount factors contributing to poor performance in the schools. It also emerged from the study that the Chemistry syllabus, including the practical sessions, was too broad and cannot be covered within the three years' time. This coupled with failure of Chemistry teachers to be punctual and regular leads to the teacher's inability to cover the syllabus hinder the performance of students in the subject.

The study also revealed that, though all the schools have Chemistry laboratories, they are not well equipped, thus inadequate laboratory resources and inadequate provision of teaching and learning materials also emerged as one of the main factors that hinder students' success in Chemistry. The state of the libraries in the schools are not any

different from that of the laboratories i.e., though they exist, they are not well-stocked. Government approved textbook for teaching and learning were inadequate in both schools. This is also a major contributing factor to the poor performance of students in Chemistry especially those students who do not have the means to purchase their own textbooks.

With regards to socio-economic factors affecting performance of students in the Akatsi South District, the study revealed that, low educational background of parents and financial problems are in the lead. Most of the students' parents were either uneducated or only ended at Junior High School and for that matter, they were not motivated or encouraged to take their wards' schooling seriously and because of that some students had to provide their own school needs. Furthermore, more than half of the student had parents or guardians who could not adequately provide their basic and school needs even if they wanted to resulting in students absenting themselves from school in order to do menial jobs to raise money for their needs. Finally, more than half of the students live in large family homes made of nuclear and extended family members. This is also a contributing factor to the poor performance as there will be more people to send them on errands and they will have less time for their studies.

5.2 Conclusion

In conclusion, the performance of students in Chemistry in the Akatsi South District is very poor. The factors responsible for this include school factors such as limitation of teaching methods to Lecture, Discussion and Brainstorming hence the inability to meet the diverse needs, abilities, backgrounds and learning styles of students; the Chemistry syllabus being too broad for the three years duration coupled with failure of Chemistry teachers to be punctual and regular leading to the inability to cover the

syllabus; inadequate laboratory resources, library resources as well as teaching and learning materials. In addition to the school factors, some socio-economic factors were also evaluated and inclusive are low educational background of parents and financial problems hence the lack of motivation or inability to provide their wards' school needs adequately which has caused absenteeism from school to be on the rise in the district; also, most of the students live in large family homes made of nuclear and extended family members, there will be more people to send them on errands and they will have less time for their studies.

5.3 Recommendations

1. To improve performance of students in Chemistry in WASSCE, the Ministry of Education, Ghana Education Service and importantly, the Senior High Schools should design systems that will provide and accurately utilize school facilities and teaching and learning materials as well as supervise teachers to ensure that the most appropriate strategies of teaching are adopted to teach under friendly environment in order to achieve success in the Chemistry.
2. Chemistry teachers must employ the proven strategies appropriate for the teaching of the subject to ensure that their abilities, background, competences and learning differences are all taken care of in order for the schools to fully achieve high quality teaching and learning of the subject.
3. Scholarships should be given to needy but brilliant students and the Parents Teacher Association (PTA) as well as other stakeholders should educate parents on the need to provide all of the child's basic and school needs, disadvantages of absenteeism and also importance of making time for the child to learn at home.

5.4 Areas for Further Research

1. WASSCE results in Chemistry for years preceding 2020 should also be analysed to ascertain whether the poor performance has always been the trend.
2. A qualitative study should be carried to determine the effect of changes in school factors studied on the performance of students in Chemistry as a subject.



