UNIVERSITY OF EDUCATION, WINNEBA

PUBLIC JUNIOR HIGH SCHOOL PUPILS' PERCEPTIONS OF THEIR LEARNING STYLE PREFERENCES AND THEIR RELATIONSHIP WITH ACADEMIC PERFORMANCE IN SOCIAL STUDIES IN EAST MAMPRUSI MUNICIPALITY

HAMISU KASIMU MESHANU

MASTER OF PHILOSOPHY

2023

UNIVERSITY OF EDUCATION, WINNEBA

PUBLIC JUNIOR HIGH SCHOOL PUPILS' PERCEPTIONS OF THEIR LEARNING STYLE PREFERENCES AND THEIR RELATIONSHIP WITH ACADEMIC PERFORMANCE IN SOCIAL STUDIES IN EAST MAMPRUSI MUNICIPALITY

HAMISU KASIMU MESHANU
202114752

**A Thesis in the Department of Basic Education,
Faculty of Educational Studies, Submitted to the School of
Graduate Studies in partial fulfilment of
the requirements for the award of the degree of
Master of Philosophy
(Basic Education)
in the University of Education, Winneba**

JUNE, 2023

DECLARATION

Candidate's Declaration

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

Signature: …….

Date: …….

Supervisor's Declaration

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

Mr. Kwaku Esia-Donkoh. **(Principal Supervisor)**

Signature: ……

Date: ……

Prof. Andrews Ghanney **(Co-Supervisor)**

Signature: ……

Date: ……

DEDICATION

To my family

ACKNOWLEDGEMENTS

I express profound gratitude to Mr. Kweku Esia-Donkoh, a Senior Lecturer in the Department of Educational Foundations, Faculty of Educational Studies, University of Education, Winneba, for his meticulous scrutiny, constructive comments and suggestions, which immensely contributed to the success of this thesis. I am also grateful to Prof. Robert Andrew Ghanney of the Department of Basic Education, University of Education, Winneba who carefully and patiently read all the scripts and offered the necessary suggestions for the success of this work. To my supervisors, I say thank you for your unfailing guidance and time, which enabled me to complete my thesis successfully.

I also wish to thank all academic and administrative staff of the Department of Basic Education, University of Education, Winneba, for their unflinching support during my M.Phil. programme. My sincere appreciation and gratitude go to the headteachers and staff of public Junior High Schools in the East Mamprusi Municipality for their support during the data collection phase of my research. I am grateful to all members of my extended family for their prayers and support. I equally appreciate the effort expended by Mr. Nelson Amponsah for his support and suggestions during the data analyses phase of my research. To all those who in one way or the other contributed to the successful completion of my programme, I say, God bless you.

Finally yet importantly, I am most grateful to all authors whose works I consulted in writing my thesis. I am however solely responsible for any shortcomings in this work.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

The study investigated learning style preferences of public junior high school pupils in studying Social Studies in the East Mamprusi Municipality of Ghana and their relationship with academic performance in Social Studies. The Grasha and Riechmann's (1982) learning styles model guided the study. Cross-sectional descriptive survey design within the positivists' quantitative methodology was used to collect data using a structured questionnaire. Data from 230 out of 234 participants selected through proportionate stratified random sampling technique were used for the study. With the aid of SPSS, descriptive (mean, standard deviation) and inferential statistics (independent samples t-test, Pearson product moment correlation, and multiple linear regression) were used to analyse the data. Even though the study established that the pupils practiced a mixture of the learning styles in different intensities, the independent learning style was dominant among the pupils whereas the competitive learning style was least prevalent. The findings also pointed out that school-related, home-related, and personal factors collectively and individually significantly predicted the learning style preferences of the pupils in Social Studies. Furthermore, the learning styles jointly and individually related positively with the academic performance of the pupils in studying Social Studies. Based on the findings, it was recommended among others that the East Mamprusi Municipal Education Directorate should liaise with the management of the public basic schools to organise orientation programmes for the pupils on the effective practice of learning styles towards the study of Social Studies in the schools.

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter discusses the background to the study, statement of the problem, purpose of the study, objectives of the study and research questions. Other areas, which the chapter covers, include significance of the study, delimitation and organization of the study.

1.1 Background to the Study

Many parts of the world, including Britain and the United States of America, witnessed the introduction of Social Studies as a subject when their societies were affected by violence, especially during the industrial revolution and its attendant social consequences (Adam, Odumah & Ngaaso, 2018). As a school subject, Social Studies encompasses the teaching of history and other social sciences such as Economics, Geography, Sociology, and Civics. but not merely as a single disciplinary knowledge made appropriately accessible to children and adolescents. Social Studies has always been a vehicle for the transmission of values and a determinant of social conventions as well as worldviews (Ross, 2020). According to Kankam (2013), Social Studies education is meant to assist learners construct potent social understanding and take seriously the obligation of democratic citizenship, which are the basic goals of teaching the subject.

The aim of Social Studies as a subject of study hinges on the promotion of civic competence in terms of the knowledge and democratic dispositions required of pupils to be active and engaged participants in public life (National Council for Social Studies, 2016). Although civic competence is not the only responsibility of Social

Studies nor is it exclusive to the field, it is more central to Social Studies than to any other subject area studied in schools (National Council for Social Studies, 2016). This highlights the important role which Social Studies as a subject of study plays in preparing pupils to become committed to democratic values, collaboration, decision-making, and problem solving. Scholars have argued that the realization of the aims of Social Studies is very much dependent on a number of factors. For instance, Angbing (2016) reported that students' performance in social studies is determined by factors related to teachers, the school environment, socio-economic background and pupils' inherent characteristics. This supports the views of Ogunsanya and Olayinka (2020) who posited that some determinants of pupils' academic performance are inherent, such as study habits and learning style preferences.

According to Stenmayr and Wirthwein (2015), academic achievement encompasses performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university. Stenmayr and Wirthwein further indicated that in most educational systems, academic achievement is defined in terms of cognitive goals that either apply across multiple subject areas or include the acquisition of knowledge and understanding in specific intellectual domains such as numeracy, literacy, science and Social Studies. This implies that academic achievement is a multifaceted construct that comprises different domains of learning. Hence, the field of academic achievement covers a broad variety of educational outcomes because its determination depends on the indicators used to measure it.

Scholars have cited high academic performance as a major indicator of progress in education. For instance, Kayode and Ayodele (2015) posited that a country's social and economic development are directly linked with pupils' academic performance. However, academic achievement is influenced by both internal and external factors (Mushtaq & Khan, 2015). It has emerged from empirical studies that several internal factors predict the academic performance of pupils. In their study, Mushtaq and Khan identified internal factors that affect academic performance to include competence in English, class schedules, class size, availability of text books, class test results, learning facilities, homework, classroom environment, complexity of the course material, teachers' role in the class, technology used in the class and examination systems.

In relation to external factors that affect academic performance, Raychaudhury, Debnath, Sen and Majumder (2016) identify socio-economic factors like attendance in the class, family income, educational level of parents, teacher-student ratio, competence of trained teachers in school, sex of student and proximity of the school. It can be construed from the assertions of these scholars that where both internal and external predictors of academic performance tilt towards the positive side of the scale, pupils stand the chance to make meaningful learning gains and hence will stand tall on the academic ladder. Conversely, when the character of these predictors of academic achievement is negative, learning gains become minimal and hence low academic performance results.

Research has also proven that there are numerous factors to which negative performance of learners in academics could be attributed. Anamuah-Mensah, Mereku and Ampiah (2010) attributed the phenomenon of low academic performance to lack

of effective school-level supervision and monitoring, lack of motivation for teachers and inadequate number of qualified teachers to fill empty classrooms. In a study to identify the perceived school environmental and home conditions that are responsible for the poor academic performance of pupils, Baidoo-Anu (2018) catalogued other factors that are attributable to poor academic performance of learners. These factors include inadequate teaching and learning materials, inadequate classrooms for teaching and learning, lack of library facility to aid teaching and learning, ill-equipped classrooms to facilitate teaching and learning and poor parental involvement in Parent Association (PA) meetings. Some predictors of academic achievement among pupils are however inherent in the learners themselves (Ogunsanya & Olayinka, 2020). Numan and Hasan (2017) identified learning style preferences of pupils as typical examples of predictors of academic achievement inherent in learners.

Learning styles are an integral and vital part of a student's learning process and have been constantly discussed in the field of education and pedagogy. Originally, it was developed from the field of psychology, psychological classification, and cognitive research (Hu, Peng, Chen & Yu, 2021). The term "learning style" is generally defined as the learner's innate and individualized preference for ways of participation in learning practice (Ehrman & Oxford, 1990). Theoretically, learning styles provide a window into pupils' learning processes (Moser & Zumbach, 2018), predict pupils' learning outcomes (Chen & Chen, 2018) and play a critical role in designing individualized instruction (Buckley & Doyle, 2017). Knowing a student's learning style and personalizing instruction to pupils' learning styles could enhance their satisfaction, improve their academic performance and even reduce the amount of time spent on learning tasks (Kuo, Chu, & Huang, 2015).

According to Kazu (2009), when students are aware of their best learning style it helps them to increase the acquisition of knowledge within a specific time frame. This suggests that learning style is directly linked to student learning outcomes and that effective learning style enhances academic performance whilst ineffective style reduces performance. Other studies have demonstrated that learning styles do not only affect academic performance, but also, they influence students' behaviour and attitude to learning (Dunn, et al, 2009). It could be assumed that appropriate learning styles spark and sustain students' enthusiasm for learning and spur them on to learn even in the face of challenges.

It has been established from research that gender is a factor among others that influence learning style preferences of students (Slater, Lujan, & Stephene, 2007). In a study that investigated learning style preferences of students based on gender, Esewe and Ogunleye (2021) employed descriptive cross-sectional survey research design with the aid of a self-administered questionnaire to investigate 206 nursing students from 2 institutions in Edo State, Nigeria through the use of an adapted instrument by Kolb (1984). Chi-square statistical technique was used to analyse the non-parametric data at a significance level of 0.05. Findings revealed that 52(36.1%) of the respondents were female convergers while 12(27.1%) were male divergers. There were 8(16.7%) male assimilators and 28(19.4%) female accommodators respectively. The study concluded that students have their own preferred way to recognize, retain and retrieve information irrespective of gender.

Contrary to the findings and conclusions made by Esewe and Ogunleye on the subject of gender and learning style preferences, other empirical studies that investigated the influence of gender on student's learning style preferences reported negative relationship between the two variables. For instance in a study, Ngala (2018)

employed a descriptive survey design which used crosssectional approach to data collection. The population of the study consisted of all the 397 post-graduate students at Africa International University. A modified version of the Grasha-Riechmann (1982) Student Learning Style Scales (GRSLSS) learning style inventory was used to measure the learning style preferences of the respondents. The findings revealed that gender was not significantly related to the ways Post-graduate students at Africa International University preferred to learn.

In another research, Wehrwein, Lujan and Dicarlo (2007 p. 53) found that "male and female students had significantly different learning styles". Yet, other researchers (Honigsfield & Dunn, 2003) and Zelazek (1986) found gender as a factor influencing learning style preferences of students.

The lack of concensus in the above studies show that there is the need to investigate the learning style preferences of males and females so as to match their learning preferences with teaching styles for enhanced academic performance.

Researchers in recent years have explored pupils' learning styles from various perspectives (Chang-Tik, 2018). In spite of the numerous studies carried out on learning styles and subsequently on the processes of matching these to teaching styles, a number of scholars have taken the view that there is not enough evidence from research to indicate that pupils learn better through their own specific learning style preferences (Kazan, 2018; Newton & Miah, 2017). Contrary to the views of these scholars, other empirical studies that investigated learning styles and academic performance of pupils in various subjects of the school curriculum have established that the two variables in question related positively (Magulod, 2019; Bright & Matilda, 2018; Alavi & Toozandehjani, 2017; Ammara & Syeda, 2017). However, it appears knowledge of the learning styles of pupils and their relationship with their

academic performance in Social Studies, as well as the influence of gender on learning sytles in the East Mamprusi Municipality of Ghana is inadequate, hence that necessitated this study.

1.2 Statement of the Problem

Social Studies as a subject aims at preparing the youth in school to become good citizens who can make positive impact on the development of their communities and Ghana as a whole. This suggests why Ghana's Ministry of Education (MOE) (2019) developed the National Pre-tertiary Education Curriculum Framework (NPTECF) to provide policy direction in the enactment of the official curriculum for Social Studies among other subjects in the basic schools. At the Junior High School level, the NPTECF has carved out a Common Core Programme (CCP) for Social Studies, which targets basic seven (7) to basic nine (9) pupils (MoE).

In a study to examine the effectiveness of the Social Studies curriculum, Eshun (2020) recommended that since Social Studies is seen as a positive attitude building subject through time and space, the Ghanaian school curriculum should be enhanced to reflect the current happenings in society to help develop 21st century youth who will be well resourced to selflessly help keep the country on a sound developmental path. Implicit in the view of Eshun (2020) is the inference that the Social Studies curriculum, if well-structured and implemented could raise individuals who are selfless and possess the requisite knowledge and skills for promoting positive development of society.

