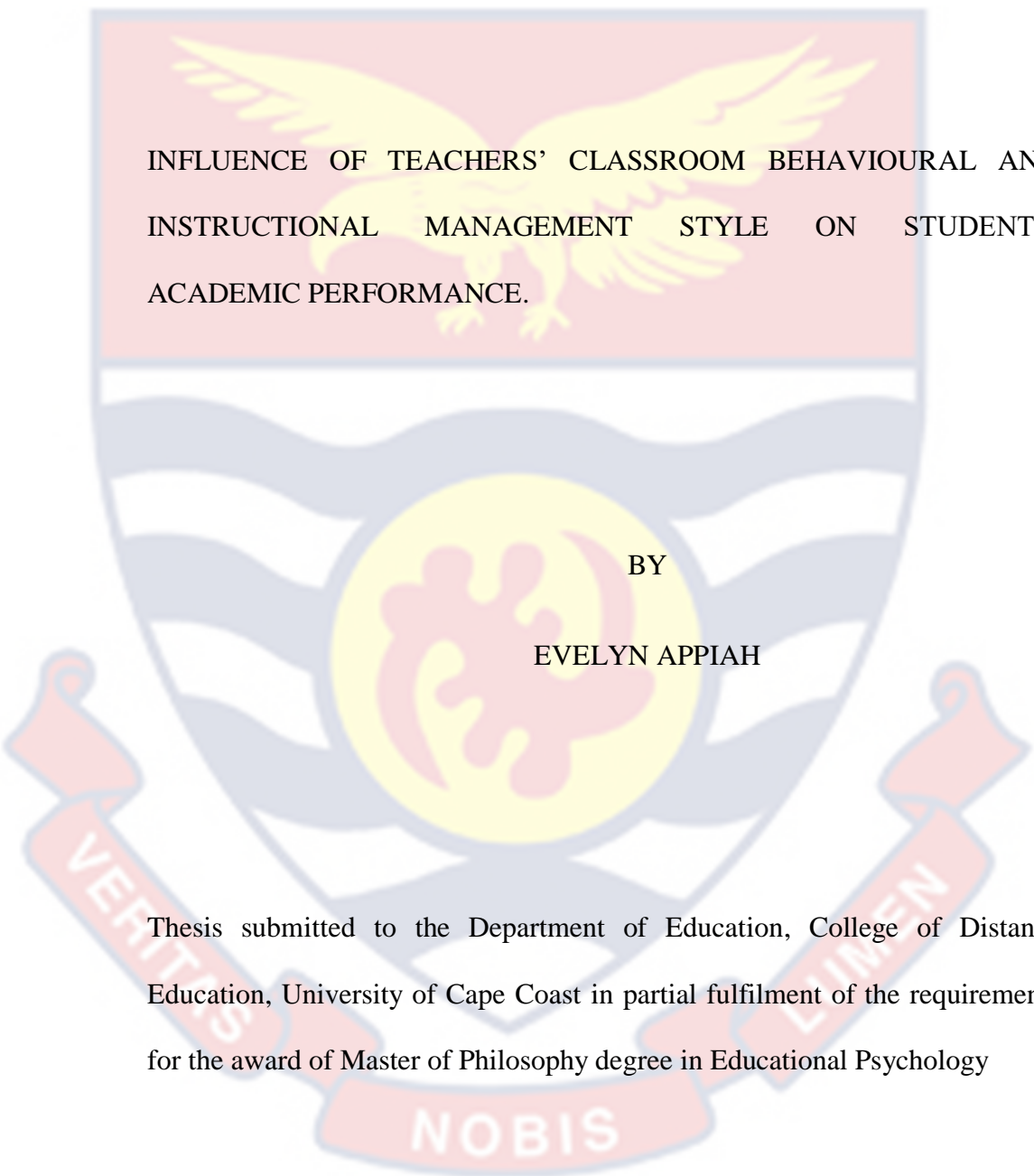


UNIVERSITY OF CAPE COAST



INFLUENCE OF TEACHERS' CLASSROOM BEHAVIOURAL AND
INSTRUCTIONAL MANAGEMENT STYLE ON STUDENTS'
ACADEMIC PERFORMANCE.

BY

EVELYN APPIAH

This thesis submitted to the Department of Education, College of Distance
Education, University of Cape Coast in partial fulfilment of the requirements
for the award of Master of Philosophy degree in Educational Psychology

2022

DECLARATION

Candidate's Declaration

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

Candidate Signature.....

Date.....

Name.....

Supervisor's Declaration

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

Principal supervisor Signature.....

Date.....

Name.....

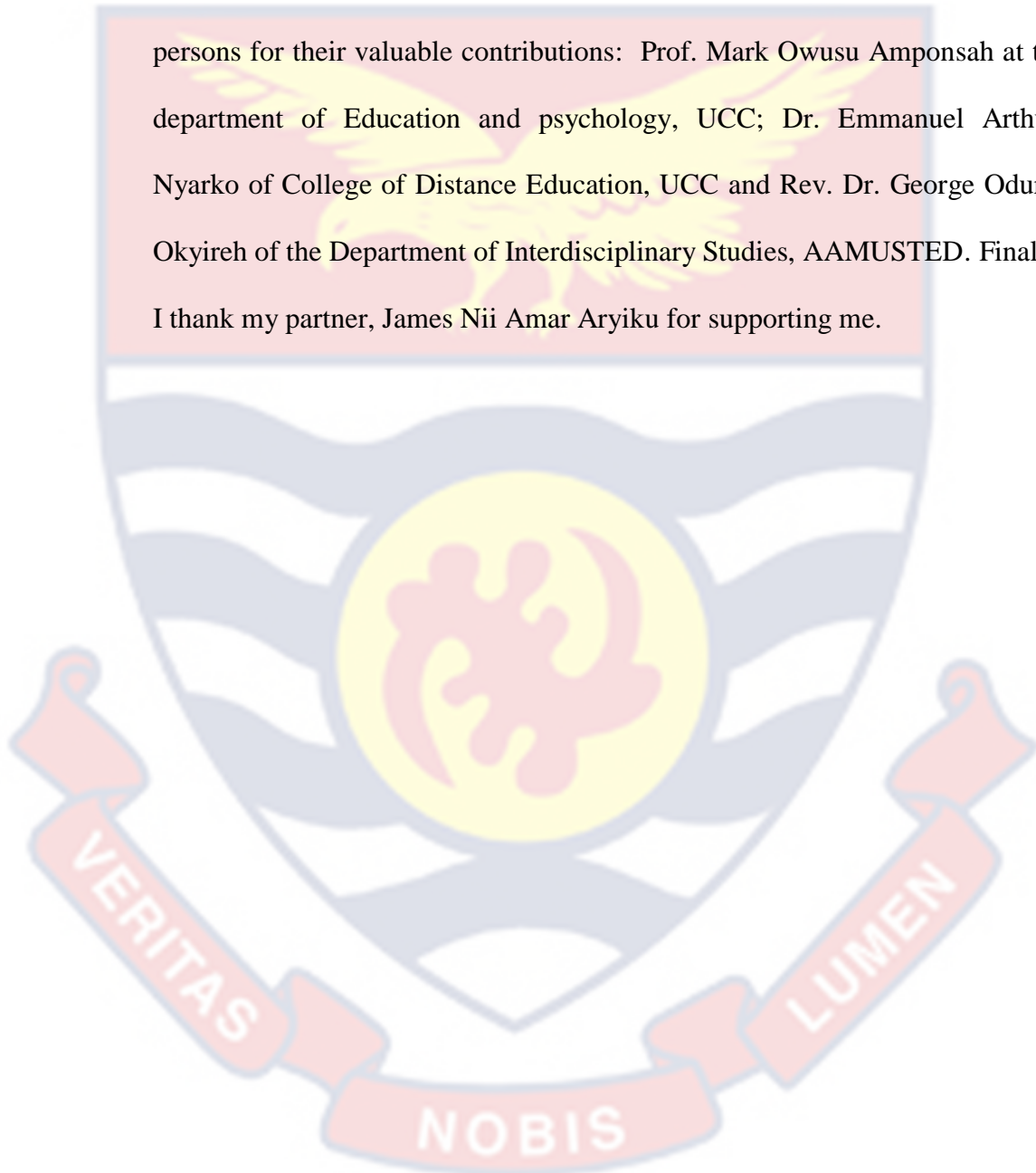
ABSTRACT

This study investigated the influence of Senior High School (SHS) teachers' classroom behavioural and instructional management style on students' academic performance. The study determined primarily the difference in students' academic performance across the behavioural and instructional management styles in addition to the behavioural and instructional management style that best predicts SHS students' academic performance within the Kumasi Metropolis, Ashanti region. The study was descriptive and randomly sampled 320 SHS students together with 26 teachers who were purposively selected from 7 schools. Data was collected using an adapted form of the Behavioural and Instructional Management Scale. Results of the study indicated that there is a significant difference in students' academic performance between the interactionist and interventionist behavioural management styles. The magnitude of the difference was 39% and 47% for biology and chemistry respectively. Also, the study discovered that the interventionist style of behavioural management best predicts students' academic performance. Again, the study discovered that the interactionist style of classroom instructional management best predicts students' academic performance. In the light of the results, teachers are recommended to adopt the appropriate style to instruct and manage students' behaviour during lessons.

ACKNOWLEDGEMENTS

I thank the Almighty God for his protection and wisdom during this study.

I am very thankful to my supervisor Dr. Felix Senyamator for prompt supervision and continuous support. Also, I am indebted to the following persons for their valuable contributions: Prof. Mark Owusu Amponsah at the department of Education and psychology, UCC; Dr. Emmanuel Arthur-Nyarko of College of Distance Education, UCC and Rev. Dr. George Oduro-Okyireh of the Department of Interdisciplinary Studies, AAMUSTED. Finally, I thank my partner, James Nii Amar Aryiku for supporting me.



DEDICATION

To my dearest mother, Akua Konadu.



TABLE OF CONTENTS

DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
DEDICATION	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xii
CHAPTER ONE	1
INTRODUCTION	1
Background of the Study	2
Statement of the Problem	5
Purpose of the Study	7
Research Questions and Hypotheses	8
Research Questions	8
Research Hypotheses	9
Significance of Study	10
Delimitations	11
Limitations	11
Definition of terms	11
Organisation of Study	13

CHAPTER TWO	15
INTRODUCTION	15
Theoretical Framework	15
The Teacher Behaviour Continuum of Wolfgang and Glickman (1980).	15
Classroom Management Style	17
Classroom Behavioural Management Style	19
Classroom Instructional Management Style	27
The Behavioural and Instructional Management Scale (BIMS)	72
Empirical Review	35
Commonest Classroom Behavioural and Instructional Management Styles	36
Difference in Students' Academic Performance across the Classroom Behavioural and Instructional Management Styles.	44
Classroom Behavioural and Instructional Management Style that best predicts Students' Academic Performance.	49
Difference in Classroom Behavioural and Instructional Management Style between Male and Female Teachers.	55
Conceptual framework of the study	60
Chapter summary	61
CHAPTER THREE	64
Introduction	64
Study Design	64
Study Area	65
Population	65
Sample and Sampling Procedure	68

Data Collection Instruments	72
Measurement of Academic Performance	77
Data Collection Procedure	83
Scoring of Instruments	84
Data Analysis Procedures	85
Ethical Issues	86
Chapter summary	86
CHAPTER FOUR	88
RESULTS AND DISCUSSION	88
Introduction	88
Teachers' Demographics	89
Students Demographics	90
Analysis of Main Data	91
Research Question 1	91
Research Question 2	93
Research Hypothesis 1	94
Research Hypothesis 2	98
Research Question 3	100
Research Question 4	102
Research Hypothesis 3	106
Research Hypothesis 4	109
Discussion	112
Chapter summary	131
CHAPTER FIVE	134
Overview	134

Summary of Key Findings	135
Conclusions	137
Recommendations	138
Suggestions for Future Research	139

REFERENCES	140
------------	-----

APPENDIX A	154
------------	-----

A Letter from Ethical Review Board	154
------------------------------------	-----

APPENDIX B	155
------------	-----

Introductory Letter from Graduate Studies Unit	155
--	-----

APPENDIX C	156
------------	-----

Department of Education and Psychology Consent Form	156
---	-----

	156
--	-----

APPENDIX D	156
------------	-----

Behavioural and Instructional Management Scale (BIMS) on Biology	
--	--

Teachers	157
----------	-----

APPENDIX E	160
------------	-----

Specialist Test in Biology	160
----------------------------	-----

Marking Scheme- Biology	162
-------------------------	-----

APPENDIX F	16664
------------	-------

Behavioural and Instructional Management Scale (BIMS) on Chemistry	
--	--

Teachers	166
----------	-----

APPENDIX G	169
------------	-----

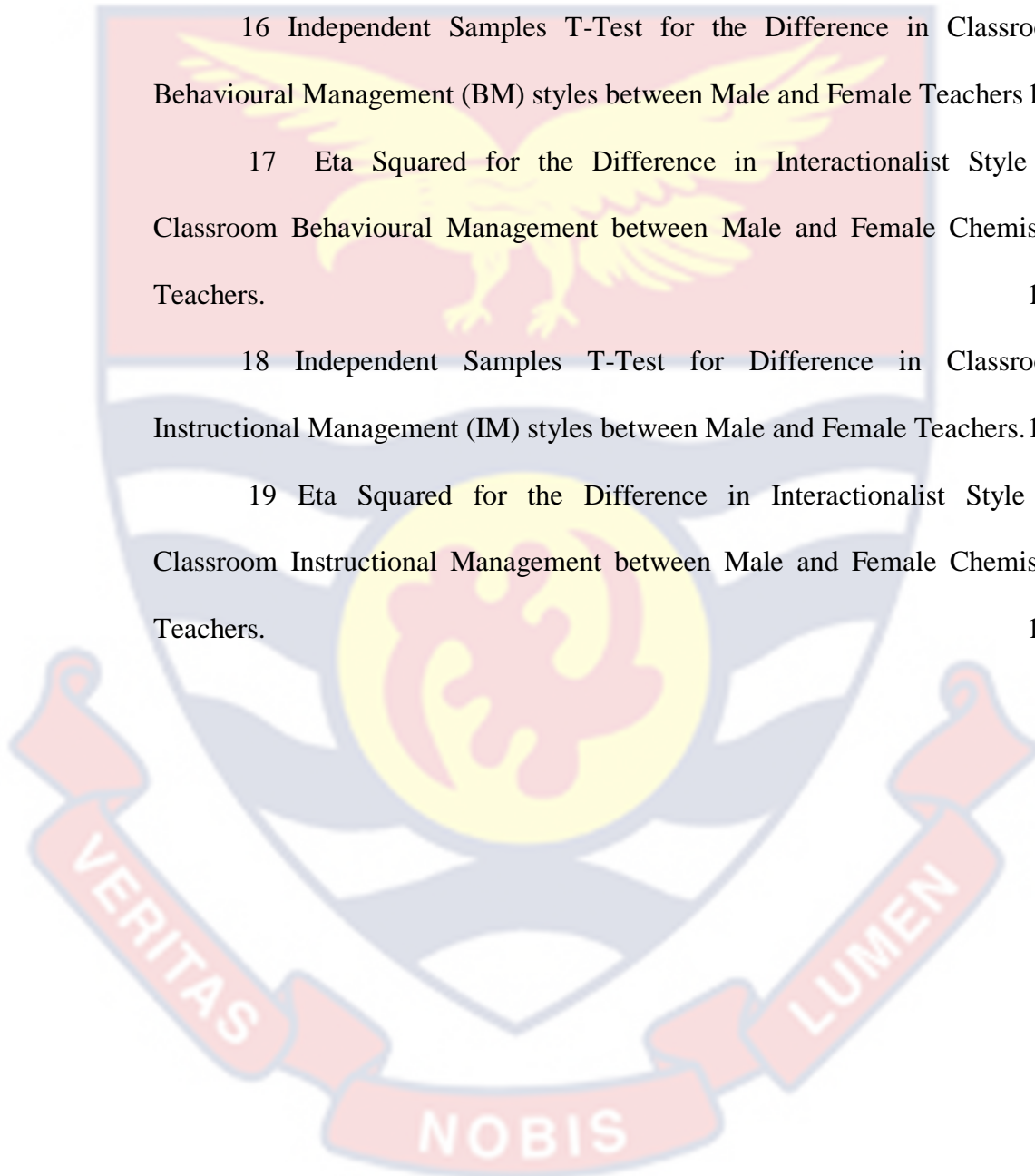
Specialist Test in Chemistry	169
------------------------------	-----

Marking Scheme- Chemistry	172
---------------------------	-----

LIST OF TABLES

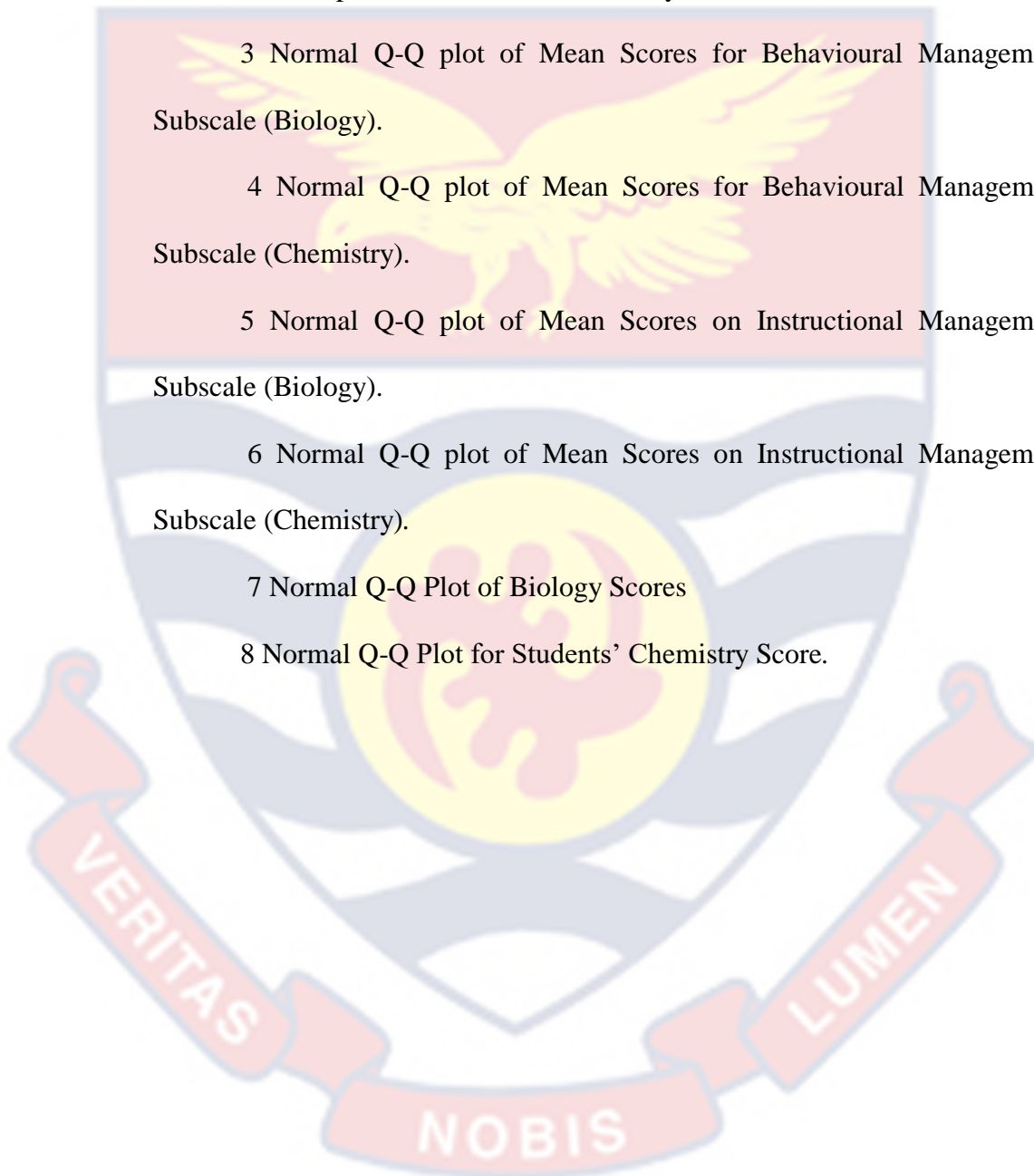
Table	page
1 Sample Size for Selected SHS in the Metropolis	70
2 Sample Size by Gender for Selected SHS	71
3 Cronbach Alpha of BIMS for Main Study	75
4 Students' Academic Performance in Biology	80
5 Students' Academic Performance in Chemistry	81
6 Cronbach's Alpha for Pilot Test	83
7 Teachers' Demographics	90
8 Students' Demographics	91
9 Frequency Table for the Commonest Classroom Behavioural Management Style among SHS Teachers	92
10 Frequency Table for the Commonest Classroom Instructional Management Style among SHS Teachers	93
11 Independent Samples T-test for Difference in Students' Academic Performance between Interactionalist and Interventionist Styles of Classroom Behavioural Management	95
12 Eta Squared for the Difference in Students' Academic Performance Scores between Interactionalist and Interventionist styles of Classroom Behavioural Management	97
13 Independent Samples T-Test for Difference in Students' Academic Performance between Interactionalist and Interventionist Styles of Classroom Instructional Management	99

- 14 Regression Test for the Classroom Behavioural Management Style that best predicts Students' Academic Performance at Selected SHS 101
- 15 Regression Test for the Classroom Instructional Management Style that best predicts Students' Academic Performance at Selected SHS 103
- 16 Independent Samples T-Test for the Difference in Classroom Behavioural Management (BM) styles between Male and Female Teachers 106
- 17 Eta Squared for the Difference in Interactionalist Style of Classroom Behavioural Management between Male and Female Chemistry Teachers. 108
- 18 Independent Samples T-Test for Difference in Classroom Instructional Management (IM) styles between Male and Female Teachers. 109
- 19 Eta Squared for the Difference in Interactionalist Style of Classroom Instructional Management between Male and Female Chemistry Teachers. 111



LIST OF FIGURES

Figure	page
1 The Teacher Behaviour Continuum Theory	16
2 Conceptual Framework of the study	61
3 Normal Q-Q plot of Mean Scores for Behavioural Management Subscale (Biology).	75
4 Normal Q-Q plot of Mean Scores for Behavioural Management Subscale (Chemistry).	76
5 Normal Q-Q plot of Mean Scores on Instructional Management Subscale (Biology).	76
6 Normal Q-Q plot of Mean Scores on Instructional Management Subscale (Chemistry).	76
7 Normal Q-Q Plot of Biology Scores	81
8 Normal Q-Q Plot for Students' Chemistry Score.	82



1

2

CHAPTER ONE

3 INTRODUCTION

4 Daly (2005) as cited in Sowell (2013) opined that there is not a single
5 teacher who has not experienced the frustration of managing a classroom
6 where some students continually disturb other students' from their academic
7 work with annoying and improper behaviour. Discipline and classroom
8 management are serious concerns particularly for teachers, school
9 administrators and the public in general (Braden & Smith, 2006; Oliver &
10 Reschly, 2007; Burkett, 2011). Schools are held responsible for all aspects of
11 student achievement and classroom management plays a significant role in
12 students' achievement. According to Shupe (1998) students perform poorly
13 when discipline and behavioural issues are not appropriately handled in
14 schools. Appropriate classroom management skills are indispensable in
15 achieving good academic outcomes as well as to curtail disruptive behaviour
16 of students which negatively affect other students (Braden & Smith, 2006).
17 Hence, the ability of a teacher to organise his/her classroom and manage
18 students' behaviour is very critical in attaining positive educational goals.
19 Boynton and Boynton (2005) as cited in Sowell (2013) further explained that
20 teachers' classroom managements that are not effective classroom reduce the
21 time for instruction, time for students' tasks and overall disturb learning
22 environments. Clearly, teachers who do not manage classrooms appropriately
23 thwart their own efforts including that of their students during the teaching and
24 learning process. Research has shown that classroom management greatly

1 influences student achievement. This study therefore was to investigate the
2 impact of teachers' classroom behavioural and instructional management style
3 on students' academic performance at SHS within the metropolis.

4

5 **Background of the Study**

6 Educational institutions are considered effective when their
7 educational goals are successful attained. Hattie (2009) opined that effective
8 education is attained by the key role teachers' play. The classroom teacher is
9 the single most important factor in student academic achievement according to
10 Sanders and Horn (1998). The influence of the teacher is made eminent when
11 Elisa and Schwab (2006) as cited in Wayne and Youngs (2003) mentioned that
12 teachers play a fundamental role in the cognitive and socio-emotional
13 development of students during education. Evidently, the teacher wields such
14 tremendous power on students' education. This appears to make the teacher a
15 very important variable in the teaching and learning process. Hence, teacher
16 characteristics like knowledge of subject matter, qualification, level of
17 experience, gender, interest, attitude, personality and motivation among others
18 have received attention in educational research works. Several educational
19 research works have focussed on teacher characteristics that impact on
20 students' achievements. Cantrell, Stenner and Katzenmeyer (1977) years ago
21 discovered that teachers' attitudes and their beliefs significantly shape
22 students' achievement in schools. Also, the study by Wayne and Youngs
23 (2003) demonstrated that teacher qualification, licensure test scores and
24 certification status were positively related with student achievement gains.
25 They concluded that students learn more from teachers who are rated high in

1 each of the stated characteristics. Again, Wang, Haertel and Walberg (1993)
2 showed that discipline and classroom management are teacher characteristics
3 that possibly have the strongest influence in teaching and learning.

4 The findings from these research works prove that indeed teacher
5 characteristics have a great influence on education of students in general,
6 particularly so on students' academic achievements. Wang et al., (1993)
7 conducted a meta-analytical study on various factors that influence pupils'
8 school achievement buttress the fact. These researchers discovered that among
9 228 variables, classroom management has the most direct influence on
10 students' achievements. It must be mentioned that classroom management has
11 evolved due to societal changes over the past century. Unfortunately,
12 disciplinary issues in schools today have increased than before and this has
13 affected student achievement (Colavecchio & Miller, 2002; Barden & Smith,
14 2006; Etheridge, 2010) as cited in Sowell (2013). Schools continually have
15 more issues which affect teachers' classroom management (Etheridge, 2010).

16 In Ghana, the implementation of the free SHS education policy in
17 September, 2017 by the presidential administration of Akuffo Addo was to
18 fulfil one of the sustainable development goals in education where there is
19 improvement in access to education, quality of education and educational
20 management. The policy has contributed very much to an enormous increase
21 in enrolment at SHS nationwide. The Ashanti region is known to have the
22 highest number of SHS in Ghana. There are about 122 SHS within the Ashanti
23 region. According to the Kumasi Metropolitan Education Directorate, the
24 metropolis in Ashanti region has 14 SHS. These SHS classrooms within the
25 metropolis now are over populated with students than have ever been. The

1 average SHS classroom size within the metropolis is commonly reported to be
2 about 45 students. This figure is highly in conflict with educationists' view of
3 between 25-30 students in a class. Such a circumstance, many educators
4 believe is likely to compromise teaching and learning quality thereby affecting
5 academic performance of students (Barber & Mona, 2017) as cited in Jones
6 and Jones (2012). Meanwhile, according to Jones and Jones (2012) the quality
7 of teaching and learning is heavily hinged on proper classroom management
8 styles teachers employ. The large number of students in SHS classrooms may
9 entice teachers to adopt inappropriate classroom management styles which
10 most likely will affect students' learning and academic performance.

11 In this study, SHS teachers' classroom behavioural and instructional
12 management style was investigated in accordance to the Teacher Behaviour
13 Continuum theory by Wolfgang and Glickman (1980). These researchers
14 conceptualised classroom management as interventionist, non-interventionist,
15 and interactionist (as cited in Lanoue, 2009; Martin & Sass, 2010). It appears
16 from literature review that little or no research work has been conducted
17 within Kumasi Metropolis regarding the influence of teachers' classroom
18 behavioural and instructional management style on students' academic
19 performance in SHS.

20

21

22

1 **Statement of the Problem**

2 The implementation of the free SHS education policy has increase
3 student enrolment nationwide. In 2018/19 academic year, student population
4 increased from 2,120 to 3,898 at the school the researcher teaches. The
5 situation expectedly increased class size from about 31 students to a current
6 average of 53 students. Within Ashanti region, the Kumasi metropolis has
7 about 49,101 students in the 14 public SHS undoubtedly resulting in
8 unacceptable large class sizes (Kumasi Metropolitan Education Directorate,
9 2021). The occurrence of large class sizes in schools is greatly not desired by
10 educationists since it threatens the quality of teaching and proper classroom
11 management (Jones & Jones, 2012). Adarkwah, Nartey and Kemetse, (2020)
12 also add that classroom management need urgent attention as a result of
13 increased enrolment in Ghanaian senior high schools, due to the
14 implementation of the free SHS policy. This has led to an increase in student
15 numbers per class and has put the teacher in an awkward position concerning
16 classroom management. There is a likely situation that, teachers at SHS within
17 the metropolis are teaching and managing large numbers of students using
18 inappropriate styles. Long ago, Martin, Yin, and Baldwin (1998) found that
19 class size is significantly and positively correlated to students' management.
20 Thus, managing a large class size offer few opportunities for teachers to
21 interact with students and so hinder proper management and monitoring of
22 students. Such incident, according to Adadzi (2006) results in low educational
23 attainment of students. Yet, it appears that there is no research in the existing
24 literature to address issues such as: what classroom management styles SHS
25 teachers' practise? What is the difference in students' academic performance

1 when different styles are practised and which style best predicts students'
2 academic performance?

3 This notwithstanding, most researchers have focussed on the free SHS
4 policy. For instance, a research work on the anatomy of the free SHS policy
5 and policy prescriptions (Adarkwah, 2022); evaluation of the free SHS policy
6 (Mohammed & Kuyini, 2021); free SHS policy and its implications to
7 education access equity (Kwegyiriba, 2021) and among others. Still some past
8 research works focussed on teachers' classroom management strategies,
9 classroom discipline, teachers' self-efficacy beliefs, gender, motivation and
10 among others. For instance, Kontor, Bakari and Amponsah (2020) investigated
11 teachers' classroom management strategies and its influence on academic
12 performance of students at Junior High Schools within the Asante Akyem
13 North District; Irwin, Anamuah-Mensah, Aboagye and Addison (2005)
14 examined teachers' perception of classroom discipline in Ghana. Again,
15 teachers' self-efficacy belief and its influence on gender and instructional
16 strategies as well as classroom management and students engagement were
17 examined by Sarfo, Amankwaa, Sam and Konin (2015). Still, in 2020
18 researchers Darkwa, Nartey and Kemetse investigated the gender differences
19 in senior high school science students' perceptions of their teachers' classroom
20 management strategies in New-Juaben municipality of Ghana. It appears these
21 studies described methods and strategies used by teachers in managing
22 classrooms without categorically identifying and mentioning the styles
23 employed. Again, most of these research works seem to investigate classroom
24 management in general and do not focus on its aspects: instruction
25 management and behaviour management as opined by Martin and Sass (2010).

1 Still, there seem to be scanty literature on teachers' classroom management
2 styles at the senior high school level of education in Ghana and its influence
3 on academic performance of students. Therefore, the researcher conducted this
4 study to fulfil the gaps in literature on the influence of teachers' classroom
5 instructional and behavioural management styles students' academic
6 performance at the senior high schools within the Kumasi Metropolis of the
7 Ashanti region in Ghana.

8 **Purpose of the Study**

9 The aim of the study was to examine the influence of SHS teachers'
10 classroom behavioural and instructional management style on students'
11 academic performance within the Kumasi Metropolis. Specifically, the study
12 sought to:

- 13 1. Discover the commonest classroom behavioural management styles
14 (non- interventionist, interactionalist and interventionist) among
15 teachers at SHS within the metropolis.
- 16 2. Examine commonest classroom instructional management styles (non-
17 interventionist, interactionalist and interventionist) among teachers at
18 SHS within the metropolis.
- 19 3. Determine the classroom behavioural management style that best
20 predicts students' academic performance at the selected SHS within
21 the metropolis.
- 22 4. Find out the classroom instructional management style that best
23 predicts students' academic performance at the selected SHS within
24 the metropolis.

- 1 5. Examine the difference in students' academic performance across the
- 2 classroom behavioural management styles (interventionist,
- 3 interactionalist and non-interventionist) at SHS within the metropolis.
- 4 6. Assess the difference in students' academic performance across the
- 5 classroom instructional management styles (interventionist,
- 6 interactionalist and non-interventionist) at SHS within the metropolis.
- 7 7. Find out the difference in classroom behavioural management styles
- 8 with respect to teacher's gender at SHS within the metropolis.
- 9 8. Investigate the difference in classroom instructional management
- 10 styles with respect to teacher's gender at SHS within the metropolis.

11

12 **Research Questions and Hypotheses**

13 **Research Questions**

14 The research questions in this study were:

- 15 1. What is the commonest classroom behavioural management style
- 16 (interventionist, interactionalist and non-interventionist) among
- 17 teachers at SHS within the metropolis?
- 18 2. What is the commonest classroom instructional management style
- 19 (interventionist, interactionalist and non-interventionist) among
- 20 teachers at SHS within the metropolis?
- 21 3. Which classroom behavioural management style best predicts students'
- 22 academic performance at the selected SHS within the metropolis?

1 4. Which classroom instructional management style best predicts
2 students' academic performance at the selected SHS within the
3 metropolis?
4

5 **Research Hypotheses**

6 The following hypotheses were formulated to guide this study.

7 1. H_0 : There is no difference in students' academic performance across
8 the classroom behavioural management styles (interventionist,
9 interactionalist and non-interventionist) at the selected SHS within the
10 metropolis.

11 H_1 : There is a difference in students' academic performance across the
12 classroom behavioural management styles (interventionist,
13 interactionalist and non-interventionist) at the selected SHS within the
14 metropolis.

15 2. H_0 : There is no difference in students' academic performance across
16 the classroom instructional management styles (interventionist,
17 interactionalist and non-interventionist) at the selected SHS within the
18 metropolis.

19 H_1 : There exists a difference in students' academic performance across
20 the classroom instructional management styles (interventionist,
21 interactionalist and non-interventionist) at the selected SHS within the
22 metropolis.

23 3. H_0 : There exists no difference in classroom behavioural management
24 style with respect to teacher's gender at the selected SHS within the
25 metropolis.

1 H₁: There exists a difference in classroom behavioural management
2 style with respect to teacher's gender at the selected SHS within the
3 metropolis.

4 4. H₀: There exists no difference in classroom instructional management
5 style with respect to teacher's gender at the selected SHS within the
6 metropolis.

7 H₁: There exists a difference in classroom instructional management
8 style with respect to teacher's gender at the selected SHS within the
9 metropolis.

10

11

12 **Significance of Study**

13 It is hoped that the findings from this study will enable teachers adapt
14 or adopt appropriate classroom behavioural and instructional management
15 style that best improves students learning and academic performance. Also,
16 the findings will aid policy makers like Ministry of Education, Ghana
17 Education Service and School Administrators in formulating policies and
18 regulations to improve the learning environment of students for the attainment
19 of high academic performance in schools. Finally, the findings will contribute
20 to literature and be useful to future researchers in the field of classroom
21 management studies.