REFERENCES

- Adell, M. A. (2002). *Strategies for improving performance in adolescents*. Madrid: Piramide.
- Adeyemo, D. A. (2005). *Parental Involvement Interest in Schooling and School Environment as predictors of Academic Self-efficacy among fresh Secondary School Student in Oyo State*. Unpublished thesis.
- Aggarwal, J. C. (2001). *Teaching of social studies. A practical approach*. New Delhi: Vikas Publishing House.
- Agyemang, D. K. (1993). *Sociology of education for African students*. Accra: Black Mask Ltd.
- Ajala and Iyiola (1988/ *Adolescence Psychology for teachers: Oyo: Abodurin Rogba Publishers*.
- Anderson, L.W. (2000). Why should reduced class size lead to increased achievement?
- Ankomah, Y., Koomson, J., Bosu, R. & Oduro, G. K. T. (2005). *Implementing quality education in low income countries*. Cape Coast. Retrieved on February, 16, 2009 from IIEP website: www.unesco.org/iiep.
- Aremu, A. O. (2000). *Academic performance 5 factor inventory*. Ibadan: Stirling-Horden Publishers.
- Aremu, O. A & Sokan, B. O. (2003/ *A multi-causal evaluation of academic performance of Nigerian learners: issues and implications for national development*. Unpublished thesis. Department of Guidance and Counselling, University of Ibadan, Ibadan.
- Aremu, S. & Oluwole, B. (2000). The Development and Validation and Academic Performance. 5 Factor Inventory: Manuscript. Department of Guidance and Counselling, University of Ibadan, Ibadan.
- Ayaaba, D.A. (2006). *Status of the teaching and learning of concepts in social studies in Teaching Training College in Ghana*. Unpublished M.Phil. Thesis UCC Ghana.
- Bakare, C.G.M. (1994/ *Mass failure in public examinations: some psychological perspectives. Monograph. Department of Guidance and Counselling, University of Ibadan, Ibadan*.

- Barnard, W. M. (2004). Parent involvement in elementary school and educational attainment. *Children and Youth Services Review*, 26, 39- 62.
- Batchford, P, Russell, A., Bassett, P., Brown, P., & Martin, C. (2006). *The effect of class size on the teaching of pupils aged 7-11 years*. Paper to American Educational Research Association Annual Meeting. San Francisco.
- Battle, J., & Lewis, M. (2002). The increasing significance of class: The relative effects of race and socioeconomic status on academic achievement. *Journal of Poverty*, 6(2), 21-35.
- Broh, B. A. (2002) Linking extracurricular programming to academic achievement: Who benefits and why? *Sociology of Education* 1 (2) 23-29.
- Caldas, S. J., & Bankston, C. L. (1997). The effect of school population socioeconomic status on individual student academic achievement. *Journal of Educational Research*, 90, 269-211.
- Capraro, M. M., Capraro, R. M., & Wiggins, B. B. (2000). *An investigation of the effect of gender, socioeconomic status, race and grades on standardized test scores*. Paper presented at the meeting of the Southwest Educational Research Association, Dallas, TX.
- Chambers, E. A., & Schreiber, J. B. (2004). Girls' academic achievement: Varying associations of extracurricular activities. *Gender and Education*, 16(3), 327-346.
- Cohen, D.K., McLaughlin, M.W., & Talbert, J.E. (Eds.) (1993) *Teaching for Understanding: Challenges for policies and practices*. San Francisco: Jossey-Bass.
- Dampson, D. G., & Dominic K. D. M. (2010). *Parental involvement in home work for children's academic success: A study in the cape coast municipality*. Cape Coast, Ghana Retrieved May, 21, 2010. From <http://www.academiconline.org>.
- Danquah, M. (2000). *Gender differences in Academic Achievement of Senior Secondary School students in Cape coast Municipality*. Unpublished. M. Phil Theses U.C.C., Ghana.
- Darkwa, D. (2009). *The essential middle school*. Accra: Perr Printers.
- Darling-Hammond, L., Gary, S. (2003). *Wanted: A National Manpower Policy for Education*. Denver.