This calls for high academic achievement of learners in social studies which is an important determinant of democratic development of Ghana, loyalty of citizens and civic responsibility. Consequently, the attainment of objectives for Social Studies as a subject in the Common Core Programme at the Junior High School level has gained reasonable attention among Social Studies educators. However, an examination of

academic achievement of Junior High School pupils in Social Studies in the Basic Education Certificate Examination (BECE) in East Mamprusi Municipality shows a downward trend in performance as depicted in Table 1.

Table 1: Academic Achievement of Students in Social Studies

Year	Pass Rate (%)	Failure Rate(%)
2017	41.4	58.6
2018	39.5	60.5
2019	43.2	56.8
2020	36.7	63.5

Source: East Mamprusi Municipal Examination Unit, Ghana Education Service (2017-2020)

Data in Table 1 show that for four consecutive years (2017 to 2020), pupils' performance in Social Studies remained low as the pass rate for the years under review fell below fifty percent (50%) whereas the failure rate for the same BECE years exceeded fifty percent (50%). The year 2017 recorded a failure rate of 58.6%. In 2018 the failure rate increased to 60.5% while in 2019, the failure rate reduced to 56.8%. Again, in 2020, the failure rate increased to 63.5%.

Angbing (2016) in a study reported that pupils' performance in Social Studies is determined by factors related to teachers, the school environment, socio-economic background and pupils' inherent characteristics. This supports the views of Ogunsanya and Olayinka (2020) who posited that some determinants of pupils' academic achievement are inherent, such as study habits and learning style preferences. Some research works have established a positive relationship between learning styles and academic performance (Ammara & Syeda, 2017; Bright & Matilda, 2018; Evans & Julius, 2015). However, a number of scholars have taken the view that there is inadequate evidence from research to indicate that pupils learn

better through their own specific learning styles (Kazan, 2018; Newton & Miah, 2017; Pashler, McDaniel, Rohrer & Bjork, 2008).

Previous studies have focused attention on documenting pupils' learning styles and how these relate with academic achievement in different subjects and contexts based on a variety of learning style theories. For instance Margaret, Suk-Hee and Courtney (2011) employed the Kolb's learning style theory by administering a learning styles inventory to examine the learning styles of Undergraduate students in Social work classes at Norfolk State University. Esia-Donkoh, Bentil and Nyatsikor (2020) also employed the Fleming's VAK learning styles theory to investigate the relationship between learning styles of Public Junior High School students in Gomoa District of the Central Region of Ghana and their relationship with academic performance. The current study however employed the Grasha and Riechmann (1982) learning style theory to investigate the learning style preferences of public Junior High School pupils in the East Mamprusi Municipality in learning Social Studies.

1.3 Purposes of the Study

The purpose of the study was to investigate learning style preferences of public junior high school pupils in studying Social Studies in the East Mamprusi Municipality, North-East Region of Ghana as well as the relationship between learning styles and academic performance in Social Studies.

1.4 Objectives of the Study

The objectives of this study were to:

1. determine the learning style preferences among public Junior High School pupils in studying Social Studies in the East Mamprusi Municipality.

2. investigate factors that predict learning style preferences among pupils in studying Social Studies in public Junior High Schools in the East Mamprusi Municipality.

3. examine the relationship between learning style preferences of pupils in public Junior High Schools in the East Mamprusi Municipality and their academic performance in Social Studies.

1.5 Research Questions

In order to achieve the objectives of the study, the following research questions were formulated to guide the study:

1. What learning style preference is dominant among pupils in public Junior High Schools in the East Mamprusi Municipality?
2. What factors predict learning style preferences among pupils in studying Social Studies in public Junior High Schools in the East Mamprusi Municipality?
3. What is the relationship between learning style preferences of pupils in public Junior High Schools in the East Mamprusi Municipality and their academic performance in Social Studies?

1.6 Hypothesis of the Study

The following hypothesis was tested in the study:

$H_{o1:}$ There is no statistically significant difference in learning style preference between male and female pupils in public Junior High Schools in the East Mamprusi Municipality in relation to learning Social Studies.

$H_{1:}$ There is statistically significant difference in learning style preference between male and female pupils in public Junior High Schools in the East Mamprusi Municipality in relation to learning Social Studies.

1.7 Significance of the Study

On a general view, findings of this study would be found to have a three-fold benefit in the form of significance to theory, practice and policy. It is hoped that the findings of the study would contribute to the body of knowledge on learning style preferences, and how they affect academic performance of pupils in Social Studies since there appears to be insufficient empirical studies in respect of these issues in public Junior High Schools in the East Mamprusi Municipality. Again, the findings of the study would provide basis for further studies on pupils' learning style preferences and academic performance in other subjects of study at the basic school level and at different settings.

With respect to practice, it is anticipated that outcomes of the study would assist teachers to understand the various learning styles favoured by their pupils, the basis upon which appropriate instructional designs would be carved out to respond to pupils' learning style preferences for enhanced academic output. At the level of policy, findings of the study would serve as a basis for education authorities to consider integrating differentiated instruction as a component of school-based Professional Learning Communities (PLCs) programme currently being run in Ghanaian basic schools. This would equip teachers with the relevant expertise to effectively respond to the multiplicity of learning style preferences of their pupils in the course of classroom instruction.

1.8 Delimitation

This study investigated the perceptions of public Junior High School pupils about their learning style preferences and how these relate with academic performance of the pupils in Social Studies in the East Mamprusi Municipality. The scope of the

study, therefore, excluded private Junior High schools in the study area. In furtherance to this, only academic performance of pupils in Social Studies at the Junior High School level was considered.

1.9 Organization of the Study

The entire research report was organized under five chapters. Chapter One is the introduction and focuses on the background to the study, statement of the research problem, the purpose of the study, research objectives and questions as well as significance of the study. A review of related literature, detailing the theoretical, empirical and conceptual reviews constitute the second chapter. Chapter Three describes the methodology employed in carrying out the study. The chapter explains the philosophical underpinning of the study, research design, the population, sample and sampling procedure, data collection instrument, validity and reliability of the instrument, and the methods used in analysing the data. Chapter four deals with the presentation and analysis of the main data as well as discussion of findings of the study, and finally, Chapter Five presents the summary of the findings, conclusions, recommendations, limitations and suggestions for further research.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Overview

The focus of the study was to investigate public Junior High School pupils' perceptions of their learning style preferences and their relationship with academic performance in Social Studies in the East Mamprusi Municipality. The review is organised into three thematic areas, namely the theoretical framework, empirical framework and finally conceptual framework.

2.1 Theoretical Framework

Anfara and Mertz (2015) held the view that theoretical framework of a study is any empirical or quasi-empirical theory of social and or psychological processes, at a variety of levels that can be applied to the understanding of phenomena. Collins and Stockton (2018) have argued that a strong theoretical framework allows the researcher to reveal existing predispositions about a study and assist in data coding and interpretation. Theoretical framework is based upon theories that have already been tested. These are theories that are the result of painstaking research conducted earlier by other investigators (Akintoye, 2015).

Theoretically, the study was hinged on the learning style models propounded by Grasha and Riechmann (1982) and the Field dependent-field independent cognitive learning style theory propounded by Witkin (1976). Montgomery and Groat (1998) in their study on pupils' learning styles and the implications for teaching report that the Grasha-Riechmann learning style model is distinct from the other models in that it is based on pupils' responses to actual classroom activities rather than a more general assessment of personality or cognitive traits. Grasha and Riechmann (1982)

considered learning styles as social interactions. These scholars have argued that learning style preferences constitute the different roles that pupils have in interacting with classmates, teachers and course content. According to them, learning styles can be identified through social and emotional dimensions such as attitudes toward learning, teachers, classmates and the classroom. Instead of considering the overall assessment of a student's personality (because the personality is constant, while styles are individuals' preferences) or cognitive characteristics, Grasha and Riechmann present a model based on pupils' responses to the real classroom activities. Hence, they classify learning styles into six categories, each of which has its own characteristics as described below.

In the avoidant learning style, pupils tend to be at the lower end of the grade distribution. They are characterized as having high absenteeism, organize their work poorly, and take little responsibility for their learning. These learners are not enthusiastic about learning content. Also, they are not interested in attending class. They do not cooperate with pupils and teachers in the classroom. Avoidant learners are uninterested and overwhelmed by what goes on in class.

Learners who practice the participant learning style are characterized as willing to accept responsibility for self-learning and relate well to their peers. They are good citizens in class. They enjoy going to class and take part in the course activities as much as possible. Participative learners are typically eager to do as much of the required learning tasks as their abilities will allow.

For the competitive learning style, pupils are described as suspicious of their peers leading to competition for rewards and recognition. They learn material in order to perform better than others in the class. The driving force that leads them is the urge to

compete with other pupils in a course for the rewards that are offered. Another characteristic of this type of learners is that they like to be the centre of attention and to receive recognition for their accomplishments in class.

Collaborative learning style is typical of pupils who feel they can learn by sharing ideas and talents with their peers or classmates. Such pupils tend to cooperate with teachers and peers and like to work with others. At a general level, collaborative learners have preferences in favour of lectures with class discussions in small groups, small seminars, student-designed aspects of courses and group rather than individual projects.

Dependent learning style is characteristic of pupils who show little intellectual curiosity and who learn only what is required. They view teacher and peers as sources of knowledge and support in respect of the learning process. Such pupils do not only look up to authority figures for specific guidelines on what to do and how to do it but also have preferences for outlines or notes on the board, clear deadlines and instructions for assignments, teacher centred classroom methods and as little ambiguity as possible in all aspects of the courses they take.

Independent learning style encapsulates pupils who like to think for themselves. They prefer to work on their own but will listen to the ideas of others in the classroom. Such pupils tend to learn the content they feel is important and are confident in their learning abilities. They have preferences in respect of independent study, working alone, self-paced instruction, taking assignments that provide opportunity to think independently, self-designed projects, and student-centred rather than teacher-centred course designs.

Table 2 presents a summary of the six student learning style dimensions, their respective descriptions and the associated preferences of pupils for appropriate teacher interventions in the instructional process:

Table 2: Grasha-Riechmann Student Learning Style Dimensions and Classroom Preferences

Dimension	Learners prefer:	Classroom Preferences- Learners tend to
Competitive	Learn material in order to perform better than others; Feel they must compete with other students in a course for the rewards that are offered	Being group leaders in discussions; Teacher centred instructional procedures; To be singled out in class for doing well; Class activities where they can do better than others.
Collaborative	Feel they can learn by sharing ideas and talents; cooperate with teacher and peers and like to work with others	Lectures with class discussions in small groups; Student-designed aspects of courses; Group rather than individual Projects.
Avoidant	Be unenthusiastic about learning content and attending class; Be uninterested and overwhelmed by what goes on in class; Avoid participating with students and teachers in the classroom	No tests as assessment tools; Blanket grades where everyone gets a passing grade; Teachers who are not enthusiastic in the conduct of instruction.
Participant	Be good citizens in class; Enjoy going to class and take the responsibility for getting the most out of a course; Take part in as much of the course activity as possible.	Lectures with discussion and opportunities to discuss course material; Class reading assign-ments; Teachers who can do good analysis and synthesis of material
Dependent	Show little intellectual curiosity; Learn only what is required; View teacher and peers as Source of support and look up to authority figures for specific guidelines on what to do and how to do it.	Outlines or notes on the board; Clear deadlines and instructions for assignments; Teacher centred classroom methods; No ambiguity in all aspects of the course(s) of study.
Independent	Think for themselves and work on their own; Listen to the ideas of others in the classroom; Learn the content they feel is important and are confident in their learning abilities	Independent study; Self-paced instruction; Assignments that give students a chance to think independently; Projects that students can design; Student-centred rather than teacher-centred course designs.

Source: Grasha-Riechmann (1982)

Grasha and Riechmann (1982) have identified six different learning styles. These styles were named as "independent", "dependent", "avoidant", "participative", "collaborative" and "competitive" (Durukan, Kızkapan, & Bektaş 2021). Pupils with the independent learning style prefer to study alone and to learn on their own. They want to do their lesson projects and activities independently rather than with other pupils (Durukan et al.). They are good at directing themselves and may be inadequate in activities based on grouping (Koçak, 2007). Pupils using dependent learning style rely on authorities and guidelines. Instead of creating their own ideas, they want to search for specific answers and directions. Their curiosity is at a very low level. They cannot overcome the uncertainty but only do what they are asked to do.

Dependent learners can, however, cope with anxious and stressful situations (Öztekin, 2012). Pupils using avoidant learning style rarely participate in the activities (Durukan et al., 2021). Feedback may remind avoidant learners of their failures. Since they do not set high goals for themselves, they cannot be in a productive position. They avoid stress (Öztekin). Pupils with the participative learning style want to take an active part in the learning process. They like to share their ideas and talents with their friends. They prefer to be in the group and cooperate with their teachers (Durukan et al.). They want to take the highest level in activities and group work in the classroom. They are willing to succeed and they respect authority. They can put their own needs in the background for others (Mete, 2013).