22

1 **Delimitations**

2 Geographically, the scope of the study was restricted to the Kumasi
3 Metropolis. Also, the study focused on investigating teachers' classroom
4 behavioural and instructional management style and students' academic
5 performance using second year SHS science students at seven public schools.
6 Lastly, students' academic performance was measured from randomly selected
7 topics in first and second year biology and chemistry syllabi.

8

9 **Limitations**

10 The study was a descriptive correlational design and as such cannot
11 establish a cause and effect relationship. The study adopted a quantitative
12 approach and so the emotions and feelings of respondents in relation to the
13 issues were not explored which could have been better examined in a mixed
14 method approach.

15

16 **Definition of terms**

17 The following terminologies are defined as used in this study.

18 **Academic Performance**

19 This refers to a student's score in any of the specialist test (ST) in biology and
20 chemistry.

21

22

1 **Classroom Behavioural Management (BM)**

2 According to Martin and Sass (2010), BM is similar to discipline and includes
3 a teacher's pre-planned efforts to prevent misbehaviour and also how teachers
4 response it.

5 **Classroom Instructional Management**

6 This refers to teacher efforts to supervise classroom activities such as student
7 interactions and learning, monitor seatwork, structure daily routines and the
8 use of certain teaching methods according to Martin and Sass (2010).

9 **Interactionalist style (behavioural management)**

10 This refers to a type of classroom behavioural management style where the
11 power to control students' behaviour is shared between teacher and students.
12 Thus, students are involved in making decisions concerning their behaviour in
13 class and usually there is an agreement on how misbehaviours are handled.

14 **Interactionalist style (instructional management)**

15 This refers to the type of classroom instructional management style where the
16 teaching and learning responsibilities are shared between teacher and students.
17 Simply, it is a teacher-student interactive teaching method.

18 **Interventionist style (behavioural management)**

19 This refers to a classroom behavioural management style where the teacher is
20 in full control and solely makes decisions concerning students' behaviour in
21 class. Thus, students do not contribute to decisions made and often their

1 behaviours are controlled using reinforcement and punishments from the
2 teacher.

3 **Interventionist style (instructional management)**

4 This refers to the classroom instructional management style where the teacher
5 takes total control of the teaching and learning process with little or no
6 participation from students. In other words, it is a teacher-centered teaching
7 method.

8 **Non-interventionist style (behavioural management)**

9 This refers to a type of classroom behavioural management style where
10 students have more power in making decisions about their behaviour in class.
11 The teacher serves as a guide during the process.

12 **Non-interventionist style (instructional management)**

13 This refers to the type of classroom instructional management style where
14 students have more power and take control of the teaching and learning
15 responsibilities. This style of instruction is mostly students-centered.

16

17 **Organisation of Study**

18 This study was organised in five chapters. Chapter 1 presents
19 introduction, study background and problem statement. This is followed by the
20 purpose for conducting the study and the research questions together as well as
21 hypotheses that were investigated. Chapter 1 ends with the significance,
22 delimitations, limitations, definition of terms used and organisation of the

1 study. Chapter 2 touches on theoretical framework of the study, conceptual
2 framework, and empirical review of literature on the influence of teachers'
3 classroom behavioural and instructional management styles on students'
4 academic performance and closed with a chapter summary. Chapter 3
5 describes the methodology that was followed in conducting this study. This
6 includes design of study, research area and the population used. Chapter 3
7 further presents the sampling procedure employed to obtain the study sample,
8 the instruments and procedures used in collecting data, processing and
9 analysis of data obtained and ends with a summary of the chapter. Chapter 4
10 presents the outcomes of data collected followed by the discussion thereof.
11 The study is summarised in chapter 5 along with the conclusions,
12 recommendations and suggestions for future research works.

13

14

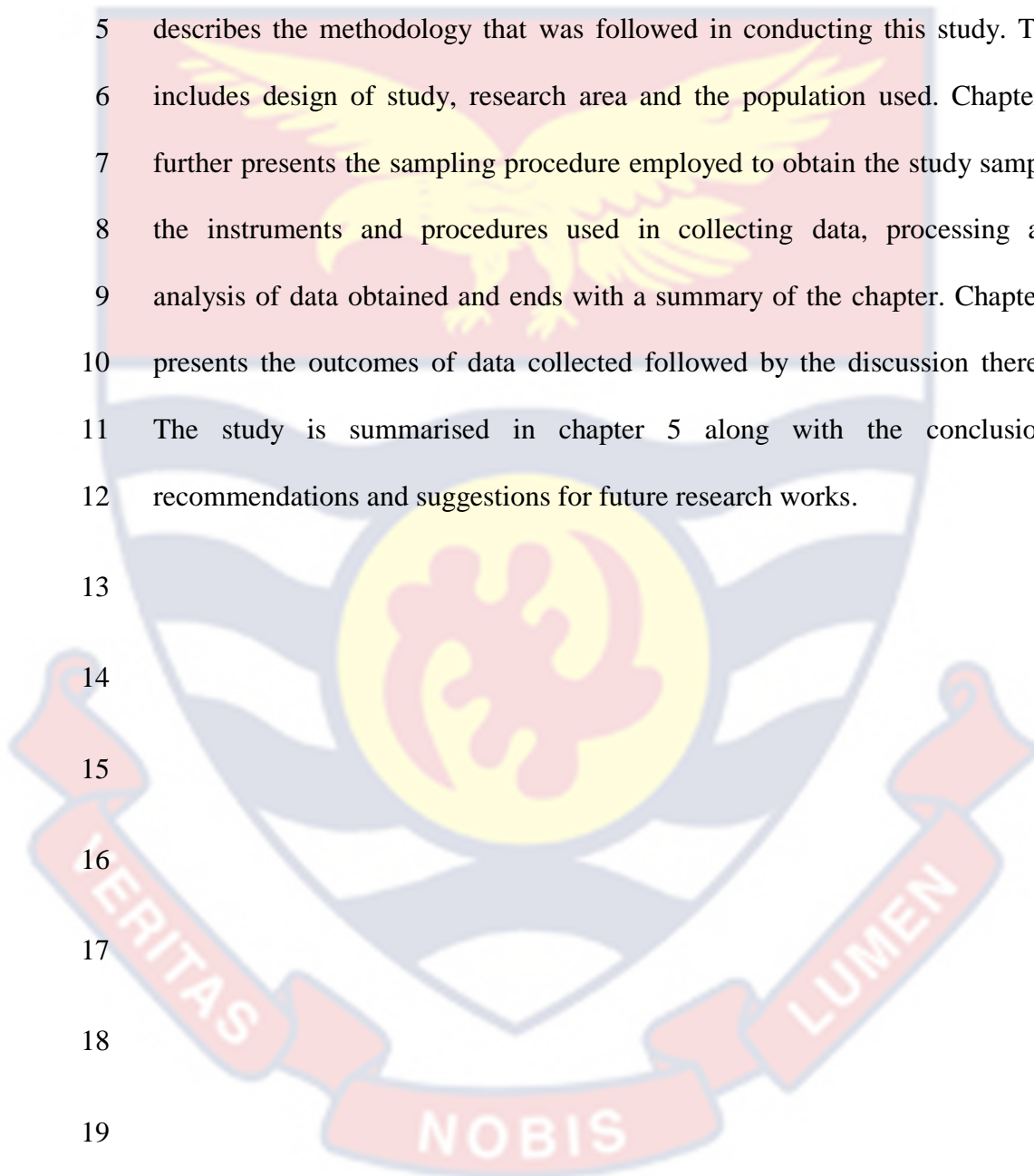
15

16

17

18

19



1

2

3

CHAPTER TWO

4

LITERATURE REVIEW

5

INTRODUCTION

6 This chapter centres on the review of related literature to the study of
7 the influence of SHS teachers' classroom behavioural and instructional
8 management style on students' academic performance. It includes the
9 theoretical frame work of the study, literature review, conceptual framework
10 and closes with a chapter summary.

11

12

Theoretical Framework

13

The main theories guiding this study are:

14

1. The Teacher Behaviour Continuum theory (Wolfgang & Glickman, 1980).

15

16

2. Theory of Educational Productivity (Walberg, 1982).

17

The two theories guiding the study are described in the following
18 paragraphs.

18

19

The Teacher Behaviour Continuum of Wolfgang and Glickman (1980).

20

21

This theory states that, the balance of power between the teacher and
student forms the basis for managing classroom. According to the theory,

22

classroom management exists in a continuum which can be conceptualized as

23

non-interventionist, interactionalist and interventionist as represented in figure

1 1. Wolfgang and Glickman believed that teachers act according to all three
2 models but only one model usually dominates their beliefs and actions thereby
3 influencing a particular classroom management style.



6 *Figure 1: The Teacher Behaviour Continuum Theory*
7 (Wolfgang & Glickman,1980).
8

9 Interventionist teachers at one end of the continuum exercise high
10 degree of power and control over classroom activities. Such teachers have the
11 belief that students learn and behave properly when they are reinforced,
12 rewarded or punished by teachers. Thus, interventionist teachers react to
13 student behaviour with consequences. At the other end, non-interventionist
14 teachers allow students to exert significant power and control in the classroom.
15 These teachers believe that students have an inner drive that needs to find its
16 expression during the teacher and learning process. Hence non-interventionist
17 teachers are proactive rather than reactive. They plan the teaching and learning
18 environment to facilitate classroom activities. In the middle of the teacher
19 behaviour continuum is the interactionalist. Interactionalist teachers share the
20 power and control for classroom management with students. Interactionalists
21 seek to employ the best characteristics of interventionists and non-
22 interventionists style of classroom management. They believe that students
23 learn and behave appropriately when they interact with people and objects.

24

25

1 **Classroom Management Style**

2 Levin and Nolan as cited in Akbaba and Arif (1998) opined that
3 theoretical approaches to classroom management are valuable to teachers
4 because they provide a foundation by which students and teachers' behaviours
5 can be analysed, understood and controlled. Teachers' classroom management
6 style was the independent variable examined in this study. Wolfgang and
7 Glickman (1980) proposed that balance of power between the teacher and
8 student forms the basis for managing classroom. According to these
9 researchers, classroom management exists in a continuum with interventionist
10 at one end, interactionalist in between and non-interventionist at the other end.
11 Recently, Martin and Sass (2010) opined that classroom management is a
12 multi-faceted construct that includes two independent constructs: Behaviour
13 Management and Instructional Management. These researchers then applied
14 the Teacher Behaviour Continuum theory to the two aspects of classroom
15 management. According to them, each aspect of classroom management
16 (behaviour and instruction) has three styles: non-interventionist,
17 interactionalist and interventionist. This implies that, teacher beliefs
18 concerning students' behaviour fall under a particular style. This may be non-
19 interventionist, interactionalist and interventionist style with regards to
20 classroom behavioural management. Likewise, teacher beliefs concerning
21 how students acquire knowledge influence the practise of a particular style. A
22 teacher may be non-interventionist, interactionalist and interventionist style
23 with regards to classroom instructional management. The proceeding
24 paragraphs present theories supporting each style of classroom behavioural

1 and instructional management styles (non-interventionist, interactionist and
2 interventionist).

3 **Classroom Behavioural Management Styles**

4 Classroom behavioural management exists in three styles: non-
5 interventionist, interactionist and interventionist styles according to (Martin
6 & Sass, 2010) in the application of the Teacher Behaviour Continuum theory
7 by Wolfgang and Glickman (1980). This implies that teachers exhibit varying
8 beliefs concerning how behaviour of students should be managed in class. The
9 three classroom behavioural management styles alongside supporting theories
10 are discussed below.

11

12 **Non-interventionist Behavioural Management Style**

13 The non-interventionist classroom behavioural management style is
14 characterised by teachers who believe that students are capable of directing
15 and self-regulating their behaviour in class. Thus, teachers wield less power
16 whilst the students are in high power about issues on behaviour management.
17 According to the Teacher Behaviour Continuum by Wolfgang and Glickman,
18 (1980), the non-interventionist teacher therefore gives more power to students
19 when making rules and regulations regarding students' behaviour in class.
20 When SHS teachers acts as guides and allow students to make decisions about
21 acceptable behaviours during classes, they are regarded as non-interventionist.
22 Such teachers trust that students are able to put up good and acceptable
23 behaviours and hence there is no need for strict regulations from teachers.

24

1 **Interactionalist Behavioural Management Style**

2 The interactionalist behavioural management style is characterised by
3 teachers who believe that students behave appropriately when they participate
4 in decisions making about their own behaviours in class. Interactionalist
5 teachers therefore share the power and control with students when setting rules
6 and regulations. Students are encouraged to contribute to the rules, regulations
7 and sanctions. This makes students feel valued, have a sense of belongingness
8 and not controlled although interactionalist teachers are firm and fair.
9 Accordingly, interactionalist classrooms are warm, friendly and cooperative
10 enabling individual student to thrive and succeed.

11 **Interventionist Behavioural Management Style**

12 According to the Teacher Behaviour Continuum by Wolfgang and
13 Glickman (1980), interventionist teachers are in high control whilst students
14 are in low control regarding managing students' behaviour in class.
15 Interventionist teachers solely are responsible for setting rules and regulations
16 regarding behaviour management in class. Students in an interventionist
17 classroom are believed to be incapable of behaving appropriately and as such
18 teachers exhibit full control and strictly apply regulations and sanctions in
19 class.

21 **Theories Supporting Classroom Behavioural Management Styles**

22 Several behavioural management theories have been propounded to
23 explain how teachers manage students' behaviour in class during teaching and
24 learning process. The theories presented are:

1 **Baumrind's Four (4) Management Styles**

2 Baumrind (1971) as cited in Thi (2012) proposed four (4) management
3 styles which have been broadly applied in classrooms for teaching and
4 managing students' behaviour. According to Baumrind, classroom
5 management styles are categorised along two (2) dimensions: degree of
6 control over students and degree of teacher's involvement with students. In
7 view of this, Baumrind (1971) presented four management styles:
8 Authoritarian, Authoritative, Indulgent and Permissive. These styles are used
9 in managing students' behaviour in classroom.

10 Firstly, the authoritarian behaviour management style is characterised
11 by teachers' exhibiting high degree of control when managing students'
12 behaviour in class. These teachers solely set up rules and regulations that are
13 strictly enforced with no contribution from students. Thus, students' opinions
14 are not considered when making the rules and regulations governing their own
15 behaviour in class. They are expected to strictly adhere to them and sanctions
16 are meted out when students misbehave. Chang (2012) as cited in Thi (2021)
17 refer to teachers exhibiting this style as "highly controlled" teacher. Chang
18 (2012) as cited in Thi (2021) continues that an authoritarian teacher does not
19 give explanations to as to why certain behaviours are acceptable and others are
20 unacceptable. Authoritarian teachers simply and explicitly inform students
21 about how they are to behave in his/her class. In this way, the authoritarian
22 style is comparable to the interventionist behavioural management style when
23 managing students' in class. Authoritarian and Interventionist teachers wield
24 much power while their students are in low power. Teachers at SHS who
25 practise such classroom behavioural management style believe that, the less

1 power students wield, the easier it is for teachers to intervene and influence the
2 classroom environment. Such teachers consider that students learn and behave
3 appropriately only through the establishment of rules and activities selected by
4 teacher alone. There are immediate consequences for negative behaviour or
5 the provision of rewards for positive conduct. By so doing, interventionist
6 teachers hope to achieve complete conformity and well-behaved students
7 (Cerit & Yüksel, 2015).

8 Secondly, the authoritative behaviour management style is
9 characterised by power shared equally between teacher and students with
10 regards to students' behaviour management in class. Teacher and students
11 together set up rules and regulations that govern behaviour in class. Baumrind
12 (1971) as cited in Thi (2021) explains that authoritative teachers expect
13 students to behave appropriately because rules and regulations have been
14 clearly explained. This helps to maintain a harmonious relationship with
15 students. Authoritative teachers are very much like teachers who practise the
16 interactionalist classrooms behavioural management style. These teachers
17 allow students to contribute ideas, suggestions and opinions when setting up
18 rules, regulations and sanctions for the class. He/ She offer explanations on
19 behaviours that are acceptable and those that are not. Authoritative and
20 Interactionalist teachers are firm and yet fair in applying sanctions when
21 dealing with students' behaviour in class.

22 Thirdly, the indulgent behaviour management style according to
23 Baumrind (1971) as cited in Thi (2021) is characterised by high degree of
24 teacher involvement yet with less control over students' behaviour in class.
25 The indulgent teacher grants students power to make decisions regarding their

1 behaviour in class. Thus, indulgent teachers actively support students by being
2 empathetic, understanding and engaging in discussions that allow students to
3 self-regulate their behaviour. Dunbar (2004) as cited in Thi (2021) calls the
4 indulgent style “Laissez-faire” style. Indulgent or laissez-faire teachers are
5 prone to establish few demands and controls over their students. These
6 teachers often hesitate to enforce rules. Indulgent or laissez-faire teachers
7 consider themselves as friends of students rather than a role model or an
8 educator according to (Jones, n.d) as cited in Thi (2021). Dunbar (2004) as
9 cited in Thi (2021) adds that students such classes are often given permission
10 to do their favourite things. This translates into a friendly and supporting
11 classroom environment that helps students achieve academic success. The
12 classroom environment created by indulgent teachers is similar to the non-
13 interventionist style of managing students’ behaviour in class. These teachers
14 give high power to students while they are in low power and are incline to the
15 belief that students are responsible for decision-making to enable them utilise
16 their innate potential, sentiments and ability of problem-solving to their
17 benefit. Again, such teachers believe that the less power they wield, the more
18 supportive they become to their students. The student is dependent on
19 him/herself and not on the teacher who is trying to control. To put it simply,
20 indulgent and non-interventionist teachers are in favour of student-centred
21 directions. Teachers at SHS who are indulgent or non-interventionist with
22 regards to classroom behavioural management style often show empathy and
23 utilise techniques such as non-verbal communication and personalised
24 discussions to allow students self-regulate (Lang, 2013). They are proactive by

1 posting and explaining rules, procedures as well as the consequences to
2 students.

3 Lastly, the permissive management style is characterised by low
4 control over students and low involvement from teachers regarding students'
5 behaviour in class. Thus, the permissive classroom makes little or no demands
6 on students regarding compliance to rules and regulations if any. Hence, there
7 is a lot of freedom and students behave as they please. (Dunbar, 2004 &
8 Baumrind, 1971) opine that permissive teachers tend to spend little time on
9 lesson preparation and have non-punitive classrooms. In short, this style
10 reflects teachers who lack interest and dedication to pedagogic career.

11 **McGregor Theory X and Y**

12 McGregor (1960) proposed theory X and Y to explain the management
13 of employees at work. According to McGregor (1960) as cited in Markwell
14 (2004), theory X managers believe that employees are naturally lazy and do not
15 want to work. Therefore, such managers strictly supervise and enforce rules
16 and regulations at work. On the other hand, theory Y managers' belief that
17 employees are self-motivated and naturally like to work therefore there is little
18 or no need for supervision. McGregor's theory X and Y have been applied in
19 education. Teachers as classroom managers have beliefs that lean towards
20 either theory X or Y.

21 Teachers practising theory X believe that students naturally want to
22 behave freely and as a result they are likely to engage in unacceptable
23 behaviours. Hence, there is the need for students' behaviour to be strictly
24 controlled by teachers. Theory X teachers therefore solely set up rules,

1 regulations and sanctions that control behaviour of students in class. Theory
2 X behaviour management is in line with the belief of teachers who are
3 considered as interventionist. These teachers wield high control over
4 behaviour of students and accordingly strictly manage their behaviour in class.

5 Conversely teachers practising theory Y belief students are capable of
6 regulating their behaviour in class. These students do not engage in activities
7 that disrupt the classroom environment since they want to learn. Consequently,
8 teachers do not exert control by strictly enforcing regulations but rather act as
9 guide and facilitators to make students behave properly in order to achieve
10 educational outcomes (Markwell, 2004). Theory Y behaviour management is
11 in line with the belief of teachers who are considered as non-interventionist.
12 Such teachers grant students control over their behaviour and only acts as
13 guides in class.

14 **Choice Theory**

15 Glasser proposed the choice theory to enable people understand their
16 behaviour from a personal viewpoint. The choice theory states that all we do is
17 behave and we are all driven by four psychological needs embedded in our
18 genes: the need to belong, the need for power, the need for freedom, and the
19 need for fun (Glasser, 1997).

20 Essentially, choice theory shows that people behave differently due to
21 the choices they make in order to satisfy the needs of belong, power, freedom
22 and fun. The application of choice theory in the classroom suggests that,
23 when teachers and students recognize the differences in their behaviour, it
24 provides the chance for modification and adjustments to occur. Teachers and

1 students realize and understand how their behaviours are to be managed.
2 Consequently, both parties agree and cooperate in making decisions regarding
3 acceptable behaviour resulting in a classroom that is warm, friendly and easily
4 managed. Glasser's choice theory supports the interactionist behavioural
5 management style in the classroom. Interactionist attempts to achieve
6 cohesion in classroom by making decisions based on the needs of teacher and
7 students. The interactionist teachers establish classroom climate where
8 responsibilities are shared and there exist cooperative procedures and mutual
9 respect during teaching and learning (Martin, Yin, & Baldwin, 1998). When
10 students misbehave, interactionist teachers employ logical consequences and
11 provide ways for students to judge their own behaviour along with accepting
12 responsibility. Therefore, when SHS teachers practise the interactionist
13 behavioural management style, they share the power with students when
14 managing the classroom.

15 **Operant Conditioning**

16 Skinner is the proponent of operant conditioning. Skinner's believed
17 that behaviour is shaped by the consequences that follow. Operant
18 conditioning of behaviour is a process of behaviour modification in which the
19 likelihood of a specific behaviour is increased or decreased through positive or
20 negative reinforcement each time the behaviour is exhibited, so that the
21 subject comes to associate the pleasure or displeasure of the reinforcement
22 with the behaviour (American Heritage Dictionary, 2009) as cited in Sowell
23 (2013). Operant conditioning of behaviour supports the interventionist style of
24 classroom behavioural management practised by teachers. Skinner believed
25 that when teachers use reinforcement, rewards and punishments, they gain

1 total control in the classroom. Thus, interventionist teachers wield much
2 power while their students are in low power. Teachers at SHS who practise
3 interventionist classroom behavioural management style believe that, the less
4 power students wield, the easier it is for teachers to intervene and influence the
5 classroom environment. Such teachers consider that students learn and behave
6 appropriately only through the establishment of rules and activities selected by
7 teacher alone. There are immediate consequences for negative behaviour or
8 the provision of rewards for positive conduct. By so doing, interventionist
9 teachers hope to achieve complete conformity and well-behaved students
10 (Cerit & Yüksel, 2015). In other words, the traditional classrooms are teacher-
11 centered and hence apply behaviourism to shape students' behaviour in a
12 desirable way (Lerner, 2003 as cited in Yasar, 2008). Buttressing this assertion
13 Garret (2005) as cited in Yasar (2008) opined that traditional classrooms
14 operate on a behavioural model which involves strong imposition and
15 management techniques from teachers.

16 **Social Learning Theory**

17 Bandura proposed the social learning theory that people learn
18 acceptable and unacceptable behaviours from each other. Bandura (1986,
19 1997) believed that children learn by observing and imitating certain
20 behaviours of other people like parents, teachers, or other children.
21 Particularly in classrooms, students observe and imitate the behaviour of other
22 students and they eventually learn to do the same. It is believed that, as
23 behaviours are imitated, students would emulate one another's good behaviour
24 to gain some positive reinforcement or avoid any negative reinforcement. This
25 theory has important implications for the interventionist style of classroom

1 behavioural management. The main tenet of interventionist style of
2 behavioural management is to control students using rewards and punishments
3 therefore; interventionist teachers effortlessly achieve orderly classrooms
4 when students learn the consequences of good and bad behaviours from peers.

5 **Classroom Instructional Management Style**

6 Classroom instructional management also exists in three styles: non-
7 interventionist, interactionist and interventionist styles according to (Martin
8 & Sass, 2010) in the application of the Teacher Behaviour Continuum theory
9 by Wolfgang and Glickman (1980). This implies that teachers exhibit varying
10 beliefs concerning how students acquire knowledge and learn in the
11 classroom. The three classroom instructional management styles alongside
12 supporting theories are presented in the proceeding paragraphs.

13 **Non-interventionist style**

14 The non-interventionist classroom instructional management teacher
15 believes that students have an inner drive to lead the quest for knowledge
16 acquisition. Hence, the non-interventionist teacher gives more power to
17 students during teaching and learning process (Wolfgang and Glickman,
18 1980). When SHS teachers prepare and create stimulating learning
19 environments to encourage students to explore and discover knowledge, they
20 are categorised as non-interventionist with regards to classroom instructional
21 management styles. Such teachers at SHS act as facilitators and guides thereby
22 allowing students to actively construct their knowledge. This style is student-
23 centred according to Ayeni (2011) and the teacher becomes a resource rather

1 than an authority and often uses discovery and inquiry teaching and learning
2 methods.

3 **Interactionalist style**

4 The interactionalist teacher with regards to classroom instructional
5 management style believes that students acquire knowledge best when they
6 interact with teacher and their peers. Therefore, when SHS teachers' share the
7 teaching and learning power with students, they employ teaching strategies
8 such as discussions, brainstorming, group activities, role plays among others
9 and permit cooperation among students. According to Brooks and Brooks
10 (1993) interactionalist teachers are constructivists encouraging and accepting
11 students' autonomy, allowing students' responses to lead lessons, modify
12 teaching strategies and alter content. Thus, the interactionalist classroom
13 instructional style is teacher- student interactive and therefore makes
14 influential changes in the dynamics of the classroom as opined by Leinhardt
15 (1992) as cited in Yasar (2008). Students of the interactionalist teacher benefit
16 from the ideas and cooperation in the classroom as they become active
17 participants and the teacher becomes resource, who facilitates, train and
18 provide feedback in the teaching and learning process (Brophy, 1996;
19 Larrivee, 1999) as cited in Yasar (2008). Beasley (1996) opined that such
20 cooperation and partnership of the teacher with students promote autonomy
21 and give students opportunity to construct knowledge through their actions
22 and experiences. The interactionalist style of classroom instructional
23 management is supported by cognitive learning theory which puts emphasis on
24 student's ability to take charge of his or her own learning and thinking thereby
25 developing self-automaticity (Lerner, 2003) as cited in Yasar, 2008).

1

2 **Interventionist style**

3 Interventionist teachers with regards to classroom instructional
4 management style believe that students acquire knowledge solely from the
5 teacher. Teachers regarded as interventionist emphasises teacher authority and
6 implements teacher-centred learning methods and teaching strategies.
7 Teachers at SHS who practise the interventionist classroom instructional
8 management style act as a repository of knowledge and imparts onto students
9 during the teaching and learning process by employing the lecture and
10 demonstration methods. Ayeni (2011) explained that, during lectures teachers
11 tell, explain and describe requisite information to students through listening
12 and understanding. The interventionist classroom instructional management
13 style is therefore seen as teacher-centred and teacher determines how and
14 when learning outcomes are achieved in the classroom.

15 **Theories Supporting Classroom Instructional Management Styles**

16 Instructional management theories that have been propounded to
17 explain teacher's belief on how students' acquire knowledge and learn in class
18 are presented in the

19 **Social Learning Theory**

20 Bandura proposed the social learning theory that people can learn in a
21 social context by observing others. This implies that people frequently acquire
22 knowledge, rules, skills, strategies, beliefs, and attitudes by watching others
23 (Bandura, 1986). Therefore, social learning is important when instructing
24 students in class. When teachers use interactive teaching methods, they

1 provide opportunities for students to learn from one another. Lesson activities
2 that require students to work in groups, discuss, brainstorm and co-operate
3 help individual students to learn and achieve desired learning outcomes. In
4 social learning, interactions occur between teacher and students as well as
5 among students create conducive learning environments that promote
6 individualised learning. Social learning is teacher-student interactive much
7 like the interactionalist style of instructional management.

8 **Direct Instruction Theory**

9 Becker and Engelmann (1960) used direct instruction to achieve
10 progress in disadvantaged children who had problems in language skills. The
11 results of their work led to the direct instruction theory. Direct instruction
12 theory posits that clear instruction eliminates misinterpretations, which can
13 greatly enhance and accelerate the learning process. Siegfried (1960) believed,
14 it is an ineffective practise when students pursue their own learning without
15 appropriate support. Direct instruction is teacher –centered. The teacher takes
16 total control of instruction and carefully designs lessons, breaking them down
17 into small individual learning outcomes. Often, lessons are delivered using
18 straightforward teaching techniques like lecture. Direct instruction is the oldest
19 form of teaching where information is presented to students who view teacher
20 as ‘all-knowing’. Clearly, direct instruction is similar to the interventionist
21 style of classroom instruction where teachers have the locus of control and
22 students only listen attentively.

23 **Kohn’s Student Directed Learning Theory**

24 Kohn’s student directed learning (1999) stems from his belief that
25 students’ curiosity and interest should determine what is taught in the

1 classroom. Kohn further argues that teaching and learning that follows a strict
2 curriculum are counterintuitive to students' needs. In other words, Kohn
3 advocates for teaching and learning that is students-centered. This implies that,
4 teachers should allow students to discover and explore topics that interest
5 them most. Teachers therefore act as guides and facilitators tapping into
6 students' natural curiosity to promote deeper understanding. Kohn's students
7 directed learning is similar to the belief of the non-interventionist teacher. A
8 teacher who practises students-directed learning or the non-interventionist
9 style of instruction often has low-power whilst students have high-power
10 during teaching and learning process.

11

12 **Baumrind's Four Management Styles**

13 Baumrind's management styles again apply to instruction in
14 classrooms. According to Baumrind as cited in Wenning (1998) classroom
15 management styles are categorised along two (2) dimensions: degree of
16 control over students and degree of teacher's involvement with students.
17 Baumrind was of the view that teachers exhibit four teaching styles during
18 lessons. The teaching styles are: Authoritarian, Authoritative, Indulgent and
19 Permissive.

20 Authoritarian teaching style is a teacher-centered classroom.
21 Authoritative teachers assume complete control of the teaching and learning
22 process. Authoritarian classrooms are quiet and structured where learners
23 focus on teacher who is the repository of knowledge. Such teachers often
24 employ direct instruction methods like lectures and demonstrations where

1 students sit passively and ‘absorb’ information from teacher. Thus, students in
2 authoritarian classrooms mostly do not contribute and are not involve in the
3 teaching and learning process. Authoritarian teachers do not engage students
4 through discussion, brainstorming or other cooperative learning methods.
5 Hence, students are not given opportunity to actively construct knowledge for
6 themselves. The interventionist classroom instructional management style is
7 analogous to the authoritarian teaching style. Both styles are characterised by
8 teachers exhibiting high degree of control of lessons with low student
9 involvement.

10 Authoritative teaching style from the view point of Baumrind is
11 teacher-students centered. Authoritative teachers expect students to participate
12 and collaborate during the teaching lesson rather than being passive.
13 Therefore, such teachers often use discussions, group work, brainstorming,
14 role play and other interactive and cooperative teaching methods to draw
15 students into classroom activities. By so doing, teachers and students become
16 partners and share the responsibilities of achieving educational outcomes
17 together. This teaching style is similar to the interactionist instructional
18 management style where teacher and students interact during the teaching and
19 learning process.

20 Indulgent teaching style is similar to the non-interventionist classroom
21 instructional management style of teachers. According to the Teacher
22 Behaviour continuum by Wolfgang and Glickman (1980), teachers who
23 practise the non-interventionist style of instruction believe that students have
24 innate desire to acquire knowledge and hence they lead and direct learning.
25 Similarly, Baumrind was of the view that indulgent teachers grant students

1 control and authority with the teacher acting as a facilitator. Students taught
2 with the indulgent or non-interventionist style direct their own learning and
3 therefore engage in interesting activities. Teaching methods like inquiry
4 method, self-directed learning methods are used to satisfy the intense desire
5 for knowledge and information.

6 Permissive teaching style is characterised by teachers who show low
7 involvement with students and low control over teaching and learning.
8 Permissive teachers are more likely to use video, movies, textbooks and audio
9 recording than teach their students. These teachers seems to have lost their
10 passion for teaching and consequently do not invest in their students success.
11 Students in permissive instructional classrooms are likely not to reach their
12 potential since their teacher has low involvement with students and low
13 control over learning.

14 **McGregor Theory X and Y**

15 Theory X and Y have also been applied to the teaching styles.
16 Markwell (2004) opines that theory X teachers belief that students are
17 incapable of learning by themselves. The teacher therefore must exercise high
18 degree of control in the learning environment and act as a repository of
19 knowledge and actively transmit knowledge and information. Direct
20 instruction mainly through lectures is the preferred method of teaching.
21 Students tutored under this belief are passive and gulp down information.
22 Theory X teachers and the interventionist teachers are in high control during
23 lessons while their students are in low power.

1 Conversely, theory Y and non-interventionist teachers are in low
2 control of lessons while their students are in high control. This means, these
3 teachers believe that students have a natural desire to learn. The self-
4 satisfaction from learning is sufficient to motivate them to achieve learning
5 outcomes. Teachers do not need to control teaching and learning. Students are
6 creative, curious and self-directed towards achieving learning outcomes.
7 Inquiry-based teaching, discovery method and self-directed learning enable
8 students attain learning goals.

10 **Walberg's Educational Productivity Theory**

11 One of the main theories guiding this study is Walberg's Educational
12 Productivity theory. Walberg's educational productivity theory (1992) posits
13 that psychological characteristics of individual students and their immediate
14 psychological environment influence educational outcomes (cognitive,
15 behavioural and affective). He further identified nine (9) key variables that
16 influence educational outcomes of students (Walberg, Fraser & Welch, 1986).
17 Among the nine (9) variables: classroom climate, quantity and quality of
18 instruction are significant to this study. Thus, teachers' classroom
19 management style creates a particular climate for teaching and learning. In
20 other words, when teachers practice a type of classroom management style
21 (behaviour and instruction), it influences the teaching and learning
22 environment. For instance, Lewin, Lippitt and White (1939) as cited in a
23 Djigic and Stojiljkovic (2011) showed that democratic teaching and learning
24 style has many benefits in the classroom than authoritarian or laissez-faire
25 style. These researchers found that democratic teachers are considered as

1 members of the class community; they exchange views with students, involve
2 them in activities and give directions without attempting to control the
3 students. Such teachers behaviour create an environment where students
4 cooperate, become responsible towards school obligations, set high standards
5 of learning and are motivated for achievement. It is quite clear that teachers'
6 classroom instructional and behavioural management style create a classroom
7 climate which may promote or impede teaching and learning. In the view of
8 this, teachers' classroom management style (instruction and behaviour) was
9 investigated in this study to determine its influence on students' academic
10 performance at SHS within the Kumasi Metropolis

11

12 **Empirical Review**

13 This section contains review of relevant literature related to the study
14 of the influence of SHS teacher's classroom behavioural and instructional
15 management styles (interventionist, interactionist and non-
16 interventionist) on students' academic performance. The review is
17 organised as follows: dimensions of classroom management and literature
18 review in accordance to the subheadings of the purpose of this study. The
19 literature review is organised as: literature on the commonest classroom
20 behavioural and instructional management styles among teachers at SHS;
21 literature on the differences in students' academic performance across the
22 classroom behavioural and instructional management styles of teachers.
23 The third subheading reviews literature on the classroom behavioural and
24 instructional management styles that best predicts students' academic
25 performance in schools. This is followed by the last subheading that

1 review literature on the differences in the classroom behavioural and
2 instructional management styles with respect to teacher's gender.