- David, M. & Sutton, C. D. (2004). *Social Research the Basics*. London: Sage Publications.
- Duke, N. (2000). For the rich it's richer: Print environments and experiences offered to first-grade students in very low- and very high-SES school districts. *American Educational Research Journal*, 37(2), 456-457.
- Eamon, M. K. (2005). Social demographic, school, neighborhood and parenting influences on academic achievement of Latino young adolescents. *Journal of Youth and Adolescence*, 34(2), 163-175.
- Eitle, T. M. (2005). Do gender and race matter? Explaining the relationship between sports participation and achievement. *Sociological Spectrum*, 25(2), 177-195.
- Essien, E. E. (2004). *Selected determinants of teachers' instructional competence and academic performance in social studies in Cross River State*. Unpublished M.ed thesis, Faculty of Education, University of Calabar, Nigeria.
- Fantuzzo, J., & Tighe, E. (2000). A family involvement questionnaire. *Journal of Educational Psychology*, 92(2), 367-376.
- Farrant, J.S. (1989). *Principles and practices of Education* (5th Edition). London: Longman Publishing House Ltd.
- Furstenberg, F. F., & Hughes, M. E.(1995). Social capital and successful development among at-risk youth. *Journal of Marriage and the Family*, 57, 580-592.
- Garzon, G. (2006). Social and cultural foundations of American education. *Wikibooks*. Retrieved 5th February, 2014 from http://en.wikibooks.org/wiki/Social_and_Cultural_Foundations_of_American_Education/Chapter_10_Supplemental.
- http://pdonline.ascd.org/pd_online/whatworks/marzano2003_ch13.html
- In M.C. Wang & J.D. Finn (Eds.2002). *How small classes Help Teachers Do their Best*. Philadelphia'. Temple University Centre for Research in Human Development.
- Jeynes, W. H. (2002). Examining the effects of parental absence on the academic achievement of adolescents: The challenge of controlling for family income. *Journal of Family and Economic Issues*, 23(2), 56-65.

- Kerlinger, F. N. (1973). *Foundations of Behavioural Research Report*. New York: Holt, Riechart and Winston, Inc.
- Kirkup, J. (2008). Middle-class children resentful at being pushed to succeed. *Telegraph*. Retrieved 5th February, 2014 from <http://www.telegraph.co.uk/education/3330301/Middleclass>
- Marzano, R. J. (2003). *What works in schools: Translating research into action?* Retrieved 5th February, 2014 from
- McCoy, L. P. (2005). Effect of demographic and personal variables on achievement in eighth grade algebra. *Journal of Educational Research*, 98 (3), 131-135.
- McWilliam, H.O.A. & Kwamena-Poh, M.A. (1975). *The Development of Education in Ghana*. London: Longman.
- Ministry of Education, Science and Sport (2007) Curriculum Research and Development Division (CRDD), September, Accra, Ghana.
- Ministry of Education, Youth and sports. (2010). *White paper on the report of the Education Review Committee*. Accra: MOEYS.
- Mokgaetsi, S. R. (2009). Factors Contributing Towards Poor Performance of Grade 12 Learners at Manoshi and Mokwatedi High Schools. *Unpublished mini-dissertation*.
- Musaazi, J. C. S. (1985). *Theory and practice of educational administration*. Basingstoke: Macmillan Publishers Ltd.
- Ochieng, O. A., Hemed M. S. & Sebtuu M. N. (2019). *A Study of Performance in Chemistry among Lower Secondary Government Schools in Zanzibar*. International Journal of Education and Research Vol. 7 No. 2 February
- Oduro, A.D. (2000). *Basic education in Ghana in the post-reform period*: Centre for Policy Analysis (CEPA), Accra, Ghana.
- Otu, D. (2007). *Comparative study of academic performance of public and private J.S.S graduates: A case study of selected schools in the Kumasi Metropolis*. Unpublished Thesis.
- Rivkin, S.G., Hanushek, E. A. & Kain, J. F. (2005). Variable Definitions, Data, and Programs for 'Teachers, Students, and Academic Achievement',” *Econometrica Supplementary Material*, 73, 2. Retrieved 5th February, 2014 from www.econometricsociety.org/ecta/supmat/4139data.pdf