Pupils who have the collaborative learning style believe that they can learn by sharing their ideas and opinions with others. They are in communication with their teachers. They can take part in small group works (Baneshi, Karamdoust, & Hakimzadeh, 2013). These pupils learn with fun and are aware of their responsibilities. They have

difficulty in individual studies (Yılmaz, 2014). Pupils with competitive learning styles strive to perform better than their friends. They like to lead the discussions (Malik, Shaheen, & Aurangzeb, 2019). These pupils' motivation level and desire for success are high. It is difficult for them to work and collaborate with a group. They may have problems with non-competitive pupils (Koçak, 2007). The use of this model in the instructional process offers educators the opportunity to prepare classes that address each dimension of student learning style preference. Pupils can also use the model to identify their preferred learning style and maximize their learning by focusing on the mode that benefits them the most (Durukan et al., 2021).

The current study was therfore, anchored on the Grasha and Riechmann (1982) student learning style model based on the view espoused by (Durukan et al) that the model has a potetial to support educators to prepare classes that address each dimension of students' prefered way of learning.

2.2 The Field dependent-field independent cognitive learning style theory

Theories of cognitive style (Lucas-Stannard, 2003) or dimensions of cognitive style (Blanton, 2004) are prescriptions, beliefs or postulates which help to explain or predict cognitive styles and their occurrence in individuals. Some cognitive style theories as listed by Lucas-Stannard, (2003) include reflective/impulsive cognitive style, holistic/serialistic cognitive style, holist/analytic cognitive style, sensory preference modality, deep-level/surface-level processing cognitive style, concrete, abstract, sequential and random cognitive style, Kolb's learning style model, levelers vs sharpeners cognitive style.

Of all these, field dependence–field independence (FDI) cognitive style dimension has received more attention than any other cognitive style and is by far the most researched cognitive style of the existing cognitive style dimensions (Liu& Ginther, 1999). Field dependence-field independence cognitive style theory was first proposed by Herman Witkin (Witkin, 1976). His pioneering work in this dimension dated back to early fifties and sixties (Lucas-Standard, 2003; Liu & Ginther, 1999). According to Witkin (1976), field dependence-field independence cognitive style is value-neutral and is characterized as the ability to distinguish key elements from a distracting or confusing background.

Summerville (1999) referred to cognitive style dimension of field dependence/field independence as a global versus articulated style that reflects the degree to which an individual's processing of information is affected by the contextual field. Field independent learners have been referred to as "analytical, competitive, individualistic, task-oriented, internally referential, intrinsically motivated, hypothesis testing and detailoriented" (Hall, 2000), whereas field dependent learners have been referred to as "group-oriented, global , sensitive to social interactions and criticisms, extrinsically motivated, externally referential, non-verbal and passive learners who prefer external information structures" (Hall, 2000, p.6).

Witkin and Goodenough (1981) stressed that field dependence/field independence cognitive style dimension should be viewed as a "bipolar" cognitive style because individuals at the two ends of the continuum have different personality characteristics and traits. Individuals with different FDI cognitive style equally have different personality characteristics. Field independent individuals have a greater aptitude for cognitive restructuring. They are usually autonomous, impersonal and manipulative

(Waber, 1997). Other characteristics of field independent individuals as noted by Waber (1997) include self-reliance and lack of awareness for social stimulus values. They are usually inner-directed, self-motivated and individualistic. They do not require extrinsic motivation and they rate low on interpersonal qualities.

Other than the existence of differences in the personality characteristics of field-dependent / fieldindependent individuals, there is also existence of differences in the methods through which these two groups of people process information. Field-independent individuals tend to do better in analytical activities. They can solve complex problems, recall information, isolate facts from fantasies, separate relevant from irrelevant information, perceive an item as discrete from its background, impose structure when it is lacking from content, can generally encode information quickly and accurately, and do well on standardized test (Richardson & Turner, 2000).

Field-dependent individuals, on the other hand, tend to be global in the analysis of learning situations and have difficulty breaking information into isolated parts. They do not perceive an item as discrete from its background, nor do they impose structure when it is lacking in content. As a result of these characteristics, fielddependent learners usually prefer more direct instruction in situations that require restructuring (Kahtz & Kling, 1999). They seem to be incidental learners in social contexts and have difficulty using intuition.

2.2.1 Field Dependence-Field Independence Cognitive Learning style and Gender

A notable variable often mentioned as one of the influential factors in the existence of field dependence-field independence cognitive style in human beings is gender. However, the existence of field dependence-field independence cognitive style in relation to gender has its own controversy (Witkin & Goodenough, 1981). On this

issue, Maghsudi (2007) reported that there was mixed evidence of the relationship between gender and field dependence-independence cognitive style. Maghsudi (2007) noted that studies of some children had not found any difference; however, in studies of adults, when differences between sexes were found, males always achieved scores that were indicative of greater field independence. Witkin et al. (1977) found slight but persistent differences among the sexes, the females tended to be more field dependent than the males. A study conducted by Witkin, OItman, Raskin and Karp (1971) revealed that there was a significant difference between the males and females with males on the average, being more field independent.

However, Maghsudi (2007) reported that there were rarely differences between males and females in the occurrence of field dependence-independence cognitive style, but where differences occurred, men were more field independent than the women, though, the effect of gender on field dependence-independence was so small that this factor was practically insignificant. Studies conducted by Kelleher (1997) using a sample of business students, revealed that there was no significant difference between the opposite sexes in terms of field dependence-field independence.

Among many factors that may sometimes affect learning style preferences is gender. Wehrwein et al. (2007) compared learning style preferences of male and female psychology undergraduate students and found that the preferred learning styles of female participants differed than those of male participants in several ways. First, more than half of the female participants preferred unimodals whereas more than half of the male ones preferred multimodal, specifically quardmodal.

Cornu (1999) examined the relationship between learning style, gender, and age. He found no significant a significant correlation between learning styles with both gender and age. Wehrwein, Lujan, and DiCarlo (2007) also searched the relationship between gender and learning style preferences among undergraduate physiology students and found a significant relationship between these two variables.

Witkin's(1976) Field Dependent/Independent learning style theory is relevant to the current study in two ways: First, it concurs with the Grasha and Riechmann (1982) learning styles theory which also postulates that individuals could adopt the dependent or independent learning styles in the process of learning. Second, various studies conducted, based on Witkin's theory on Field Dependent/Independent learning style theory relative to gender leaves unresolved controversies; this raises the need for the current study to test gender by way of determining if there are any significant differences among males and females in their Social Studies learning style preferences.

2.3 Concept of Learning Styles

The term learning styles refers to the view that different people learn information in different ways. In recent decades, the concept of learning styles has steadily gained influence (Pashler et al., 2008). The concept of learning styles has elicited an intense interest and discussion among professional educators at all levels of the educational system. Moreover, the learning-styles concept appears to have wide acceptance not only among educators but also among parents and the public. This acceptance is perhaps not surprising because the learning-styles idea is actively promoted by vendors offering many different tests, assessment devices, and online technologies to help educators identify their students' learning styles and adapt their instructional approaches accordingly (Pashler et al., 2008).

According to Coffield, Moseley, Hall and Ecclestone (2004), the concept of learning styles encompasses not only a large body of written materials but also what seems to be a thriving set of commercial activities. The writings that touch on the learning-styles concept in its broadest sense include several thousand articles and dozens of books. These figures may seem surprisingly large, but one should keep in mind the sheer number of different schemes or models of learning styles that have been proposed over the years. For example, in a relatively comprehensive review, Coffield et al. described 71 different schemes on commercial activity related to learning styles and reported that such activity largely centers on the publishing and selling of measurement devices to help teachers assess individual learning styles. These devices classify the learners into different style categories.

According to Dunnet al. (2009), learning style refers to the way in which an individual concentrates on, processes, internalizes, and retains new and difficult information. Therefore, learning style could be seen as the peculiar manner in which an individual makes meaning of information, stores and retrieve the processed information when the need arises. Smith and Dalton (2005) posited that a learning style is a unique and habitual behaviour of acquiring knowledge and skills through everyday study or experience. From this definition, it could be realized that every learner has distinct learning style preferences which are consistent with how knowledge and skills are gained. This view is supported by Schmid, Yeung and Read (2009) when they argued that it is possible to think that people learn differently.

Testing has been recommended by organizations at all levels of education that might be presumed to base their recommendations on evidence. For example, the National Association of Secondary School Principals Commissioned the construction of a

learning-styles test that it distributed widely (Keefe, 1979). Similarly, the Yale Graduate School of Arts and Sciences (2009) currently maintained a Website that offers advice for Yale instructors; the site informs visitors that ‘‘college students enter our classrooms with a wide variety of learning styles’’ (p. 14-16). The site goes on to recommend that instructors determine their own ‘‘modality of learning’’ as well as assess their students’ learning styles and make their instructional choices accordingly.

Furthermore, the learning-styles concept is embraced in a number of current educational psychology textbooks. For instance, Omrod (2008) posited that some cognitive styles and dispositions do seem to influence how and what students learn. This implies that some students seem to learn better when information is presented through words (verbal learners), whereas others seem to learn better when it’s presented through pictures (visual learners). Thus, educational psychology students and aspiring teachers are being taught that students have particular learning styles and that these styles should be accommodated by instruction tailored to those learning styles.

Learning style is the way in which each learner begins to concentrate on, process, absorb, and retain new and difficult information (Dunn, 1990). The interaction of these elements occurs differently in everyone. Therefore, it is necessary to determine what is most likely to trigger each student’s concentration, how to maintain it, and how to respond to his or her natural processing style to produce long-term memory and retention. To reveal these natural tendencies and styles, it is important to use a comprehensive model of learning style that identifies each individual’s strengths and preferences across the full spectrum of physiological, sociological, psychological,

emotional, and environmental elements. (International Learning Styles Network, 2008).

Some of the most popular learning-style schemes include the Dunn and Dunn learning-styles model (Dunn, 1990), Kolb's Learning Styles Inventory (kolb, 1984, 1985) and Honey and Mumford's Learning Styles Questionnaire (Honey & Mumford, 1992). The assessment devices that have been developed in relation to the model of Dunn and Dunn are particularly popular and extensive (Pashler, et al., 2008).

It is fundamental that teachers identify individual's learning style preferences in order to refine the instructional process (Romanelli, Bird, & Ryan, cited in Regie, 2022). Learning style preferences of students have become an inevitable consideration in designing instructional objectives. Given the importance of constructing a carefully planned blueprint of an executable lesson, it is imperative that teachers match their instructional strategies to that of the students' learning style preferences (Regie). The likelihood of having significant relationship between learning style preferences of students and instructional strategies of the teachers was highlighted in the studies of Pashler, et al. (2009), and Rogowsky (2015).

Williamson and Watson, cited in Regie (2022) argued that in order to achieve the goal of developing lifelong learners, the needs of the students must be essentially met to allow for substantial academic progress. Unfortunately, when a typical classroom is visualized, it is rare to find different learning approaches incorporated into just one lesson (Regie). While this situation may seem impossible to carry out, it can be done through thorough planning and adequate preparedness of teachers. As Rosenfeld & Rosenfeld (2008) articulated, the teachers' understanding on the learning style preferences of the students warrants increased attention to professional development.

Such professional advancement includes preparation and construction of planners and budget of work. Moreover, providing teachers with training and significant tools feel more confident in choosing relevant instructional strategies based on students' learning style preferences (Noble, 2004).

Learning Styles of pupils constitute one of the variables within the framework of learning that has received considerable research (Brown, Zogni, Williams & Sim, 2009). Several models and categorizations of learning styles have been reported, some of which used instruments to measure only individual learning style preferences (Coffield et al., 2004). Scholars have highlighted student's behaviour in defining the learning styles as a concept closely related to learning. Kocinski (1984) defined learning style as the favourite learning approach and the best approach through which a person best learns. Considering the learning style notion as a major component of psychology, Heineman (1995) emphasized the idea that an individual's learning styles are reflections of personality types. This view corroborates that of Grasha-Riechmann (1982) that learning style preferences are personality based and hence deal with pupils' personal reactions to learning situations. Similarly, Keefe (1979) suggestd that learning styles are cognitive, affective, and psychological behaviours that serve as relatively stable indicators of how pupils perceive, get attached and respond to a variety of learning circumstances.

In a study on learning style preferences and study habits as determinants of academic achievement among public junior high school pupils. Appiah (2018) reported that learning styles represent a complex issue, both for pupils and teachers. Knowles, Holton and Swanson (2005) posited that from the pupils' perspective, the learning style indicates a general preference for learning and encapsulates cognitive, affective,

psychomotor, and physiological dimensions. On the other hand, Pashler et al. (2008) noted from the teacher's perspective that pupils have different leaning styles which pose a constant challenge because the effectiveness of instruction presupposes diagnosing individuals' learning styles and tailoring instruction to suit the diversity of learning needs.

2.4 Origin and Popularity of the Concept of Learning Style

The popularity and prevalence of the learning-styles approach may be a product of its success in fostering learning and instruction even though there are reasons to suspect that other factors may play a role in the popularity of the learning-styles approach (Pashler et al., 2008). Jung (1964) explained that most learning-styles taxonomies are ''type'' theories: That is, they classify people into supposedly distinct groups, rather than assigning people graded scores on different dimensions. Lineage of these theories can be traced back to the first modern typological theorizing in the personality field, which was undertaken by the psychiatrist and psychoanalyst.