3 **Dimensions of Classroom Management**

4 Classrooms are filled with students who come to schools to learn.
5 Students have different learning abilities, come from varying home
6 environments, show differences in willingness to learn and among other
7 attributes, yet teachers teach them all. Obviously, teachers need to be on top of
8 managing the classroom since according to Yilmaz and Cavas (2008)
9 classroom management is one of the most important issues in educational
10 settings. It has been identified as a major influence on teacher performance, a
11 key source of teachers' job-related stress and a prerequisite for student
12 learning (Emmer & Hickman, 1991). The term 'classroom management' is
13 variously defined by researchers. Brophy (1998) defines it as a teacher's set
14 of actions taken to create and maintain a learning environment conducive to
15 attainment of the goals of instruction (arranging the physical environment of
16 the classroom, establishing rules and procedures, maintaining attention to
17 lessons and engagement in academic activities). Martin, Yin and Baldwin
18 (1998) describe it as a teacher's efforts to oversee classroom activities such as
19 learning, social interaction and student behaviour. Still, classroom
20 management is a combination of rules, words and many actions that a teacher
21 apply to keep the classroom 'running smoothly' so that teaching and learning
22 can work efficiently (Groves, 2009). A recent definition by Martin and Sass
23 (2010) is classroom management comprises the organization of the physical
24 environment of the classroom, management of planning and programming
25 activities, management of relations and communication in the classroom and

1 management of children's behaviour. Clearly, classroom management is a
2 broad term and it is one of the primary areas of concern expressed by
3 educators at all levels. Originally, classroom management comprised three
4 dimensions: instructional management, people management, and behaviour
5 management as opined by Martin, Yin and Baldwin (1998). A number of
6 research studies describe instructional management to include aspects such as
7 monitoring seatwork, structuring daily routines, and allocating materials
8 (Burden, 1995; Kounin, 1970; McNeely & Mertz, 1990; Weinstein &
9 Mignano, 1993) as cited in Martin et al, (2006). Again, the people
10 management dimension pertains to what teachers believe about students as
11 persons and what teachers do to develop the teacher-student relationship.
12 Finally the behaviour management dimension is similar to, but different than
13 discipline, in that it focuses on pre-planned means of preventing misbehaviour
14 rather than the teacher's reaction to it. Essentially, this facet includes setting
15 rules, establishing a reward structure, and providing opportunities for student
16 input (Martin et al, 2006). Currently through many research works, classroom
17 management may actually comprise only two (2) dimensions: instruction
18 management and people management with the third subscale (behaviour
19 management) absorbed by the people management subscale (Martin, Yin, &
20 Baldwin (1998); Martin, Yin, & Mayall, (2007); Martin & Sass (2010) as cited
21 in Koutrouba, Markarian and Sardianou (2018). According to them,
22 instructional management refers to the teacher's effort to plan and conduct the
23 daily teaching routine, design learning activities for his/her students, to choose
24 learning materials, monitor and assess the students' learning procedure and
25 academic performance in a constructive learning environment. On the other

1 hand, behaviour management refers to the establishment of rules which deter
2 students from displaying misbehaviour, reward them for positive behaviour,
3 and strongly motivate them to accept, utilize and take full advantage of these
4 rules. Also, it refers to teachers' efforts to establish and maintain high-quality
5 communication with their students and to develop relationships based on
6 teacher-student mutual respect and cooperation. Hence classroom management
7 in this study was investigated along the two dimensions: instructional and
8 behavioural management. Glickman and Tamashiro in 1980 together with
9 Wolfgang in 1995 as cited in (Koutrouba, Markarian & Sardianou, 2018)
10 proposed a conceptual model to explain teachers' beliefs concerning managing
11 instruction and students' behaviour in class. According to them, teachers
12 practise beliefs on classroom management that demonstrate a particular style.
13 The researchers further state that each classroom management dimension is
14 categorised into three styles: non-interventionist, interactionalist and
15 interventionist. The three styles exist in a continuum of control. At one end is
16 non-interventionist and the other end is interventionist with the interactionalist
17 mid-way in the continuum. Non-interventionist teachers exhibit low locus of
18 control whilst students are given high control and hence they are oriented
19 towards student-centered methods of classroom management. On the other
20 hand, interventionist teachers exhibit high locus of control whilst students are
21 given little or no control in managing the classroom and thus they are oriented
22 towards teacher-centered methods of managing classrooms. Interactionalist
23 teachers are known to share their power with students when managing
24 classrooms and therefore often employ teacher-student interactive methods. In
25 view of recent dimensions of classroom management and its accompanying

1 styles, this study was conducted to investigate the influence of teachers'
2 classroom instructional and behavioural management style on senior high
3 school students' academic performance within the Kumasi Metropolis of
4 Ashanti region, Ghana.

5 6 **Commonest Classroom Behavioural and Instructional** 7 **Management Styles**

8 Research works on the dimensional structure of classroom
9 management began decades ago. Most of such early work investigated
10 teachers' classroom management style based on three dimensions:
11 (instructional management, behaviour management and people management)
12 using the Attitudes and Beliefs on Classroom Control (ABCC) Inventory
13 (formerly titled the Inventory of Classroom Management Style). The ABCC
14 consists of 29 likert format statements and includes three sub-scales:
15 instructional management (14 items); people management (9 items); behaviour
16 management (6 items). One of such works was conducted by Martin and Yin
17 (1997) on beliefs regarding classroom management style. They investigated
18 the differences between male and female teachers, urban and rural secondary
19 level teachers. The researchers discovered that rural teachers were
20 significantly more controlling and interventionists on the instructional
21 management dimension; urban teachers were significantly more
22 interventionist than rural teachers in people management and there was no
23 statistical difference on the behaviour management dimension between rural
24 and urban teachers as well as between male and female teachers. A case study
25 conducted by Eveyik-Aydın, Kurt, and Mede (2009) explored the relationship

1 between teacher beliefs and styles on classroom management in relation to
2 actual teaching practices in Turkey. The researchers also used the Attitudes
3 and Beliefs on Classroom Control (ABCC) Inventory (Martin, Yin, &
4 Baldwin, 1998) and discovered that the participant was interactionist on the
5 instructional and people management subscales whilst interventionist on the
6 behaviour dimension. Again, a study on beliefs, attitudes and classroom
7 management of prospective teachers by Caner and Tertemiz (2014) used a
8 study sample of 280 third and fourth year students attending an English
9 Language Teaching program. The Attitudes and Beliefs on Classroom Control
10 (ABCC) Inventory was adapted for the study. The results indicated that the
11 prospective teachers had interventionist orientations on both the instructional
12 management and people management subscales.

13 Other studies examined classroom management styles of teachers in
14 general. For instance in Isfahan-Iran a study by Moghtadaie and Hoveida
15 (2015) on the relationship between academic optimism and classroom
16 management styles of teachers—case study: elementary school teachers
17 discovered that 192 out of 384 teachers were interactionist-oriented. The
18 teacher participants' classroom management style was evaluated using the
19 questionnaire of class management style of Wolfgang and Glickman (1986). A
20 similar work also in Iran was conducted by Moradi (2020) with 20 English
21 secondary school teachers. The researcher investigated the impact of
22 classroom management on students' communication skills in English language
23 classroom. Again, the Wolfgang and Glickman Class Management Style
24 Questionnaire was used to determine commonest classroom management
25 style. The study discovered that 45% of the English secondary school teachers

1 practise the interactionist style. Again Serbian researchers Djigic and
2 Stojiljkovic in 2011 aimed to discover the frequently used classroom
3 management style in a sample of 269 primary school teachers. They found that
4 59.5% of observed teachers are interactionists using the instrument Protocol
5 for classroom management styles assessment (PCMSA) designed for the study
6 purpose (Djigic & Stojiljkovic, 2011).

7 In recent times, studies to determine the classroom management style
8 of teachers employ the behavioural and instructional management scale
9 (BIMS) constructed by Martin and Sass (2010). The development of BIMS
10 provides an opportunity for researchers to reliably measure and determine the
11 teachers' style on the two dimensions of classroom management: behavioural
12 and instructional. Over the years, some studies have reported their findings on
13 the commonest classroom behavioural and instructional management styles
14 teachers employ. A number of studies cited in Koutrouba, Markarian and
15 Sardianou (2018) found that most teachers were interventionists with respect
16 to classroom instructional management style (Caner & Tertemiz, 2015;
17 Savran, Gencer & Bakıroğlu, 2007; Gürçay, 2015; Yılmaz & Çavaş, 2008).
18 Also, Eveyik-Aydın, Kurt, and Mede (2009) had similar results showing that
19 most teacher participants practised the interventionist style of classroom
20 behaviour management. Also, in Singapore, Lang (2013) found most teachers
21 practise the interventionist style of classroom behaviour management. In their
22 own research work: classroom management style from Greek teachers'
23 perceptions. Koutrouba, Markarian and Sardianou (2018) study revealed that
24 most Greek teachers are interventionist with respect to classroom behaviour
25 management of students. Similar finding was obtained in Iran when

1 researchers Rahimi and Asadollahi (2012) found that teachers seemed to adopt
2 an interventionist style on classroom behaviour management. However, a few
3 years later Aliakbari and Heidarzadi (2015) found that teachers practised the
4 interactionalist style when managing students' behaviour in class. Contrarily
5 to the popular findings of interventionist style in managing students'
6 behaviour in class, the American researcher Reynolds-Keefer (2013)
7 discovered that American teachers were interactionalists on the behaviour
8 management dimension. Sowell (2013) obtained similar finding that most
9 American teachers were interactionalist regarding classroom behavioural. Her
10 results showed that 55 out of 83 teachers from third grade to fifth grade level
11 practised the interactionalist style when managing students' behaviour in class.
12 Cerit and Yüksel (2015) as cited in Koutrouba, Markarian and Sardianou
13 (2018) conducted a comparative study on teachers' perceptions of classroom
14 management orientations in Turkey and Latvia. Their study discovered that
15 teachers in both countries are interactionalists in terms of classroom
16 behavioural management. It appears that most studies on the commonest
17 classroom behavioural management style of teachers were conducted in
18 countries like America, Turkey, Serbia and Iran. Literature review has shown
19 that some American, European and Middle East teachers are interventionist
20 whilst others are interactionalist, almost no literature seem to exist on teachers
21 from other countries in Africa particularly Ghana. Hence, there is a need to
22 conduct a study on Ghanaian teachers' classroom behavioural management
23 style to reflect current knowledge.

24 Literature review shows that teacher' classroom instructional
25 management style also varies. Reynolds-Keefer (2013) examined the

1 differences in pre-service teachers' attitudes about classroom management
2 found that the American teachers were interventionists on instructional
3 management. In Singapore, Lang (2013) also discovered that teachers practise
4 the interventionist style with respect to instructional management. Again, most
5 Iranian teachers seemed to adopt an interventionist style on the classroom
6 instructional management dimension (Rahimi and Asadollahi 2012) as cited in
7 Koutrouba, Markarian and Sardianou (2018). In Turkey, a number of research
8 works cited in Koutrouba, Markarian and Sardianou (2018) showed that most
9 teachers were interventionists as regards instructional management (Caner &
10 Tertemiz, 2015; SavranGencer & Bakıroğlu, 2007; Gürçay, 2015; Yılmaz &
11 Çavaş, 2015.) Likewise, the Iranian researchers Rahimi and Asadollahi (2012)
12 as cited in Koutrouba, Markarian and Sardianou (2018) found that teachers
13 seemed to adopt an interventionist style on classroom instructional
14 management dimension.

15 On the other hand, literature shows that some teachers are
16 interventionist during the teaching and learning process. In 1999, Martin and
17 Shobo discovered that teachers in alternative certification programs were
18 significantly more interventionist than traditionally certified teachers
19 regarding instructional management. The finding of Aliakbari and Heidarzadi
20 (2015) as mentioned in Koutrouba, Markarian and Sardianou (2018)
21 contradicts the finding of Rahimi and Asadollahi (2012) years later. Aliakbari
22 and Heidarzadi (2015) investigated the relationship between EFL teachers'
23 beliefs and actual practices of classroom management. They found that teacher
24 participants exhibit the interactionist style and not the interventionist style of
25 classroom instructional management. Sowell (2013) obtained similar finding

1 in her study on Classroom management strategies: the impact on student
2 achievement. Majority of American grade teachers (55 out of 83) were
3 interactionist regarding classroom instructional management styles.
4 Heidarzadi (2015) as cited in Koutrouba, Markarian and Sardianou (2018)
5 found that most teachers were interactionist during teaching and learning.
6 Also, a study by Yasar (2008) on classroom management approaches of
7 primary school teachers reported significantly higher ratings in the use of
8 student-centered teaching approach (interactionist) than teacher-centered
9 teaching approach (interventionist). The findings of studies presented show
10 that the commonest instructional classroom management style of teachers
11 appears to differ with respect to sample used.

12

13

14 **Difference in Students' Academic Performance across the Classroom** 15 **Behavioural and Instructional Management Styles.**

16 Wang et al., (1993) pointed out that classroom management has the
17 greatest direct influence on students' achievements. Several years later,
18 Hakizimana (2016) buttresses Wang et al, (1993) finding when the researcher
19 found a positive and significant relationship between classroom management
20 and students' academic performance ($r = 0.45$, $p = 0.00$). The researcher
21 concluded that classroom management influence students' academic
22 performance. The beliefs of teachers regarding students' behaviour in class
23 and instruction inform the type of classroom management style (non-
24 interventionist, interactionist and interventionist) he/she practises. Research

1 works have been conducted to determine the difference in students' academic
2 performance across the classroom management styles used by teachers. A
3 study on classroom management styles, classroom climate and school
4 achievement by Djigic and Stojiljkovic (2011) reported a significant
5 difference in students' school achievement across the three (3) management
6 styles. Analysis of variance results gave a significant mean difference in
7 students' school achievement between interactionist and interventionist
8 (0.32783) and interactionist and non-interventionist (0.28461) with no
9 statistical difference between interventionist and non-interventionist (-
10 0.04322). The instrument used in conducting the research was the Protocol for
11 Classroom Management Styles Assessment (PCMSA) developed by the
12 researchers. The PCMSA consists of 20 items, describing classroom situations
13 under teacher personality (5 items), teaching (10 items) and discipline (5
14 items) from which a teacher's classroom management style is eventually
15 determined as non-interventionist, interactionist or interventionist. Another
16 study by Moradi (2020) on the impact of classroom management on students'
17 communication skills in English language classrooms discovered that the
18 interactionist style obtained the highest percentage (75%) of students who
19 develop a strong English communication skill as compared to non-
20 interventionist (35%) and interventionist (15 %). Moradi (2020) in a similar
21 manner collected information on teachers' classroom management style using
22 Wolfgang and Glickman Class Management Style Questionnaire which
23 categorises teachers' management style as non-interventionist, interactionist
24 or interventionist. Brannon (2010) as cited in Sowell (2013) examined the
25 relationship between student academic success and classroom management

1 beliefs on fifth grade English language Arts and math scores. Brannon
2 employed the Attitudes and Beliefs on Classroom Control (ABCC) and found
3 that ELA and math scores did significantly differ by group (non-
4 interventionist, interactionist and interventionist). On the contrary in 2012,
5 Adeyemo investigated the relationship between effective classroom
6 management and students' academic achievement. Adeyemo (2012) found no
7 significant difference in students' performance and classroom management of
8 teachers. This finding may be partly due to the instrument used in collecting
9 data on classroom management. The researcher developed and collected
10 information using a structured classroom disruptive behaviour questionnaire.
11 Classroom management is more than collecting information on students'
12 disruptive behaviour and maintaining discipline in the classroom. It is
13 concerned with the organization of the physical environment of the classroom,
14 management of planning and programming activities, management of relations
15 and communication in the classroom and management of children's behaviour
16 (Martin & Sass, 2010). Martin, Yin and Baldwin (1998) as cited in Koutrouba,
17 Markarian and Sardianou (2018) add that it comprises teacher's set of actions
18 for effective establishment of student-to-teacher and teacher-to-student
19 interactive communication, as well as the successful management of students'
20 positive or negative behaviour. It must be mentioned that the research works
21 reviewed used instruments that collected information on classroom
22 management style of teachers in general without reference to the two
23 dimensions (behaviour and instruction). So, these researchers could not
24 provide needed information on the difference in students' academic
25 achievement across the three (3) styles practised by teachers for both

1 behavioural and instructional management. Sowell (2013) conducted a
2 detailed investigation on the impact of classroom management strategies on
3 students' achievement. The researcher used the Behavioural and Instructional
4 Management Scale (BIMS) to collect information on classroom management
5 style of eighty-three (83) elementary school teachers. The BIMS allowed the
6 researcher to gather data on both behavioural and instructional dimensions of
7 classroom management of teachers as recently opined by Martin and Sass
8 (2010). Sowell (2013) found a significant difference in students' academic
9 achievement in reading, math and English language across non-interventionist,
10 interactionalist and interventionist styles in terms of classroom behavioural
11 management. The researcher noted that, no teacher was regarded as non-
12 interventionist in her study. Despite her findings, Sowell (2013) gathered the
13 information using teacher participants who responded to the BIMS a self-
14 report of their behavioural management style in class. A self-report likely will
15 not provide important information since it may lack objectivity.

16 Research works on the difference in students' academic performance
17 across the classroom instructional management styles may be implicitly taken
18 from other works. These research works investigated the performance of
19 students when teachers employ different teaching methods. For instance,
20 Munyaradzi (2013) investigated the differential effectiveness of three teaching
21 methods (student-centered, teacher-student interactive and teacher-centered)
22 and students' academic performance. He discovered a significant mean
23 difference in students' academic performance between the three teaching
24 methods applied. The teacher-student interactive approach (interactionalist)
25 produced the highest mean score (mean=1.87), followed by a mean 1.79 score

1 for the student-centered approach (non-interventionist) and the lowest mean
2 score (mean=1.36) was recorded for the teacher-centered approach
3 (interventionist). Munyaradzi (2013) finding agrees with the finding of another
4 study on teachers' teaching methods and students' academic performances in
5 Ibarapa East local government area secondary schools Adewole (2020). The
6 researcher discovered the performance assessment scores of students differed
7 significantly among the three teaching methods with $F(2, 107) = 10.13$ at a
8 0.05 significance level. The teacher-student teaching method had a
9 significantly highest score when compared to student-centered and teacher-
10 centered teaching methods. Similar finding was reached when Moradi (2020)
11 conducted a study on the impact of classroom management on students'
12 communication Skills in English Language. She also reported that 75% of
13 students developed strong communication skills in English when the teacher
14 practised the interactionist style with regards to instructional management.
15 Overall, the results of studies reviewed show that students' seem to perform
16 relatively better when teaching methods employ make them active learners.
17 The findings of a study by Caprariis, Barman, & Magee (2001) as cited in
18 Carpenter (2006) suggest that lecture methods (interventionist) leads to the
19 ability to recall facts, but discussion (interactionist) produces higher level
20 comprehension. More research works on interactive methods of teaching has
21 shown that cooperative learning and student-led discussions produce
22 favourable student performance outcomes in addition to fostering greater
23 participation, building self-confidence and leadership ability than traditional
24 lecture method (Perkins & Saris, 2001; Yoder & Hochevar, 2005) as cited in
25 Carpenter (2006). Similarly, Hunt, Haidet, Coverdale, and Richards (2003) as

1 cited in Carpenter (2006) investigated student performance in team learning
2 methods and found positive learning outcomes as compared to traditional
3 lecture-based methods. Yet, Sowell (2013) found no significant difference in
4 students' achievement in reading, maths and English Language arts when
5 different teaching methods are employed.

6

7 **Classroom Behavioural and Instructional Management Style that best**
8 **predicts Students' Academic Performance.**

9 Teachers must employ appropriate behavioural and instructional
10 management strategies to effectively teach and manage students' behaviour
11 during lessons according to Marzano, Pickering and Pollack (2001) as cited in
12 Sowell (2013). Taila (2009) as cited in Sowell (2013) also mentions that when
13 teachers properly prepare and organise their classroom management strategies,
14 the learning outcomes of students are better. The primary role of instruction or
15 teaching methods in schools is to develop a major change in the learners'
16 behaviour (Tebabal & Kahssay, 2011 as cited in Oke, 2020). The acquisition
17 of knowledge requires the teacher to employ appropriate methods that is
18 suitable to the learner, the objectives and learning outcomes. Teachers' ability
19 to organise instructions for learning is one of the basic element in teaching
20 (Evertson & Neal, 2005; Jones & Jones, 2012; Martin, Shoba & Yin, 2003).
21 This section discusses the review of literature on teachers' classroom
22 behavioural and instructional management style that best predicts students'
23 academic performance in schools.

1 Oke (2020) investigated the relationship between teachers' teaching
2 methods and students' academic performances at secondary schools located in
3 Ibarapa East, Nigeria. The researcher found that the teacher-student interactive
4 approach produced the highest estimated marginal mean estimates of 1.98,
5 followed by the student-centered approach (mean=1.74) and the lowest mean
6 score (mean=1.26) was recorded for the teacher-centered approach. The
7 researcher concluded that the teacher-student interactive approach produced
8 the best students' learning outcomes. Similarly, a research by Ganyaupfu
9 (2014) on the differential effectiveness of teaching methods on students'
10 academic performance revealed that the estimated marginal mean estimates
11 for teacher-student interactive approach produced a high mean score of 1.87,
12 followed by the student-centered approach with a mean score of 1.79 and the
13 lowest mean score of 1.36 was recorded for the teacher-centered approach.
14 Additional research work by Bibi, Ghazi, Rashid and Mustapha (2017) on
15 teachers' classroom management approaches in public elementary schools at
16 Toba Tek Singh District, India suggests that the interactionist style of
17 classroom management is the best predictor of students' academic
18 performance. Bibi et al, (2017) found that the interactionist style contributed
19 34% to students' academic performance. This was followed by the non-
20 interventionist style which contributed 13% and the interventionist style
21 contributed 9%. Yet, results of previous research conducted by Duman, Gelişli
22 and Çetin (2002) as cited in Bibi et al, (2017) showed that the interventionist
23 classroom management approach was used by the teachers at high school level
24 rather than interactionist approach. The difference in findings between
25 Duman et al, (2002) and Bibi et al, (2017) works may be accounted by the

1 population used. Duman et al (2002) used high school students whilst Bibi et
2 al, (2017) used elementary teachers in gathering information on classroom
3 management. H'lvis (2013) also found that the teacher-student interactive
4 method was most effective in improving students' academic performance
5 H'lvis (2013) carried out a study on effect of different teaching methods on
6 students' academic performance. The researcher used students' assessment
7 test prepared by the lecturer and administered to 109 students. Djigic and
8 Stojiljkovic (2011) carried out a descriptive study on teachers' classroom
9 management styles, classroom climate and school achievement in Serbia. The
10 researchers sampled 273 school teachers teaching maths, sciences, social
11 sciences, technical sciences, languages and arts at the elementary level. The
12 Protocol for Classroom Management Styles Assessment (PCMSA) purposely
13 designed for the study and the data for students' school achievement was
14 obtained from school records. The results of the analysis of variance
15 (ANOVA) disclosed that the mean score of students were 4.12, 3.80 and 3.84
16 for interactionist, interventionist and non-interventionist respectively.
17 Another study by Briggs (2019) on teaching methods as correlate of student
18 performance in business studies in selected public secondary schools in Port
19 Harcourt, Nigeria reported a very high correlation ($r=0.92$) between pre-test
20 and post-test scores of students taught using the discussion method. In the
21 same study however, a correlation of 0.70 was found between pre-test and
22 post-test scores of students taught using the lecture method. The results
23 suggest the use of the discussion method influenced the students'
24 performance. Literature review provides abundant evidence that the
25 interactionists style of classroom instruction seems to predicts students''

1 academic performance best. These findings appear to be supported by the
2 theoretical perspective of Glasser (1997) as well as that of Lanoue (2009) who
3 believe that the interactionist style should result in high learning outcomes.
4 This may be due to the ‘relaxed and free’ learning environment that the
5 interactionist teachers create to provide a stress free atmosphere promoting
6 academic work. On the contrary, Sowell (2013) found no significant
7 difference in the percentage of students passing state-wide standardised test in
8 reading, math, and English language with respect to classroom instructional
9 management styles. She reported that 78% (SD=10%) and 76% (SD=13%) of
10 students passed the standardised test in reading for teachers who practised the
11 non-interventionist and interactionist style respectively. The researcher
12 investigated the relationship between classroom management strategies and
13 students’ academic performance. Again, Sowell(2013) reported no significant
14 difference in percentage of students passing standardised maths and English
15 language test with respect to classroom instructional management styles.
16 Specifically, she found that non-interventionist teachers obtained 69% (SD =
17 10%) of their students passing math and interactionist teachers obtained 69%
18 (SD = 14%) of their students passing math. Sowell (2013) findings may be
19 due to the researcher using previously existing achievement scores of students
20 and not their classroom academic achievement scores at the time of the study.
21 Also, the study sample size was modest- only one school district of 83
22 participating elementary school teachers responded to the BIMS. Again, the
23 BIMS as a self-report measure may not objectively assess teachers’ classroom
24 management especially when it is responded to by teachers themselves. In
25 Rwanda, Hakizimana (2016) examined classroom management and students’

1 academic performance in secondary schools within Nyamagabe district. The
2 researcher used a mixed method to collect information on classroom
3 management from head teachers and their deputies, head of departments and
4 teachers. Hakizimana (2016) found that there is a positive and significant
5 relationship between instructional management and students' academic
6 performance ($r = 0.684$, $p = 0.00$). Despite the positive correlation found
7 between instructional management and students' academic performance,
8 Hakizimana (2016) did not investigate the instructional management style that
9 best predict students' academic performance.

10 Similarly, studies have shown that classroom behavioural management
11 of students is crucial in order to attain learning outcomes (Hill, 2003). Many
12 researchers agree that proper management of students' behaviour improves
13 students' academic achievement (Burden, 1995; Glasser, 1986; Weinstein,
14 1996 as cited in Thi, 2021). Teachers manage students' behaviour using
15 different styles. Thi (2021) conducted a study to examine how classroom
16 management styles affect students' motivation and academic achievement in
17 learning English. The researcher sampled a total of 398 secondary school
18 students, 14 English teachers and collected data using questionnaires, pre-test
19 and post-test. It was reported that the most significant difference between the
20 pre-test and post-test scores of students was 1.025 ($SD = 1.527$) obtained from
21 authoritarian teachers whilst the indulgent teacher obtained the least mean
22 paired difference of 0.875. Clearly, the teacher's style of managing students
23 behaviour in class appears to predict learning outcomes. Also, Sowell (2013)
24 reported significant difference in the percentage of students passing
25 standardised tests in reading, math and English language with respect to

1 classroom behavioural management style. The researcher found that, the
2 interactionalist behavioural management style recorded the highest percentage
3 of students passing reading (83%) whilst the interventionist style recorded (72
4 %.); interactionist style recorded 74% passing math whilst the interventionist
5 style recorded 66% and finally the interactionist style obtained 84% passing
6 English language whilst the interventionist style obtained 79%. Evidently, the
7 interactionist style of behaviour management creates accepting classroom
8 routines that foster teaching and learning. Adeyemo (2012) obtained a
9 conflicting result when the researcher conducted a study on the relationship
10 between effective classroom management and students' academic
11 achievement. The researcher tested the hypothesis that there is no significant
12 difference between students' performance and effective classroom
13 management. This implies that the researcher expects students' academic
14 performance to be equal in classrooms that are effectively managed and
15 classrooms that are not. Information for the study was collected using a self-
16 developed classroom disruptive behaviour questionnaire. The researcher
17 accepted the hypothesis that there is no significant difference between students
18 performance and classroom management. This finding is likely because
19 Adeyemo (2012) investigated classroom management in its composite form.
20 Hence, any likelihood of a difference between students' academic
21 achievement and behaviour management would be obscured. Adeyemo (2012)
22 should have singled out the behaviour dimension aspect of classroom
23 management in his study. This is so because, Evertson and Emmer (1982) and
24 Sanford (1984) as cited in Adeyemo (2012) are of the view that managing
25 students behaviour is one of the aspects of effective classroom management.

1 Therefore teachers must possess effective classroom management skills
2 because it has a significant impact on their educational effectiveness (Lang et
3 al. (1994) as cited in Adeyemo (2012). Moradi (2020) study on the impact of
4 classroom management on students' communication skills in English language
5 found that 75% of students of the interactionist teachers developed strong
6 communication skills; 35% and 15% of students of the non-interventionist and
7 interventionist teachers respectively developed strong communication skills.
8 Moradi (2020) finding of the interactionist style predicting students'
9 academic performance is similar to that of Sowell (2013). However, Moradi
10 (2020) unlike Sowell (2013) did not investigate classroom management in its
11 two dimensions (behaviour and instruction) but rather focussed on general
12 classroom management styles (non-interventionist, interactionist and
13 interventionist). Hakizimana (2016) found that behaviour management has a
14 significant and positive relationship to students' academic performance ($r =$
15 0.3 , $p = 0.002$). However, the researcher did not investigate the behaviour
16 management style that best predicts students' academic performance. This
17 study was therefore conducted to investigate the influence of teachers'
18 classroom management style along its two dimensions (behaviour and
19 instruction) on students' academic performance at Senior High Schools.

21 **Difference in Classroom Behavioural and Instructional Management** 22 **Styles with respect to Teacher's Gender.**

23 Gender is a characteristic that involve biological sex and sex-based
24 social structures that differentiate between masculinity and femininity. Simply,
25 gender is the societal meaning assigned to male and female (Biber & Carger

1 (2000) as cited in Oktan and Caganaga (2015). Literature review on
2 differences in classroom management style between male and female teachers
3 shows conflicting findings. An early study by Martin and Yin (1997) on
4 differences between male and female teachers' attitudes and beliefs regarding
5 classroom management style found that male teachers were considered to be
6 more interventionist than their female counterparts on two (2) subscales of the
7 ABCC Inventory. Specifically, the gender differences were statistically
8 significant in behavioural and instructional management but not in people
9 management. The researchers concluded that females were significantly less
10 interventionist than males regarding both classroom behavioural and
11 instructional management. They opined that male teachers are more
12 controlling, authoritarian, rigid, impersonal, assertive and aggressive
13 (interventionist) than female teachers. However, a recent study by Bullough
14 (2015) as cited in Oktan and Çağanağa (2015) found that there were no
15 differences between male and female teachers on classroom management. The
16 researcher further explained that gender doesn't affect classroom management
17 because teaching is not based on gender but on teachers' motivation and the
18 power of context. The finding of Rahimi and Asadollahi (2012) as cited in
19 Oktan Çağanağa (2015) also supports that gender doesn't have any relation to
20 classroom management. Again, Nejati, Hassani and Sahrpaur (2014) as cited
21 in Oktan and Çağanağa (2015) discovered that males and females did not
22 differ as far as classroom management. They explained their findings that
23 male and female teachers however seem to show subtle difference in terms of
24 student engagement and instructional strategies. Male teachers were better at
25 student engagement, while female teachers were better at instructional

1 strategies. Further research study by Terzi (2001) as cited in Yasar (2008) also
2 reported that male and female teachers use similar styles to manage their
3 classrooms. Terzi (2001) sampled 736 teachers from 73 schools using a
4 researcher made questionnaire called Classroom management Attitudes of
5 Teachers. In their own qualitative study, Oktan and Çağanağa (2015) used
6 semi-structured interview and reflective reports to gather information on male
7 and female teachers' use of classroom management strategies. The researchers
8 used a checklist consisting of 5 crucial aspects of classroom management.
9 These are organization, physical arrangement, behavioural considerations,
10 instructional strategies and social climate. Their findings showed that Iranian
11 male and female teachers manage classrooms in a similar manner. Ünal and
12 Ünal (2012) investigated the impact of years of teaching experience on the
13 classroom management approaches of elementary school teachers. Ünal and
14 Ünal (2012) reported that there were no significant differences between male
15 and female teachers on their classroom management beliefs on behaviour
16 instructional and management scale. These reported results support what most
17 of the literature have claimed about the similarity between male and female
18 teachers' classroom management.

19 Yet, some recent research findings however seem not to be in
20 consistent with an early research finding by Martin and Yin (1997) where the
21 researchers reported no gender differences to any of the classroom
22 management styles. Caner and Tertemiz (2015) adapted the Attitudes and
23 Beliefs on Classroom Control (ABCC) Inventory and collected information to
24 answer a research question: Do ELT student teachers' beliefs on classroom
25 management vary by gender? The researchers discovered there is a statistically

1 significant difference between male and female teachers on instructional and
2 people management subscales. It was discovered that male teachers are more
3 interventionist orientation on both subscales than their counterparts. Also,
4 Saeedi (2016) in his study on EFL teacher's attitudes and beliefs regarding
5 classroom management style: the case of gender and teaching experiences
6 found that there was a significant difference in the mean scores of male and
7 female EFL teachers where ($M = 42.65$, $SD = 26.64$) and ($M = 33.39$, $SD =$
8 19.01) respectively with $t(182) = 3.95$, $p = .000 < .05$ on instructional
9 management of BIMS. Again, there was also a statistically significant
10 difference found between the mean scores of male and female EFL teachers
11 where ($M = 40.51$, $SD = 27.43$) and ($M = 37.12$, $SD = 21.14$) respectively
12 with $t(182) = 2.89$, $p = .008 < .05$ on behaviour management subtest of BIMS.
13 Male EFL teachers obtained higher mean scores on instructional and
14 behavioural management subscales of the BIMS. The researcher concluded
15 that male teachers are considered to be more interventionist than female
16 teachers.

17 A study by Martin, Yin and Mayall (2006) investigated the difference
18 in teachers' classroom management styles concerning classroom management
19 training, teaching experience and gender. In their study, 163 participants
20 responded to the Attitudes and Beliefs on Classroom Control questionnaire.
21 The researchers reported that females were more interventionist than the males
22 when managing students' behaviour in class during teaching. Sowell (2013) in
23 her study reported that they were more male interventionist teachers than
24 female with respect to instructional management style. They were 60% male
25 interventionist as compared to 40% females. However, Sowell (2013) findings

1 also reveal that more females were interactionalist or non-interventionist in
2 terms of instructional management style than males. Her data reports 64%
3 female interactionalist while there were 36% male interactionalist. Also, 61%
4 female as compared to 39% male teachers were non-interventionist. On the
5 behavioural management dimension, Sowell (2013) reported 67% males while
6 there were 33% females with regards to non-interventionist style. On the other
7 hand, 65% females and 35% male teachers were interventionist.
8 Interactionalist teachers were 48 out of 83 where 59% were females and 31%
9 males. Sowell (2013) only reported the frequencies of male and female
10 teachers practising each style of classroom behavioural and instructional
11 management. She did not examine the difference in the style practised by the
12 teachers under the two classroom dimensions. Hence, there is no definitive
13 information in terms of teacher gender that practises a particular style the
14 most. Furthermore, Martin, Yin and Mayall (2006) examined the variables;
15 classroom Management Training, Teaching Experience and Gender impact on
16 teachers' attitudes and beliefs toward classroom management style. The
17 researchers used a revised questionnaire of the ABCC consisting of two
18 dimensions (people management and instructional management). The
19 researchers found that there was no significant difference in people
20 management style between female and male teachers. The researchers opined
21 that the no significant differences regarding gender on the People Management
22 dimension may be that perhaps, the teaching setting is more of a factor than
23 gender in how to interact with students. They however discovered that more
24 female interventionist ($M = 2.18$, $SD = 0.40$) than males ($M = 2.04$, $SD = 0.33$)
25 on the instructional management dimension. These researchers acknowledge

1 that the finding of more female interventionist than males may result from the
2 small percentage (14%) of males in the study.