- Roberts, G. A. (2007). *The effect of extracurricular activity participation in the relationship between parent involvement and academic performance in a sample of third grade children*. Retrieved 5th February, 2014 from <https://www.lib.utexas.edu/etd/d/2007/robertsgl1186/robertsg11186.pdf>
- Sakyi, K.A. (2012). Curriculum reform of secondary education in Ghana – Part 4: retrieved 10th December, 2013 from <http://www.ghanaweb.com>.
- Sander, W. (2001). Chicago public schools and student achievement. *Urban Education*, 36(1), 27-38.
- Sangedighi, A. J. (1998). A glimpse of teacher commitment. *The Journal of Research in Curriculum Studies* 1 (1), 65-73.
- Siaw, A. (2009). *Modern approaches to research in educational administration*. Kumasi: Payless Publication Limited.
- Toh, T.L. (2006). A survey on the teaching of relative velocity and pupils' learning difficulties Asia-Pacific on Forum on Science Learning and Teaching. Vol.7 Issue 2, Article 8 (Dec., towards Mathematics and achievement in Mathematics. *American Journal of Education*, 110, 256-280.
- Trusty, J. (2000). High educational expectations and low achievement: Stability of educational goals across adolescence. *Journal of Educational Research*, 93, 356-366.
- Tsinidou, M., Gerogiannis, V., & Fitsilis, P. (2010). Evaluation of the factors that determine quality in higher education: An empirical study. *Quality Assurance in Education*, 18 (3), 227-244.
- Walberg, H. J. (1981). A psychological theory of educational productivity. In F. H. Farley & N. U. Gordon (Eds.), *Psychology and education*. Berkeley, CA: McCutchan.
- Weiner, B. (2000). Intrapersonal and interpersonal theories of motivation from an attributional perspective. *Educational Psychology Review*, 12(1), 1-14.

APPENDIX A

QUESTIONNAIRE FOR STUDENTS UNIVERSITY OF EDUCATION, WINNEBA DEPARTMENT OF EDUCATIONAL FOUNDATIONS

Dear Student,

This questionnaire is meant to collect data for a study being conducted by Bernice Tali, a student from the above-named University in connection with a Postgraduate Diploma in Education thesis titled “**Factors affecting Academic Performance of Senior High School students in Chemistry in the Akatsi South District of the Volta Region**”. The information you provide will help the researcher, school management and other stakeholders to understand the School and Socio-economic factors that affect students’ performance and how they can be addressed. Every piece of information you give will highly be accorded the needed confidentiality in addition to non-disclosure of your identity should the data be published. Taking part in this study is however voluntary.

Thank you.

Section A: Background Characteristics

Please tick [] the appropriate bracket or column or fill the blank spaces provided where applicable.

1. Sex: Male [] Female []
2. Age: a) Less than 15 [] b) 15 – 18 [] c) 18 and above []
3. Educational level? a) Form one [] b) Form two [] c) Form three []

Section B: School factors that affect academic performance

Please tick () the appropriate box and also note that all the questions refer to your chemistry teacher.

Sn	School factors	Strongly agree	Agree	Disagree	Strongly Disagree
4	Your teacher relates with you friendly.				
5	Your teacher always comes to class				
6	Your teacher comes to class on time				
7	Your teacher asks questions in class when teaching				
8	Your teacher allows you to ask questions or make contributions when teaching in class				
9	Your teacher pays attention to your needs when you do not understand something				
10	Your teacher gives exercise to check your understanding of what is taught				
11	You are provided with feedback on the exercises				

12. Are there any special period for practical? Yes [] No []
13. Do you have a Chemistry laboratory? Yes [] No []
14. If 'No', where do you do your practical?
15. Does your school make funds available for the purchase of learning materials?
Yes [] No []
16. If 'No' specify how you cope.....
17. What in your opinion are the three main factors that hinder student's success?
a)
b)
c).....