Jung's (1964) ideas were explicitly incorporated into a psychological test developed in the United States, the Myers–Briggs Type Indicator test. This test became very popular starting in the 1940s and remains widely used to this day. The Myers–Briggs categorizes people into a number of groups, providing information that is said to be helpful in making occupational decisions. The assumption that people actually cluster into distinct groups as measured by this test has received little support from objective studies (Druckman & Porter, 1991; Stricker & Ross, 1964), but this lack of support has done nothing to dampen its popularity. It seems that the idea of finding out ''what type of person one is'' has some eternal and deep appeal, and the success of the Myers–Briggs test promoted the development of type based learning-style

assessments. Another understandable part of the appeal of the learning-styles idea reflect the fact that people are concerned that they, and their children, be seen and treated by educators as unique individuals. It is also natural and appealing to think that all people have the potential to learn effectively and easily if only instruction is tailored to their individual learning styles (Pashler et al., 2008).

A related factor that plays a role in the popularity of the learning-styles approach has to do with responsibility (Twenge, 2006). If a person or a person's child is not succeeding or excelling in school, it may be more comfortable for the person to think that the educational system, not the person or the child himself or herself, is responsible. That is, rather than attribute one's lack of success to any lack of ability or effort on one's part, it may be more appealing to think that the fault lies with instruction being inadequately tailored to one's learning style. Evidence for a learning-styles intervention needs to consist of finding that a student's learning is enhanced by instruction that is tailored in some way to that student's learning style. Naturally, it is undeniable that the optimal instructional method will often differ between individuals in some respects. Many research studies (McNamara, Kintsch, Butler-Songer, & Kintsch, 1996) have demonstrated that the conditions of instruction that are optimal differ depending on students' prior knowledge.

2.5 Learning Style Hypothesis

In their study on learning styles concepts and evidence, Pashler et al. (2008) claimed that learning will be ineffective, or at least less efficient than it could be, if learners receive instruction that does not take account of their learning style, or conversely, that individualizing instruction to the learner's style can allow people to achieve a better learning outcome. It is important to note that there is a specific version of the

learning-styles hypothesis that evidently looms largest both within the educational literature and within the minds of most people writing about learning styles: the idea that instruction should be provided in the mode that matches the learner's style. For example, if the learner is a ''visual learner,'' information should, when possible, be presented visually. This specific instance of the learning-styles hypothesis according to Pashler et al. (2008) is referred to as the meshing hypothesis—the claim that lesson presentation should mesh with the learner's own proclivities.

Most proponents of the learning-styles idea subscribe to some form of the meshing hypothesis, and most accounts of how instruction should be optimized assume the meshing hypothesis: For example, they speak of tailoring teaching to the way in which each learner begins to concentrate on, process, absorb, and retain new and difficult information (Dunn & Dunn, 2008), the learner's preferred modes of perception and processing (Kolb's, 1984, 1985), or the fit between people's learning style and the kind of learning experience they face (Hay Group, n.d.). Learning-styles hypothesis, as defined here, could be true without the meshing hypothesis being true. For example, individuals classified as visual learners profited more from verbal instruction in some situations or if individuals classified as verbal learners profited more from visual instruction. In the review of Pashler et al., evidence for both the broad version of the learning-styles hypothesis as well as the more specific meshing hypothesis has been established through empirical research.

Relevance of Learning Styles

Learning styles have been the focus of academics and researchers due to its significance in students learning effectiveness. Boström and Lassen (2006) opined that students do homework, solve problems, and sift information available to them

when they possess and apply knowledge of their typical learning styles. They further observed that when students are aware of their learning styles, they are able to take charge of their learning process, and modify existing styles when they are aware that such styles are less productive. The conclusion drawn from the preceding debates is that students should know their learning styles, employ them in their studies, and alter prevailing styles when there is proof that they (styles) are ineffectual in promoting meaningful learning. Therefore, it is required that learners are educated on the various learning styles, guide them to identify their styles, and counsel them on the implications of adopting a particular learning style.

It is argued that understanding of a person's best learning style helps to heighten the extent of knowledge that could be acquired within a period leading to improvement of the students' academic performance within the period (Schmid et al., 2009). It could be construed that lack of students' knowledge of their learning styles throttles their learning success, and results in poor academic attainment. Linking this assertion to the Ghanaian scene, it could be hypothesized that the poor academic performance at the basic school level in recent years could be attributed to pupils' dearth of knowledge in learning styles, and how effectively they could employ such learning styles in their learning.

Scholars have established that students produce superior academic performance when they possess and apply different learning styles in the learning. This claim was supported by Abidin, Rezaee, Abdullah and Singh (2011) when they noticed that those students with multiple learning styles tend to do better academically than those with just one dominant style. Therefore, it is not unconceivable to think that some learning styles are inappropriate in learning certain concepts and that specific style are

required to learn particular concepts. Huang and Busby (2007) sustained the argument that persons could adapt and switch to a different learning style when the need arises when they have various learning styles. Thus, it is possible that an average student who develops multiple learning styles could outperform his/her peers who are categorized as above average students, but possess one learning style. It is, therefore, pertinent that educators endeavour to guide their students to develop more than one learning style if they desire to realize desirable level of academic performance.

Several researchers have documented that an awareness of learning styles does not promote academic performance only, but other behaviours that are directly linked to performance. Researchers like Boström and Lassen (2006) and Dunn et al. (2009) in previous studies found that when students were taught how to accommodate their own learning style preferences, their confidence, attitude as well as academic achievement improved. Conversely, poor learning styles make students reticent in their learning processes, and this stifles their academic performance. Furthermore, Boström and Lassen (2006) intimated that making students aware of their own learning styles influences metacognition, self-efficacy, and choice of learning strategies. In the view of Dunn, et al., matching student learning styles with instructional styles has been shown to improve student attitudes toward learning, and strengthening achievement. Dunn, et al. further take the view that it is not enough to know the learning styles of students, but to link the styles to the teaching styles of teachers. This implies that teachers would be expected to vary their teaching techniques to accommodate the diverse learning styles of students.

2.6 Models of Learning Styles

This section of the literature review delved into models of learning styles. These include Schmeck, Ribich, and Ramanaiah learning styles (1977), Kolb's Experiential Learning Style (1984), Dunn and Dunn's Learning Style Theory (1978), Honey and Mumford Learning Style (1982), Gardner's Theory of Multiple Intelligences (1983), Vermunt's Learning Style Model (1992), Gregorc's Learning Style Theory (1974) and Fleming's VAK Learning (1995), Information Processing Theory of Learning (1956), Constructivism (1962) and Social learning Theory (1977).

2.6.1 Fleming's (1995) VAK Learning Style

In reviewing literature on a study that investigated the relationship between learning styles and academic achievement of public Junior High School pupils in the Effutu Municipality of the Central region of Ghana, Ghanney, Appiah, and Esia-Donkoh (2019) discovered that the learning style model propounded by Neil D. Flemings (VARK model, also VAK) serves as one of the most common and widely used theories in the field of learning style preferences which in the view of these scholars expanded upon earlier neuro-linguistic programming (VARK) models, including visual learners, auditory learners, reading-writing preference learners and kinaesthetic or tactile learners. Flemings was of the view that the appropriate response to the prevalence of this diversity in learners is for educators to use a variety of teaching techniques to give all the best chance to succeed. Further, most people possess a dominant or preferred learning style, however some people have a mixed and evenly balanced blend of the three types, including visual, auditory and kinaesthetic.

One approach to improving student learning outcomes and skill development is through the application of appropriate methods of teaching and learning that address the learning styles of the pupils. Numerous studies (Hedges, 2008; Stokes & Wilson, 2009; Wright & Stokes, 2012) demonstrated that pupils differ in their preferred learning styles. Fleming claimed that visual learners have a preference for seeing (think in pictures; visual aids that represent ideas using methods other than words, such as graphs, charts, diagrams, symbols). Auditory learners learn best through listening (lectures, discussions, tapes). Tactile/kinesthetic learners prefer to learn via experience moving, touching, and doing (active exploration of the world; science projects; experiments).

The VAK Learning Style Model is one of the classical sets of learning ideas in education (Li, Medwell, Wray, Wang & Liu, 2016, cited in Esia-Donkoh, et al, 2020). The Model describes how students are categorised because of learning through their sensory preferences. Fareo (2015) asserts that students, in their learning processes, make use of three most common learning styles namely visual, auditory, and kinesthetic learning styles. According to Fleming (2015) students who prefer visual learning style are comfortable learning information presented to them in the form of graphs, pictures, diagrams, maps, charts, board illustrations, and films. They learn best by looking at the information available, taking detailed notes, and often using coloured highlighter pens to help them recollect important issues. Again, they prefer to watch videos about what they are taught or what they learn (Fareo, 2015; Fleming, 2015, Esia-Donkoh, et al, 2020).

Relatively, visual students, as observed by Fareo (2015), are more particular about the logical ideas of an issue than the practical importance. In understanding and remembering facts, as well as forming ideas and concepts, they mostly develop a mental picture of the phenomenon. Auditory learning style refers to learning by hearing, and students who prefer this learning style are comfortable with information that is spoken and heard, such as listening to a lecture, or study groups where issues are discussed and debated aloud to enable them grasp the information they are learning (Fareo, 2015; Nel & Nel, 2013, Esia-Donkoh, et al., 2020). They listen closely to what their facilitators say, read aloud any information they need to remember, and talk about things with other people. That is, they learn best by interacting with others in a speaking-listening exchange.

Fareo (2015, p. 2632) intimated that "auditory learners prefer to gain information from audiotape, and in an attempt to remember any information, they often 'hear' the way it was told them, or the way the information was previously repeated aloud", and mostly, they have the skill of defining and solving problems. Esia-Donkoh, et al. (2020) in their study reported that students who prefer kinesthetic learning style learn well when instructional activities are structured in a way that enable them to move around and act out ideas (role play). They prefer to observe and perform demonstrations during and after instructional hours, and doing something to learn from their own actions.

Kinesthetic learning style is the learning by feeling where students prefer to move around while studying, and participate in "hands on" student learning experiences where they manipulate materials to learn new concepts (Fareo, 2015). Such students find it uncomfortable when they sit for long hours during instructional processes since

they prefer to explore to obtain and understand concepts and are often not happy about traditional lessons and ways of teaching, and as such, are sometimes falsely labelled as disruptive or slow students (Bennett, 2013, Leopold, 2012; Esia-Donkoh, et al, 2020). The VAK Model of learning style has been critiqued in many ways. For instance, Li, Medwell, Wray, Wang, and Liu (2016) argued that students do not necessarily retain information through their senses but they do so based on their ability to make meaning out of the information they obtain. There is also no evidence of the validity and reliability of the VAK Model (Sharp, Bowker, & Byrne, 2008). The VAK Model of learning style mainly labels students in a particular way, and this limits their potential for learning experiences (Hattie, 2011).

2.6.2 Fernald et al. (1920) Learning Styles Theory

Fernald, Keller, Orton Gillingham, Stillman and Montessori (1920) were psychologists and educationists who contributed to the development of the VAK learning theory, an acronym for visual, auditory, kinesthetic. The VAK learning styles are grounded on the sensory experiences of learners in the acquisition and processing of information. Fernald et al. (1920) and other learning styles theorists like Wallace (2004) and Sholes (2012) argue that humans naturally use their eyes, ears, and hands to receive information from our environment and then process that information to construct meaning. Consequently, people learn by using visual, auditory and motor senses. The VAK theory, therefore, categorizes learners into three groups according to their preferred learning style.

In visual learning style, learners rely on their sight where they prefer seeing and reading as they learn. Therefore, they learn better if they have the opportunity to work with pictures, diagrams, and text. In the classroom, the teacher is expected to use

visual aids, illustrations and texts to appeal to the learners' visual sense to help them learn effectively. The teacher should also encourage students to make notes which they can read after lessons to reinforce learning.

Auditory learning style relates with the sense of hearing. Therefore, auditory learners learn more effectively when they listen and speak. They prefer listening to the teacher and discussing what has been said with colleagues. Therefore, the teacher should encourage them to ask questions and share ideas through the use of teaching techniques such as debates, discussion, and role-play. Auditory materials such as the radio and tape recorder could be effective in the teaching and learning process.

With kinesthetic learning style, learning takes place effectively through practical activities. Touching and doing things is preferred by kinesthetic learners where they learn best while experiencing and doing hands-on activities. The teacher is expected to design tasks during which they can move or do things physically. The activity approach to teaching where leaners are engaged in activities is needed for kinesthestic learners.

Researchers have adopted the VAK learning styles in their studies. In a study by Bricheno and Younger (2004) using the VAK questionnaire, it was revealed that there was no significant relationship between gender and preferred learning styles. According to Mulalic, Mohd Shah and Ahmad (2009), students preferred the kinesthetic learning style than visual and audio learning styles. Contrary to this result, a study by Aultman College (2008) disclosed that the visual learning style is the most common in learning. Other scholars have established that a combination of learning styles produced better academic performance than one style. This claim was proven in a study by Kim, Seitz and Shams (2008) who found that adults who were trained

using both visual and auditory styles performed significantly better than a control group that used only visual stimuli. Therefore, it would be expected that learners are encouraged to apply multiple learning styles so as to obtain good academic achievement.