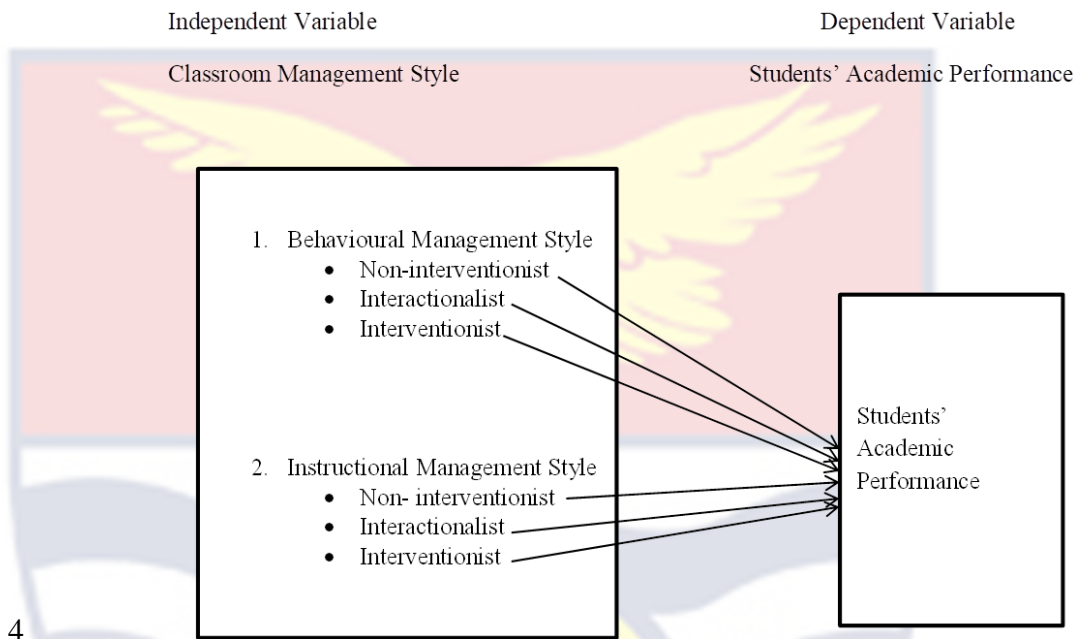
3 Literature has shown results that are conflicting regarding the
4 differences in classroom management style between male and female teachers.
5 A number of studies have reported statistically significant differences whilst
6 other studies found no difference. Most importantly, review of literature show
7 that knowledge and information on this issue come from research works
8 conducted in foreign countries. It seems few or no research works have been
9 conducted in Ghana on the difference in classroom management style
10 (behaviour and instruction) with respect to teachers' gender at any level of
11 education. Therefore among the aims of this study, the researcher determined
12 the difference in classroom behavioural management styles with respect to
13 teacher's gender at SHS within the metropolis and also determined the
14 difference in classroom instructional management styles with respect to
15 teacher's gender at SHS within the metropolis.

16

17 **Conceptual framework of the study**

18 This section focuses on the variables in the study. This study
19 investigated the influence of the independent variable classroom
20 management on the dependent variable academic performance of students.
21 The independent variable, classroom management exist in two aspects:
22 behavioural management and instructional management. Each aspect is
23 also categorised into three management styles: non-interventionist,
24 interactionalist and interventionist (Martin & Sass, 2010). Therefore the

1 study investigated the influence of each style under behavioural and
 2 instructional management on students' academic performance. Figure 2
 3 shows the conceptual framework for this study.



4
5
6 *Figure 2: Conceptual Framework of the study*

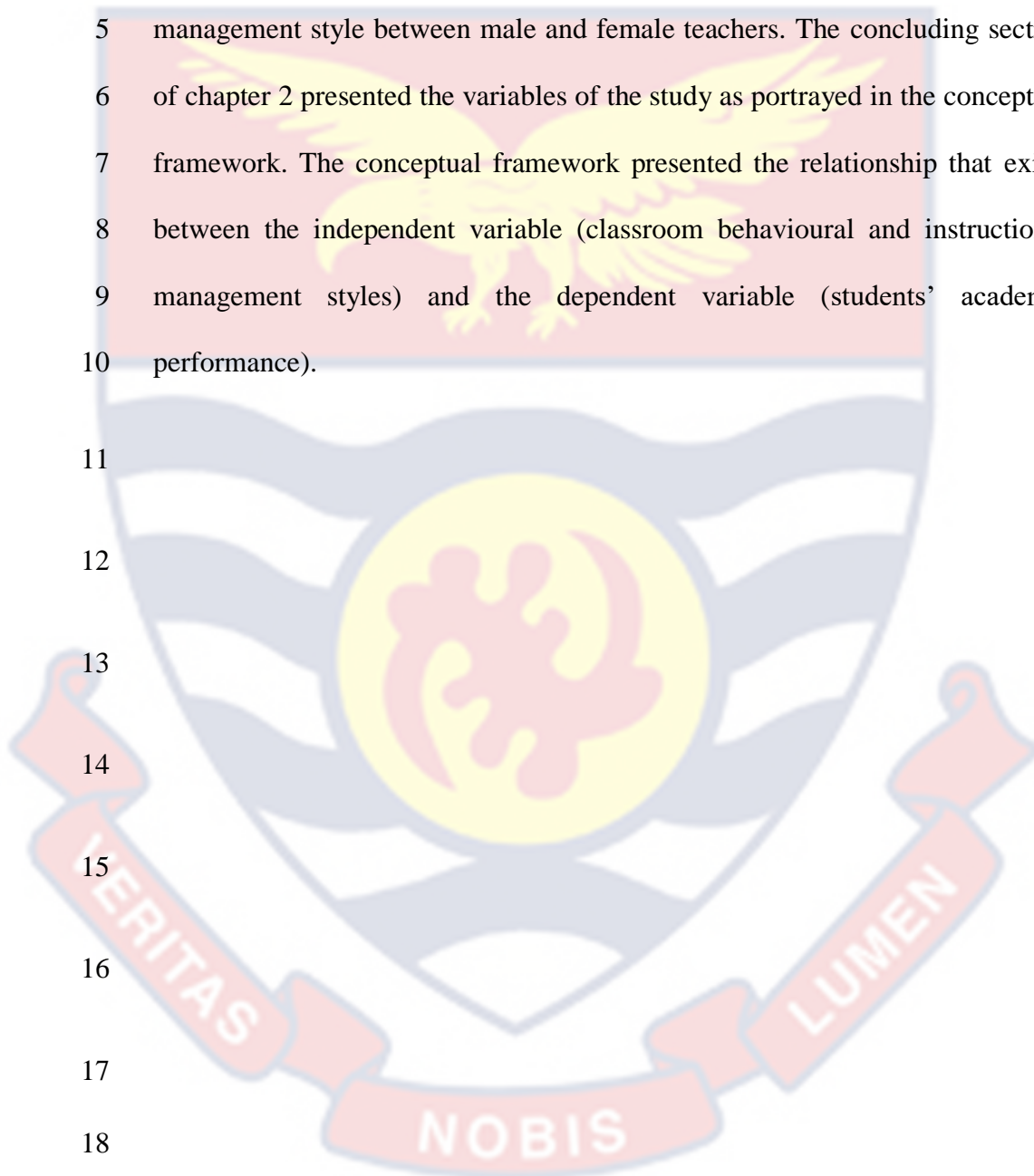
7
8
9 **Chapter summary**

10 Wolfgang and Glickman (1980) proposed that the balance of power
 11 between the teacher and students forms the basis for managing classrooms.
 12 They further explained that, the beliefs that teachers hold regarding students'
 13 behaviour management and acquisition of knowledge inform the practise of a
 14 particular classroom management style. The three classroom management
 15 styles opined by Wolfgang and Glickman (1980) exist in a continuum with

1 non-interventionist and interventionist at the extremes and interactionalist in
2 the middle. This chapter also touched on relevant literature in accordance to
3 the purpose of this study. Literature review on the commonest classroom
4 behavioural and instructional management style revealed that some teachers
5 used different styles while other teachers employ the same style to manage and
6 instruct students in class. Again, review of the literature on the classroom
7 behavioural management style showed that interactionalist style improves
8 students' academic performance. For instance, Sowell (2013) reported that the
9 interactionalist classroom behavioural management style results in high
10 students' achievement in reading, math and reading. However, review of the
11 limited literature on classroom instructional management style that best
12 predict students' academic performance revealed contrasting findings. Some
13 research works for instance by Munyaradzi (2013); Adewole (2020); Moradi
14 (2020) reported that the interactionalist classroom instructional management
15 style best predict students' academic performance while Sowell (2013)
16 reported no significant difference in students' academic performance across
17 the non-interventionist, interactionalist and interventionist styles for classroom
18 instructional management.

19 Furthermore, literature review on difference in classroom behavioural
20 and instructional management styles with respect to teacher's gender showed
21 conflicting reports. Earlier research reports by Martin and Yin (1997) showed
22 that males are teachers tend to be more controlling, authoritarian, rigid and
23 impersonal thus exhibiting the interventionist style than their female
24 counterparts. However, Bullough (2015) as cited in Oktan and Caganaga
25 (2015); Oktan and Caganaga (2015) found no difference in classroom

1 behavioural and instructional management styles among teachers with respect
2 to their gender. Yet, Saeedi (2016) in his study found a significant difference
3 in classroom instructional management style between male and female
4 teachers but obtained no significant difference in classroom behavioural
5 management style between male and female teachers. The concluding section
6 of chapter 2 presented the variables of the study as portrayed in the conceptual
7 framework. The conceptual framework presented the relationship that exists
8 between the independent variable (classroom behavioural and instructional
9 management styles) and the dependent variable (students' academic
10 performance).



11
12
13
14
15
16
17
18
19
20

1 **CHAPTER THREE**

2 **RESEARCH METHODS**

3 **Introduction**

4 This chapter presents the methodology that was followed in the
5 conduct of this study. It includes the study design, study area, population,
6 sample and sampling procedure. Others are data collection instruments, data
7 collection procedure, data processing and analysis and chapter summary.

8
9 **Study Design**

10 A research design is a detailed plan on how a research study is to be
11 performed. The plan contains information on sample selection, data
12 collection and analysing the results (Thyer, 1993). The design of this
13 study was correlational. A correlational study design is a type of
14 descriptive research that measures the relationship between two variables
15 without the researcher controlling either of them. This design best fits this
16 study because the phenomenon that will be investigated borders on the
17 relationship existing between teachers' classroom behavioural and
18 instructional management style and students' achievement at SHS in
19 metropolis. Also this study is cross-sectional in nature as it investigated a
20 phenomenon by using a segment of the target population at a particular
21 time. The phenomenon was investigated by selecting a section of students
22 at SHS within for the duration of the research.

1 Study Area

2 This study was carried out within the Kumasi metropolis of
3 Ashanti region in Ghana. Kumasi Metropolis is one of the 30 districts in
4 Ashanti region. The metropolis is located between latitude 6.350 North
5 and 6.40 0 South and Longitude 1.300 West and 1.35 0 East and elevated
6 250 to 300 metres above sea level. The metropolis is surrounded by
7 Kwabre East and Afigya Kwabre districts at the north, Atwima Kwawoma
8 and Atwima Nwabiagya districts at the west, Asokore Mampong and
9 Ejisu-Juaben Municipality at the east and finally Bosomtwe district at the
10 south. The metropolis is estimated to have a surface area of 214.3 square
11 kilometres and accommodates 36.3 percent of the population in Ashanti
12 region. This makes metropolis the second populous city in Ghana after
13 Accra. Kumasi is a cosmopolitan metropolis with people from many
14 different cultures inhabiting the city. Kumasi Metropolis has a wide array
15 of amenities for health, school, water supply, electricity, information and
16 communication technology, transport, security and among others.

17 Population

18 In research terminology, population of a study can be explained as
19 an entire collection of individuals, institutions, objects and among others
20 with characteristics that are of interest to the researcher (Bhandari, 2020).
21 This general population constitutes the target population for the study. The
22 target population comprised 2,097 second year science students. The
23 science students were used as target population because science is an ever
24 changing field of study which helps to create new knowledge, solves
25

1 everyday problems, increase quality of life and among others (UNESCO,
2 2021). Anderson (2007) as cited in Amoah, Eminah, Ngmanwara and
3 Azure (2023) adds that science education is significant to the development
4 of nations. The advances in science along with technology have influenced
5 the economic development, improve quality of life and provide solutions
6 to some major problems and needs of society. Moreover, science trains
7 scientifically literate citizens and competent professionals in the various
8 scientific disciplines (Ministry of Education, 2010) as cited in Amoah,
9 Eminah, Ngmanwara and Azure, (2023). In view of this, the researcher
10 wanted to examine teachers' classroom management styles that influence
11 students' academic performance in science subjects.

12 Table 1 shows the target population of the study. The table shows
13 that some senior high schools within the Kumasi Metropolis do not offer
14 the general science programme. Specifically, Serwaa Nyarko Girls',
15 Prince of Peace Girls' and Osei Tutu College. Furthermore, the researcher
16 did not get the opportunity to include students from Islamic senior high
17 school and Prempeh College due to lengthy bureaucracy that did not fit
18 into the time lines for data collection of the study. The remaining 9 senior
19 high schools consisted of 2 girls' schools (Kumasi Wesley and Kumasi
20 Girls); 2 boys' schools (Opoku Ware and St. Hubert Seminary) and 5
21 mixed schools (T.I. Ahmadiyya, Armed Forces, Adventist, Kumasi senior
22 high technical and Kumasi Anglican schools) became the target
23 population.

24 Seven schools out of the 9 were used as the accessible population
25 for the study. All the single sex schools were selected whilst 3 out of 5

1 mixed schools were randomly selected for the study. The accessible
 2 population was made of 568 female and 772 male students totalling 1,340
 3 students (Kumasi Metropolitan Education Directorate, 2021). Also, second
 4 year science teachers in the 7 SHS were included in the population for this
 5 study. There were 100 second year science teachers comprising 36 females
 6 and 64 males (Kumasi Metropolitan Education Directorate, 2021). Table 1
 7 shows the target population of second year science students from the 14
 8 Senior High Schools within Kumasi Metropolis.

9 Table 1: *Target population of the study*

S/N	SHS	Second year Science Student Population
1	Armed Forces	185
2	Kumasi Girls'	208
3	Kumasi Senior Technical	129
4	Kumasi Wesley Girls'	188
5	Opoku Ware	209
6	T.I. Ahmadiya	218
7	St. Hubert Seminary	203
8	Serwaa Nyarko Girls	0
9	Prince of Peace Girls'	0
10	Kumasi Anglican	171
11	Osei Tutu College	0
12	Prempeh College	297

13	Islamic SHS	164
14	Adventist SHS	125
Total		2,097

1 Source: Kumasi Metropolis Directorate (2022)

2

3 **Sample and Sampling Procedure**

4 A research sample according to Bryman and Bell (2003) is the section
5 of the population that is selected for study; it is a subdivision of the
6 population. Thus, the study sample was selected from the accessible
7 population. The sample selected was representative of the population. This
8 was achieved in accordance with Krejcie and Morgan's criteria for sample
9 selection (Krejcie & Morgan, 1970). Therefore, the sample size for this study
10 was 320 SHS second year science students. The procedure for selecting a
11 sample for study is known as the sampling procedure. Sampling procedure as
12 defined by Krathwohl (1997) as cited in El-Gohary (2023) is the method of
13 selecting a small number of entities from a population to enable researchers to
14 make reliable conclusions about the nature of that population. There are two
15 major ways of obtaining a study sample. These are the probability and non-
16 probability methods. This study employed the probability method to select the
17 study sample. The probability sample employs random selection so that each
18 unit in the population has an equal opportunity to be chosen (Bryman & Bell,
19 2003). According to these researchers, using a probability sample gives a more
20 representative sample of the population and also helps reduce sampling error.

1 This research study employed the simple random sampling method.
2 The lottery method of the simple random technique is suitable because it
3 offered every respondent an equal chance to be selected from the population.
4 A sampling frame for this study was prepared from the study population. The
5 researcher developed two sampling frames (with respect to student gender).
6 The sampling frame was a list of students' names at the selected SHS studying
7 the general science program within the metropolis. The researcher then used
8 the sampling frame and the lottery method to select the sample for this study.
9 Firstly, the members of the sampling frame were assigned numbers. Secondly,
10 the numbers written on small papers were later folded and placed in a
11 container. Thirdly, the researcher randomly picked a piece of paper from the
12 container one at a time. The selected number is noted and the paper is placed
13 back into the container. Lastly, the name of the student who was assigned the
14 selected number from the sampling frame is chosen and included in the
15 sample. The researcher continues until the required sample size is reached.
16 The sample size for selected SHS was determined using the formula: $X = S * n$
17 / N, where
18 X is sample size for selected school
19 n is the population of science students in selected school
20 N is the accessible population (1340)
21 S is the total sample size (320)
22 Table 2 presents the sample size of students from the selected SHS.
23

1 Table 2: *Sample Size for Selected SHS in the Metropolis*

S/N	SHS	Second year Science Student Population	Sample Size
1	Armed Forces	185	44
2	Kumasi Girls'	208	50
3	Kumasi Senior Technical	129	31
4	Kumasi Wesley Girls'	188	45
5	Opoku Ware	209	50
6	T.I. Ahmadiya	218	52
7	St. Hubert Seminary	203	48
Total		1,340	320

2 Source: Field Survey (2022)

3 Overall, 320 second year general science students from the selected
 4 SHS within the metropolis were randomly selected to collect information on
 5 their teachers' classroom behavioural and instructional management during
 6 lessons. The sample size according to student's sex in the selected SHS was
 7 also determined by the formula:

8 $S_{m/f} = n * S / N$ where

9 $S_{m/f}$ is the number of male or females selected in the school

10 n is the number of second year science males or females in the school

11 N is the accessible population (1340)

12 S is the total sample size (320)

1 Table 3 presents the sample size for selected SHS according to student's sex.

2 Table 3: *Sample Size by Gender for Selected SHS*

S/N	SHS	Second year science students population		Sample size	
		Male	Female	Male	Female
1	Armed Forces	142	42	34	10
2	Kumasi Girls'	0	208	0	50
3	Kumasi Wesley Girls'	0	188	0	45
4	Kumasi Senior Technical	92	37	22	9
5	Opoku Ware	209	0	50	0
6	T.I. Ahmadiyya	159	59	38	14
7	ST. Hubert Seminary	201	0	48	0
Total		803	534	192	128

3 Source: Field Data (2022)

4 The selected second year science students collected information on
 5 their teachers' classroom behavioural and instructional management. Out of
 6 the target population of 100 second year science teachers, 26 teachers
 7 constituted the accessible population. This is because these teachers tutored
 8 the selected students. Therefore, the teachers were purposively selected for
 9 the study. The sample size was 26 teachers comprised 11 females and 15
 10 males.

11

1 **Data Collection Instruments**

2 **The Behavioural and Instructional Management Scale (BIMS)**

3 The independent variable in this study was the classroom behavioural and
4 instructional management styles of SHS teachers. The independent variable
5 was measured using the BIMS adapted from Martin and Sass (2010). BIMS
6 measures a teacher classroom management style in two aspects: behaviour and
7 instruction. According to Martin and Sass (2010), Behavioural Management
8 (BM) is analogous to discipline but quite different from it. These researchers
9 are of the view that BM includes planned activities to prevent students'
10 misbehaviour and how teachers response to it. Behaviour Management largely
11 refers to the day-to-day classroom maintenance routines including rules for
12 student input during teaching and the reward systems used (Martin & Sass,
13 2010). On the hand, Instructional Management (IM) comprises monitoring
14 students' activities at their seats, planning classroom routines and appropriate
15 use of instructional methods such as lecture, interaction, practise work and
16 among others. Martin and Sass (2010) further propose that classroom
17 management entails teachers' actions to supervise classroom activities like
18 student behaviour, student interactions and learning.

19 The application of Wolfgang and Glickman (1980) theory of Teacher
20 Behaviour Continuum by Martin and Sass (2010) gives three management
21 styles of teachers (non-interventionist, interactionalist and interventionist) for
22 classroom behavioural and instructional management. The developers then
23 developed the BIMS to measure classroom teachers' management styles. The
24 BIMS consist of two subscales: behavioural management (BM) and
25 instructional management (IM) subscales. On both subscales, a teacher is

1 categorised as non-interventionist, interactionalist or interventionist based on
2 the mean score obtained. When the mean scores of BM and IM falls within
3 between 1.00 and 2.65, the classroom management style of a teacher is non-
4 interventionist; when the mean score falls within 2.70-4.33, the classroom
5 management style of a teacher is interactionalist and finally when the mean is
6 above 4.33 the classroom management style of a teacher is interventionist.

7 The BIMS is a psychometrically reliable tool for determining teachers'
8 behavioural and instructional management styles. The developers performed
9 series of studies on the BIMS to ascertain its validity and reliability. They first
10 assessed a shortened form of the 24-item BIMS using an exploratory factor
11 analysis. The factor analysis indicated a reliability of .85. They conducted a
12 second survey where the validity and reliability of BIMS was investigated
13 using a confirmatory factor analysis. On both validity and reliability, the
14 BIMS showed a good internal consistency of 0.77. After their two previous
15 studies, the developers sensed that the discriminate and convergent validity of
16 the instrument should be evaluated. Another study was then conducted to
17 compare the BIMS with the Teacher Efficacy Scale of Ohio State. The
18 analysis showed a good over-all model fit. These outcomes confirmed that the
19 BIMS successfully measures teachers' classroom management beliefs and
20 style when instructing and managing students' behaviour in classroom.
21 Consequently, the researchers recommend the use of the 24-item BIMS for
22 future studies. Therefore, the independent variable (classroom management
23 style) was reliably measured using the 24-items on the BIMS.

24 This study collected data using two instruments – an adapted version
25 of BIMS and specialist test (ST). The selected second year general science

1 students used the adapted version of the 24 items on the BIMS originally
2 developed by Martin and Sass (2010) to collect data on their teachers'
3 classroom behavioural and instructional management style. This questionnaire
4 consists of sections A and B. Section A contains the background questions
5 while section B consists of twenty-four (24) statements which examine
6 classroom management style. A six-point likert scale ranging from strongly
7 agree = 6; slightly agree=5; agree=4; slightly disagree=3 slightly disagree=2
8 and strongly disagree=1 was employed in scoring of the items. The BIMS has
9 two subscales: behaviour management style (BM) and instructional
10 management style (IM). The even numbered statements constitute the BM
11 scale whilst the odd numbered statements constitute the IM scale. The total
12 scores on each subscale range from 12-70. The mean score on each subscale
13 has a minimum of 1.00 and a maximum of above 4.33. According to the
14 developers, a teacher can be categorized as non-interventionist, interactionalist
15 and interventionist on each subscale. When the mean score is between 1.00
16 and 2.65, the management style of a teacher is categorised as non-
17 interventionist; when the mean score is between 2.70- 4.33, the management
18 style of a teacher is interactionalist and when the mean score is above 4.33, the
19 management style of a teacher is interventionist. The descriptive statistics of
20 the adapted BIMS is presented as follows.

21

22 **Descriptive Statistics of BIMS**

23 Data on teachers' classroom behavioural management and instructional
24 management was collected by their students using the adapted version of the

1 BIMS. The content validity of BIMS was assessed by experts in the field. It
 2 was then piloted on a sample of second year SHS students within the
 3 metropolis. The reliability co-efficient obtained for the pilot testing did not
 4 deviate much from reported values of Cronbach. Table 4 gives the Cronbach's
 5 Alpha of 0.70 obtained during the main study and it is consistent with reported
 6 reliability co-efficient of 0.76 by Saeedi, (2016).

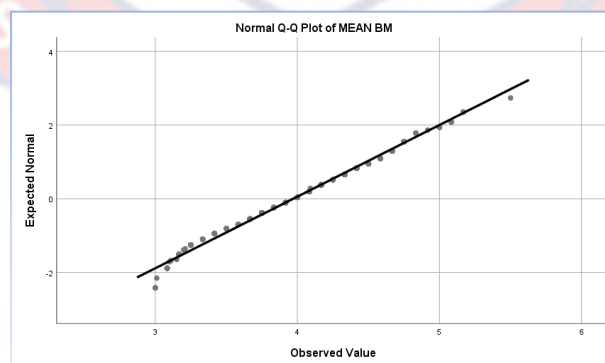
7 Table 4: *Cronbach Alpha of BIMS for Main Study*

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.682	.665	24

8 Source: Field Data (2022)

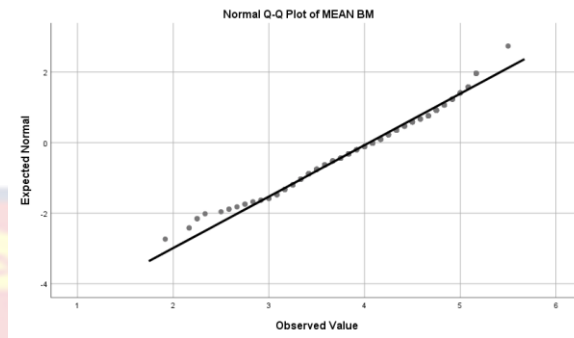
9 The BIMS consists of the behavioural management (**BM**) and
 10 instructional management (**IM**) subscales. The mean scores obtained on the
 11 behavioural management subscale were normally distributed. Figures 2 and 3
 12 show the distribution of the mean scores on the behavioural management
 13 subscale for the biology and chemistry respectively.

14 *Figure 3: Normal Q-Q plot of Mean Scores for Behavioural Management*
 15 *Subscale (Biology).*



16
 17
 18

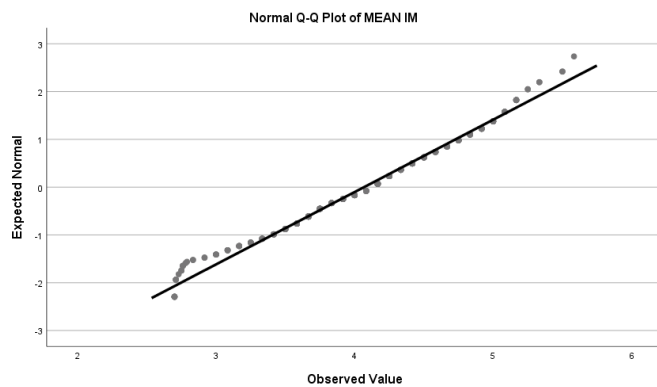
- 1 *Figure 4: Normal Q-Q plot of Mean Scores for Behavioural Management*
- 2 *Subscale (Chemistry).*



- 3
- 4
- 5

6 Similarly, the mean scores obtained on the instructional management
7 subscale were normally distributed. Figures 4 and 5 show the distribution of
8 the mean scores on the instructional management subscale for the biology and
9 chemistry respectively.

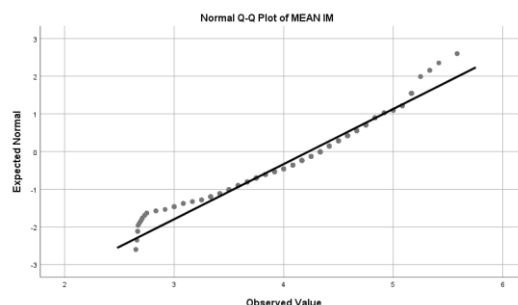
- 10 *Figure 5: Normal Q-Q plot of Mean Scores on Instructional Management*
- 11 *Subscale (Biology).*



- 12
- 13
- 14
- 15

- 16 *Figure 6: Normal Q-Q plot of Mean Scores on Instructional Management*
- 17 *Subscale (Chemistry).*

- 18
- 19
- 20



1 **Measurement of Academic Performance**

2 The dependent variable in this study was the academic performance of
3 students. Academic performance has been defined and explained by many
4 authors. According to Narad and Abdullah (2016) as cited in Abaidoo (2018)
5 academic performance is a student score or mark based on knowledge
6 attained. They further explained that academic performance is the degree of
7 educational goals attained by a student. Performance is defined as the
8 observable or measurable behaviour of a person an animal in a particular
9 situation usually experimental situation (Simpson and Weiner. 1989) as cited
10 in Hakizimana (2013). This means that performance measures the aspect of
11 behaviour that can be observed at a specific period. The performance of
12 students in schools is usually determined by a test. According to Singer (1999)
13 as cited in Hakizimana (2013) defined performance test as the type of mental
14 test in which the subject is asked to do something rather than to say
15 something. Thus, it can be inferred that academic performance test is a
16 concept used to describe the observable display of knowledge, skill,
17 understanding and ideas. It is commonly measured in schools through test,
18 assignments, project works, and quizzes, among others

19 The academic performance of randomly selected second year general
20 science students at SHS in this study was measured by their performance in a
21 specialist tests for biology and chemistry. Students' academic performance in
22 biology was used in this study because the biology syllabus is designed to
23 make students develop practical skills required to work with scientific
24 equipment, biological materials, collect and analyse biological data. More
25 importantly, for students to recognise the value of biology to society and use it

1 responsibly to develop a sense of curiosity and critical mindedness as well as
2 providing a foundation for future career development (Ministry of Education,
3 2010) as cited in Amoah, Eminah, Ngmanwara and Azure, (2023). Also,
4 students' academic performance in chemistry was measured in this study.

5 Chemistry is a complex subject that covers a wide range of topics from basic
6 principles to biochemistry and physical chemistry. This makes the subject
7 challenging to teach as well as learn (Bertels & Bolte, 2015; Johnstone, 2000;
8 Ronkainen, 2015) as cited in Esiam, Osie-Antwi and Quayson (2023).
9 Consequently, the chemistry chief examiner reports over the years indicate
10 that students struggle and fail chemistry. Chiu, (2005) as cited in Esiam, Osie-
11 Antwi and Quayson (2023) notes that the teaching method, instructional
12 language and among others can have impact on the difficulties students
13 encounter in chemistry classroom (Gilbert, 2006; Rocard, et al., 2007;
14 Sjoberg, & Schreiner, 2010) as cited in Esiam, Osie-Antwi and Quayson
15 (2023) add that students frequently do not show sufficient interest in
16 chemistry. Despite the challenges in studying chemistry, the rationale for
17 teaching and learning chemistry at senior high school level is to make students
18 recognise that chemistry is about us humans and everything around us.
19 Chemistry keeps living things alive, through the changes that occur in their
20 bodies. Again, chemistry is all around us: in foods, clothing, medicine,
21 transportation system, outer space, soaps, plastics, books and among others.
22 Also important is that chemistry enables us to understand, explain, control and
23 prevent phenomena like pollution, corrosion of metals and the depletion of the
24 ozone layer. Understandably, chemistry is very important subject for life.

1 In the light of this, it is crucial that a study is conducted to examine
2 students' academic performance in biology and chemistry as well as the likely
3 influence of teachers' classroom instructional and behavioural management
4 style on it. Hence in this study, specialist tests were constructed from
5 randomly selected topics in first and second year syllabus for biology and
6 chemistry subjects. The biology and chemistry tests were further validated by
7 experts in the field and also were similar in construction to past questions of
8 the West African Examination Council. Research works have shown that the
9 outcome of students' academic performance is dependent upon several
10 factors such as student previous educational outcome, classroom management,
11 socio economic status of the parents, parent educational background, student
12 effort and motivation, learning preferences, standard and type of educational
13 institution, the school in which they study and among others (Burden & Ellis
14 ,1995; Roddy & Talcott ,2006; Graetz , 1995; Considine & Zappala ,2002;
15 Kwesiga , 2002) as cited in martin et al (2006).

16

17 **Specialist Tests: Biology and Chemistry.**

18 These were 20 minutes specialist test (ST) made up of 15 objective test
19 items. A test item was made up of a stem (question) and four options from
20 which participants circled the correct response. Each test item carried one
21 mark to make a total score of fifteen on both tests. Specialist tests (ST) were
22 administered to the second year science students at the selected SHS. The
23 specialist test (ST) items were constructed by SHS teachers who are expert in
24 biology and chemistry. The score on the subject specialist test (ST) were used

1 a measure of their academic performance in each subject. The details of
 2 students' academic performance in the specialist tests (ST) are presented.

3 **Descriptive Statistics on Students Performance in Specialist Test (ST)**

4 **Students' Academic Performance**

5 The dependent variable for this study was students' academic
 6 performance in the specialist test (ST) for biology and chemistry. The
 7 academic performance was measured by the scores obtained from the 15
 8 multiple objective questions in the specialist test (ST). The test questions were
 9 responded to by a random sample of 320 second year general science students
 10 selected from 7 SHS in the metropolis.

11 Analysis of biology test scores revealed a lowest score of 0 and a
 12 highest score of 14. The overall mean biology score was 6.98 with a standard
 13 deviation of 2.8. Male students performed better than female students. The
 14 mean biology score for male students was 7.5 with a standard deviation of 2.8
 15 as compared to the mean biology score of 6.2 with a standard deviation of 2.7
 16 for female students. Table 5 gives the performance statistics of students in
 17 biology.

18 Table 5: *Students' Academic Performance in Biology*

Variable		N	X	SD
Biology score	mean		6.98	2.8
Gender	Male	192	7.5	2.8
	Female	128	6.2	2.7

19 Source: Field Data (2022)

1 Generally, the biology scores for the sample were considered to be
 2 normally distributed as depicted on the normal Q-Q plot in Figure 7. The
 3 normality of scores distribution is again crucial for performing further
 4 analytical procedures.

5 *Figure 7: Normal Q-Q Plot of Biology Scores*



6
 7
 8
 9
 10
 11
 12
 13
 14 Likewise, the analysis of chemistry test score gave minimum and
 15 maximum scores of 0 and 12 respectively. The overall average score for
 16 chemistry was 4.6 with standard deviation points of 2.5. Again, male students
 17 performed a little better than female students in chemistry. The mean
 18 chemistry score for males was 4.9 with a standard deviation of 2.5 whilst
 19 females obtained an average chemistry score of 4.1 with standard deviation
 20 points of 2.6. Table 6 presents students' academic performance in chemistry.

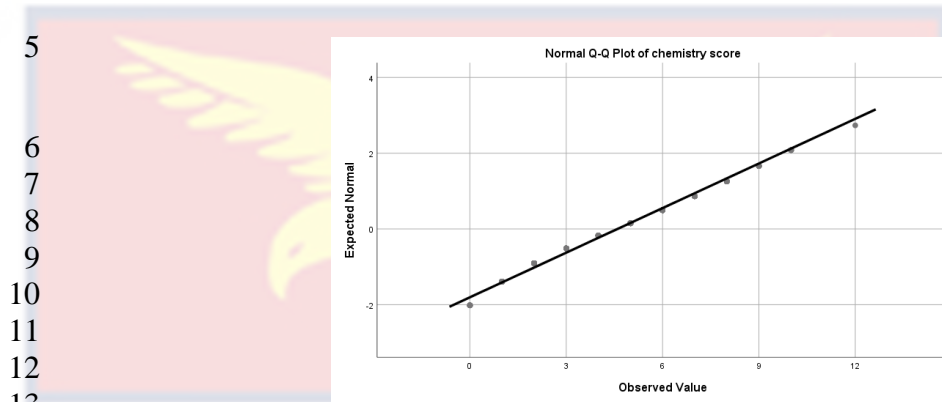
21 Table 6: *Students' Academic Performance in Chemistry*

Variable	N	X	SD
Chemistry mean score		4.6	2.5
Gender	Male	198	4.9
	Female	122	4.1

22 Source: Field Data (2022)

1 The Normal Q-Q plot of chemistry scores shows a fairly normal
2 distribution. The figure 8 depicts normality of scores distribution as it is
3 crucial for performing further analytical procedures.