Section C: Family Education Background and Socio-Economic Status

(Please tick (√) the appropriate box)

S _n	Socio-economic factors	Strongly agree	Agree	Disagree	Strongly Disagree
18	Your parents/guardians adequately provide your needs				
19	I live with my parents only				
20	My parents are strict				
21	I come to school everyday				

- 22) Specify three reasons why you absent yourself from school
a)
b)
c).....
23. What level did your mother/guardian reach in Education?
a) primary [] b) JHS [] c) SHS [] d) tertiary []
24. What level did your father reach in Education?
a) primary [] b) JHS [] c) SHS [] d) tertiary []

APPENDIX B

QUESTIONNAIRE FOR TEACHERS UNIVERSITY OF EDUCATION, WINNEBA DEPARTMENT OF EDUCATIONAL FOUNDATIONS

Dear Teacher,

This questionnaire is meant to collect data for a study being conducted by Bernice Tali, a student from the above-named University in connection with a Postgraduate Diploma in Education thesis titled “**Factors affecting Academic Performance of Senior High School students in Chemistry in the Akatsi South District of the Volta Region**”. The information you provide will help the researcher, school management and other stakeholders to understand the School and Socio-economic factors that affect students’ performance and how they can be addressed. Every piece of information you give will highly be accorded the needed confidentiality and in addition to non-disclosure of your identity should the data be published. Taking part in this study is however voluntary.

Thank you.

Section A: Background Characteristics

Please tick [] the appropriate bracket or column or fill in the blank spaces provided where applicable.

1. Sex: Male [] Female []
2. Age: a) Less than 30 [] b) 30-45 [] c) 45 and above []
3. Educational Qualification a) HND [] b) First Degree [] c) Masters []

Specify if any other:

4. Teaching Experience: (a) Less than 5yrs [] (b) 6 – 10yrs []
(c) 11 – 15yrs [] (d) 16 – 20yrs [] (e) 21yrs and above []
5. When did you start teaching in this school?
(a) Less than a year [] (b) 1 – 5yrs [] (c) 5 – 10yrs [] (d) Above 10yrs []

Section B: School factors that affect academic performance

Please tick [] the appropriate bracket or column or fill in the blank spaces provided where applicable

6. Do you have any methods of teaching Chemistry? Yes [] No []
7. If ‘Yes’, mention some.....

8. Which teaching methods do you prefer?

9. Why?

10. How many periods do you teach in a week?

11. Is it enough? Yes [] No []

12. Are there any special periods for practicals? Yes [] No []

13. If 'No' why?

14. Do you have a Chemistry laboratory? Yes [] No []

15. If 'No', where do you do your Chemistry practical?
.....

16. Does your school make funds available for purchase of teaching resources?

Yes [] No []

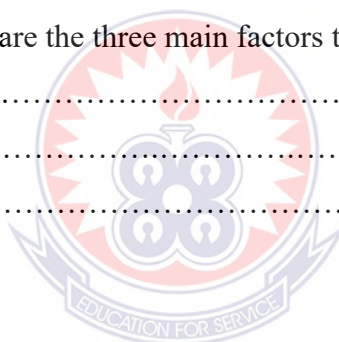
17. If 'No', specify how you cope.
.....
.....

18. What in your opinion are the three main factors that hinder student's success?

a)

b)

c)



APPENDIX C

INTRODUCTORY LETTER



UNIVERSITY OF EDUCATION, WINNEBA

FACULTY OF EDUCATIONAL STUDIES
DEPARTMENT OF EDUCATIONAL FOUNDATIONS

P.O. Box 25, Winneba, Ghana | edufoundations@uew.edu.gh
030 298 0885

9th November, 2021.

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

LETTER OF INTRODUCTION

I write to introduce to you, BERNICE TALI, the bearer of this letter who is a student in the Department of Educational Foundations of the University of Education, Winneba. She is reading Post Graduate Diploma in Education with index number 200048890.

She is conducting a research on the topic: FACTORS AFFECTING ACADEMIC PERFORMANCE OF SENIOR HIGH SCHOOL STUDENTS IN CHEMISTRY IN THE AKATSI SOUTH DISTRICT OF THE VOLTA REGION. This is in partial fulfillment of the requirements for the award of the above mentioned degree.

She is required to administer questionnaire to help her gather data for the said research and she has chosen to do so in your outfit.

I will be grateful if she is given permission to carry out this exercise.

Thank you.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Richardson Addai-Mununkum'.

DR. RICHARDSON ADDAI-MUNUNKUM
AG. HEAD OF DEPARTMENT