2.6.3 Schmeck, Ribich, and Ramanaiah Learning Styles

In 1977, researchers Schmeck, Ribich, and Ramanaiah first published Inventory of Learning Processes (ILP) with a view to examine the cognitive activities that pupils employ while studying (Schmeck & Geisler-Brenstein, 1991). Originally created with 62 true/false statements, the inventory was used to investigate the behavioural and conceptual processes which pupils engage in while attempting to learn new material (Jaleel & Thomas, 2019). The ILP was revised by Schmeck and Geisler-Brenstein in 1991 (ILP-R) by adding an additional 118 statements. In addition, response options were converted to a 6-point Likert scale covering four dimensions (Jaleel & Thomas), which include academic self-concept (how a student approaches learning from an emotional basis); reflective processing (how a student expresses and asserts himself through learning); agentic processing (how a student focuses personally on the task of learning); and methodical study (what methods a student uses to process information) (Schmeck & Geisler-Brenstein).

The dimension of Academic Self-Concept is based on four sub-scales within the Inventory of Learning Processes-Revised (ILP-R). These four sub-scales are used to measure the student's intrinsic motivation for learning, self-efficacy in the learning process, ability to learn through non-reiterative processing, and self-esteem. Whether a student's self-concept as a learner is healthy can be determined by the responses to each of these sub-scales (Schmeck & Geisler-Brenstein, 1991).

The second dimension, reflective processing, is based on three sub-scales within the ILP-R. The student's ability to use deep processing of information while learning, elaborative processing by connecting concepts to past experiences and information already processed, and self-expression while learning can be measured using this (Schmeck & Geisler-Brenstein, 1991. These scholars further related that Agentic Processing is the third dimension, based on three sub-scales within the ILP-R. These sub-scales are used to measure the student's desire for authority, order, and adherence to a stated plan, the student's ability to use serial processing by moving from one completed learning task to another, and the student's ability to retain facts. A high score in this dimension is an indicator to succeed with objective tests (Jaleel & Thomas, 2019). The fourth dimension, Methodical Study, has no sub-scales and is used to elicit information about the student's study skills and habits. A student who scores high in this area tends to study frequently and over-study for tests.

2.6.4 Honey and Mumford Learning Style (1982)

Honey and Mumford (1982) identified four distinct learning styles or preferences, including activist, theorist, pragmatist and reflector. Honey and Mumford were of the view that individuals naturally prefer these learning approaches and they recommend that in order to maximize one's own personal learning, each learner ought to understand his/her learning style and then take advantage of available opportunities to participate in the learning process using that style. Table 3 summarises the characteristics of each of the four learning style dimensions espoused by Honey and Mumford.

Table 3: Honey and Mumford's Learning Style Dimensions and their features

Learning Style Dimension	Description of Honey and Mumford's learning theory	Characteristics
Reflectors	Reflectors like to stand back to ponder experiences and observe them from many different perspectives. They collect data, both first hand and from others, and before coming to any conclusion, they prefer to think about it thoroughly. The thorough collection and analysis of data about experiences and events are what counts. So, they tend to postpone reaching definite conclusions as long as possible. Their philosophy is to be cautious. They are thoughtful pupils. These pupils like to consider all possible angles and implications before making a move. Reflectors are learned by observing and thinking about what happened.	Careful, good listener. Holds back from participation. Methodical and do not jump to conclusions, slow to decide. Thorough and thoughtful.
Theorists	Theorists adapt and integrate observations into complex but logically sound theories. A vertical, step-by-step logical way is adopted to think problems. They assimilate disparate facts into coherent theories. They tend to be perfectionists. They are interested in analysis and synthesis. They are keen on basic assumptions, principles, Theories models and systems thinking. Their philosophy poses rationality and logic. "If it's logical, it's good". Questions they frequently ask are: "Does it make sense?" "How does this fit with that?" "What are the basic assumptions?" In order to learn, they need models, concepts and acts. They feel uncomfortable with subjective judgments.	Disciplined and intolerant of subjective, intuitive ideas. Logical, rational and parental in approach.
Activists	Activists involve themselves fully and without bias in new experiences. They are open-minded, not sceptical. This tends to make them enthusiastic about anything new. Their philosophy is "I'll try anything once". They tend to act first and think for the consequences afterwards. Their days are filled with activity. Brainstorming is used to tackle problems. They are busy with the activities throughout the day. They tend to thrive on the challenge of new experiences but these pupils are bored with implementation and long-term consolidation.	Flexible and gets bored with consolidation. Happy to give things a try. Open minded and optimistic about change. Rushes into action without preparation. Takes unnecessary risk..
Pragmatists	They are keen on trying out ideas, theories and techniques to see if they work in practice. They positively search out new ideas. Pragmatists take the first opportunity to experiment with applications. They want to try out new ideas in practice. They like to get on with things and act quickly and confidently on ideas that attract them. They are essentially practical, down-to-earth pupils who like making practical decisions and solving problems.	Business-like- Gets to the point. Does not like theory, Impatient with waffle.Keen to test things out in practice. Practical, down to earth and realistic. Rejects ideas without clear application. Task and technique focused.

Honey and Mumford (1982)

In the study by Cartney (2000) it was reported that although supervisors felt that understanding student learning styles was useful, they did not use this knowledge to assist students in a practical setting. The students who participated in the study felt that it was important to know the impact of learning and teaching styles on their placement experiences.

A comparative study of learning style models respectively propounded by Honey and Mumford (1982) and Grasha-Riechmann (1982) revealed an obvious distinction with respect to the number of learning style dimensions contained in each of the models. This has to do with the fact that Honey and Mumford's (1982) model presents four learning style dimensions (reflectors, theorists, activists and pragmatists) whilst the Grasha and Riechmann (1982) model presents six learning style dimensions (avoidant, participative, collaborative, dependent, independent and competitive). However, a similarity between the two learning style models rests on the fact that the learning style dimensions presented in both focus on student attitudes toward learning tasks, classroom activities, teachers and peers. This similarity is significant as it establishes a theoretical connection between the two learning style models and the objectives for the current study, which sought to explore the learning style preferences of public Junior High School pupils in the East Mamprusi Municipality and the relationship with their academic achievement in Social Studies.

2.6.5 Kolb's Experiential Learning Model

Jaleel and Thomas (2019) described learning as the acquisition of abstract concepts that can be applied flexibly in a range of situations. In Kolb's theory, the driving force for the development of new concepts in the learning process is provided by new experiences. According to Kolb (1984), "Learning is the process whereby knowledge is created through the transformation of experience" (p. 38). Kolb classified individuals into one of four learning styles based on a mathematical computation, which derives from the individual's score on a self-report instrument. The instrument measures preferences for perception and processing which directly relate to individual behaviours. Kolb's learning model is based on two continuums that form a quadrant as depicted in Figure 1.

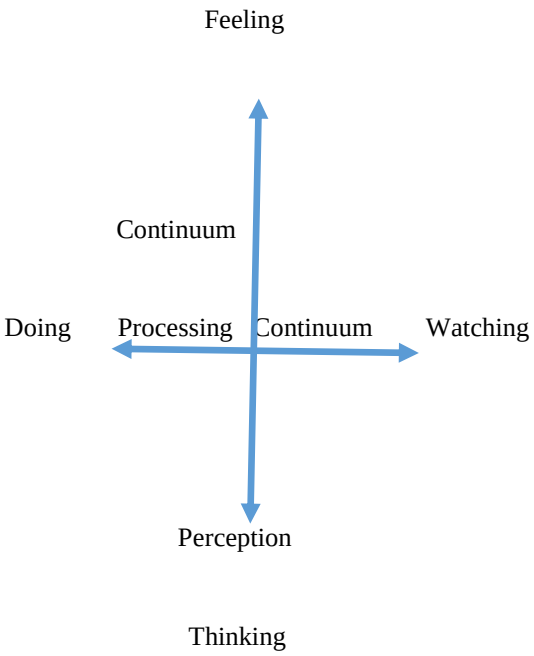


Figure 1: Continuum of learning according to Kolb (1984)

Kolb used each continuum in the arrangement to explain the preference with which learners approach any learning task. The processing continuum describes our approach to a task, such as preferring to learn by doing or watching. On the other hand, the perception continuum describes our emotional response, such as preferring to learn by thinking or feeling (Kolb, 1984). The four combinations of perceiving and processing determine one of four learning styles of how pupils prefer to learn. Kolb believed that learning styles are not fixed personality traits, but that they are relatively stable patterns of behaviour that are based on the background and experiences of learners. Thus, they can be conceptualised more as learning preferences, rather than styles (Jaleel & Thomas, 2019).

2.6.7 Dunn and Dunn's Learning Style Theory

Dunn and Dunn (1978) proposed one of the oldest and most widely used approaches to learning styles. They observed the distinct differences in the ways pupils responded to instructional materials presented. The model involves five stimuli, which are

environmental, emotional, sociological, physiological, and psychological (Jaleel & Thomas, 2019). According to Dunn and Dunn, each stimulus contains individual elements, which contribute to mastering academic skills.

In a literature review on a study to investigate the learning style preferences of public Junior High School pupils, Appiah (2018) reported that the Dunn's model of learning style preferences provides descriptors regarding how pupils differed in terms of their definition of an ideal place to learn. Some preferred a warm, brightly lit place with desks, many people, and verbal interaction, while others preferred cooler, more subdued lighting with a quieter, more informal environment. Though many teachers believe that they have little control over these elements, Dunn and Dunn described how the standard square box of a classroom can be partitioned into separate areas with different environmental climates (Appiah).

The emotional dimension centres on the extent to which pupils are self-directed learners. At one end of the continuum are self-starters who can be given a long-term project and who monitor and pace themselves until finishing the job. At the other end are pupils who need considerable support and have the desire for assignments in small chunks with periodic due dates. Semester-long projects without periodic checks would be disastrous with these pupils. Understanding your pupils' apparent needs for support allows you to design learning experiences that help pupils succeed and learn more effectively (Appiah, 2018). Pupils also differ in how they react to peer interaction. Some dislike group projects, preferring instead to learn by themselves; others thrive on the companionship and support provided by group work. Again, others prefer the more traditional approach of learning from an adult. One can capitalize on these preferences by varying one's movement. This dimension may be

one of the hardest for teachers to accommodate teaching techniques based on different learning configurations (Appiah, 2018).

Another important dimension identified by the Dunn relates to individual differences in terms of physiological preferences. Probably the most important element here is learning modality; some of us are visual; others prefer auditory channels. Mobility, or the ability to periodically move around, is another element here. Another important element in this dimension is time. Some of us are morning people, while others do not function fully until later in the day. Teachers accommodate this dimension when they set up learning centres that allow student movement. This dimension may be one of the hardest for teachers to accommodate (Coffield, et al, 2004).

The fifth learning style, according to Jaleel and Thomas (2019), is the psychological dimension. This dimension focuses on the general strategies pupils use when executing learning tasks. Some approach learning tasks globally, by looking at the broader picture, while others prefer to address individual elements of a problem separately (Coffield et al., 2004). Similarly, some learners go into learning tasks, figuring things out as they go along, while others are more reflective, planning before beginning to tackle the learning task.

2.6.8 Gregorc's Learning Style Theory

Gregorc (1974) introduced his Energic Model of learning styles as an introduction to his work in learning styles, which began in 1969. This work evolved into the Mind Styles Model in 1984 (Jaleel & Thomas, 2019). This model uses perceptual and thinking/ processing modes to determine four preferred learning styles and is seen as a modified version of Kolb's learning dimensions, focusing on random and sequential processing of information. Gregorc proposes that we perceive the world in both

concrete and abstract ways and subsequently order those perceptions in either a sequential or a random fashion. The combination of these perceptual qualities and ordering abilities generates four combinations: concrete sequential; abstract random; abstract sequential; concrete random. Although both of the perceptual qualities and both of the ordering abilities are present in each individual, some will be more dominant. This combination determines individuals' preferred mind style and provides the foundation for our specific learning strengths or learning styles (Appiah, 2018).

Gregorc and Butler (1984) noted that the model is based on the existence of perceptions of our evaluation of the world by means of an approach that makes sense to us. These perceptions in turn are the foundation of our specific learning strengths or learning style preferences. In this model, there are two perceptual qualities: (a) concrete and (b) abstract; and two ordering abilities: (a) random and (b) sequential. Concrete perceptions involve registering information through the five senses, while abstract perceptions involve the understanding of ideas, qualities, and concepts, which are not to be seen. Concerning the two ordering abilities, sequential involves the organization of information in a linear, logical way and random involves the organization of information in chunks and in no specific order. Both of the perceptual qualities and both of the ordering abilities are present in each individual, but some qualities and ordering abilities are more dominant within certain individuals (Gregorc & Butler, 1984). There are four combinations of perceptual qualities and ordering abilities based on dominance: a) concrete sequential; b) abstract random; c) abstract sequential; d) concrete random. Individuals with different combinations learn in different ways, they have different strengths, different things make sense to them,

different things are difficult for them, and they ask different questions throughout the learning process.