4 *Figure 8: Normal Q-Q Plot for Students' Chemistry Score.*



14

15 **Validation of Research Instruments**

16 My supervisor made sure that the adapted BIMS had face and content
17 validity. This was accomplished through assessment, comments and
18 suggestions. The subject specialist tests in biology and chemistry tests were
19 constructed by experts in the field based on second year syllabi for each
20 subject and were also similar in construction to past questions by West African
21 Examination Council.

22

23 **Pilot Study**

24 The BIMS was piloted tested at Adventist SHS within the metropolis
25 of Ashanti region. The pilot study was necessary to assess the internal
26 consistency reliability of the instrument. Also, the pilot test gave the

1 opportunity to correct ambiguous statements, poorly worded items and
 2 instructions that were unclear to the respondents before the final
 3 administration.

4 During the pilot test, 50 SHS students in second year studying the
 5 general science programme at Adventist SHS responded to items on the
 6 adapted BIMS within fifteen minutes. The decision of 50 students in the pilot
 7 test was the researcher's belief that the number could help strengthen the
 8 instrument. The data obtained was put through computer analysis to ascertain
 9 its reliability. The result of the pilot test is displayed in the Table 7.

10 Table 7: *Cronbach's Alpha for Pilot Test*

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.742	.795	24

11 Source: Field Data (2022)

12
 13 The result in Table 7 showed that Cronbach's Alpha of 0.8 is
 14 consistent with the authors (Martin & Sass, 2010) and also Saedi, (2016)
 15 reported a reliability of the BIMS .76 in his study. The Cronbach Alpha of .8
 16 obtained for the BIMS used in this study indicates a good internal consistency
 17 above the recommended value of 0.7.

18

19 **Data Collection Procedure**

20 The researcher sought permission from the Kumasi Metropolitan
 21 Directorate of Education to visit selected SHS. The researcher again sought

1 permission from school authorities, head of science department and subject
2 teachers before meeting with students. The researcher administered the
3 instruments with the help of science teachers from the schools. The selected
4 second year science students spent a total of 35 minutes in responding to the
5 BIMS and the subject specialist tests (ST) in biology and chemistry at the
6 school laboratory or any available classroom. The BIMS has two sections: the
7 first section contains the teacher and student demographics and the second
8 section consists of the adapted 24 items on the BIMS for students' use. The
9 BIMS collected data on classroom behavioural and instructional management
10 style for biology and chemistry teachers. The selected students then answer 15
11 objectives test items each in biology and chemistry. The data was collected
12 over a three-week period.

13

14 **Scoring of Instruments**

15 The BIMS items were scored in two parts: Behavioural Management
16 score (BM) and Instructional Management score (IM) was computed. The
17 total on each subscale has minimum and maximum score of 12 and 70
18 respectively. Following this, the mean on each subscale was determined. The
19 mean score is later used to categorise teachers into one of the three
20 management styles (non-interventionist, interactionalist and interventionist) on
21 both subscales as assessed by their students.

22 The test items on the Academic performance Test in Biology and
23 Chemistry were scored out of fifteen marks. On these tests, the minimum and
24 maximum score of a student can be 0 and 15 respectively. The student's score

1 in biology and chemistry is used as a measure of academic performance in
2 each subject.

3

4 **Data Analysis Procedures**

5 Data collected on the field was edited, coded and imputed into the
6 Statistical Package for Service Solution version 21. The data collected was
7 then scrutinised to give solutions to the research questions and test the
8 hypotheses as well. Frequency count was used to answer the first two research
9 questions. The frequency count enabled the researcher to determine the
10 commonest classroom behavioural and instructional management styles
11 among SHS teachers in the metropolis. Also, multiple linear regression tests
12 were used to answer the last two research questions. The outcomes of the
13 multiple linear regression test enabled the researcher to determine the
14 classroom behavioural and instructional management style that best predict
15 students' academic performance at the selected SHS within the metropolis.

16 Analysis of variance (ANOVA) was used to test the first two research
17 hypotheses. ANOVA enabled the researcher to determine any significant
18 difference in students' academic performance across the classroom
19 behavioural and instructional management styles employed by SHS teachers.
20 The last two research hypotheses were tested using independent samples t-test.
21 The independent samples t-test enabled the differences in classroom
22 behavioural and instructional management style between male and female
23 teachers at selected SHS to be determined.

1

2 **Ethical Issues**

3 This concerns the ethics that were followed in the conduct of the study.
4 The ethical standards mostly centered on the methods of protecting
5 respondents' confidentiality and the care and availability of data to other
6 researchers and the general public. The researcher ensured that respondents
7 did not indicate their names, class and school on the instruments to maintain
8 anonymity. The respondents in this study participated willingly and their
9 responses were for academic purposes only.

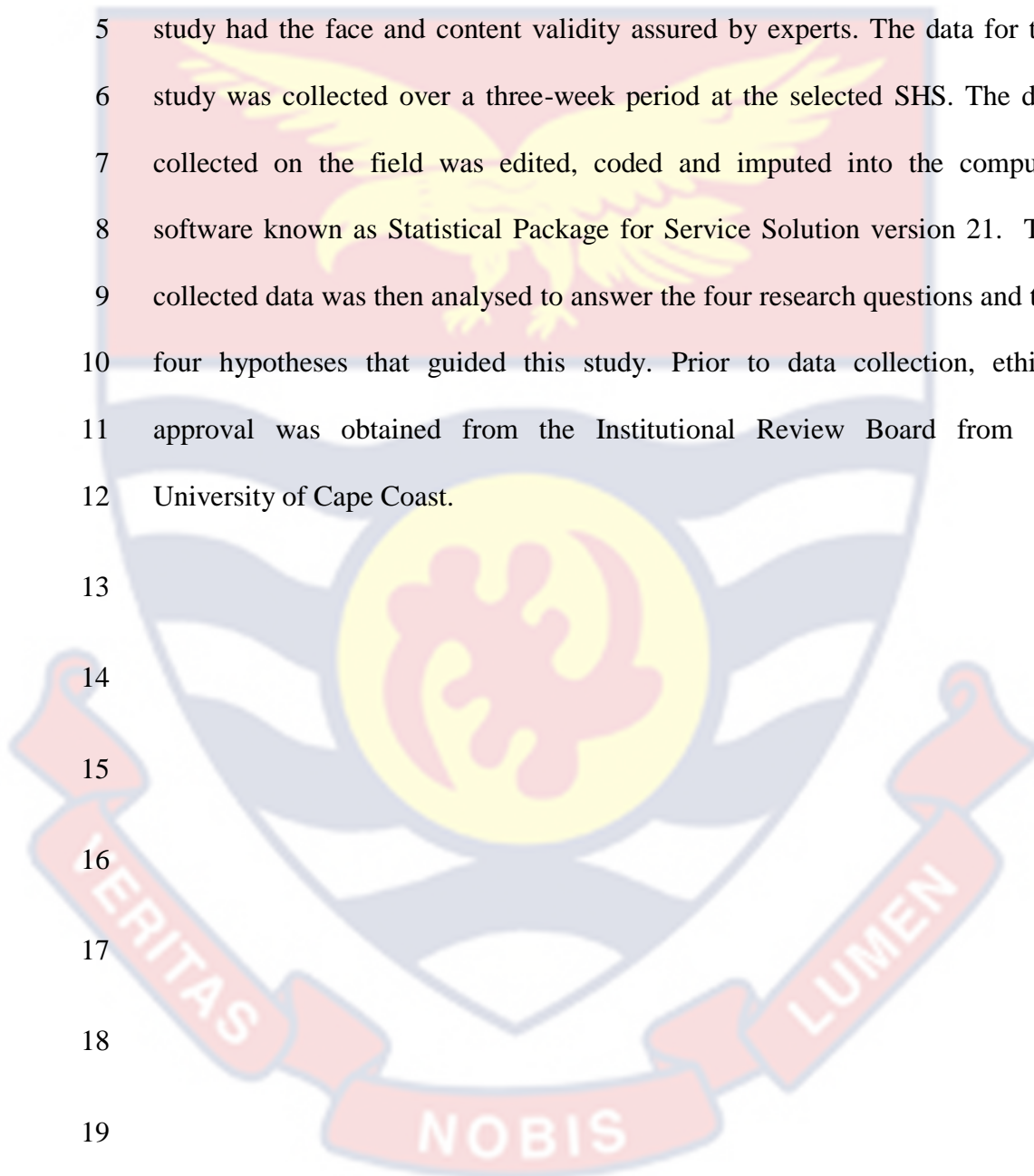
10 Prior to the use of the instruments for this study, the Institutional
11 Review Board of the University of Cape Coast examined and approved them.
12 Again, plagiarism was highly observed in this study. There was no thievery
13 and use of scholarly forgery or copious use of unacknowledged research
14 works. Additionally, the researcher did not forge and manipulate any research
15 material, instruments, processes nor change or omit results to provide an
16 inaccurate data in the research records

17

18 **Chapter summary**

19 Chapter 3 presented the methodology that was followed in the conduct
20 of the study. The study design was descriptive because it examined the
21 influence of teachers' classroom and instructional management style on
22 students' academic performance at SHS within the metropolis. The lottery
23 method was employed to select 320 students from the accessible population in
24 accordance with Krejcie and Morgan's criteria for sample selection.

1 Also, a total of 26 teachers who tutored the selected second year
2 students were purposively selected and included in the study. Data for this
3 study was collected using two instruments: an adapted version of the BIMS
4 and two specialist test (ST) in biology and chemistry. The instruments for this
5 study had the face and content validity assured by experts. The data for this
6 study was collected over a three-week period at the selected SHS. The data
7 collected on the field was edited, coded and imputed into the computer
8 software known as Statistical Package for Service Solution version 21. The
9 collected data was then analysed to answer the four research questions and test
10 four hypotheses that guided this study. Prior to data collection, ethical
11 approval was obtained from the Institutional Review Board from the
12 University of Cape Coast.



13

14

15

16

17

18

19

20

21

22

1 CHAPTER FOUR

2 RESULTS AND DISCUSSION

3 Introduction

4 Chapter 4 discusses the results of this study. Prior to the analysis, data
5 gathered on the field were edited, coded and imputed into the computer
6 software Statistical Package for Service Solution (SPSS) version 21. The
7 predictive analytic software within SPSS processed the data into tables for
8 interpretation. The demographic data were analysed using frequency counts
9 and percentage tables. The main objective of the study was to examine the
10 influence of SHS teachers' classroom behavioural and instructional
11 management style on students' academic performance. This study
12 investigated four research questions and tested four research hypotheses. The
13 research questions in this study were: what is the commonest classroom
14 behavioural management style (non-interventionist, interactionalist and
15 interventionist) among SHS teachers; what is the commonest classroom
16 instructional management style (non-interventionist, interactionalist and
17 interventionist) among SHS teachers; which classroom behavioural
18 management style best predicts students' academic performance at the
19 selected SHS within the metropolis and lastly which classroom instructional
20 management style best predicts students' academic performance at the
21 selected SHS within the metropolis?.

22 The four hypotheses tested in this study were: the difference in
23 students' academic performance across the classroom behavioural
24 management styles (non-interventionist, interactionalist and interventionist) at

1 the selected schools within the metropolis; the differences in students'
2 academic performance across the classroom instructional management styles
3 (non-interventionist, interactionalist and interventionist) at the selected schools
4 within the metropolis; the difference in classroom behavioural management
5 style between male and female teachers at the selected schools within the
6 metropolis and finally the difference in classroom instructional management
7 style between male and female teachers at the selected schools within the
8 metropolis.

9 Overall, 320 second year general science SHS students participated in
10 this study and collected data on 26 teachers from 7 SHS in the metropolis.
11 Data collected on the field was directed by the four research questions and the
12 four hypotheses in this study. The data from respondents were analysed to
13 with respect to their demographics and the research questions and hypotheses.

14

15 **Demographic Data Analyses**

16 This section of data analysis focuses on the background data of the
17 respondents. These are grouped into teachers' background data and students'
18 background data.

19 **Teachers' Demographics**

20 Data collected revealed that the selected students collected information
21 on 26 teachers regarding their classroom behavioural and instructional
22 management during lessons. Background data analysis showed that 15 out of
23 26 teachers were biology teachers from the selected schools. Out of 15 biology

1 teachers, there were 7 females and 8 males representing 46.7% and 53.3%
 2 respectively. The remaining 11 teachers out of 26 were chemistry teachers at
 3 the selected schools. Specifically, there were 4 females and 7 males teaching
 4 chemistry at the second year level. Table 8 presents the demographics of
 5 second year biology and chemistry teachers at the selected SHS within the
 6 metropolis. Teachers' demographics show that there were more male teachers
 7 than female teachers with respect to biology and chemistry at the selected
 8 schools within the metropolis.

9 Table 8: *Teachers' Demographics*

Variable	Subject	Gender	Frequency	Percent
Gender	Biology	Male	8	53.3%
		Female	7	46.7%
	Chemistry	Male	7	63.64%
		Female	4	36.36%

10 Source: Field Data (2022)

11 **Students Demographics**

12 The background data on the sample were analysed and organised into a
 13 frequency table. A total of 320 second year SHS general science students
 14 formed the sample. Students' background data is organised into gender with
 15 respect to biology and chemistry subjects. The gender demographics for
 16 biology showed that 192 were males, accounting for 60% whilst 128
 17 accounting for 40% were females. Likewise, the gender demographics for
 18 chemistry revealed 190 males representing 61.9 % against 122 females
 19 representing 38.1%. The results are presented in Table 9. Students'
 20 demographics reveal that there were more second year male students than

1 female students who studied biology and chemistry at the selected schools
2 within the metropolis.

3 Table 9: *Students' Demographics*

Variable	Category	Gender	Frequency	Percent
Gender	Biology	Male	192	60.0%
		Female	128	40.0%
	Chemistry	Male	198	61.9%
		Female	122	38.1%

4 Source: Field Data (2022)

7 Analysis of Main Data

8 This study was conducted to address the following research questions and
9 hypotheses.

10 Research Question 1

11 **What is the commonest classroom behavioural management style**
12 **(interventionist, interactionist and non-interventionist) among SHS**
13 **teachers at the selected schools within the Kumasi Metropolis?**

14 This research question identified the commonest classroom
15 behavioural management style among SHS teachers at the selected schools
16 within the metropolis. The selected second year general science students
17 collected information on their teachers' classroom behavioural management
18 using items on the adapted BIMS. The data collected enabled the researcher to
19 determine the commonest classroom behavioural management style among
20 teachers at the selected SHS within the metropolis. The result of the data
21 analysis is presented in Table 10.

1 Table 10: *Frequency Table for the Commonest Classroom Behavioural*
 2 *Management Style among SHS Teachers*

Variable	Subject	Category	Frequency	Percent
Classroom behavioural management style	Biology teachers	Non-interventionist	0	0%
		Interactionalist	11	73.33%
		Interventionist	4	26.67%
	Chemistry teachers	Non-interventionist	0	0%
		Interactionalist	7	63.63%
		Interventionist	4	36.37%

3 Source: Field Data (2022)

4 The result in Table 10 shows that. Thus, 2 out of 3 classroom
 5 behavioural management styles (interactionalist and interventionist) are
 6 practiced by teachers within the metropolis. Table 10 shows that there were a
 7 total of 15 biology teachers in this study. Out of this number, 11 practised the
 8 interactionalist style and 4 practised the interventionist style with respect to
 9 classroom behavioural management style from Table 9. Again, Table 10
 10 shows that there were a total of 11 chemistry teachers in this study. Out of this
 11 number, 7 practised the interactionalist style and 4 practised the interventionist
 12 style with respect to classroom behavioural management style from Table 10.

13 The results from Table 10 clearly show that, the interactionalist style
 14 of classroom behavioural management was the commonest among teachers at
 15 the selected SHS within the metropolis. Table 10 shows that 73.33% and
 16 63.63% of biology and chemistry teachers respectively were interactionalist
 17 with regards to classroom behavioural management.

1 **Research Question 2**

2 **What is the commonest classroom instructional management style**
 3 **(interventionist, interactionalist and non-interventionist) among SHS**
 4 **teachers at the selected schools within the Kumasi Metropolis?**

5 This research question identified the commonest classroom
 6 instructional management style among SHS teachers at the selected schools
 7 within the metropolis. Again, the selected second year general science students
 8 collected information on their teachers' classroom instructional management
 9 using items on the BIMS. The data collected enabled the researcher to
 10 determine the commonest classroom instructional management style practised
 11 among teachers at the selected SHS. The outcome of the data analysis is
 12 shown in Table 11.

13 *Table 11: Frequency Table for the Commonest Classroom Instructional*
 14 *Management Style among SHS Teachers*

Variable	Subject	Category	Frequency	Percent
Classroom instructional management style	Biology teachers	Non-interventionist	0	0%
		Interactionalist	9	60.00%
		Interventionist	6	40.00%
Classroom instructional management style	Chemistry teacher	Non-interventionist	0	0%
		Interactionalist	5	45.45%
		Interventionist	6	54.54%

15

 Source: Field Data (2022)

16 The result in Table 11 shows no teacher practises the non-
 17 interventionist style of classroom instructional management. Thus, 2 out of 3

1 classroom instructional management styles (interactionalist and
2 interventionist) are practiced by teachers within the metropolis. Table 11
3 shows that there were a total of 15 biology teachers in this study. Out of this
4 number, 9 practised the interactionalist style and 6 practised the interventionist
5 style with respect to classroom instructional management style from Table 11.
6 Also, Table 11 shows that there were a total of 11 chemistry teachers in this
7 study. Out of this number, 5 practised the interactionalist style and 6 practised
8 the interventionist style with respect to classroom instructional management
9 style from Table 11.

10 The results from Table 11 clearly show that biology and chemistry
11 teachers at the selected schools within the metropolis practise different styles
12 of classroom instructional management. The interactionalist style of classroom
13 instructional management was the commonest among biology teachers (60%)
14 whilst the interventionist style was the commonest among chemistry teachers
15 (54.54%).

16 The results of research questions 1 and 2 depicted in Tables 10 and 11
17 revealed that no SHS teacher was regarded as non-interventionist with regards
18 to classroom behavioural and classroom instructional management styles.
19 Therefore, this eliminates the non-interventionist category from classroom
20 behavioural and instructional management styles.

21 **Research Hypothesis 1**

22 **H_0^1 : There is no difference in student's academic performance between**
23 **interactionalist and interventionist styles of classroom behavioural**
24 **management.**

1 H_1^1 : There is a difference in student's academic performance between
 2 interactionalist and interventionist styles of classroom behavioural
 3 management.

4 The purpose of this first hypothesis was to discover if there is a
 5 difference in the average scores of students' academic performance (in biology
 6 and chemistry) between interactionalist and interventionist teachers with
 7 regards to classroom behavioural management. The independent samples t-test
 8 was used with classroom behavioural management styles as independent
 9 variable and student's academic performance scores as dependent variable.
 10 Normality and homogeneity of variance tests were conducted to ensure that
 11 assumptions were not violated. The outcome of the independent samples t-test
 12 is shown in Table 12.

13 Table 12: *Independent Samples T-test for Difference in Students' Academic*
 14 *Performance between Interactionalist and Interventionist Styles of Classroom*
 15 *Behavioural Management*

Variable	Subject	Category	X	SD	t	df	F	Sig.
Classroom behavioural management	Biology	Interactionalist	6.7	2.8	2.8	318	.15	.004
		Interventionist	7.8	2.7				
	Chemistry	Interactionalist	4.9	2.6	2.8	318	.004	.005
		Interventionist	4.1	2.4				

16 $p < 0.05$. Results are statistically significant. Source: Field Data (2022)

17 The results in Table 12 give a difference in students' biology and
 18 chemistry average scores between interactionalist and interventionist styles of
 19 classroom behavioural management with $t(2.8,318) = 0.15$, $p < 0.05$ for biology
 20 and $t(2.8,318) = 0.004$, $p < 0.05$ for chemistry. Therefore, the researcher rejected
 21 the null hypothesis in favour of the alternate hypothesis. The alternate

1 hypothesis stated as there is a difference in students' academic performance
2 between interactionist and interventionist styles of classroom behavioural
3 management was therefore accepted.

4 This suggests that there is a difference in academic performance of
5 students between teachers who practice interactionist and interventionist
6 style when managing students' behaviour. Specifically, the results in Table 12
7 showed that when biology teachers manage students' behaviour using the
8 interventionist style, their students obtained a significantly higher average
9 score of 7.8 as compared to an average score of 6.7 obtained by students when
10 their teachers manage their behaviour using the interactionist style. Even
11 though, the interventionist style of behavioural management was not the
12 commonest style among SHS biology teachers as seen in Table 10.

13 Again, the results from Table 12 gave a difference in students'
14 chemistry average scores between interactionist and interventionist styles of
15 classroom behavioural management with $t(2.8, 318) = 0.004, p < 0.05$.
16 Therefore, the researcher rejected the null hypothesis in favour of the alternate
17 hypothesis. The alternate hypothesis stated as there is a difference in students'
18 academic performance between interactionist and interventionist styles of
19 classroom behavioural management was therefore accepted. This implies that
20 students whose chemistry teachers practise interactionist style of classroom
21 behaviour management obtained a higher average score of 4.9 as compared to
22 the average score of 4.1 obtained by students whose chemistry teachers are
23 interventionist when managing their classroom behaviour. The results in Table
24 12 clearly showed the difference in students' chemistry average scores

1 between interactionist and interventionist styles of classroom behavioural
2 management.

3 Overall, the result of the Independent samples t-test showed that there
4 exist a difference in students' academic performance between interactionist
5 and interventionist styles of classroom behavioural management was for both
6 biology and chemistry as shown in Table 12. Therefore, the magnitude of the
7 difference in students' academic performance between interactionist and
8 interventionist styles of the classroom behavioural management was
9 determined. Table 13 presents the Eta squared results obtained between
10 interactionist and interventionist styles of classroom behavioural
11 management for biology and chemistry.

12 Table 13: *Eta Squared for the Difference in Students' Academic*
13 *Performance Scores between Interactionist and Interventionist styles of*
14 *Classroom Behavioural Management*

Variable	Subject	Categories	N	t	Eta Squared
Classroom behavioural management style	Biology	Interactionist	11	2.8	0.38
		Interventionist	4		
	Chemistry	Interactionist	5	2.8	0.47
		Interventionist	6		

16 Source: Field Data (2022)

17 Table 13 presents the effect size for the difference in students'
18 academic performance scores in biology and chemistry between
19 interactionist and interventionist classroom behavioural management style
20 was calculated using Eta squared. The formula is given as $\text{Eta squared} = \frac{t^2}{t^2 + (N_1 + N_2 - 2)}$ where $t=2.8$, $N_1=11$ and $N_2=4$ from Table 13. The Eta squared
21 for biology was 0.38 or 38%. Cohen (1988) proposed that an effect size of
22

1 more than 0.14 is considered as large. This suggests a huge magnitude of 38%
2 of the variance in students' biology scores is explained by teachers' classroom
3 behavioural management style. Thus, 38% of variance in students' biology
4 scores can be explained by teachers' interventionist behaviour management
5 style.

6 Likewise, the effect size for difference in students' chemistry score
7 between interactionist and interventionist styles of classroom behavioural
8 management was determined by Eta squared. The formula is given as Eta
9 squared = $t^2 / t^2 + (N_1 + N_2 - 2)$ where $t=2.8$, $N_1=5$ and $N_2=6$ from Table 13. A
10 value of 0.47 or 47% effect size was obtained. This implies that a large
11 magnitude of 47% of the variance in students' chemistry scores is explained
12 by the style of teachers' classroom behavioural management. Thus, 47% of
13 variance in students' chemistry scores can be explained by teachers'
14 interactionist behaviour management style.

15 **Research Hypothesis 2**

16 **H^2_0 : There is no difference in students' academic performance between**
17 **interactionist and interventionist styles on classroom instructional**
18 **management subscale.**

19 **H^2_1 : There is a difference in students' academic performance between**
20 **interactionist and interventionist styles on classroom instructional**
21 **management subscale**

22 The purpose of this hypothesis was to determine if there is a statistical
23 significant difference in the mean scores of students' academic performance
24 (in biology and chemistry) between interactionist and interventionist styles

1 of classroom instructional management. This second hypothesis was tested
 2 using independent samples t-test with classroom instructional management
 3 styles as independent variable and student's academic performance scores as
 4 dependent variable. Normality and homogeneity of variance tests were
 5 conducted to ensure that underlying assumptions were not violated. Table 14
 6 presents the results of the independent samples t-test.

7 Table 14: *Independent Samples T-Test for Difference in Students' Academic*
 8 *Performance between Interactionalist and Interventionist Styles of Classroom*
 9 *Instructional Management*

Variable	Subject	Category	X	SD	t	df	F	Sig.
Classroom instructional management	Biology	Interactionalist	6.8	2.8	1.0	318	.28	.30
		Interventionist	7.2	2.8				
	Chemistry	Interactionalist	4.8	2.3	1.2	318	5.8	.25
		Interventionist	4.4	2.7				

10 $p > 0.05$. Result not statistically significant. Source: Field Data (2022)

11 The results in Table 14 shows that there exist no difference in students'
 12 biology and chemistry mean scores between interactionalist and interventionist
 13 styles of classroom instructional management with $t(1,318)=0.28$, $p>0.05$ for
 14 biology and $t(1.2,381)=5.8$, $p>0.05$ for chemistry. Therefore, the researcher
 15 failed to reject the null hypothesis. This implies that irrespective of teachers'
 16 classroom instructional management style, there exist no difference in the
 17 students' academic performance in biology and chemistry. Simply put, there
 18 was no difference in students' academic performance score whether teachers
 19 engage in exchange of ideas, use group discussions, activities, and offer
 20 explanations during teaching (interactionalist) or teachers act as a repository of
 21 knowledge and therefore do not utilise interaction methods during teaching
 22 (interventionist).

1 In sum, the results for hypothesis 1 showed that there is a difference in
2 students' academic performance between the interactionist and
3 interventionist classroom behavioural management styles practised by teachers
4 where $t(2.8, 318) = 0.15$, $p < 0.05$ for biology and $t(2.8, 318) = 0.004$, $p < 0.05$
5 for chemistry at the selected SHS within the metropolis. Also, the results for
6 hypothesis 2 showed that there exist no significant difference in students'
7 academic performance between the interactionist and interventionist
8 classroom instructional management styles practised by teachers with t
9 $(1,318)=0.28$, $p > 0.05$ for biology and $t(1.2,381)=5.8$, $p > 0.05$ for chemistry at
10 the selected SHS within the metropolis. In the light of the above results, it was
11 then necessary to determine the classroom behavioural and instructional
12 management style that best predicts students' academic performance at the
13 selected SHS within the metropolis.

14

15

16 **Research Question 3**

17 **Which classroom behavioural management style best predicts students'**
18 **academic performance at the selected SHS within the Kumasi**
19 **Metropolis?**

20 This research question identified the classroom behavioural
21 management style (interactionist and interventionist) practised by teachers at
22 the selected SHS that best predicts and makes the most contribution to
23 students' academic performance. Teachers' classroom behavioural
24 management styles (interactionist and interventionist) were the predictor

1 variables and the academic performance of students was used as the dependent
 2 variable. The data collected enabled the researcher to analysed and answer this
 3 research question using multiple linear regression test. Prior to data analysis,
 4 assumptions underlying the use of multiple linear regression were checked to
 5 ensure that none was violated. The outcomes of the test are presented in Table
 6 15.

7 Table 15: *Regression Test for the Classroom Behavioural Management Style*
 8 *that best predicts Students' Academic Performance at Selected SHS*

Model variables	Unstandardised coefficients		Standardised coefficient	X	S	T	Sig	Collinearity Statistics	
	β	Std. error						B	Tol.
1 Constant	14.8	10.9		5.	1.	1.	.1		
				5	7	3	8		
Interventionist	2.9	2.6	.343			1.	.2	.15	6.6
						1	7		
Interactionist	-5.5	5.1	-.336			1.	.2	.15	6.6
						1	8		
R			.34						
R Square			.018						
Adjusted R Square			-.011						

9 Dependent variable: academic performance. N= 71, p>0.05.

10 Source: Field Data (2022)

11 The result in Table 15 reveals that the interventionist style of
 12 classroom behavioural management best predicts and contributes most to
 13 students' academic performance. This is shown by the standardised

1 coefficients beta of 34.3% for interventionist style whilst that of the
2 interactionist style is 33.6%. This means that, the interventionist style
3 practised by some teachers at the selected schools contributed 34.3% to the
4 variance in academic performance whilst the interactionist style contributed
5 33.6%. Again, Table 15 provides the multi-collinearity results for the multiple
6 linear regression test. Multi-collinearity occurs when the independent
7 variables (interactionist and interventionist) are highly correlated. Multi-
8 collinearity is measured by the Tolerance and Variance Inflation Factor (VIF).
9 Tolerance values below 0.1 and VIF values above 10 indicate multi-
10 collinearity according to Pallant (2007). The Tolerance and VIF values of 0.15
11 and 6.6 respectively in Table 15 suggest that the assumption of multi-
12 collinearity for multiple linear regression test was not violated. Table 15 also
13 gives the values of R, R square and the Adjusted R square in the regression
14 model for the students' academic performance. The regression model shows
15 how much of the variance in the dependent variable (academic performance)
16 can be explained by model (interactionist and interventionist behavioural
17 management styles). The regression model shows that, altogether the
18 interactionist and interventionist styles of classroom behavioural
19 management contributed 1.8% to the variance in academic performance as
20 reported by R square.

21

22 **Research Question 4**

23 **Which classroom instructional management style best predicts students'**
24 **academic performance at the selected SHS within the Kumasi**
25 **Metropolis?**

1 This research question identified the classroom instructional
 2 management style (interactionalist and interventionist) practised by teachers at
 3 the selected SHS that best predicts students' academic performance. Teachers'
 4 classroom instructional management styles (interactionalist and
 5 interventionist) were the predictor variables and the academic performance of
 6 students was used as the dependent variable. The data collected enabled the
 7 researcher to answer the fourth research question. This fourth research
 8 question was also analysed using multiple linear regression. Prior to data
 9 analysis, assumptions underlying the use of multiple linear regression were
 10 checked to ensure that none was violated. The outcomes of the test are
 11 presented in Table 16.

12 Table 16: *Regression Test for the Classroom Instructional Management Style*
 13 *that best predicts Students' Academic Performance at Selected SHS*

Model	Unstandardised coefficients		Standardised coefficients	X	S	t	Sig.	Collinearity Statistics	
	β	Std. error						β	Tolerance
1									
Constant	9.5	3.5				2.6	.00		
Interactionist	-2.8	2.7	-.318			-1.0	.20	.10	9.6
Interventionist	1.5	2.2	.215			.7	.40	.10	9.6
R	.134								
R Square	.018								

Adjusted R -
square .001

1 Dependent variable: Average academic performance. N=106, $p > 0.05$.

2 Source: Field Data (2022)

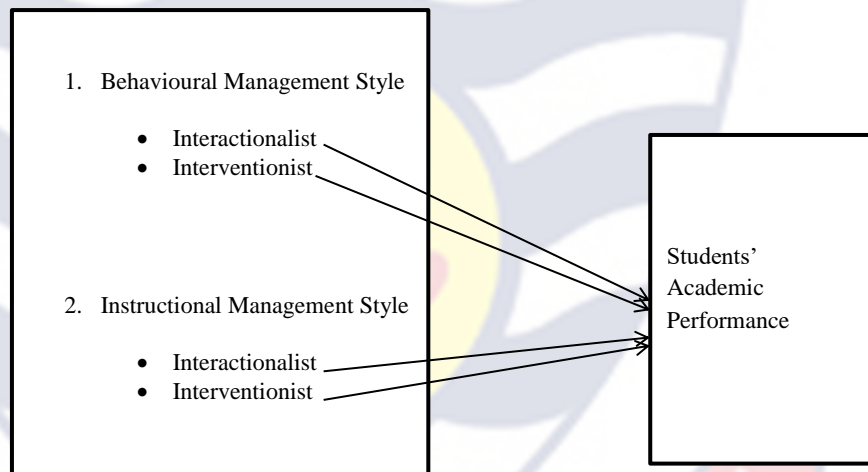
3 The result in Table 16 reveals that the interactionist style of
4 classroom instructional management best predicts students' academic
5 performance. This is because the standardised coefficients beta for the
6 interactionist style is 31.8% whilst that for the interventionist style is 21.5%.
7 This suggests that, when teachers practise the interactionist style, it
8 contributes 31.8% to the variance in academic performance of students.
9 Tolerance and VIF values of 0.10 and 9.6 indicate that the assumption for
10 multi-collinearity is not violated when conducting multiple linear regression
11 test. Table 16 provides the values of R, R square and Adjusted R square for
12 the regression model. The regression model shows that altogether the
13 interactionist and interventionist styles of classroom instructional
14 management contribute 1.8% to academic performance as reported by R
15 square.

16 The results of research question 1 showed that no teacher practises the
17 non-interventionist style of classroom behavioural management. Similarly,
18 results of research question 2 revealed that no teacher practises the non-
19 interventionist style of classroom instructional management. In addition, the
20 regression analysis results showed existing relationship between two styles:
21 (interactionist and interventionist) of classroom instructional and
22 behavioural management on students' academic performance.

1 Altogether, the results indicate that there is no relationship between
 2 the non-interventionist style of classroom instructional and behavioural
 3 management but, there is a significant relationship between interactionist
 4 and interventionist styles of classroom behavioural and instructional
 5 management at the selected senior high schools within the Kumasi Metropolis
 6 of Ashanti region. The final conceptual framework in figure 9 depicts the
 7 findings of the study.

8 **Figure 9: Final Conceptual Framework for the Study**

Independent Variable	Dependent Variable
Classroom Management Style	Students' Academic Performance



9
 10
 11
 12
 13
 14
 15

1 **Research Hypothesis 3**

2 **H_0^3 : There exists no difference in the classroom behavioural management**
 3 **style with respect to teacher's gender.**

4 **H_1^3 : There exists a difference in the classroom behavioural management**
 5 **style with respect to teacher's gender.**

6 The purpose of this hypothesis was to find out the difference in the
 7 classroom behavioural management style between male and female teachers.
 8 This study revealed that, the classroom behavioural management styles among
 9 teachers are interactionalist and interventionist styles. Therefore, the
 10 researcher conducted this test to determine whether male or female teachers
 11 exhibit a stronger degree of a particular behavioural management style when
 12 managing students' behaviour. This hypothesis testing was conducted using
 13 independent samples t-test with teacher gender as independent variable and
 14 classroom behavioural management scores as dependent variable. Normality
 15 and homogeneity of variance tests were conducted to ensure that assumptions
 16 were not violated. The result is presented in Table 17 for biology and
 17 chemistry teachers.