2.6.9 Vermunt's Learning Style Model

Vermunt (1992) explained the concept of learning in terms of processing strategies. These strategies involve an awareness of the aims and objectives of the learning exercise used to determine what is learnt; regulation strategies, which serve to monitor learning; mental models of learning, encompassing the learners' perceptions of the learning process; and learning orientations, described as personal aims, interventions and expectations based on past experience of learning. With these strategies and orientations, Vermunt derived four learning styles: undirected where there is difficulty in assimilating learning material, coping with the volume of material; reproduction, where little or no effort is made to understand but instead information is reproduced to complete the task or achieve the minimum required standard; application directed, which is characterized by the application of learning material to concrete situations in order to gain understanding and lastly, meaning directed learning, which involves attempts to gain a deeper understandings of learning material and to draw on existing and related knowledge to achieve critical understanding (Adaugo & Maxwell, 2017).

According to Appiah (2018), Vermunt's Learning Style Instrument (LSI) was developed as a diagnostic tool for use in a higher education context. The degree to which each of the four styles is favoured based on an assessment using Vermont's LSI. The LSI comprises of 20 sub-scales and 120 items relating to study strategies, motives and mental models. Individuals respond to statements along a five-point scale

according to the degree to which the statement is descriptive of their behaviour or the extent to which they agree to the statement (Vermunt, 1992).

2.6.10 Information Processing Theory of Learning

Information processing theory is the approach to the study of cognitive development evolved out of the American experimental tradition in psychology. Developmental psychologists who adopt the information processing perspective account for mental development in terms of maturational changes in basic components of a child's mind. The theory is based on the idea that humans process the information they receive, rather than merely responding to stimuli (Miller, 1956)

Cognitive psychologists have improved understanding of how individuals think, reason, and learn. Much of this gain is attributed to the continuing development of a theoretical framework known as the information-processing model of human memory (Anderson, 1985; Atkinson & Shiffrin, 1968; Craik & Lockhart, 1972). Major theoretical concepts associated with the information processing (Slate & Charlesworth, 1988) include attention, active learning, meaningfulness, organization, advance organizers, memory aids, over learning, and automaticity.

Slate and Charlesworth's (1988) view on the information processing model of human memory finds a common ground with the view held by Schneider and Bjorklund (1998) on the same theory (Information Processing Theory of Human Learning). This is in view of the fact that these scholars all agree that the human memory plays a key role in the learning process. A point of departure between the views of the scholars regarding the information theory of human learning is that whereas Slate and Charlesworth (1988) focused on theoretical concepts that ultimately support the creation of a well-structured learning environment to facilitate effective use of the

human memory (attention, active learning, meaningfulness, organization, advance organizers, memory aids, over learning, and automaticity), Schneider and Bjorklund emphasised on the functions of the various compartments of the human brain, including sensory register, the short-term memory and the long-term memory.

According to Schneider and Bjorklund (1998), the sensory register is the originating storage compartment of the brain. This compartment receives information through the five senses (sight, hearing, touch, smell and taste) and stores this information for not more than a couple of seconds. If nothing happens to the information held in the sensory register, it is rapidly lost. Since the sensory register holds everything briefly, the individual has a chance to make sense of it and to organize it through pattern recognition. This according to Schneider and Bjorklund is very necessary since there is much information available in the sensory register than can probably enter the next structure (the short-term memory). Thus, instead of perceiving everything, we pay attention to certain features of the total content in the sensory register and look for patterns. This implies that pupils must pay attention to information if they are to retain it and also take time to bring all the information seen into consciousness. Lecturers should also stress on salient points after a long lecture to help pupils retain needed information in the sensory register and further move it to the next structure (the short-term memory).

The next compartment, according to Baddeley (1986), is the working memory or more commonly termed short-term memory, a temporary storage place having the limited capacity of approximately seven items. According to Campbell (2007), the short-term memory is a storage system that can hold a limited amount of information for a few seconds. The short- term memory is believed to have a capacity of five to

seven “bits” of information. That is, we can think about only five to seven distinct things at a time. However, any particular “bit” may itself contain a great deal of information. Baddeley said the short-term memory is part of the memory where information currently being thought about is stored. The thought we are conscious of having at any given moment are being held in our short-term memory. When we stop thinking about something, it disappears from our short-term memory. One way to store information in our short-term memory is to think about it or say it repeatedly. According to information processing theorists, rehearsals are very important in maintaining information. They argued that without rehearsal, items will not probably stay in the short-term memory for more than 30 seconds, and because the short-term memory has a limited capacity, information can be lost from it by being forced out by other information. However, if information is attended to, it moves to the long-term memory where information is stored permanently. This implies that distance learners need to read over their notes after every face-to-face meeting. Lecturers are also advised not to teach too much information too rapidly since this is likely to be ineffective unless pupils are given time to rehearse each new piece of information.

The third storage compartment is the long-term memory. This is that part of our memory system where we keep information for long period. Long-term memory has a very large storage capacity. Tulving (1985) suggested the existence of three types of long-term memory; episodic memory (personal events); semantic memory (language and environments); and procedural memory (steps in performing a skill). Again, connectionist models (McLelland & Rumelhart, 1986) of memory and cognitive processing suggest multiple storage locations throughout the brain. In these models, the brain comprised of a complex network of interconnected information units.

Memories and information do not exist in isolated compartments but are connected by increasingly complex networks.

In fact, many theorists believed that we may never forget information in the long-term memory; rather we may just lose the ability to find the information within our memory. Just as information can be stored in the long-term memory for a long time, so, too, the capacity for long-term seems to be very large. Information processing theorists posited that we do not live long enough to fill up our long-term memory. Theoretically we should be able to remember as much as we want when information has entered the long-term memory, however, this is practically not so.

Information Processing Theory informs study habit skills in terms of information storage and recall (Bentil, Esia-Donkoh, & Ghanney, 2018). Information storage begins at the point of gathering data through all our senses, when we receive stimuli from the environment through our natural pathways, before our brain processes the stimuli and stores the information in a meaningful way. When we use the study habit skills of, applying past knowledge to new situations, we need to be able to retrieve information from our brain's memory compartments to use this information in a different context (recalling our multiplication tables when planning the dimensions of a house extension). In this way information is recalled and processed into meaningful knowledge. In turn, then, this meaningful knowledge can assist learners to think and communicate with clarity and precision. Again, Information Processing Theory is useful here in terms of a learners' ability to process information, retrieve information and use knowledge meaningfully. However, this same theory ignores contextual and personal factors such as the role of emotions in learning and the attitudinal influence of the learning environment (Bentil, et al.). Educators would, therefore, have to pay

particular attention to the learners' utilization of the memory in the intake and processing of information as far as learning is concerned.

2.6.11 Constructivism Theory of Learning

Constructivism represents one of the broad ideas in education because its implications for how teachers teach and learn to teach are tremendous (Bada, 2015). The constructivist view of learning considers the learner as an active agent in the process of knowledge acquisition. Bada (2015) posited that constructivist conceptions of learning have their historical roots in the work of Dewey (1929), Bruner (1961), Vygotsky (1962), and Piaget (1980). Bednar, Cunningham, Duffy, and Perry (1992) and von Glasersfeld (1995) have proposed several implications of constructivist theory for instructional developers, stressing that learning outcomes should focus on the knowledge construction process and that learning goals should be determined from authentic tasks with specific objectives. Similarly, von Glasersfeld stated that learning is not a stimulus-response phenomenon, but a process that requires self-regulation and the development of conceptual structures through reflection and abstraction.

Bada (2015) explained that constructivism theory is based on observation and scientific study, about how people learn. It says that people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences. In the classroom, the constructivist view of learning can point towards a number of different teaching practices. In the most general sense, it usually means encouraging pupils to use active techniques (experiments, real-world problem solving) to create more knowledge and then to reflect on and talk about what they are doing and h ow their understanding is changing. The teacher makes sure

he/she understands the pupils' pre-existing conceptions, and guides the activity to address them and then build on them (Bada).

Two important notions revolve around the simple idea of constructed knowledge (Phillips, 1995). The first is that learners construct new understandings using what they already know. This implies that there is no tabula rasa on which new knowledge is carved. Rather, learners come to learning situations with knowledge gained from previous experience, and that prior knowledge influences what new or modified knowledge they will construct from new learning experiences. The second notion is that learning is active rather than passive. Learners confront their understanding in light of what they encounter in the new learning situation. If what learners encounter is inconsistent with their current understanding, their understanding can change to accommodate new experience. Learners remain active throughout this process: they apply current understandings, note relevant elements in new learning experiences, judge the consistency of prior and emerging knowledge, and based on that judgment; they can modify knowledge (Phillips). The above notions on the constructivist theory relate to the current study because the study is based on Grasha and Riechman model of learning styles, which also deals with the attitudes of learners (rather their personality) in specific learning situations regarding how the learners participate in the learning process in order to construct knowledge.

2.6.12 Social learning Theory

Bandura's (1977) Social Learning Theory sets forth the idea that in the learning process, individuals learn from one another, largely through modelling, observation and imitation. According to Muro and Jeffrey (2008), Bandura has taken a perspective known as a Social Cognitive approach to learning because in his view, learning relies

on observation, which is a social phenomenon. The new perspective taken by Bandura led to the expansion of Social Learning to become known as Social Cognitive Learning Theory (SCLT), which provides a framework for understanding, predicting and changing human behaviour (Green & Peil, 2009). Bandura (1977) posited that the SCLT hinges on the ideas that people learn by watching what others do, and that human thought processes are central to understanding personality. It is Bandura's argument that individuals learn both behaviours and cognitive strategies by observing the behaviour of others, and these acquisitions can be learned without being directly reinforced.

Based on their studies, Mccormick and Martinko (2004) introduced three (3) basic assumptions of Bandura's SCLT. They claimed that people can learn by observing others; learning is an internal process that may or may not result in a behaviour change; and that learning can occur without a change in behaviour (Observation without imitation). The Social cognitive learning theory explains socialization broadly, including processes whereby individuals acquire their society's norms of thought and action. Within this context, Bandura explains four types of learning effects as spelt out by Green and Peil (2009):

- Observational Learning Effect: Acquiring new behaviour from model
- Response Facilitation Effect: Increased frequency of learned behaviour after model is reinforced for same behaviour.
- Response Inhibition Effect: Decreased frequency of learned behaviour after observing a punished model.
- Response disinhibition Effect: Return of inhibited response after observing model's behaviour without adverse consequences.

From his research, Bandura formulated four principles of social learning which are also considered as the four conditions needed in the modelling process (Wheeler, 2014). These principles as outlined by Wheeler include:

Attention: In the modelling process, the person must first pay attention to the model. The more striking or different something is, the more likely it is to gain people's attention. Likewise, if we regard something as prestigious, attractive or like ourselves, we will take more notice (Colour). We cannot learn if we are not focused on the task. If we see something as being novel or different in some way, we are more likely to make it the focus of our attention. Social contexts, therefore, help to reinforce these perceptions.

Retention: In modelling, the observer must be able to remember the behaviour that has been observed. One way of increasing this is using the technique of rehearsal. We learn by internalizing information in our memories. We recall that information later when we are required to respond to a situation that is similar to the situation within which we first learned the information.

Reproduction: The third condition needed in the modelling process is the ability to replicate the behaviour that the model has just demonstrated. This means that the observer has to be able to replicate the action, which could be a problem with a learner who is not ready developmentally to replicate the action. We reproduce previously learned information (behaviour, skills, knowledge) when required. However, practice through mental and physical rehearsal often improves our responses.

Motivation: The final necessary ingredient for modelling to occur is motivation. Learners must be willing to demonstrate what they have learned. Since these four conditions vary among individuals, different people will reproduce the same behaviour differently. Reinforcement and punishment play an important role in motivation. We need to be motivated to do anything. Often, that motivation originates from our observation of a rewarded or punished for something an individual has done or said. This usually motivates us later to do, or avoid doing the same thing. The connectedness of Bandura's Social Learning Theory to the current study is evident in the nature of the principles of the theory, which clearly spell out conditions or determinants for learner behaviour. An aspect of this study deals with the factors for differences in the learning style preferences of pupils; including school-related factors, home-related factors and personal factors all of which can be said to be well situated within the principles of the social learning theory. For instance, the principles of attention, retention and reproduction can best manifest when learners' environment (school or home) present opportunities for the observance of a model's behaviour, retention of the behaviour observed and its reproduction.

3.0 Empirical Review

An empirical literature review is more commonly called a systematic literature review; and it examines past empirical studies to answer a particular research question (Gohavacyf, 2020). The empirical review of related literature deals with the various thematic areas in the stated objectives of the study. This section covers the following sub-headings: concept of learning, the nature of learning styles, academic performance, factors for variability of learning style preferences among pupils and relationship between learning style preferences and academic achievement of pupils.