18 Table 17: *Independent Samples T-Test for the Difference in Classroom*
 19 *Behavioural Management (BM) with respect to Teacher's Gender*

Variable (BM)	Subject	Teacher gender	X	SD	T	df	F	Sig. value
Interactionalist style	Biology	Male	3.8	.4	1.37	247	.014	.170
		Female	3.7	.4				
	Chemistry	Male	3.6	.5	-4.1	157	9.4	.000
		Female	3.8	.3				

Biology	Male	4.7	.2	-.04	69	.44	.966
	Female	4.7	.2				

Interventionist
style

Chemistry	Male	4.8	.2	1.2	107	.28	.248
	Female	4.7	.2				

1 Source: Field Data (2022)

2 The results of test in Table 17 gives an insignificant result for the
 3 interactionist classroom behavioural management style between male and
 4 female biology teachers with $t(1,37,247) = 0.014$, $p > 0.05$. Therefore, the
 5 researcher failed to reject the null hypothesis. This implies that male and
 6 female biology teachers practise the interactionist style in the same way
 7 when managing students' behaviour during lessons. However, the result from
 8 Table 17 for chemistry is statistically significant for the interactionist
 9 classroom behavioural management style between male and female chemistry
 10 teachers where equal variances were not assumed with $t(-4.1, 157) = 9.4$,
 11 $p < 0.05$. Hence, the researcher rejected the null hypothesis in favour of the
 12 alternate hypothesis. The alternate hypothesis stated as there is a significant
 13 difference in the interactionist style of classroom behavioural management
 14 between male and female chemistry teachers was therefore accepted. This
 15 means that male and female chemistry teachers practise the interactionist
 16 style of managing students' behaviour in class differently.

17 The results from Table 17 showed a significant difference in the
 18 interactionist style of classroom behaviour management between male and
 19 female chemistry teachers. Consequently the magnitude of the difference in
 20 the interactionist style of classroom behaviour management between male

1 and female chemistry teachers was then calculated. Table 18 presents the
 2 magnitude of the difference in the interactionist style of classroom
 3 behavioural management between male and female chemistry teachers.

4 Table 18: *Eta Squared for the Difference in Interactionist Style of*
 5 *Classroom Behavioural Management between Male and Female Chemistry*
 6 *Teachers.*

Variable	Subject	Gender	N	T	Eta Squared
Interactionist style	Chemistry	Male	4	-4.1	0.77
		Female	3		

7 Source: Field Data (2022)

8 Table 18 shows Eta squared of 0.77 or 77% obtained for the magnitude
 9 of the difference in the interactionist style of classroom behavioural
 10 management practised between male and female chemistry teachers.
 11 According to Cohen (1988) an Eta squared/Effect size of more than 0.14 is
 12 considered as large. This suggests a huge magnitude of 77% in the difference
 13 of the interactionist style between male and female chemistry teachers when
 14 managing students' behaviour during lessons. Simply, female chemistry
 15 teachers appear to exhibit 77% more of the interactionist qualities than their
 16 male counterparts when managing students' behaviour in chemistry class.

17 Also, the results in Table 18 show that there exists no statistically
 18 significant difference in the interventionist style with regards to classroom
 19 behavioural management between in terms of teacher's gender for the two
 20 subjects. Specifically, male and female biology teachers exhibit the same
 21 degree of the interventionist style of classroom behavioural management with
 22 $t(-0.04, 69) = 0.44, p > 0.05$. Similarly, some male and female chemistry
 23 teachers practise the interventionist style in a similar manner when managing
 24 students' behaviour during lessons with $t(0.78, 120) = 0.47, p > 0.05$.

1

2 **Research Hypothesis 4**

3 **H_0^4 : There is no statistically significant difference in the classroom**
 4 **instructional management style between male and female teachers.**

5 **H_1^4 : There is a statistically significant difference in the classroom**
 6 **instructional management style between male and female teachers.**

7 The purpose of this hypothesis was to find out the difference in
 8 classroom instructional management style between male and female teachers.

9 This study revealed that the classroom instructional management styles among
 10 teachers were the interactionalist and interventionist styles. The researcher
 11 conducted this test to determine whether male or female teachers exhibit a
 12 stronger degree of a particular instructional management style. This hypothesis
 13 testing was conducted using independent samples t-test with teacher gender as
 14 independent variable and classroom instructional management scores as
 15 dependent variable. Normality and homogeneity of variance tests were
 16 conducted to ensure that assumptions were not violated. The outcomes are
 17 displayed in Table 19.

18 Table 19: *Independent Samples T-Test for Difference in Classroom*
 19 *Instructional Management (IM) styles with respect to Teacher's Gender.*

Variable (IM)	Subject	Gender	X	SD	t	df	F	Sig.
Interactionalist style	Biology	Male	3.6	.5	-4.1	195	.08	.60
		Female	3.7	.4				
	Chemistry	Male	3.6	.5	-3.6	147	6.31	.00
		Female	3.9	.4				

Interventionist style	Biology	Male	4.7	.3	-1.6	121	2.3	.12
		Female	4.7	.3				
	Chemistry	Male	4.7	.3	-1.5	169	2.0	.13
		Female	4.8	.3				

1 Source: Field Data (2022)

2 The outcomes of test in Table 19 gives a statistically insignificant
 3 result for the interactionist classroom instructional management style
 4 between male and female in biology with $t(-4.1,195)= 0.08$, $p>0.05$. Hence,
 5 the researcher failed to reject the null hypothesis. This means that there is no
 6 difference between male and female biology teachers who practise of the
 7 interactionist style of classroom instructional management. Thus, there is no
 8 significant difference between male and female biology teachers in the using
 9 interactionist style where teaching methods like brainstorming, discussion
 10 and explanation, laboratory work, group activities are often used.

11 However, the results in Table 19 give a statistically significant
 12 difference in the interactionist style of classroom instructional management
 13 between male and female chemistry with $t(-3.6,147)=6.31$, $p<0.05$. Therefore,
 14 the researcher rejected the null hypothesis in favour of the alternate
 15 hypothesis. The alternate hypothesis is stated as there is a difference in the
 16 interactionist style of classroom instructional management with respect to
 17 teacher's gender for chemistry was therefore accepted. This means that, male
 18 and female chemistry teachers practise the interactionist style of classroom
 19 instructional management differently. This is evident from Table 18 where
 20 male chemistry teachers obtained a low interactionist mean score of 3.6
 21 whilst female chemistry teachers had a high interactionist mean score of 3.9.

1 This appears to indicate that female chemistry teachers exhibit more of the
 2 interactionalist style during teaching than male chemistry teachers. Thus,
 3 female chemistry teachers are more likely to often employ teaching methods
 4 that encourage cooperation, discussion, group activity among students than
 5 their male counterparts. Subsequently, the magnitude of the difference in the
 6 interactionalist style of classroom instructional management practiced by
 7 female chemistry teachers than male chemistry teachers is determined by
 8 calculating Eta squared. The results are presented in Table 20.

9 Table 20: *Eta Squared for the Difference in Interactionist Style of*
 10 *Classroom Instructional Management between Male and Female Chemistry*
 11 *Teachers.*

Variable	Subject	Gender	N	T	Eta Squared
Interactionist style	Chemistry	Male	3	-3.6	0.81
		Female	2		

12 Source: Field Survey (2022)

13 The result from Table 20 depicts that there is a very large difference of
 14 81% in the practise of the interactionist style of classroom instructional
 15 management between male and female chemistry teachers. This suggests that
 16 female chemistry teachers are more interactionist and hence are likely to use
 17 teaching methods like brainstorming, discussion, explanation, laboratory work
 18 and group activities 81% of the times during lessons than their male
 19 counterparts.

20 Again, Table 20 showed that result of the independent samples t- test is
 21 statistically insignificant for the interventionist classroom instructional
 22 management style between male and female teachers in both subjects.
 23 Therefore, the researcher failed to reject the null hypothesis. Specifically,
 24 there was no statistically significant difference in the interventionist style of

1 classroom instructional management between some male and female biology
2 teachers with $t(-1.6, 121) = 2.3, p > 0.05$. This means that, when practicing the
3 interventionist style some male and female biology teachers equally utilise
4 lectures and demonstrations as well as act as repository of knowledge during
5 instruction. Also, Table 20 also presented the outcomes of the test conducted
6 with respect to chemistry teachers in determining the difference in the
7 interventionist style of classroom instructional management. The results gave t
8 $(-1.5, 169) = 2.0, p > 0.05$ which is interpreted to mean that there was no
9 statistically significant difference in the interventionist style of classroom
10 instructional management between male and female chemistry teachers.
11 Hence, the researcher failed to reject the null hypothesis. This means that,
12 when practicing the interventionist style male and female chemistry teachers
13 equally utilise lectures and demonstrations as well as act as repository of
14 knowledge during instruction.

15

16 Discussion

17 The purpose of this study were to determine the commonest classroom
18 behavioural and instructional management styles (non-interventionist,
19 interactionalist and interventionist) among SHS teachers in metropolis; to
20 determine the differences in students' academic performance across the
21 classroom behavioural and instructional management style; to determine the
22 classroom behavioural and instructional management style that best predicts
23 students' academic performance and lastly to determine the differences in the
24 classroom behavioural and instructional management styles between male and
25 female SHS teachers.

1 This study revealed that within the metropolis, two out of three
2 classroom behavioural management styles are practised by teachers at selected
3 SHS. The two styles are interactionalist and interventionist. However, the
4 commonest classroom behavioural management style among SHS teachers
5 (biology and chemistry) was interactionalist. It was discovered that 73.3% and
6 63.6% of biology and chemistry teachers respectively are interactionalist at
7 SHS from Table 10. This makes the interactionalist style of classroom
8 behaviour management popular among SHS teachers. This finding agrees with
9 that of Djigic and Stojiljkovic (2011) on classroom management styles,
10 classroom climate and school achievement. They found out that the
11 commonest classroom behavioural management style among Serbian
12 secondary school teachers was the interactionalist representing 59.5%
13 followed by interventionist representing 24.2% and lastly non-interventionist
14 representing 16.4%. Similarly, 50% of Iranian school teachers even at the
15 elementary school level were interactionalist whilst 42.4% were
16 interventionist and 7.5% non-interventionist with respect to classroom
17 behavioural management in a study by Moghtadaie and Hoveida (2015).
18 Moradi (2020) also found 45% of secondary school teachers practised the
19 interactionalist style of classroom behavioural management. The
20 interactionalist style of classroom behaviour management operates on beliefs
21 that students' behaviour should be bound by classroom rules and regulations
22 set by teacher and students. Thus, the teacher and students wield equal power
23 and develop behaviour control measures such that students' misbehaviours are
24 dealt with on the agreement set by both parties. The teacher is seen as a
25 member of the classroom community, exchanges views and ideas with

1 students and offer directions, but do not attempt to dominate. The
2 interactionalist style of classroom behaviour management typifies Good and
3 Brophy's (1986) assertion that the aim of the teacher is to develop students'
4 inner self control and not to apply control over them. The interactionalist style
5 of classroom behaviour management helps students develop personal identity
6 because they feel a sense of belongingness, ownership and are allowed to
7 participate in decision making according to Savage (1999 as cited in Yasar,
8 2008).

9 Again, this study revealed that within the metropolis, two out of three
10 classroom instructional management styles are practised by teachers at SHS.
11 The two styles are interactionalist and interventionist. The study discovered
12 that the commonest instructional management style in SHS is interactionalist
13 and interventionist for biology and chemistry teachers respectively.
14 Specifically from Table 11, 60% of SHS biology teachers were discovered to
15 be interactionalist with regards to classroom instructional management style.
16 Most biology teachers practised the interactionalist instructional management
17 style because students generally have great interest in biology. Therefore,
18 biology teachers employ the interactionalist style of classroom instruction
19 where presentations and explanations, group work, discussions and laboratory
20 work give students more opportunity to explore and be actively engaged in
21 lesson (Porozovs, Liepniece and Voita 2015). It is a teacher-student
22 interactive method of instruction and therefore allows exchange of ideas;
23 opportunity to engage in group activity and discussions. This helps students to
24 actively construct their knowledge and understanding to achieve learning
25 outcomes. This study found that students achieved high mean biology score of

1 6.98 when most biology teachers utilise the interactionalist style of classroom
2 instruction. On the other hand, 54.54% of SHS chemistry teachers were
3 discovered to be interventionist with regards to classroom instructional
4 management style from Table 11. This appears to be the reason since students
5 often has little interest in chemistry. A study by Nya (2017) on secondary
6 schools students' preferences of teaching methods in chemistry courses and
7 factors affecting their choice from their perspectives found out that, 32.14% of
8 the students studied chemistry because they liked it as compared to 67.86% of
9 the students who studied because it relates to their future career. Also studies
10 by Gibert, (2006); Rocard, et al., (2007); Sjoberg and Schreiner, (2010) as
11 cited in Essiam, Osei-Antwi and Quayson (2022) supports that students are not
12 sufficiently interested in chemistry. So, most SHS chemistry teachers employ
13 the interventionist instructional management style. The interventionist
14 instructional style is teacher centred and it is similar to the traditional lecture
15 method. The teacher is the repository of knowledge and takes total control of
16 lesson. According to Temechegn and Sileshi (2005) as cited in Essiam, Osei-
17 Antwi and Quayson (2022) opines that students rather should be actively
18 engaged in the chemistry classes, instead of the teacher dominating.

19 Analysis of data collected and presented in Table 12 showed that there
20 is a statistically significant difference in students' academic performance
21 between the two classroom behavioural management styles (interactionalist
22 and interventionist) among biology and chemistry teachers at selected SHS.
23 This finding agrees with Sowell (2013) who reported a difference in students'
24 academic achievement in reading, maths and English language between
25 interactionalist and interventionist classroom behavioural management styles.

1 It was found out that biology teachers who are interventionist with regards to
2 classroom behaviour management during lessons had students who obtained a
3 higher average score of 7.8 when compared to the average score of 6.7 for
4 students whose biology teachers are interactionalist from Table 12. This may
5 be due to the interventionist biology teachers' sole power to manage students'
6 behaviour in a 'firm yet fair' learning environment so as to continuously shape
7 their interest in biology and achieve better learning outcomes. Interventionist
8 biology teachers practise the belief that students learn to behave properly by
9 firmly applying the tenets of behaviourism in the classroom. Hence they
10 typically use reinforcements, punishments and other strategies to manage
11 students' behaviour during lessons. It must be mentioned that, although the
12 interactionalist behaviour style was the commonest among biology teachers, it
13 did not reflect in high students' academic performance. It appears that
14 managing students' behaviour in such a firm manner from the interventionist
15 biology teacher resulted in a high average score of 7.8 as compared to an
16 average score of 6.7 for students of the interactionalist biology teacher from as
17 shown in Table 12. Subsequently, the magnitude of the difference in students'
18 academic performance in biology between the interactionalist and
19 interventionist style of classroom behavioural management was found to be
20 37% as shown in Table 13. This implies that, the kind of classroom
21 behavioural management style that biology teachers practise may likely
22 account for 37% of the difference in how students' biology scores vary at the
23 selected SHS within the metropolis. On the contrary, it was found out that
24 chemistry teachers who were interactionalist with regards to classroom
25 behaviour management during lessons had students who obtained a higher

1 mean score of 4.9 as compared to the mean score of 4.1 for students whose
2 chemistry teachers were interventionist from Table 12. This finding is
3 consistent with the theoretical perspective of Glasser (1997) as well as that of
4 Lanoue (2009) who believe that the interactionist style should result in high
5 learning outcomes. This may be due to the 'relaxed and free' learning
6 environment that the interactionist chemistry teachers create to provide a
7 stress free atmosphere for most students who consider chemistry as
8 uninteresting. Such chemistry teachers appear to develop good relationship
9 with their students by allowing them to participate in classroom decisions
10 making. Such opportunity creates a sense of belongingness and ownership and
11 seems to spur students on to attain better learning outcomes and achieve a
12 higher mean score of 4.9. This is supported by Pianta, Steinberge and Rollins
13 (2002) who opined that good relationship between teachers and students turns
14 to improve students learning outcomes. As a result, students achieved more
15 success in obtaining the learning goal, in relationship with instructors and
16 participating in academic activities. On the other hand, interventionist
17 chemistry teachers take total control in classroom decisions making. Such a
18 situation appears to support Nya (2017) who reported that majority of
19 chemistry students feel threatened in class and therefore may not obtain good
20 learning outcomes. This is seen in Table 12 where students of such teachers
21 obtained a lower mean score of 4.1. The magnitude of the difference in
22 students' academic performance in chemistry between the interactionist and
23 interventionist style of classroom behavioural management was found to be
24 47% as shown in Table 13. This implies that, the kind of classroom
25 behavioural management style that chemistry teacher practise may likely

1 account for 47% of the difference in how students' chemistry scores vary at
2 the selected SHS within the metropolis.

3 Again from Table 14, this study found no difference in students'
4 academic performance between interactionalist and interventionist classroom
5 instructional management styles. This finding again agrees with Sowell (2013)
6 in her study on the impact of classroom management strategies on students'
7 academic achievement. The researcher found no statistically significant
8 difference in students' achievement in reading, math and English language arts
9 between interactionalist and interventionist instructional management style.
10 Again, Brannon (2010) attain similar finding when there was no difference in
11 fourth and fifth grade pupils passing standardised math and English language
12 arts across the classroom management styles of teachers. Thus students'
13 academic performance test scores in biology were similar for teachers who
14 practice either interactionalist or interventionist classroom instructional
15 management style. Thus, biology teachers who practise the interactionalist
16 style of classroom instructional management always use teaching methods that
17 encourage interaction among student; such teachers always ensure that
18 students contribute in lessons and ask questions and among others. Such
19 classroom instructional management strategies suggest a teacher-student
20 interactive teaching method or the interactionalist style of classroom
21 instructional management that is practised by some biology teachers. On the
22 other hand, biology teachers who are interventionist with regards to classroom
23 instruction use teacher-centered teaching methods like lecture, demonstrations
24 with little or no contributions from students. Nevertheless, it seems the
25 interactionalist and interventionist styles of classroom instructional

1 management result in statistically equal students' academic performance in
2 biology ($X = 6.8$ for interactionist and $X = 7.2$ for interventionist) as
3 presented in Table 14. Likewise, there was no difference in students' academic
4 performance in chemistry between the interactionist and interventionist style
5 of classroom instructional management as presented in Table 14.
6 Interactionist chemistry teachers employ teaching method that encourages
7 interaction among students whilst interventionist chemistry teachers take total
8 control of instruction and mostly do not actively engage students. Despite the
9 classroom instructional management style chemistry teachers practised, there
10 was no difference in students' chemistry scores. Thus, students achieved
11 approximately equal chemistry mean score of 4.8 and 4.4 for interactionist
12 and interventionist chemistry teachers respectively from Table 14. In general,
13 there was no difference in students' academic performance in biology and
14 chemistry between interactionist and interventionist classroom instructional
15 management styles as seen in Table 13. This may be because science teachers
16 at SHS combine different instructional methods to achieve learning outcomes.
17 Instructional methods like lectures, discussions, demonstrations, group work,
18 laboratory work and among others are used to provide a teaching style that fit
19 the needs of students in attaining learning outcomes during lessons. This is
20 supported by the finding of Porozovs, Liepniece and Voita (2015) on
21 evaluation of the teaching methods used in secondary school biology lessons.
22 These researchers discovered that science teachers frequently utilise a
23 combination of teaching methods like presentations, explanations, laboratory
24 work, group work and discussions during lessons. Hence, there is no particular

1 classroom instructional management style that influences students' academic
2 performance as shown in Table 14.

3 In addition, this study determined the classroom behavioural
4 management style that best predicts students' academic performance at the
5 selected SHS within the metropolis. Two classroom behavioural management
6 styles (interactionalist and interventionist) are practised among teachers at the
7 selected schools from Table 10. This study found that there was a difference
8 in students' academic performance in biology with $t(2.8, 318) = 0.15, p < 0.05$
9 and in chemistry with $t(2.8, 318) = 0.004, p < 0.05$. The researcher conducted
10 a multiple regression test to determine the classroom behavioural management
11 style that best predicts students' academic performance at the selected schools.
12 The results of the multiple linear regression test revealed that the
13 interventionist style best predicts students' academic performance at the
14 selected schools as shown in Table 15. Table 15 showed that the
15 interventionist style of classroom behavioural management best predicts
16 students' academic performance than the interactionalist style. The total
17 contribution of the interactionalist and interventionist styles of classroom
18 behavioural management is 1.8% towards the variance in students' academic
19 performance scores. Nevertheless, the interventionist style made a slightly
20 higher contribution of 34.3% towards the variance in students' academic
21 performance than the 33.6% contribution by the interactionalist style. This
22 means that when teachers practise the interventionist style to manage students'
23 behaviour, it accounts for approximately 2.0 out of the mean score of 5.5 in
24 students' academic performance. It seems that teachers who practise the
25 interventionist style are able to firmly control and direct students' behaviour

1 during lessons resulting in the style making a 34.3% contribution to students'
2 academic performance. This finding contradicts that of Bibi, Ghazi, Rashid
3 and Mustafa (2017) where they reported that the interactionist style made the
4 highest impact of 34% on students' academic achievement. The difference in
5 findings may be attributed to the use of self-reported data on classroom
6 behavioural management style obtained from the teachers in their study.
7 Secondly, the researchers did not separate behavioural management aspect
8 from instructional management which might account for the different findings.
9 Most importantly, Table 10 showed that majority of SHS teachers at the
10 selected schools within the metropolis practised the interactionist style of
11 classroom behavioural management in order to adhere to the recent
12 introduction of the Positive Discipline Toolkit by the Ghana Education
13 Service. The Tools for Positive Discipline in Schools by the Guidance and
14 Counselling Unit of Ghana Education Service requires teachers to involve
15 students in the setting of values, expected standards of behaviour and
16 disciplinary measures and promote mutual respect between teachers and
17 students (Ghana Education Service, 2016). The implementation of the Tools
18 for Positive Discipline in schools by teachers reflects the interactionist style
19 of classroom behavioural management. Therefore, teachers do not exert full
20 power in the establishment of rules and regulation, use of punishments and
21 reinforcements regarding students' conduct in class so as to help create a 'safe
22 and friendly' classroom atmosphere as suggested by the Positive Discipline
23 Toolkit. However, the results of the multiple regression test showed in Table
24 15 suggest that the interactionist style of classroom behavioural management
25 does not best predict students' academic performance at the selected schools

1 within the metropolis. Again, this finding contradicts Glasser (1997) and
2 Lanoue (2009) who opined that the interactionist style should result in high
3 learning outcomes yet Duman, Gelisli and Cetin (2002) as cited in Bibi et al
4 (2017) found that high school teachers practise the interventionist style.

5 Again, two classroom instructional management styles (interactionist
6 and interventionist) are practised by teachers at the selected schools within the
7 metropolis from Table 14. This study found that there was no statistically
8 significant difference in students' academic performance between the styles
9 with $t(1,318)=0.28$, $p>0.05$ for biology and $t(1,2,381)=5.8$, $p>0.05$ for
10 chemistry from Table 14. Nevertheless, the researcher conducted a multiple
11 linear regression test to determine the classroom instructional management
12 style that better predicts students' academic performance at the selected
13 schools. The researcher found that the interactionist style of classroom
14 instructional management best predicts students' academic performance at the
15 selected SHS. Table 16 showed that the interactionist style explained 31.8%
16 while the interventionist style explained 21.8% of students' academic
17 performance. The total contribution of the interactionist and interventionist
18 styles of classroom instructional management is 1.8% towards the variance in
19 students' academic performance scores. Notwithstanding, the interactionist
20 style of instruction best predicts students' academic performance at the
21 selected schools. This means that when teachers employ teaching methods that
22 encourage discussion, cooperation, group activities, exchange of ideas and
23 among others, 1.8 out of the average academic performance of 5.7 may be
24 attributed to such teaching methods. This finding is consistent with Bibi, et al
25 (2017) where they reported that the interactionist style made the highest

1 impact of 34% on students' academic achievement. This finding also agrees
2 with of Glasser (1997) and Lanoue (2009) that the interactionist style should
3 result in high learning outcomes. Also, this finding is consistent with Oke
4 (2020) where the researcher reported that the teacher-student interactive
5 approach produced best students' learning outcomes. Adler (1930) and
6 Dreikurs (1957) as cited in Thi (2021) concluded years ago that a supportive,
7 democratic, and encouraging classroom environment offers students greater
8 satisfaction and involvement in school with their teachers. It appears that the
9 interactionist style of instruction makes the most contribution to students'
10 average academic performance because it provides a cooperative and shared
11 learning environment between teacher and students that sustains and nurture
12 students' interest. A case in point is Lasisi, Alabi and Salaudeen (2016) study
13 on the effects of guided discovery, problem solving and conventional teaching
14 methods on retention of secondary school students. The researchers measured
15 students' retention by their academic performance in a 40-item retention test
16 constructed from the topics that were taught during the study. Lasisi et al
17 (2016) found that the guided discovery method which involves group
18 activities, experimentations, active learning and discussions produced students
19 who had the highest retention mean score of 67.82 as compared to 56.12 and
20 44.21 for problem solving and conventional teaching method respectively.
21 Lasisi et al (2016) finding supports that the interactionist style of classroom
22 instruction best predicts students' academic performance at secondary schools.
23 Again, the results obtained by Baah, Ansah, Amoako, Boachie, and Kwarteng
24 (2020) show that, the interactionist style better enhance understanding of
25 students. These researchers reported that student academic performance was

1 significantly enhanced from a pre-test mean score of 31.83 to post-test mean
2 score of 53.80. When students are given opportunities to express their ideas,
3 conduct experimentation, engage in discussions and make connections
4 between concepts and real life issues, students' academic performance greatly
5 improves (Wilhelm, Friedman & Erickson, 1998 as cited in Baah et al, 2020).
6 Clearly when students are encouraged and supported by their teachers, they
7 have a sense of belongingness, importance, freedom, and mutual respect in
8 classroom (Djigic & Stojiljkovic, 2011; Dreikurs et al., 2004; Waterman,
9 2007). The students therefore are willing to engage in classroom activities,
10 complete their homework and other school tasks to achieve learning outcomes
11 (Wessler, 2003).

12 Furthermore, this study determined the difference in classroom
13 behavioural and instructional management styles between male and female
14 teachers. Specifically, with regards to classroom behavioural management
15 style, the results in Table 17 showed that there was no difference in the
16 interactionist style practised between male and female biology teachers.
17 There was an insignificant difference of 0.1 in the interactionist mean score
18 between males biology teachers ($X=3.8$) and female biology teachers (3.7)
19 from Table 17. This implies that both sexes practise the interactionist style in
20 almost in the same degree when managing students' behaviour during lessons.
21 Martin and Yin (1997) found no significant differences in the behavioural
22 management style practised by male and female teachers. Clearly, gender is
23 not a factor in determining teachers' beliefs about classroom management
24 style at the high school level.

1 However, there existed a difference in the interactionist style of
2 classroom behavioural management with respect to chemistry teachers' gender
3 from Table 17. The results in Table 17 show that male and female chemistry
4 teachers obtained an interactionist mean score of 3.6 and 3.8 respectively. It
5 appears however that a mean score of 3.6 for male chemistry teachers suggests
6 that they portray less interactionist style than their female counterparts who
7 obtained a mean score of 3.8 with respect to classroom behaviour
8 management. For instance, female chemistry teachers according to
9 information collected on them by their students using the BIMS are more
10 lenient when managing students' behaviour in class. These female chemistry
11 teachers do not always interfere when students talk at inappropriate times
12 during class and also they appear to allow students to move out of their seat
13 with no permission from teacher. The magnitude of the difference in the
14 interactionist style of classroom behaviour management practised by male
15 and female chemistry teachers was found to be 77% from Table 18. This
16 seems to imply that female chemistry teachers exhibit 77% more of the
17 interactionist style when managing their students' behaviour than their male
18 counterparts at selected SHS within the metropolis. In general, the
19 interactionist style of classroom behavioural management is the commonest
20 among SHS teachers partly because of the recent introduction of the Positive
21 Discipline Toolkit by the Ghana Education Service. The Tools for Positive
22 Discipline in Schools (2016) by the Guidance and Counselling Unit of Ghana
23 Education Service contain the following rationales: involve students in the
24 setting of values, expected standards of behaviour and disciplinary measures
25 and promote mutual respect between teachers and students. Consequently,

1 SHS teachers share the decision making power with students regarding their
2 conduct in class. Classroom rules and regulations regarding students'
3 behaviour are set by both teachers and students to help generate 'safe and
4 friendly' classroom atmosphere as suggested by the Positive Discipline
5 Toolkit.

6 Also, Table 17 also showed that there existed no difference in the
7 interventionist style of classroom behavioural management with respect to
8 biology and chemistry teachers' gender. Thus, both sexes practise the
9 interventionist style in a similar manner during lessons. Particularly, male and
10 female biology teachers obtained an interventionist mean score of 4.7 from
11 Table 17. This implies that interventionist biology teachers irrespective of
12 gender manage students' behaviour in a similar manner during lessons.
13 Interventionist teachers either male or female biology teachers are known by
14 their students to always intervene when students talk at inappropriate times
15 during class; both sexes carefully monitor our behaviour that is not connected
16 to the lesson task during class; both sexes do not seem to use ideas from
17 students to create classroom rules and among others according to BIMS. Such
18 interventionist traits of firm and total control are exhibited in approximately
19 equal measure between male and female biology teachers. Table 17 again
20 showed that there was no difference in the interventionist style between male
21 and female chemistry teachers at the selected SHS within the metropolis.
22 Specifically, male chemistry teachers had an interventionist mean score of 4.8
23 and female chemistry teachers obtained an interventionist mean score of 4.7.
24 This means that both sexes portray the same degree of interventionism when
25 managing the behaviour of students in class. Both sexes strictly enforce

1 classroom rules to control students' behaviour; both sexes seem not to reward
2 students who show good behaviour in the classroom. Such typical
3 interventionist traits appear to be displayed equally among chemistry teachers
4 irrespective of their gender when managing students' behaviour management
5 at the selected SHS within the metropolis. Generally, the results in Table 17
6 showed no difference in the interventionist style of classroom behavioural
7 management in terms of teachers' gender teachers at the selected SHS within
8 the metropolis. This finding is in conflict with Martin, Yin and Baldwin
9 (1997) who found that females were significantly less interventionist than
10 males regarding classroom behavioural management. They opined that male
11 teachers are more controlling, authoritarian, rigid, impersonal, assertive and
12 aggressive (interventionist) than female teachers. Nevertheless, a study by
13 Terzi, (2001 as cited in Yasar, 2008) reported no significant difference
14 between male and females on classroom management styles. Also, Oktan, and
15 Çağanağa (2015) study on the impact of teachers' gender differences on
16 classroom management found no difference in classroom management in
17 terms of teachers' gender at Iran. The reports by Terzi (2001); Oktan and
18 Çağanağa (2015) support the finding that there exists no difference in
19 classroom behavioural management styles in terms of teachers' gender in this
20 study.

21 Lastly, this study determined the difference in classroom instructional
22 management styles between male and female teachers. Specifically, with
23 regards to classroom instructional management style the results in Table 19
24 showed that there was no difference in the interactionist style practised
25 between male and female biology teachers where $t(-4.1, 195) = 0.08, p > 0.60$.

1 Hence, the null hypothesis was not rejected. There was an insignificant
2 difference of 0.1 in the interactionist mean score between males biology
3 teachers ($X=3.6$) and female biology teachers (3.7) from Table 19. This
4 implies that both sexes practise the interactionist style in the same degree
5 when managing students' behaviour during lessons. According to information
6 collected by their students using the BIMS, both sexes always ensure that
7 students contribute in lessons and ask questions; involve students in discussion
8 about lesson topics related to real world applications. Again, both male and
9 female biology teachers at the selected SHS within the metropolis are known
10 by their students to always use a teaching method that encourages interaction
11 among students. Also, male and female biology teachers appear to exhibit the
12 same degree of interactionism during teaching because students generally
13 have high interest in biology lessons as already mentioned in literature. Hence,
14 both sexes employ similar teaching methods that share the instructional power
15 between teachers and students. Teaching methods like brainstorming,
16 explanations and discussions, group activities are equally and frequently
17 utilised by both male and female biology teachers to encourage the interest of
18 students in lessons. Again, the interactionist instructional style displayed by
19 both male and female biology teachers stem from their belief that, students
20 acquire knowledge and learn when they interact with teacher and their peers.
21 This assertion is in line with the interactionist beliefs propounded by
22 Wolfgang and Glickman (1970) in the teacher behaviour continuum theory.
23 However, the interactionist style practised by male and female chemistry
24 teachers differ statistically as shown in Table 19. There existed a difference in
25 the interactionist style of classroom instructional management between male

1 and female chemistry teachers at the selected SHS where $t(-3.6147) = 6.31$,
2 $p < 0.05$. Therefore the null hypothesis was rejected in favour of the null
3 hypothesis. This result suggests a difference in the interactionist style
4 portrayed among chemistry teachers. There existed a difference of 0.3 in the
5 interactionist average score between males chemistry teachers ($X=3.6$) and
6 female chemistry teachers (3.9) from Table 19. This means that female
7 chemistry teachers are more interactionist when teaching. Female chemistry
8 teachers are known to display more of the following traits based on
9 information collected on them by their students using the BIMS: always
10 ensure that students contribute in lessons and ask questions; encourage group
11 work in the classroom; always asks questions during lessons to increase
12 students' understanding and among others. Clearly, female teachers
13 encourage cooperation, discussions and contributions than their male
14 counterparts during chemistry lessons and hence portray more of the
15 interactionist style during teaching. The result from Table 20 showed the
16 magnitude of the difference in the interactionist style between male and
17 female chemistry teachers. A difference of 81% exists between male and
18 female chemistry teachers when practising the interactionist style of
19 classroom instructional management. Thus, female chemistry teachers are
20 likely to use teaching methods like brainstorming, discussion, explanation,
21 laboratory work and group activities 81% of the times during lessons than
22 their male counterparts.

23 In terms of interventionist style of classroom instructional
24 management, there was no difference between male and female biology
25 teachers where $t(-1.6, 121) = 2.3$, $p > 0.05$ at the selected SHS within the

1 metropolis from Table 19. Thus, SHS biology teachers exhibited the same
2 degree of interventionist style irrespective of their gender. They are known by
3 their students not to always allow students contribute in lessons and ask
4 questions and appear to often use a teacher-centered teaching method. Such
5 instructional management strategies clearly suggest that male and female
6 biology teachers practise the interventionist style in almost equal measure
7 when teaching. Hence, interventionist male and female biology teachers
8 equally use lecture method and may limit contribution from students when
9 teaching. Similarly, Table 19 showed that there was no difference in the
10 interventionist style between male and female chemistry teachers where $t(-$
11 $1.5, 169) = 2.0, p > 0.05$ at the selected SHS within the metropolis. Male and
12 female interventionist chemistry teachers are observed by their students to
13 exhibit about the same degree of interventionism when teaching. They are
14 known not to always use a teaching method that encourages interaction among
15 students and also seem not use students' interest when giving assignments.
16 The reason may be that students generally have low interest in chemistry
17 lessons as earlier cited and therefore chemistry teachers (both male and
18 female) assume total control during instruction and deliver lessons mainly by
19 lecture method with little or no discussions with students. The interventionist
20 instructional style displayed by male and female teachers in biology and
21 chemistry also stems from teachers' belief that, students acquire knowledge
22 and learn when teachers act as a repository of knowledge and 'pour' onto
23 students (Wolfgang and Glickman, 1970). Additionally, there existed no
24 difference in the interventionist style with respect to teacher's gender at the
25 selected schools because as opined by Bullough, (2015) and cited in Oktan,

1 and Çağanağa (2015) teaching is not about gender; it is more about teachers'
2 motivation and the power of context.