According to Cedefop (2017: p.26) learning outcomes are statements of the knowledge, skills and abilities individual students should possess and can demonstrate upon completion of a learning experience or sequence of learning experiences. It is what the student is able to do, know about and value at the completion of a course of study. It states both the substance of learning and how its attainment is to be demonstrated. For learning outcomes statements to make any difference to learners, they must be visible in not only (written) qualification standards and programme description. Their visibility in practice, throughout the teaching and learning process as well in assessment arrangements, is of critical importance and decides whether they add value to the individual learner (Brainard, 2021)

Learning outcomes therefore provide a common language allowing different stakeholders in education and training, as well as the labour market and society, to clarify skills needs and to respond to these in a relevant way. If used systematically, this allows for systematic review of the quality and relevance of education and training, focusing on the relationship between intended and actually achieved learning outcomes. The definition of learning outcomes requires systematic reflection on the use of labour market intelligence and how this will be balanced with the needs of the education and training system and of teachers, to support education, training and learning (Brainard, 2021).

In a study to investigate factors affecting quality teaching and learning outcomes in Teacher Education, Brainard (2021) reported that a discussion on learning outcomes should be done alongside teacher outcomes as these potentially determine the quality of learning outcomes. Brainard explained teacher outcomes as the elements that specify what teachers need to know and do in order to deliver on the promise of an

effective, equitable education for every student. The teacher outcomes included: knowledge, skills and dispositions related to content knowledge; pedagogical knowledge; assessment; understanding how students learn; understanding how students' cognitive, social, emotional, and physical development influence their learning; engaging students with diverse cultures, gender and socio-economic conditions; creating learner-friendly learning environments; professional growth and development. These, call for the need for teachers demonstrate awareness of and be guided by the elements of teacher outcomes in their professional practice as teachers because the effective practice of learning style preferences by students depends on how well teachers create a learning environment that is conducive enough to ensure effective functioning of the elements identified above.

Research has documented the positive influence, which an effective learning environment can bring to bear on meaningful learning. In a systematic literature review to determine the influence of four indoor environmental parameters (indoor air, thermal, acoustic, and lighting conditions) on the quality of teaching and learning and on pupils' academic achievement in schools for higher education, Brink, Loomans, Mobach and Kort (2020) applied the Cochrane Collaboration Method to collect and analyse evidence which showed that that the indoor environmental quality (IEQ) can contribute positively to the quality of learning and short-term academic performance of pupils. However, the influence of all parameters on the quality of teaching and the long-term academic performance could not be determined yet.

Brink et al. (2020) further advance the argument that pupils perform at their best in different IEQ conditions, and these conditions are task-dependent, suggesting that classrooms, which provide multiple IEQ classroom conditions facilitate different

learning tasks optimally. Researchers have investigated personal or student-related factors that affect learning. In a study that sought to determine the factors affecting the academic performance of pupils in the software engineering course at Salalah College of Technology, Ugalde (2019) identified student-related factors affecting learning such as student's efforts, age, and self-motivation, learning preference, entry qualification and previous school. Ugalde's (2019) research findings on personal factors that affect learning clearly identify learning preference as one of the factors. This corroborates the view of Grasha-Riechman (1982) that every individual has certain preferences in any learning situation, such as exhibiting a mix of preferences like being avoidant, participative, collaborative, dependent, independent or competitive.

3.2 Academic Achievement

It is a fact that the student's academic achievement, which is one of the most basic and indispensable aims of educational institutions, is an expectation of society, and in this sense, has been included in a continuous development process (Ozcan, 2021). For pupils to be able to realise desired academic achievement, it is expected that the factors related to the family, the school's physical conditions, the school administration, the school environment and the teacher, which are among the characteristics of efficient schools (Ozcan) will be continually updated and changed. Academic achievement is the progress made towards attaining the goals determined by individuals or educational institutions has a direct link to reaching the objectives framed in the curriculum (Kazazoglu, 2013).

Learning styles have an effect on academic performance. Existing studies prove that how students learn correlates with how much they learn (Cano, cited in Derya, (2022).

In a study that investigated the relationship between learning styles, academic major, and academic Performance of College Students at California state university in the spring semester of 2012, Seiver, Haddad and Do (2014) collected data on 99 students in three sections of Finance 323, Introduction to Finance, All sections were taught by the same professor to control for the confounding effects of textbook, teaching style, and testing and grading philosophy. Each student took a 72-question online version (www.Humanmetrics.com) near the end of the semester and transmitted the results. Based on the outcome of this study, Seiver et al reported that when learners' learning styles comfort the teaching methodologies of the instructor, the learners have less difficulty in storing the information in their memories. As these learners are properly taught, they can easily make use of the information presented and they develop a positive attitude toward what has been taught. This means that a difference in learning styles of individuals is likely to influence their academic performance in a positive way (Arbabisarjou, Zare, Shahrakipour, & Ghoreishinia, 2016).. Similarly, it could be claimed that analyzing the learning styles of students is significant in terms of accommodating teaching to students' needs, which in turn, will increase the academic performance (Fuad, & Andriana, 2020).

Evidence on the relationship between learning styles and academic performance has been noted in a number of studies. A study carried out by Nursen, Tomruk, Yeşilyaprak, Karadibak and Savcı (2018) with physiotherapy students revealed the positive relationship between academic performance and participatory learning style. Another study by Ha (2021) demonstrated that various learning styles along with

learning environment influence academic performance either positively or negatively. Lastly, an existing study conducted in applied science courses gave evidence on the relationship between study habits, academic achievement, and learning styles of science students (Magulod Jr, 2019).

In a study on learning style preferences as determinants of academic achievement among public junior high school pupils in the Effutu Municipality, Ghanney et al. (2019) reported that academic achievement has always been influenced by factors such as the learner's previous educational achievement, parents' income and social status, pupils' social and emotional status or well-being, the school environment, and learners' attitude. This implies that the determinants of academic performance are not limited to only learning style preferences of pupils but that other factors act together to yield a combined effect on how the student responds to a variety of learning situations in the classroom.

Several empirical studies exist on socio-demographic factors and learning styles that influence academic performance among students. A study carried out in Indonesia on the impact of socio-demographic factors and learning styles on academic performance among high school students revealed that female students scored significantly better than their male counterparts in Mathematics and Reading (Indrahadi & Wardana, 2020). However, from the in Debre-tabor primary school children, the mean academic performance for primary school children for male was greater than that of females, and a study done in Ethiopia Wolayta-sodo also showed being a female student decreased academic performance, (Katiso, Kerbo, and Dake, 2021).

As a student-related factor, home-school distance has been found to have a negative effect on student academic performance.

For instance in a study which investigated the impact of socio-demographic factors and learning styles on academic peformance among High School students in Indonesia, Indrahadi and Wardana, (2020) discovered that students who spent more than thirty minutes from home to school had their academic achievement adversely affected. These scholars also concluded from the findings of their study that kindergarten attendance experience had significant effect on reading and Mathematics scores and also the use of student textbooks was a factor considered to have a positive impact on student academic achievement.

Some researchers (Idris, Hussain & Ahmad, 2020; Ndum & Udoye, 2020) have reported that there are other socio-demographic factors that impact academic achievements among High School students. From the study done in Ethiopia, Wolayta-Sodo, students' poor living conditions due to single parenthood was found to significantly lower their academic performance as compared with students whose parents are in marital union (Ndum & Udoye, 2020). Age and monthly income are significant factors for academic performance among primary school children (Asmare, Taddele, Berihun & Wagnew, 2018). The performance of highly educated parents' children was found good as compared to less educated parents (Idris et al.). A study done in Lalibela revealed that children who have mothers with secondary and above educational status had more than two times higher average semester score than children with illiterate mothers (Asmare et al.).

Parents' occupation has a significant impact on the academic performance of their children. Most children from parents with more professional and lucrative jobs perform better than children whose parents have poorly paid jobs (Ndum & Udoye, 2020). The other factor that had shown significant association were Parents' income level. This significantly affect the academic performance of children, wealthy parents tend to produce children with better academic performance than poor parents (Ndum & Udoye, 2020) and the influence of family size on students' academic performance has been investigated. A small family size also influences higher academic achievement (Ella, Odok & Ella, 2015).

Again, empirical studies sought to investigate behavioral factors that affect academic performance among students. A cross-sectional study done on Pakistan undergraduate students showed academic performance had a significant positive impact attendance (Latif, Bhatti & Ali, 2019). Absenteeism can lead to depression and result in poor quality of education because of time lost while being away from school. It could also lead to moral degradation and by extension drug abuse, early pregnancies and unruly behavior (King, Dewey & Borish, 2015). This finding corroborate the findings of study done in Scotland that show student absenteeism is negatively associated with academic achievement (Klein, Sosu & Dare, 2022). Senthil (2018) investigated Iceland adolescent's internet use and academic achievement and reported that there was a positive correlation between average time spent online and how well students felt they did at school compared with their peers. However, a study on the same subject done in Ghana showed that 71.9% of adolescents who spend their time on the internet for social media purposes performed below the mean academic score (Owusu-Acheaw & Larson, 2015).

3.3 Effect of school-related, home-related and personal factors on learning styles of students

Researchers have examined the effect of factors like school-related, home-related, and personal factors on the learning styles of students. For instance, Fajar, Hussain, Sarwar, Afzal and Gilani (2019) investigated factors that affect the learning styles of students in Lahore School of Nursing, Pakistan. The researchers adopted the cross-sectional survey design to carry out the study. Using the convenience sampling technique, 133 students were selected for the study. Questionnaire was used to collect data, which was analysed statistically with the aid of SPSS. The study established that factors such as teacher factors, student factors, home factors, and school factors significantly affected the learning styles of the nursing students. Therefore, the study recommended that education stakeholders should pay attention to these factors so as to enhance the learning styles of the students to enhance their academic achievement.

Bhattacharya (2020) carried out a study on the effect of home-related factors on learning styles of primary school children in Contai Municipality. The study involved 40 parents and 20 students drawn from 10 primary schools. Descriptive survey research design was employed to carry out the study. The sample was selected using simple random sampling technique. The data was statistically analysed. The findings established that home-related factors such as educational status of parents, occupational status of parents, level of academic help received from family members, tuition facility, time devoted for self-study at home affected the learning styles of the students.

George, Lakra and Kamath (2017) examined factors that affect learning styles of undergraduate Nursing students of two nursing institutions under a selected University at Karnataka. Cross-sectional survey research design was adopted for the study. Convenience sampling technique was used to select 414 undergraduate nursing students for the study. Questionnaire was used to collect data which was analysed using descriptive (frequencies, percentages) and inferential statistics like the exploratory factor analysis. The results showed that factors such as learning environment, supportive services, teacher characteristics, learner challenges and personal factors affect the student learning styles.

Other researchers like Khan, Begum and Imad (2019) investigated the effect of home interactions and physical facilities on the learning styles of students of secondary schools of Mardan District. Data was collected through questionnaires which was analysed with the help of SPSS. Percentage, mean scores, standard deviation and Pearson correlation were applied to analyse the data. The findings showed that home interactions and physical facilities influenced the learning styles of the students. Therefore, the study recommended that education stakeholders should pay attention to these factors so as to enhance the learning styles of the students.

In another study, Dzever (2015) examined the effect of home environment factors on the learning styles of public secondary school students in Garki Area District, Abuja, Nigeria. The study used descriptive survey research design. Stratified random sampling technique was used to select 300 students from six public schools. Data for the study was collected through questionnaire administration. The data was analysed using descriptive and inferential statistical techniques. The results revealed that home environment affected the learning styles of the students. Particularly, the results

indicated that parental income, educational background and occupational level influenced their learning styles.

Furthermore, Ahmadi, Hassani and Ahmadi (2020) investigated the influence of student-level and school-level variables on the learning styles of students from Urmia, West Azerbaijan province. The target population was all high school students in Urmia in the 2018-2019 academic, year totalling 25,000. Questionnaire was used to collect data. A total of 1,200 students were selected using simple random sampling technique from 60 schools. The data was analysed using hierarchical linear modelling. The findings of the study showed that student-level variables such as socio-economic status, parental involvement, and peer support affected the students' learning styles. Furthermore, school-level variables like teacher-student relations affected the learning styles of the students.

Ortiz-de-villate and Rodr (2021) examined the influence of contextual variables on learning styles among Andalusian learners. The researchers adopted cross-sectional survey design to carry out the study. Census sampling technique was used to select 2,525 learners to constitute the sample. Hierarchical linear model was used in the data analysis. The study found that contextual variables such as the socio-economic and cultural conditions of families, parental expectations towards their children's education as well as parental level of involvement in schools have significantly influenced the learning styles of the students.

3.4 Factors for Variances of Learning Style Preferences among Pupils

Research has established that a multiplicity of factors affect the learning style preferences of pupils. According to Alkooheji and Al-Hattami (2018), different personal variables bring about differences in the learning style of pupils. Significant

differences exist between male and female pupils in terms of their learning style preferences (Almigbal, 2015; Corbin, 2017; Mohammadi, Mobarhan, Mohammadi & Ferns, 2015). This view is corroborated by Durukan et al. (2021) who posited that learning styles of pupils may be affected by different variables directly or indirectly, one of such variables being gender. Researches have examined the change of learning styles by gender. In these studies, some results reported that learning styles differ according to gender (Mete, 2013; Öztekin, 2012) as well as results showing that learning styles are gender independent (Bagav, 2015).