3

4 **Chapter summary**

5 This chapter presented the demographics of the sample and the
6 findings of this study. Three hundred and twenty second year general science
7 students participated in this study. The demographics showed that 192 males
8 and 128 females responded to the subject specialist test in biology. On the
9 other hand, 190 males and 122 females responded to the subject specialist test
10 in chemistry. The selected students collected information on a total of 26
11 teachers regarding their classroom behavioural and instructional management
12 during lessons. Background data analysis showed that there were 15 biology
13 teachers and 11 chemistry teachers at the selected schools. The research
14 questions and their findings are:

- 15 1. What is the commonest classroom behavioural management style
16 (interventionist, interactionalist and non-interventionist) among SHS
17 teachers at the selected schools within the metropolis? This study
18 found that the interactionalist classroom behavioural management style
19 is the commonest among teachers (biology and chemistry) at the
20 selected SHS within the metropolis.
- 21 2. What is the commonest classroom instructional management style
22 (interventionist, interactionalist and non-interventionist) among SHS
23 teachers at the selected schools within the metropolis? The study
24 showed that the interactionalist classroom instructional management

1 style is the commonest among biology teachers whilst the
2 interventionist style is the commonest among chemistry teachers
3 within the metropolis.

4 3. Which classroom behavioural management style better predicts
5 students' academic performance at the selected SHS within the
6 metropolis? This study found that the interventionist classroom
7 behavioural management style best predicts and contributes more to
8 students' academic performance with β (0.343, 2.6), $p > 0.05$.

9 4. Which classroom instructional management style better predicts
10 students' academic performance at the selected SHS within the
11 metropolis? This study showed that the interactionist style of
12 classroom instructional management best predicts students' academic
13 performance with β (-0.318, 2.7), $p > 0.05$.

14 The results of the four hypotheses tested in this study were:

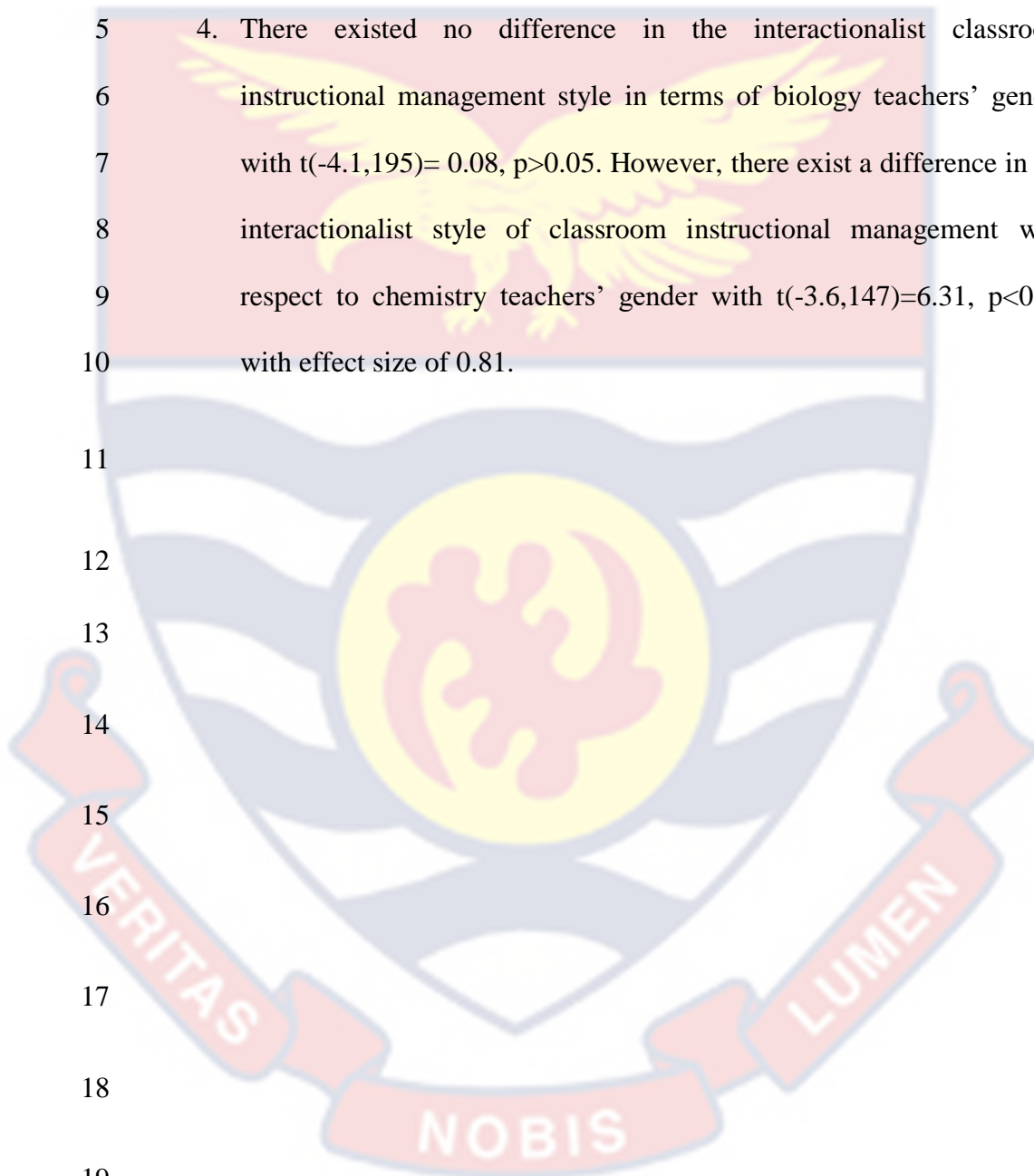
15 1. There existed a difference in students' academic performance in
16 biology and chemistry between the interactionist and interventionist
17 styles of classroom behavioural management t (2.8, 318) = 0.15, $p <$
18 0.05 with effect size of 0.38 for biology and t (2.8, 318) = 0.004, $p <$
19 0.05 with effect size of 0.47 for chemistry.

20 2. There existed no difference in students' academic performance in
21 biology and chemistry between interactionist and interventionist
22 styles of classroom instructional management with t (1, 318) = 0.28,
23 $p > 0.05$ for biology and t (1.2, 381) = 5.8, $p > 0.05$ for chemistry.

24 3. There is no difference in the interactionist classroom behavioural
25 management style between male and female biology teacher where t

1 (1.37, 247)=0.014, $p>0.05$. However, there existed a difference in the
2 interactionist classroom behavioural management style in terms of
3 chemistry teachers' gender where equal variances were not assumed
4 with $t(-4.1, 157) = 9.4$, $p<0.05$ with effect size of 0.77.

5 4. There existed no difference in the interactionist classroom
6 instructional management style in terms of biology teachers' gender
7 with $t(-4.1, 195) = 0.08$, $p>0.05$. However, there exist a difference in the
8 interactionist style of classroom instructional management with
9 respect to chemistry teachers' gender with $t(-3.6, 147) = 6.31$, $p<0.05$
10 with effect size of 0.81.



1 CHAPTER FIVE

2 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

3 Introduction

4 Chapter 5 begins with a summary of the study and the conclusions
5 made following the results of this study. The chapter ends with
6 recommendations and suggestions for future research.

7 Overview

8 This study determined the influence of teachers' classroom behavioural
9 and instructional management styles on students' academic performance at
10 SHS within the metropolis of the Ashanti region. The research questions
11 enquired were:

- 12 1. What is the commonest classroom behavioural management style
13 among SHS teachers?
- 14 2. What is the commonest classroom instructional management style
15 among SHS teachers?
- 16 3. Which classroom behavioural management style best predict students'
17 academic performance at the selected SHS?
- 18 4. Which classroom instructional management style best predict
19 students' academic performance at the selected SHS?

20 The four null hypotheses tested in this study were:

- 21 1. There is no difference in students' academic performance across the
22 classroom behavioural management styles.

1 2. There is no difference in students' academic performance across the
2 classroom instructional management styles.

3 3. There is no difference in the classroom behavioural management style
4 between male and female teachers.

5 4. There is no difference in the classroom instructional management
6 styles between male and female teachers.

7 The study design was descriptive. The simple random technique was
8 employed to sample 320 general science students in second year at selected
9 SHS. The students collected information on their biology and chemistry
10 teachers using an adapted form of the BIMS with reliability co-efficient of
11 0.70. Overall, the 320 students collected information from 15 biology and 11
12 chemistry teachers from the selected SHS within the metropolis. The
13 information collected with the BIMS from the teachers provided the scores for
14 the independent variables (classroom behavioural and instructional
15 management styles) whilst the performance scores obtained by students on the
16 specialist test (ST) in biology and chemistry were the dependent variables in
17 this study. The two research questions were answered using frequency counts
18 and the four null hypotheses were tested using independent samples t-test.

19 **Summary of Key Findings**

20 Based on the study conducted, the following key findings emerged:

21 1. Two classroom behavioural management styles (interactionalist and
22 interventionist) were practised among the teachers at the selected SHS
23 in the metropolis. The interactionalist style was the commonest. Thus,

- 1 out of 15 biology teachers, 11 were found to be interactionalist and 7
2 out of 11 chemistry teachers were also interactionalist.
- 3 2. Classroom instructional management style differed between biology
4 and chemistry teachers. The commonest classroom instructional
5 management style practised among biology teachers was the
6 interactionalist whilst the interventionist style was the commonest
7 among chemistry teachers at the selected SHS. Results showed that, 9
8 out of 15 biology teachers were interactionalist whilst 6 out of 11
9 chemistry teachers were interventionist.
- 10 3. The interventionist style of classroom behavioural management best
11 predict students' academic performance contributing 31.4%.
- 12 4. The interactionalist style of classroom instructional management best
13 predict students' academic performance contributing 31.8%.
- 14 5. There existed a difference in students' academic performance between
15 the interactionalist and interventionist classroom behavioural
16 management styles where $t(2.8, 318) = 0.15, p < 0.05$ with Eta squared
17 of 38% for biology and $t(2.8, 318) = 0.004, p < 0.05$ with Eta squared
18 of 47% for chemistry.
- 19 6. There existed no difference in students' academic performance
20 between the interactionalist and interventionist classroom instructional
21 management styles where $t(1, 318) = 0.28, p > 0.05$ for biology and t
22 $(1.2, 318) = 5.8, p > 0.05$ for chemistry.
- 23 7. Furthermore, the null hypothesis that there exist no difference in
24 interactionalist classroom behavioural management style between male
25 and female biology teachers was accepted [$t(1.37, 247) = 0.014,$

1 p>0.05]. However, there existed a difference in interactionist
2 classroom behavioural management style with respect to chemistry
3 teachers' gender with $t(-4.1, 157) = 9.4$, $p < 0.05$ with Eta squared of
4 77%.

5 8. Lastly, the null hypothesis that there exist no difference in
6 interactionist classroom instructional management style with respect
7 to biology teachers' gender was accepted with $t(4.1, 195) = 0.08$,
8 $p > 0.05$. However, there was a difference in interactionist classroom
9 instructional management style with respect to chemistry teachers'
10 gender with $t(-3.6, 147) = 6.31$, $p < 0.05$ with Eta squared of 81%.

11

12

13 **Conclusions**

14 The following conclusions were drawn based on the findings of this study.

- 15 1. The interventionist style of classroom behavioural management
16 best predict students' academic performance than the popular
17 interactionist style at the selected SHS within the metropolis.
- 18 2. The interactionist style of classroom instructional
19 management best predict students' academic performance than
20 the interventionist style at the selected SHS in the metropolis.
- 21 3. Female chemistry teachers are more interactionist by 77%
22 than their male counterparts when managing students behaviour
23 during lessons.
- 24 4. Female chemistry teachers are more interactionist by 81%
25 than their male counterparts when teaching.

1

2

3 **Recommendations**

4 The recommendations given are in reference to the findings of this study.

5 1. Although the interactionalist style of classroom behavioural
6 management was the commonest among teachers at the selected
7 schools, it does not best predict students' academic performance. The
8 result of multiple linear regression test showed that the interventionist
9 style best predict students' academic performance by contributing
10 34.3% than the 33.6% contribution of the interactionalist style. In view
11 of this finding, teachers at SHS within the metropolis should adopt an
12 appropriate way of practising the interventionist style to manage
13 students' behaviour in class.

14 2. The interactionalist style of classroom instructional management
15 contributed 31.8% to students' academic performance than the 21.5%
16 contribution of the interventionist style. In view of this finding,
17 teachers within the metropolis should be encouraged to adopt the
18 interactive teaching methods at the SHS.

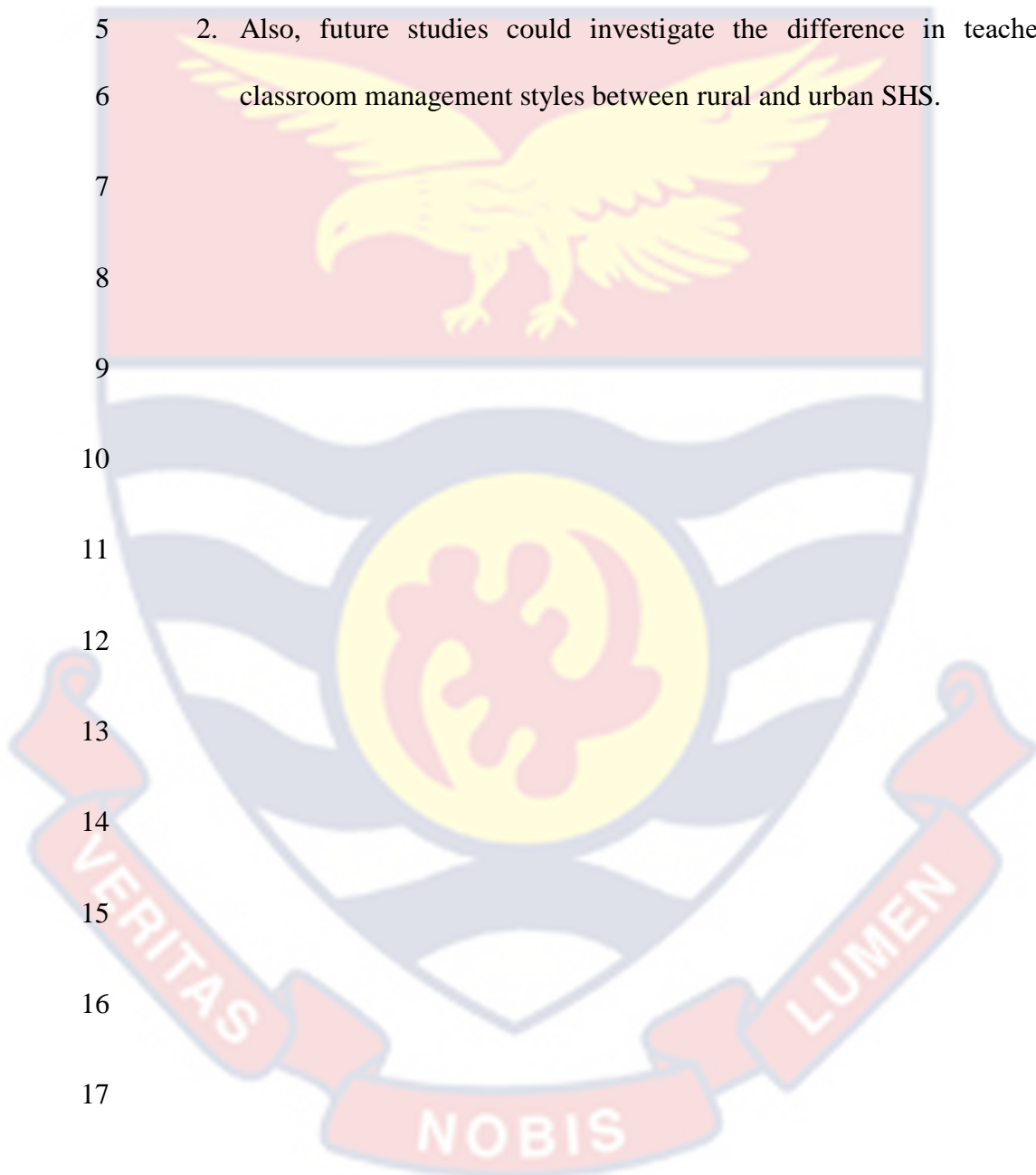
19 3. Chemistry male teachers should be more interactionalist during
20 instruction to create shared learning experiences.

21

1 Suggestions for Future Research

2 1. Future researchers may investigate the relationship of teacher
3 motivation on classroom management and its impact on students'
4 academic performance.

5 2. Also, future studies could investigate the difference in teachers'
6 classroom management styles between rural and urban SHS.



20

1 **REFERENCES**

- 2 Abaidoo, A. (2018). Factors contributing to academic performance of students
3 in a Junior High School. Retrieved from www.grin.com on 25/03/2022
4 at 8:45am.
- 5 Adarkwah, M. A. (2022). Anatomy of the 'free senior high school' policy in
6 Ghana and policy prescriptions. *Interchange*, 53(2), 283-311.
- 7 Adewole, O.A. (2020). Teachers' teaching methods and students' academic
8 performances in Ibarapa East local government area secondary
9 schools. *International Journal of Advanced Academic Research (Arts,*
10 *Humanities and Education)*, 6(10), 15-28.
- 11 Adeyemo, A. S. (2012). The relationship between effective classroom
12 management and students' academic achievement. *European Journal*
13 *of Educational Studies*, 4(3), 367- 381.
- 14 Akbaba, S., & Arif, A. (1998). Teachers' reflections on classroom
15 management. Retrieved from www.files.eric.ed.gov. at 5/03/2022 at
16 10am.
- 17 Aliakbari, M., & Heidarzadi, M. (2015). The relationship between EFL
18 teachers' beliefs and actual practices of classroom management.
19 *Cogent Education*, 2(1), 1-13.
- 20 Amoah, J.E.M., Eminah, J.K., Ngmanwara, E. I. D., & Azure, J. A. (2023).
21 The status of biology teaching and learning materials in selected
22 central regional schools, Ghana. *Cogent Education*, 10(1), 219-229.

- 1 Ayeni, A. J. (2011). Teachers' professional development and quality assurance
2 in Nigerian Secondary Schools. *World Journal of Education*, 1(2),143-
3 149.
- 4 Baah, K. A., Ansah, F.O., Amoako, S. K., Boachie, S., & Kwarteng, C.
5 (2020). Using constructivist approach to enhance understanding of
6 mole concept among second year students in chemistry at Adobewura
7 SHS in Ashanti Region, Ghana. *International Journal of Scientific
8 Research and Management* 8(8), 1611-1617.
- 9 Bandura, A. (1993). Perceived self-efficacy in cognitive development and
10 functioning. *Educational Psychologist*, 28(2), 117-148.
- 11 Beasley, L.A. (1996). Autonomy in constructivist classrooms. Unpublished
12 doctoral dissertation, University of Central Oklahoma Edmond,
13 Oklahoma. Retrieved from www.search.proquest.com on 2/02/2022 at
14 6pm.
- 15 Bhandi, P., (2020). Population versus sample: definitions and differences and
16 examples. Retrieved from www.scribbr.com on 5/5/2022 at 8:45am.
- 17 Bibi, Z., Ghazi, S. R., & Rashid, S. (2017). Classroom management
18 approaches used by teachers in public elementary schools at District
19 Toba Tek Singh. *Bannu University Research Journal of Education*,
20 1(1), 29-43.
- 21 Braden, S., & Smith, D. (2006). Managing the college classroom:
22 Perspectives from an introvert and an extrovert. *College Quarterly*,
23 9(1), 1-9.

- 1 Brannon, T. S. (2010). The effects of classroom management beliefs/
2 ideologies on student academic success. Dissertation completed at
3 California State University. 1-97.
- 4 Briggs, B. P. (2019). Teaching methods as correlate of student performance in
5 business studies in selected public secondary schools in Port Harcourt.
6 *International Journal of Innovative Social & Science Education*
7 *Research*, 7(2), 1-12.
- 8 Brophy, J. (1986). Classroom management techniques. *Education and Urban*
9 *Society*, 18(2), 182-194.
- 10 Brophy, J. (1988). Educating teachers about managing classrooms and
11 students. *Teaching and Teacher Education*, 4(1), 1-18.
- 12 Bryman, A. and Bell, E. (2003) *Business Research Methods*. Oxford
13 University Press, Oxford.
- 14 Burden, P. R. (1995). *Classroom management and discipline*. White Plains,
15 NY: Longman.
- 16 Burkett, M. C. (2011). Relationships among teachers' personality, leadership
17 style, and efficacy of classroom management. A dissertation submitted
18 to the graduate school of the University of Southern Mississippi in
19 partial fulfilment of the requirements for the degree of doctor of
20 philosophy. Pro-Quest LLC.
- 21 Caner, A.H., & Tertemiz, N.I. (2015). Beliefs, attitudes and classroom
22 management: a study on prospective teachers. *Procedia - Social and*
23 *Behavioral Sciences*, (186), 155 – 160.

- 1 Cantrell, R. P., Stenner, A. J., & Katzenmeyer, W. G. (1977). Teacher
2 knowledge, attitudes, and classroom correlates of student achievement.
3 *Journal of Educational Psychology*, (2), 172-179.
- 4 Carpenter, J. M. (2006). Effective teaching methods for large classes.
5 *Journal of Family & Consumer Sciences Education*, 24 (2), 13-23.
- 6 Cerit, Y., & Yüksel, S. (2015). Teachers' perceptions of classroom
7 management orientations in Turkish and Latvia contexts: A
8 comparative study. *Journal of Educational and Instructional Studies in*
9 *the World*, 5(3), 1-10.
- 10 Djigic, G., & Stojiljkovic, S. (2011). Classroom management styles, classroom
11 climate and school achievement. *International Conference on*
12 *Education and Educational Psychology*, 29(11), 819-828.
- 13 El- Gohary, R.O.A. (2023). The impact of E-marketing practices on market
14 performance of small business enterprises. Retrieved at
15 www.bradscholars.brad.ac.uk on 5/01/2023 at 9am
- 16 Emmer, E. T. & Hickman, J. (1991) 'Teacher efficacy in classroom
17 management and discipline'. *Educational and Psychological*
18 *Measurement*, 51(3), 755–66.
- 19 Esiam, C., Osei-Antwi, D., & Quayson, C. (2023). Are chemistry topics
20 difficult to learn? The stance of Ghanaian senior high school students.
21 *International Journal of New Trends in Arts, Sports & Science*
22 *Education (IJTASE)*, 12(2), 112-121.

- 1 Etheridge, T. (2010). Assertive discipline and its impact on disruptive
2 behaviour. Dissertation completed at Capella University.1-118.
- 3 Evertson, C. M., & Neal, K. W. (2005). Looking into learning-centered
4 classrooms: Implications for classroom management. In B. Demarest
5 (Ed.), *Benchmarks for excellence*. NEA.
- 6 Eveyik-Aydm, E., Kurt, G., & Mede, E. (2009). Exploring the relationship
7 between teacher beliefs and styles on classroom management in
8 relation to actual teaching practices: A case study. *Procedia-Social and*
9 *Behavioural Sciences*, 1(1), 612-617.
- 10 Ganyaupfu, E. M., (2014). Teaching methods and students' academic
11 performance. *International Journal of Humanities and Social Science*
12 *Invention*, 2 (9), 29-35.
- 13 Garrett, T. (2005). Student and teacher centered classroom management: a
14 case study of three teachers' beliefs and practices. Unpublished
15 doctoral dissertation . The State University of New Jersey. ProQuest
16 Information and Learning Company. UMI Number: 3170999.
- 17 Ghana Education Service, (2016). Tools for positive discipline in Basic
18 schools. Guidance and counselling unit. Retrieved from www.ges.gov.gh
19 on 12/10/21 at 9:30am
- 20 Glasser , W. (1997b). A new look at school failure and school success. *Phi*
21 *Delta Kappan*, 75(8), 596-604.
- 22 Glasser, W. (1986). *Control theory in the classroom*. NY, NY: Harper & Row.

- 1 Glasser, W. (1997a). "Choice Theory" and student success. *Education Digest*,
2 63(2), 16-21.
- 3 Glasser, W., (1995). *The control theory manager*. New York: HarperCollins
4 Publishers.
- 5 Good, T.L. & Brophy, J.E. (1986). *School effects: handbook of research on*
6 *teaching*. New York, Macmillan.
- 7 Groves, E (2009). *The everything classroom management book*. USA: Adams
8 Media. 12435.
- 9 Gürçay, D. (2015). Preservice physics teachers' beliefs regarding classroom
10 management. *Procedia-Social and Behavioural Sciences*, 174, 2430
- 11 Hakizimana, E. (2016). Classroom management and students' academic
12 performance in secondary schools in Nyamagabe district, Rwanda.
13 Mount Kenya University. Retrieved online at erepository.mkuit.ac.rw
14 on 09/02/2022 at 23:30pm.
- 15 Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses*
16 *relating to achievement*. London, England: Routledge.
- 17 Hl'vis, M. Cj. (2013), Teaching methods and students' academic performance.
18 *International Journal of Humanities and Social Science Invention*, 2
19 (9), 29-35.
- 20 Irwin, L.H., Anamuah-Mensah, J., Aboagye, J.K, Addison, A.K (2005).
21 Teachers' perceptions of classroom discipline in Ghana. *International*
22 *Education*, 34(2), 46-54.

- 1 Jones, V.F., & Jones, L.S. (2012). Comprehensive classroom management:
2 Creating communities of support and solving problems (10th ed.).
3 Prentice Hall.
- 4 Kohn, A. (1999). Students don't work- they learn. Education Week. Retrieved
5 from www.newfoundations.com at 2/03/2021 at 5pm.
- 6 Kontor, M.O, Bakari, Y.D., Ampona, M.O. (2021). Classroom management
7 strategies and academic performance at Junior High Schools.
8 *International Journal of Educational Management Engineering*, (6),
9 29-38.
- 10 Koutrouba, K., Markarian, D., Saedianou, E. (2018). Classroom management
11 style: Greek teachers' perceptions. *International Journal of*
12 *Instruction*, 11(4), 641-656.
- 13 Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research
14 activities. Educational and psychological measurement. Retrieved from
15 www.kenpro.org at 8/24/2022 at 7am.
- 16 Kwegyiriba, A. (2021). Free senior high school policy: implications to
17 education access and equity in Ghana. *British Journal of Education*,
18 9(8), 68-81.
- 19 Lang, Q. C. (2013). Exploring beginning teachers' attitudes and beliefs on
20 classroom management. *New Horizons in Education*, 61(2), 13-33.
- 21 Lanoue, P. D. (2009). The effect of professional development in perceptual
22 control theory on administrator and teacher beliefs about classroom
23 management. Unpublished doctoral dissertation. Mercer University,

- 1 Atlanta Unpublished doctoral dissertation. Kansas State University.
- 2 UMI Number: 8806247
- 3 Lasisi, N., Alabi, O. T. & Saluadeen, M. B. (2016). Comparison of the
4 effects of guided discovery, problem solving and conventional
5 teaching methods on retention of secondary school chemistry students
6 in Minna Metropolis, Niger State. *The American Journal of Innovative
7 Research and Applied Sciences*, 2(3), 98-104.
- 8 Martin, N. K. & Sass, D. (2010). Construct validation of the behaviour and
9 instructional management scale. *Teacher and Teacher Education*.
10 University of Texas, San Antonio. (Publication No. AAT 3409180)
- 11 Martin, N. K., Shobo, A. R., & Yin, Z. (2003). Attitudes and beliefs regarding
12 classroom management styles: the impact of teacher preparation vs.
13 experience. *Mid-South Educational Research Association*, 10(2), 29-
14 34.
- 15 Martin, N. K., Yin, Z., & Baldwin, B. (1998). Construct validation of the
16 attitudes and beliefs on classroom control inventory. *Journal of
17 Classroom Interaction*, 33(2), 6-15.
- 18 Martin, N. K., Yin, Z., & Mayall, H. (2007). The attitudes and beliefs on
19 classroom control inventory-revised and revisited: A continuation of
20 construct validation. *Journal of Classroom Interaction*, 42(2), 11-20.
- 21 Martin, N. K., Yin, Z.; Baldwin, B. (1998). Classroom management training,
22 class size and graduate study: do these variables impact teachers'
23 beliefs regarding classroom management style? Paper presented at the

- 1 Annual Conference of the Southwest Educational Research
2 Association, Austin, TX., February, 2006.
- 3 Martin, N.K., & Yin, Z. (1997). Attitudes and beliefs regarding classroom
4 management style: Differences between male and female teachers.
5 Austin, TX. (ERIC Documentation Reproduction Service No. ED 404
6 738).
- 7 Marzano, R.J., Marzano, J.S. & Pickering, D.J. (2003). Classroom
8 management that works. Retrieved from
9 www.ascd.org/publications/books/103027.aspx on 03/04/2022 at
10 4pm.
- 11 Moghtadaie, L. & Hoveida, R. (2015). Relationship between academic
12 optimism and classroom management styles of teachers—case study:
13 *Elementary School Teachers in Isfahan. International Education*
14 *Studies*, 8(11), 184-192.
- 15 Mohammed, A. K., Kuyini, A.B. (2021). An evaluation of the free senior high
16 school policy in Ghana. *Cambridge Journal of Education*, 51(2), 143-
17 172.
- 18 Moore, D. W. (2008). Classroom organizational structures as related to student
19 achievement in upper elementary grades in Northeast Tennessee public
20 schools. Electronic Theses and Dissertations at East Tennessee State
21 University. Retrieved from: <http://www.temoa.info/node/292566>

- 1 Moradi, N. (2020). The impact of classroom management on students’
2 communication skills in English language classrooms. *Language*
3 *Testing in Focus*, (2), 22-33.
- 4 Munyaradzi, G. E (2013). Teaching methods and students’ academic
5 performance. *International Journal of Humanities and Social Science*
6 *Invention*, (2) 9, 29-35.
- 7 Nya, C.O. (2017). Secondary schools students’ preferences of teaching
8 methods in chemistry courses and factors affecting their choice from
9 their perspectives. Retrieved from www.ssrn.com on 3/03/2021 at
10 12pm.
- 11 Oke, A. A., (2020). Teachers’ teaching methods and students’ academic
12 performances in Ibarapa East local government area secondary
13 schools. *International Journal of Advanced Academic Research (Arts,*
14 *Humanities and Education)*, 6(10), 15-28. Retrieved from
15 www.ijaar.org on 21/01/2022 at 6pm.
- 16 Oktan, D. & Caganaga, C. K. (2015). The impact of teachers’ gender
17 differences on classroom management. *International Online Journal of*
18 *Education and Teaching (IOJET)*, 2(4), 239-247.
- 19 Oliver, R.M. & Reschly, D.J. (December, 2007). Effective classroom
20 management: teacher preparation and professional development.
21 Retrieved from
22 www.tqsource.org/topics/effectiveclassroommanagement.pdf on
23 www.tqsource.org/topics/effectiveclassroommanagement.pdf on
www.tqsource.org/topics/effectiveclassroommanagement.pdf on
12/02/2021 at 4pm.

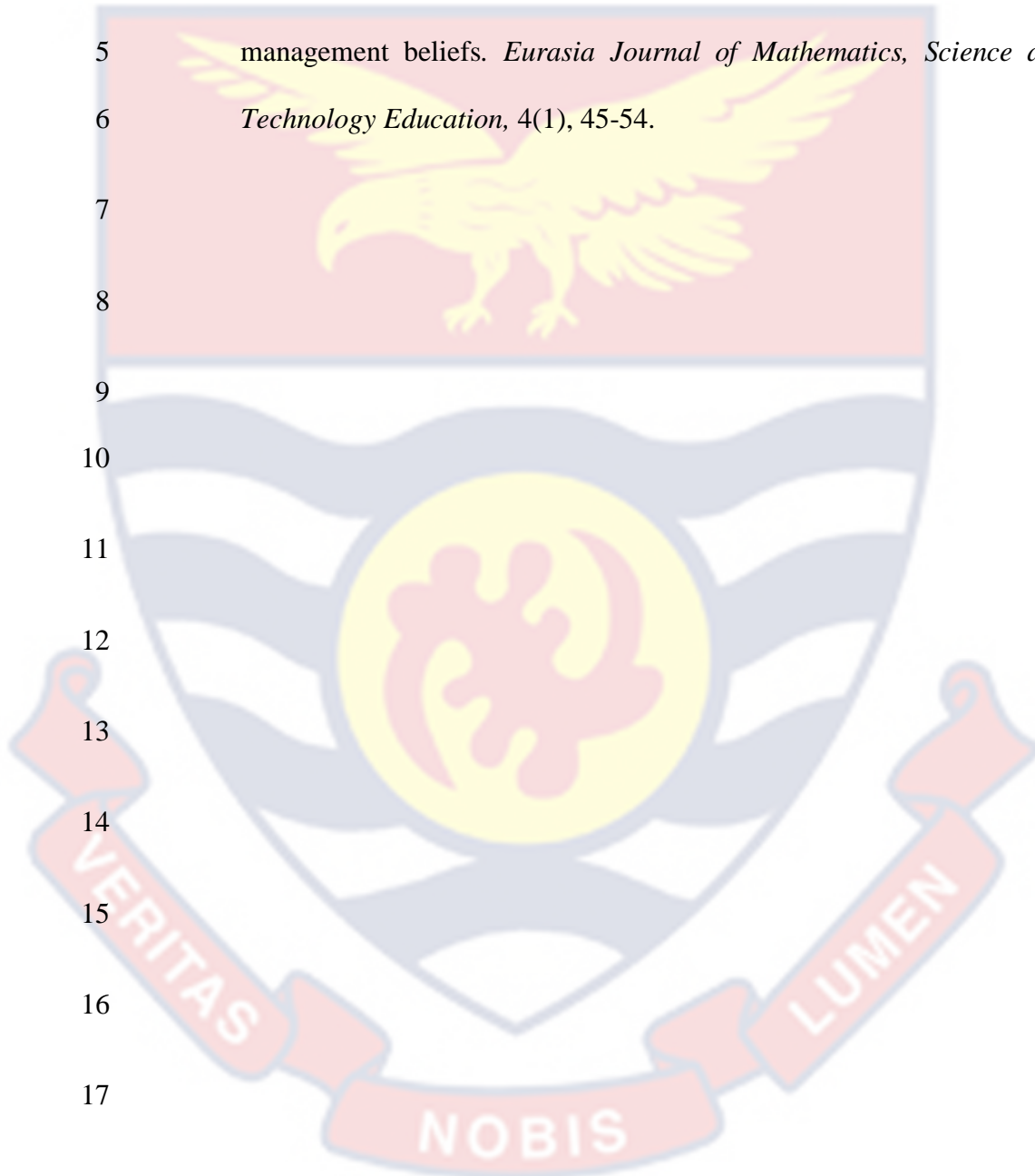
- 1 Pallant, J. (2007). SPSS survival manual. Berkshire, England: Open
2 University Press.
- 3 Porozovs, J., Liepniece, L., & Voita, D. (2015) Evaluation of the teaching
4 methods used in secondary school biology lessons. *Signum Temporis*,
5 7(1), 60–66.
- 6 Rahimi, M. & Asadollahi, F. (2012). On the relationship between Iranian EFL
7 teachers' classroom management orientations and teaching style.
8 *Procedia-Social and Behavioural Sciences*, 31, 49-55.
- 9 Reynolds-Keefer, L. (2013). Differences in pre-service teachers' attitudes
10 about classroom management: Elementary and secondary perspectives.
11 *International Education Research*, 1(2), 1-7.
- 12 Saeedi, M. (2016). EFL teacher's attitudes and beliefs regarding classroom
13 management style: the case of gender and teaching experiences.
14 *European Journal of Education Studies*, 2(1), 58-69.
- 15 Sanders, W., & Horn, S. P. (1998). Implications for educational evaluation and
16 research. *Journal of Personnel Evaluation in Education*, (12) 247- 256.
- 17 Santiago, D. (2012). A study of the relationship between middle school and
18 high school teachers instructional and behaviour management practices
19 and demographic variables. Liberty University. Retrieved from Digital
20 Commons at Liberty University.
- 21 Science for society. Retrieved from www.en.unesco.org at 24/04/2023 at 7pm

- 1 Shupe, J. (1998). Prescriptive discipline: Just what the doctor ordered. *NASSP*
2 *Bulletin*, 82(596), 25-30.
- 3 Skinner, B.F. (1950). Are theories of learning necessary? *The Psychological*
4 *Review*, 57(4), 193-216.
- 5 Sowell, K.H, (2013). Classroom management strategies: the impact on student
6 achievement. Unpublished dissertation presented in partial fulfillment
7 of the requirements for the degree Doctor of Education. Liberty
8 University. Retrieved from www.search.proquest.com on 04/06/2021
9 at 3pm.
- 10 Tebabal, A. & Kahssay, G. (2011). The effects of student-centered approach in
11 improving students' graphical interpretation skills and conceptual
12 understanding of kinematical motion. *Lat. Am. J. Phy. Edu.*, 5(2),374-
13 381
- 14 Thi, T. T. & Nguyen, H.T.T. (2021). The effects of classroom management
15 styles on students' motivation and academic achievement in learning
16 English. *International Journal of Learning, Teaching and Educational*
17 *Research*, 20(1), 223-239.
- 18 Thyer, B.A. (1993). Single-systems research design in R.M. Grinnel (ed),
19 *Social Work, Research and Evaluation* (4th ed), Itasca Illinois:
20 Peacock.
- 21 Ünal, Z. & Ünal, A. (2012). The impact of years of teaching experience on the
22 classroom management approaches of elementary school teachers.
23 *International Journal of Instruction*, 5(2), 41-60.

- 1 Walberg, H.J. (1981). A psychological theory of educational productivity. In
2 F.H. Farley & N. Gordon (Eds), *Psychological and Education*, 81-110.
3 Chicago: National Society for the study of Education.
- 4 Walfgang, C.H. & Glickman, C.D. (1980). Solving discipline problems:
5 Strategies for classroom teachers. Boston, MS: Allyn and Bacon, Inc.
- 6 Walker, J. (2009). Authoritative classroom management: How control and
7 nurturance work together. *Theory Into Practice*, 48(2), 122-129.
- 8 Wang, M.C., Haertel, G.D. & Wallberg, H.J. (1993). Toward a knowledge
9 base for school learning. *Journal of Educational Research*, 63(3), 249-
10 253.
- 11 Waterman, S. S. (2007). The democratic differentiated classroom. Eye on
12 Education. Routledge, Taylor and Francis Group.
- 13 Wayne, A.J. & Youngs, P. (2003). Teacher characteristics and student
14 achievement gains: A review. *Review of Educational Research*, 73-89.
15 Retrieved online from [www. researchgate.net](http://www.researchgate.net) on 12/03/2022 at 4pm.
- 16 Weinstein, C. S. (1996). Secondary classroom management: Lessons from
17 research and practice. NY, NY: McGraw-Hill.
- 18 Wessler, S. L. (2003). Building classroom relationships: It's hard to learn
19 when you're scared. *Educational Leadership*, 67(1), 40-43.
- 20 Wong, H. & Wong, R. (1998). The first days of school: How to be an effective
21 teacher. Mountain View, CA: Harry K. Wong Publications.

1 Yasar, S. (2008). Classroom management approaches of primary school
2 teachers. Retrieved from [www. open.metu.edu.tr](http://www.open.metu.edu.tr). on 5/03/2022 at 6am.

3 Yılmaz, H., & Çavaş, P., H. (2008). The effect of the teaching practice on pre-
4 service elementary teachers' science teaching efficacy and classroom
5 management beliefs. *Eurasia Journal of Mathematics, Science and*
6 *Technology Education*, 4(1), 45-54.



18

1

APPENDIX A

2

Introductory Letter from Graduate Studies Unit

3

4

5

6

7

8

9

10

11

12

13

14

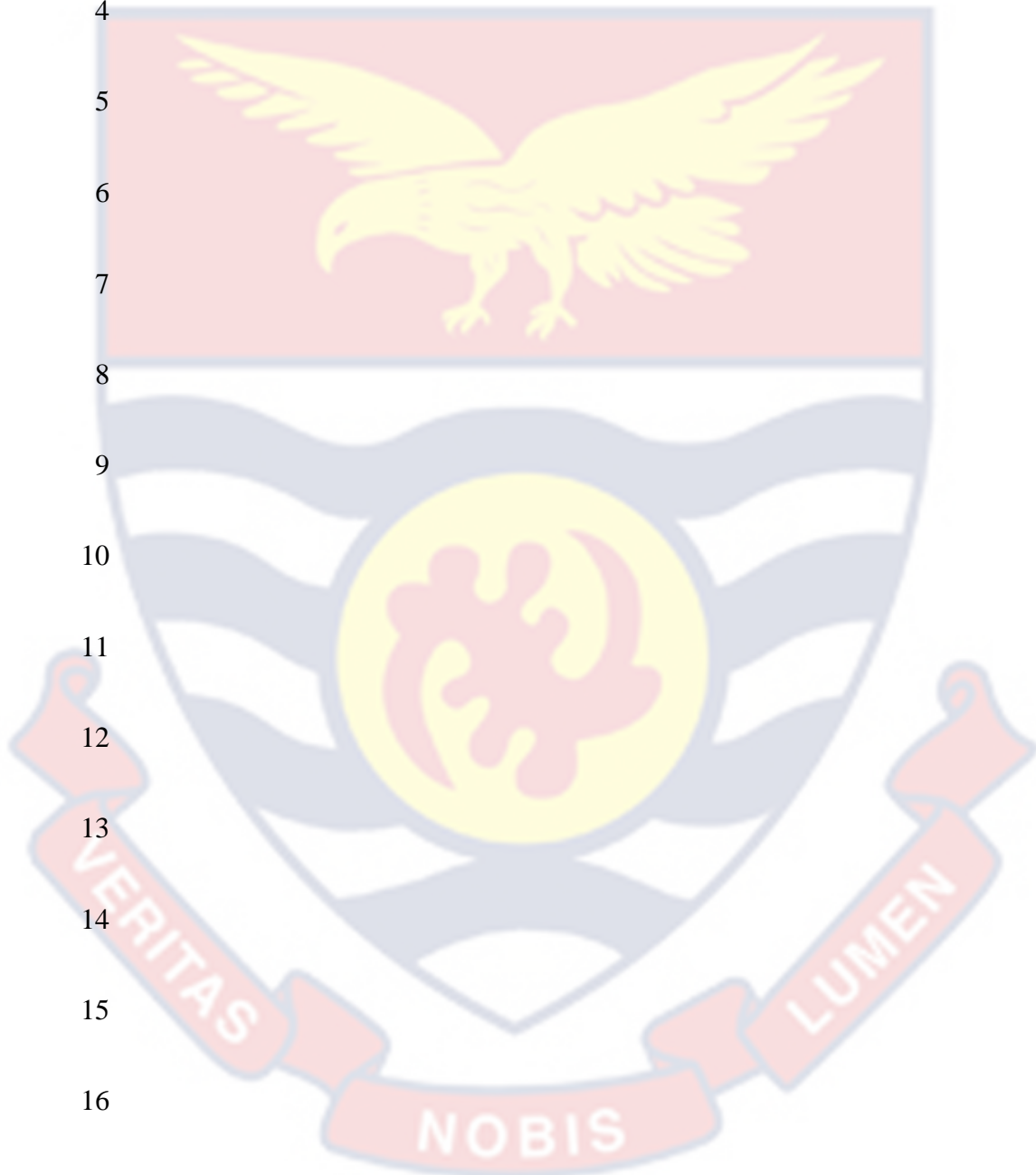
15

16

17

18

19



1 **APPENDIX B**

2 **A Letter from Ethical Review Board**

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20



1

2

APPENDIX C**3 Department of Education and Psychology Consent Form**

4 TOPIC: Influence of SHS teachers' classroom behavioural and instructional
5 management style on students' academic performance in the metropolis of
6 Ashanti region.

7

8 Dear respondent,

9 This questionnaire is designed to solicit information for a research
10 work. The survey is completely voluntary. Your participation and views are
11 very important to the success of the study and will be kept confidential. For
12 this reason, YOUR NAME IS NOT REQUIRED. Please contact me on 0265
13 833562 should you have any questions concerning your participation. I
14 appreciate your support in this important activity.

15

Consent to Participate In Research:

16

17

18

19

20

21

22

23

24

25

I understand that any information I give remain confidential and that when the results of the research are published or discussed in conference, no information will be included to reveal my identity. By agreeing with the survey, I willingly participate and submit a response to the researcher.

Yes

No

1 **Behavioural and Instructional Management Scale (BIMS) on Biology**

2 **Teachers**

3 Section A

4 Please tick the option applicable to you.

5 1. Gender: Male Female

6 2. Teacher's gender: Male Female

7 Subject: Biology

8 **Section B**

9 Directions: For each statement below, please tick the response that best
 10 describes your biology teacher during lessons. There are no right or wrong
 11 answers, so please respond as honestly as possible using the following keys.

12 *SD= strongly disagree, SID= slightly disagree, D=disagree, A=agree,*

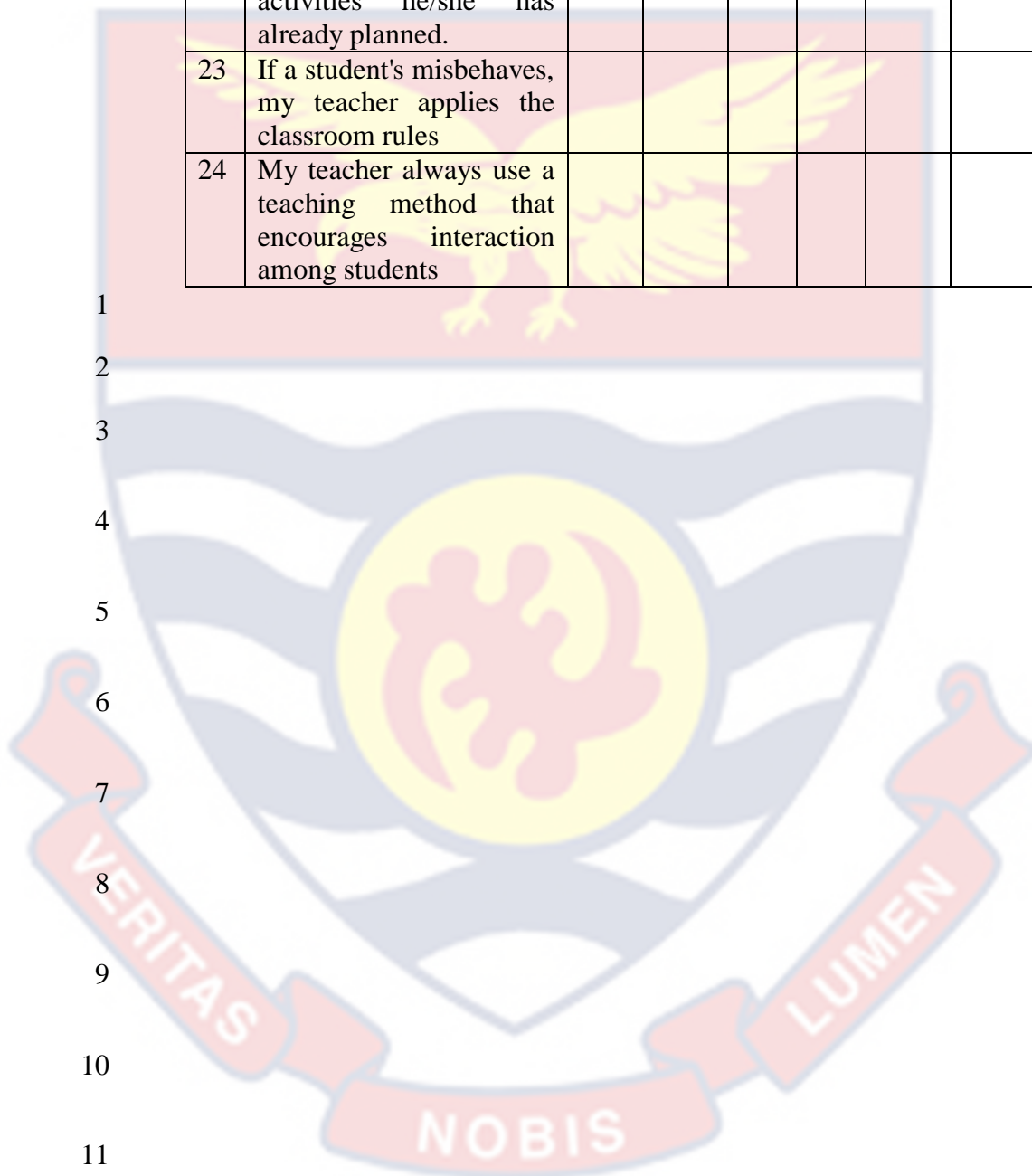
13 *SlA= slightly agree and StA= strongly agree*

14

	Statement	SD	SID	D	A	SlA	StA
1	My teacher always interferes when students talk at inappropriate times during class						
2	My teacher gives tuition to the whole the class to ensure there is order						
3	My teacher strongly stops student who make noise in the classroom						
4	My teacher always ensures that students contribute in lessons and ask questions						
5	My teacher rewards students who show good behaviour						
6	My teacher engages students in discussion about lesson topics related to real world						

	applications						
7	If a student talks to another student, my teacher will change the seating position of that student.						
8	My teacher has a teaching routine in and sticks to it						
9	My teacher uses ideas from students to create classroom rules						
10	My teacher encourages group work in the classroom						
11	My teacher allows students to get out of their seat without permission.						
12	My teacher uses students interest when giving assignments						
13	My teacher is strict when it comes to student obedience in classroom						
14	My teacher always asks questions during lessons to increase our understanding.						
15	My teacher draws our attention to the lesson when we are not attentive.						
16	My teacher guides our understanding in our learning activities.						
17	My teacher insist that we follow classroom rules at all times						
18	My teacher always changes the teaching style to fit the needs of a particular student						
19	My teacher carefully monitors our behaviour that is not connected to the lesson during class						
20	My teacher is always						

	straight forward when teaching						
21	My teacher strictly enforces classroom rules to control our behaviour						
22	My teacher does not deviate from learning activities he/she has already planned.						
23	If a student's misbehaves, my teacher applies the classroom rules						
24	My teacher always use a teaching method that encourages interaction among students						



1
2
3
4
5
6
7
8
9
10
11
12
13

1

APPENDIX E

2 **Specialist Test in Biology**

3 Please answer the following questions by circling the best option.

4 Time Allowed: 15 minutes.

5 1. The fine thread-like structure that constitute the vegetative body of
6 fungi are called

- 7 a. hyphae
-
- 8 b. mycelia
-
- 9 c. rhizoids
-
- 10 d. stolons

11

12 2. The male Agama lizard frightens its enemy with the

- 13 a. bulging eyes
-
- 14 b. gular fold
-
- 15 c. nuclear crest
-
- 16 d. spiny scale

17

18 3. The process of expelling undigested food materials out of the body is
19 termed

- 20 a. egestion
-
- 21 b. excretion
-
- 22 c. ingestion
-
- 23 d. secretion

24

25 4. Which of the following best describes an ecosystem?

- 26 a. a group of different species living together
-
- 27 b. an area where living and non-living parts interact
-
- 28 c. group of organisms of the same species in an area
-
- 29 d. part of the earth where life exists

30

31 5. Bacterium is a cell which does not possess

- 32 a. cell membrane
-
- 33 b. cell wall
-
- 34 c. nuclear material
-
- 35 d. nuclear membrane

36

37

38

39

40

- 1 6. The smallest taxon among the following is
- 2 a. class
- 3 b. genus
- 4 c. order
- 5 d. species
- 6
- 7 7. The excretion of uric acid is an adaptation for the conservation of
- 8 a. energy
- 9 b. heat
- 10 c. salt
- 11 d. water
- 12
- 13 8. Protein synthesis occurs on
- 14 a. Golgi bodies
- 15 b. mitochondrion
- 16 c. plasma membrane
- 17 d. ribosome
- 18
- 19 9. Rickets is a
- 20 a. bacterial disease
- 21 b. contagious disease
- 22 c. hereditary disease
- 23 d. nutrient deficiency disease
- 24
- 25 10. Which of the following is a tissue?
- 26 a. blood of a mammal
- 27 b. flower of a plant
- 28 c. leaf of a plant
- 29 d. motor neurone of a mammal
- 30
- 31 11. The heartbeat of a mammal originates from the
- 32 a. parasympathetic nervous system
- 33 b. purkinje fibres
- 34 c. sino-atrial node
- 35 d. sympathetic nervous system
- 36
- 37 12. Which of the following substance is known to deplete the ozone layer?
- 38 a. carbon dioxide
- 39 b. carbon monoxide
- 40 c. chlorofluorocarbon
- 41 d. sulphur dioxide
- 42
- 43
- 44

- 1 13. Which of the following association is epiphytism?
2 a. an egret on a cow
3 b. fern growing on palm tree
4 c. lice in human hair
5 d. mistletoe on a citrus tree
6
7
- 8 14. Small insects crawling on the bark of a tree can be collected with a
9 a. light trap
10 b. pooter
11 c. quadrat
12 d. sweeping net
13
- 14 15. The movement of substances against concentration gradient in an
15 organism is referred to as
16 a. active transport
17 b. diffusion
18 c. osmosis
19 d. rapid translocation
20
21
22

23 **Marking Scheme- Biology**

- 24 1. A
25 2. B
26 3. A
27 4. B
28 5. D
29 6. D
30 7. D
31 8. D
32 9. D
33 10. A
34 11. C
35 12. C

1 **13. B**

2 **14. B**

3

4

5

6

7

8

9

10

11

12

13

14

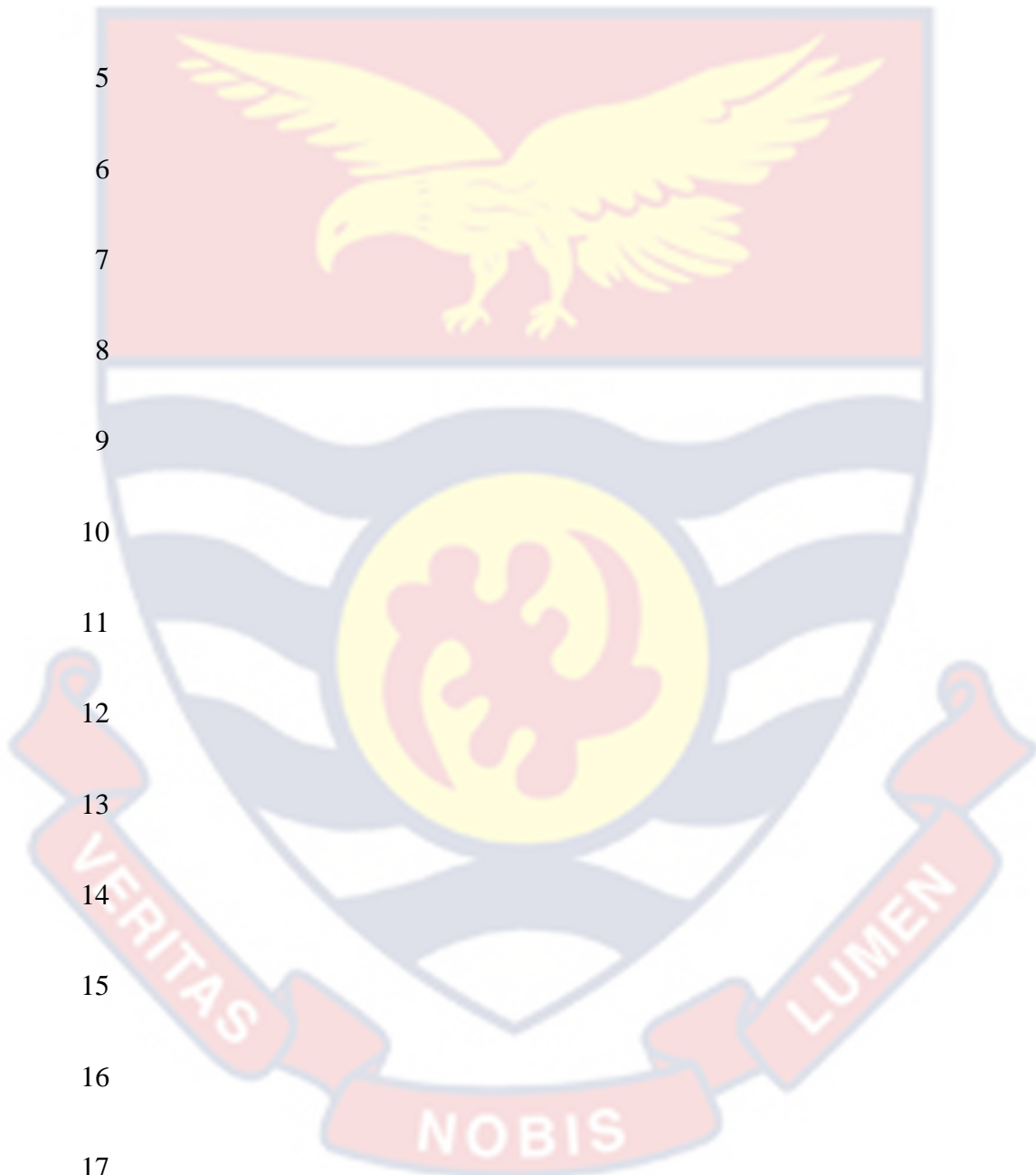
15

16

17

18

19



1

APPENDIX F

2 **Behavioural and Instructional Management Scale (BIMS) on Chemistry**3 **Teachers**

4 Section A

5 Please tick the option applicable to you.

6 1. Gender: Male Female 7 2. Teacher's gender: Male Female

8 Subject: Chemistry

9

10 Section B

11 Directions: For each statement below, please tick the response that best
 12 describes your chemistry teacher during lessons. There are no right or wrong
 13 answers, so please respond as honestly as possible using the following keys.

14 *SD= strongly disagree, SID= slightly disagree, D=disagree, A=agree,*15 *SLA= slightly agree and StA= strongly agree*

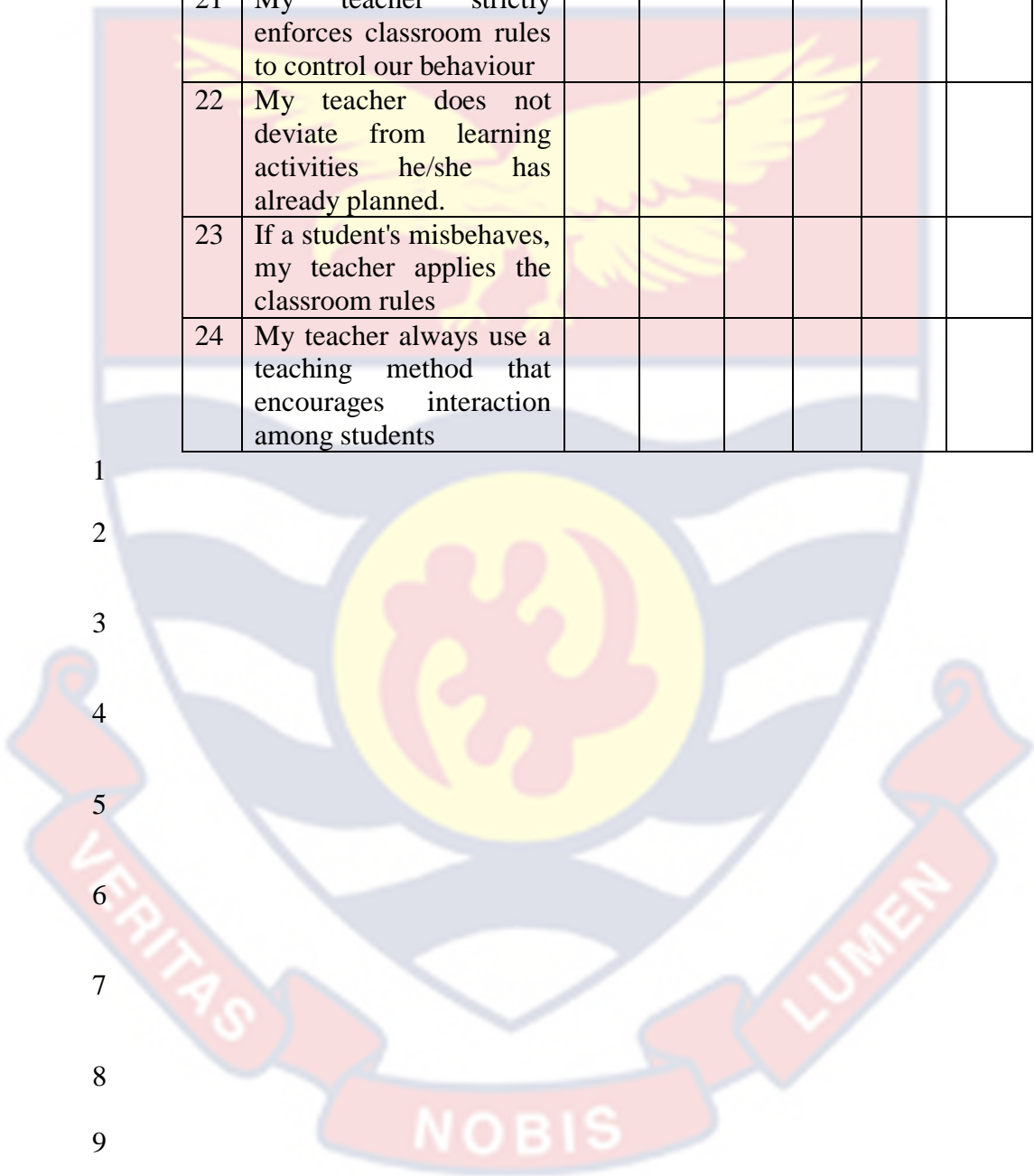
16

17

	Statement	SD	SID	D	A	SIA	StA
1	My teacher always interferes when students talk at inappropriate times during class						
2	My teacher gives tuition to the whole the class to ensure there is order						
3	My teacher strongly stops student who make noise in the classroom						
4	My teacher always ensures that students contribute in lessons and ask questions						

5	My teacher rewards students who show good behaviour						
6	My teacher engages students in discussion about lesson topics related to real world applications						
7	If a student talks to another student, my teacher will change the seating position of that student.						
8	My teacher has a teaching routine in and sticks to it						
9	My teacher uses ideas from students to create classroom rules						
10	My teacher encourages group work in the classroom						
11	My teacher allows students to get out of their seat without permission.						
12	My teacher uses students interest when giving assignments						
13	My teacher is strict when it comes to student obedience in classroom						
14	My teacher always asks questions during lessons to increase our understanding.						
15	My teacher draws our attention to the lesson when we are not attentive.						
16	My teacher guides our understanding in our learning activities.						
17	My teacher insist that we follow classroom rules at all times						
18	My teacher always changes the teaching style to fit the needs of a particular student						

19	My teacher carefully monitors our behaviour that is not connected to the lesson during class						
20	My teacher is always straight forward when teaching						
21	My teacher strictly enforces classroom rules to control our behaviour						
22	My teacher does not deviate from learning activities he/she has already planned.						
23	If a student's misbehaves, my teacher applies the classroom rules						
24	My teacher always use a teaching method that encourages interaction among students						



1
2
3
4
5
6
7
8
9
10

1

APPENDIX G

2 **Specialist Test in Chemistry**

3 Please answer the following questions by circling the best option.

4 Time Allowed: 15 minutes.

5 1. How many electrons are in the outermost shell of the element $^{14}_7\text{X}$?

- 6 a. 2
7 b. 5
8 c. 7
9 d. 14

10

11 2. Three isotopes of Neon are represented by the symbols; $^{20}_x\text{Ne}$, $^{21}_y\text{Ne}$,
12 $^{22}_z\text{Ne}$. The relationship between x, y and z

- 13 a. $x > y > z$
14 b. $x < y < z$
15 c. $x = y = z$
16 d. $x < z < y$

17

18 3. Which of the following statements about atoms is true?

- 19 a. An atom increases in size with decreasing number of shell
20 b. Atoms of different elements have the same number of protons
21 c. The mass of proton in an atom is almost equal to the mass of a
22 neutron
23 d. There are equal numbers of electrons and neutrons in the atom

24

25 4. What mass of Na_2CO_3 would be required to prepare 250cm^3 of
26 0.15mol/dm^3 solution?

- 27 a. 3.98g
28 b. 13.25g
29 c. 15.90g
30 d. 63.60g

31

32 5. Which of the following favour formation of covalent bonds?

- 33 a. High electron affinity
34 b. Low ionisation energy
35 c. Small size of the anion
36 d. Small size of the cation

37

38

39

40

- 1 6. Which of the following compounds is most ionic?
2 a. AlBr_3
3 b. AlI_3
4 c. BeI_2
5 d. CsF
6
- 7 7. Which of the following contains the greatest number of molecules?
8 Molar masses: $\text{CH}_4=16$, $\text{CO}=28$, $\text{C}_2\text{H}_2=26$, $\text{CO}_2=44$
9 a. 1g of C_2H_2
10 b. 1g of C_2H_3
11 c. 1g of CH_4
12 d. 1g of CO_2
13
- 14 8. Which of the following statements about molar solution is correct? It
15 a. Cannot dissolve more of the solute in that temperature
16 b. Contains any amount of solute in a given volume of solution
17 c. Contains one mole of the solute in 1 dm^3 of solution
18 d. Is a supersaturated solution
19
- 20 9. What is the PH of a 0.10 mol/dm^3 NaOH solution?
21 a. 1
22 b. 10
23 c. 11
24 d. 13
25
- 26 10. Solid Iron (III) chloride turns liquid on exposure to air because it is
27 a. Amphoteric
28 b. Deliquescent
29 c. Efflorescent
30 d. Hygroscopic
31
- 32 11. A suitable indicator for weak acid-strong base titration is
33 a. Litmus
34 b. Methyl orange
35 c. Methyl red
36 d. Phenolphthalein
37
- 38 12. The position of equilibrium in a reversible reaction is affected by
39 a. Change in concentration of the reactants
40 b. Particle size of the reactants
41 c. Presence of a catalyst
42 d. Vigorous stirring of the reaction mixture
43
44

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34

13. What is the volume of 0.1 mol/dm^3 HCl that would completely neutralise 25cm^3 of 0.3 mol/dm^3 Ca(OH)_2 ?

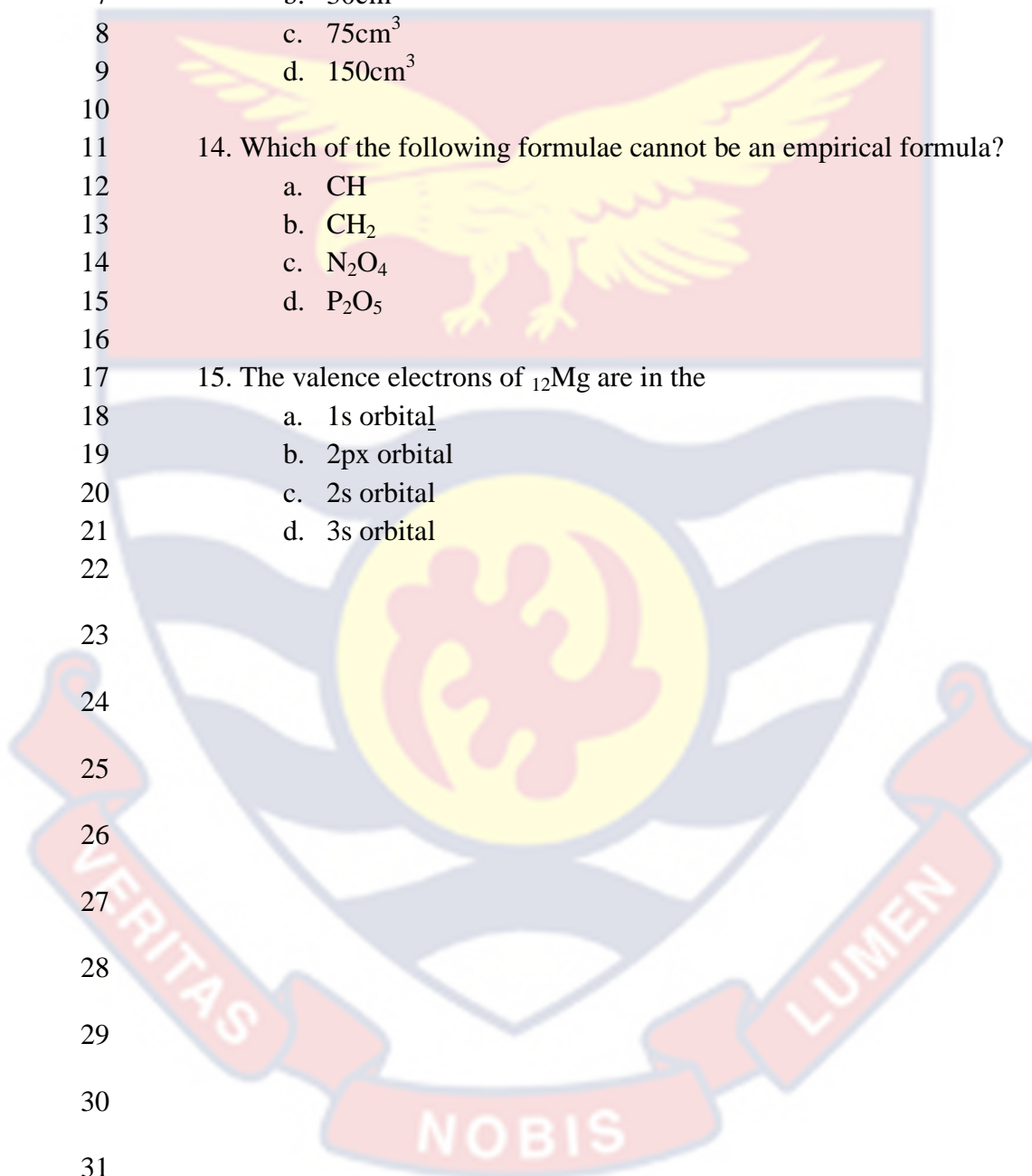
- a. 25cm^3
- b. 30cm^3
- c. 75cm^3
- d. 150cm^3

14. Which of the following formulae cannot be an empirical formula?

- a. CH
- b. CH_2
- c. N_2O_4
- d. P_2O_5

15. The valence electrons of ${}_{12}\text{Mg}$ are in the

- a. 1s orbital
- b. 2px orbital
- c. 2s orbital
- d. 3s orbital



1

2

3

4 **Marking Scheme- Chemistry**

5 1. B

6 2. C

7 3. C

8 4. A

9 5. A

10 6. D

11 7. B

12 8. C

13 9. D

14 10. B

15 11. D

16 12. A

17 13. D

18 14. A

19 15. D

20

21

22

23

24