Khurshid, Tanveer and Qasmi (2012) noted that class level affected learning styles of students where those in a higher class displayed better learning styles than those in lower class. It was realized in the study that first year students have entered a new educational institution where the working environment is completely different from what they are accustomed to. Thus, they have brought with them their own ways and ideas of how to study and have not yet developed or adjusted them. Third years on the other hand, have had time to mature within their learning styles over the years and have gained a better understanding on what may or may not work for them within a particular course. Therefore, first year students need time to modify their learning styles so that they can cope with their learning task after transition to higher institutions or class level.

Other researchers have focused on the effect of sex on the learning styles of students where they observed significant difference in the learning styles of male and female students (Pillai, 2012). Sud and Sujatha (2006) revealed that female students had better learning styles than their male counterparts. This finding was sustained by Aluja-Fabregat and Blanch (2004) who found that girls scored higher on learning

styles than their male peers. With these results, much attention would be given to male students to assist them to improve on their learning styles so as to enhance performance. However, Awabil, Kolo, Bello and Oliagbo (2013) discovered that gender was not a significant determinant of learning styles among students. Similar result was found in Zimbabwe where Mushoriwa (2009) found no significant difference in the learning styles of male and female students. What is not clear from the studies of Awabil et al. (2013) and Mushoriwa (2009) is the status of the students' study habit in terms of high or low. The issue is that even though no difference was found, it could be that the level of students' study habit might be low which still calls for guidance to improvement.

A literature review conducted by Cevher and Yıldırım (2020) found that among 54 studies conducted on the relation between learning styles and gender, 21 of them reported a relation between gender and learning styles whilst 33 of them reported no relation. This implied that further studies are needed to eliminate the ambiguity that differences such as perception and interest arising from gender will also affect learning style. Another variable that may have an impact on learning styles is socio-economic levels. The learning styles of pupils who continue their education life in an environment with rich educational opportunities may also differ. In studies on this aspect (Keleşoğlu, 2011; Toğrul, 2014), it is stated that pupils who have an independent study room, for example, have improved learning styles.

There are also results that there is no significant relationship between learning styles and socio-economic level (Durukan et al., 2021). A study by Alkooheji and Al-Hattami (2018) also found out that to some limited extent, sex had an effect on pupils' learning style preferences (Esia-Donkoh, et al., 2020). Other studies that investigated

the role of pupils' gender and age in shaping their learning style preferences have however yielded controversial outcomes. For instance, in a study that investigated factors affecting learning styles preferences of students offering Hospitality Management Programme (HMP), Khairy (2018) found that the evidence of the link between learning style and age exists, and pupils' gender and age play a big role in how they prefer to receive and give out information. However, other studies argued that this link is lacking for evidence (Negari & Barghi, 2014; Urval, et al., 2014).

Similarly, some studies have established that there are no statistically significant differences in the learning style preferences of male and female pupils (Lai & Lee, 2019; Elkalmi, et al., 2015; Bhat & Govil, 2014; Garner-O'Neale & Harrison, 2013). Some studies have revealed that statistically significant differences exist in the learning style preferences of pupils because of age (Alkooheji & Al-Hattami, 2018; Corbin, 2017). Contrary to this finding, other studies instead report that no statistically significant differences exist in the learning style preferences of pupils due to age (Appiah, 2018; Garner-O'Neale & Harrison, 2013).

In addition, during learning, pupils may face difficulties due to a variety of factors as proposed by Abucay (2009). In a study that investigated factors affecting learning Style preferences of Hospitality Management Program (HMP) pupils, Khairy (2018) found and categorized factors affecting learning style preferences of pupils such as physical factors, for instance, health, physical defects, and nutrition. Second, environmental factors such as classrooms, availability of textbooks, and equipment. Third, emotional and social factors for example kind of relationships between pupils and their teachers in the classroom, pupils' attitudes towards teachers and teacher's personality to lead and to inspire pupils. Lastly, learning factors, for instance, the

limited background of topics discussed lack of mastery of what has been taught, and improper methods of study.

Moreover, researchers have explored the impact of geographical location of a school on students' learning styles. Agina-obu, Amakiri and Emesiobi (2011) observed that there is no significant difference between rural and urban students in their learning styles. This result suggests that environmental disparity between rural and urban schools does not account for the learning styles of students. It is, therefore, imperative that pupils' learning styles are investigated across these geographical locations so that specific solutions based on evidence are offered for support.

A study by Esia-Donkoh et al. (2020) on variances in learning styles of full-time undergraduate students of the Department of Basic Education, University of Education, Winneba, based on demographic variables, established statistically significant differences in learning style preferences of male and female students even though the significance level was small. This finding differs from that of other studies such as Bhat and Govil (2014), Elkalmi et al. (2015), Garner O'Neale and Harrison (2013), and Lai and Lee (2019). Esia-Donkoh et al. (2020) further explained that the reason for the small statistical significance might be due to chance that the level of significant difference was not enormous per the test conducted. However, the possibility of the impact of factors such as biological, developmental, environmental, and social traits of male and female pupils on how they perceive, process, understand and utilise information cannot be discounted. Amir, Jelas and Rahman (2011) argued that at the university level, female pupils often adopt learning styles, which correspond with classroom approaches to learning tasks, while male pupils mainly

prefer independent work, which is one of the learning style dimensions espoused by Grasha-Riechmann (1982).

Age was another factor that received the attention of researchers in relation to learning styles. Ossai (2012) revealed a significant difference in the study habit of students based on age. Analysing the cause of the disparity in learning styles due to age, Heath (2007) explicated that mature age students are more motivated to succeed academically due to greater maturity and better learning styles. Heath (2007) assumed that when students become mature, their educational goals become clearer which engenders commitment to thrive and attain such goals. To this end, they employ effective learning styles. Ehiozuwa and Anaso (2013) also revealed that significant difference exists between younger students (16 years and below) and older students (17 years and above) in their learning styles where older students exhibited better learning styles than the younger students. Consistent with these reports, it is expected that Form 2 pupils are likely to possess better learning styles than those in Form 1.

3.5 Relationship between Learning Style Preferences and Academic Performance

Nurhayati and Penna (2023) conducted a study among Pioneer Manado students in the first semester of 2020/2021 academic year. The study sought to find the correlation between students' learning styles and their English academic performance. The sample size was 80 students who were selected through convenience sampling technique. This study followed the quantitative approach. Questionnaire was used to collect data which was analysed through descriptive (mean score) and Pearson Product Moment Correlation. The findings of the study showed that students learning styles were correlated with their English achievement. The findings of the study

implied that one way to improve the academic achievement of the student is to enhance his/her learning styles.

In another study, Hidayah, Rofiqoh, Dewi and Suriaman (2022) investigated the correlation between learning styles and academic achievement of students on English Education Study Programme at Tadulako University. The study involved 33 third year students in the 2021/2022 academic year. The instruments used to collect data were questionnaire on learning styles and students' GPA. The data were analysed by using Pearson Product Moment with SPSS version 20. The study employed correlational research design within the quantitative framework. The result showed that there was positive correlation between learning styles and academic performance of students. However, the level of correlation was moderate. The finding of the study implied that learning style is a major factor contributing to the students' academic achievement.

Roashani and Albina (2021) examined the relationship between learning style and academic achievement of Generation Z learners. The study was premised on the position that learning style has gained widespread recognition in education theory and classroom management strategy as a key determinant of academic achievement. The study employed survey research design, and questionnaire was used to collect data. Therefore, the study was approached with quantitative lens. The population of the study comprised college students in Andaman Nicobar Islands. The researchers used stratified random sampling technique to select 331 students from different colleges. The study established that there was no significant relationship between learning styles and academic achievement of the students.

In Ghana, Augustine, Sawiri and Kusi (2021) examined the relationship between learning styles and students' academic performance at junior high pupils in Kintampo North Municipal. The focus of the study was to investigate the relationship between learning styles and students' academic performance in Mathematics and ICT as well as analyse the impact of learning styles on academic performance. The study applied the correlational design. One and hundred forty (140) respondents were selected through simple random sampling technique. Pearson correlation and hierarchical regression were used to analyse the data. The findings revealed that the learning style positively related to Mathematics achievement. However, the learning style aural was inversely related to the learning of Mathematics. Therefore, the study recommended that Mathematics teachers should effectively pay attention to the learning styles of the pupils in learning Mathematics.

Also, Hanawi et al. (2022) investigated the relationship between learning style and academic performance among the Generation Z students in Kuala Lumpur. A cross-sectional decriptive survey design was adopted to conduct the study. The participants were first to third year biomedical science students. The sample for the study was 84 students. The learning style inventory questionnaire was used to measure students' learning styles. The data was analysed using Pearson correlation with the help of SPSS. The results showed that learning style and CGPA had a positive and significant correlation. In conclusion, this study revealed that academic performance was influenced by learning style.

Furthermore, Ali and Yahya (2021) conducted a study among Iraqi EFL students, and the purpose of the study was to investigate the relationship between learning styles and academic achievement of the students. Correlation research was adopted for the

study involving fifty students in 2020/2021 year. The data was collected using questionnaire to assess students' learning styles and students' averages from the previous year in all subjects to determine academic performance. The data was analysed using Pearson Product Moment Correlation. The study indicated that there was a negative correlation between students' learning styles and their academic performance.

In another study, Aboe (2019) aimed to determine the learning styles of students and their correlation with their academic achievement. Data was collected from 75 students of the English Language education program of Khairun Ternate University. The respondents consisted of 15 males and 60 females. Data on student learning style was collected using questionnaires while student academic achievement was obtained from the end of semester examination scores. To analyse the correlation between learning styles and academic achievement, Pearson correlation coefficients analysis was used with the SPSS version 16.0. The results of the Pearson correlation coefficient revealed that there was a positive relationship between learning styles and student academic achievement.

Sintia, Rusnayati and Samsudin (2017), on their part, studied the learning style profile exhibited by students towards the academic achievement in Malaysian Polytechnic. The target population was international business students of Malaysian Polytechnic. Through the simple random sampling technique, 103 students were selected as the sample for research. Dscriptive survey research design was followed, and questionnaire was used to collect data. According to the results, there was no significant relationship between learning style and academic achievement of the students.

Among Chapingo Autonomous University students, Peña-escalona, Victorino-ramírez, Salinas-martínez and González-Garduño, 2020) carried out a study on the extent to which learning styles, study habits and academic performance correlate. Questionnaire was used to collect data for the study. The sampling included 142 propaedeutic students. Convenience sampling was applied to select the sample. The findings established that there was no correlation between learning styles and academic achievement.

Dayon's (2018) study focused on the relationship between learning styles of second year Technology and Livelihood Education students and their academic performance in English 3. This study utilized correlational research design. The study employed Spearman's Rank Order Correlation Coefficient. The study revealed a negative correlation between academic performance and learning styles, specifically the independent, collaborative, dependent, and participant, except for avoidant and competitive which had a correlation with academic performance.

Kohan, et al. (2021) investigated the relationship between learning styles and academic performance among virtual nursing students. The study adopted cross-sectional survey design, and 237 virtual nursing students were selected through convenience sampling technique. Questionnaire was used for data collection. The basis for determining academic performance was the grade point average(s) of the students. The study indicated that there was no significant relationship between the learning styles and academic performance of the students.

Academic success has an inextricably link to learning preferences, and study habits because these constructs influence each other and demonstrate how they improve pupils' learning outcomes (Kate, et al., 2022). Pupils who do not receive enough study

method instruction do not attain effective and sustained learning and, as a result, do not realize their maximum academic potential (Kate et al.). Furthermore, pupils with better academic achievements make more use of these abilities than those with lower academic achievements (Rezaie, Seyed, Reza, Chehrzad, & Kazem, 2017). Consequently, in order to boost pupils' learning and broaden their knowledge, thought should be given to ways in which learning can be made much easier for the pupils. One of the most significant improvements in education emanates from a considerable amount of research conducted by various scholars in the area of learning styles, which establish that the learners in classrooms have a variety of learning profiles (Kemi, Nicky, & Emmanuel, 2020).

Researchers have established a nexus between learning styles and pupils' academic achievement in a variety of contexts. For instance, studies (Ghanney et al., 2019; Alade & Ogbo, 2014) have identified the strong influence of pupils learning styles on their academic achievement. Implicit in this finding is the reasonable conclusion that learning styles enhance academic attainment of pupils and consequently lead to superior academic performance. However, inconsistent findings in studies related to the relationship between academic achievement of pupils and their learning style preferences (Ghanney et al.) were found, pointing to the view that learners' academic achievement is not greatly dependent on their learning style preference. The current study sought to find out the relationship between pupils' learning style preferences and their academic achievement in Social Studies based on Grasha-Riechmann learning style model.

Increasing learners' awareness of their own learning styles yields benefits including higher interest and motivation in the learning process, increased student responsibility for their own learning, and greater classroom community. Other scholars have identified the correlation of learning styles, instructional materials and learner academic achievement (Kemi et al., 2020; Cuaresma, 2008). Rawashdeh, Nawafleh and Alomari (2012) explored learning styles in relation to academic achievement and identified an association between different learning styles and academic achievement in various subjects founded on various scales of learning style preferences. Adeyemo, Babajide and Amusa (2013) found that the effect of learning styles on academic achievement correlates positively with high scores in Mathematics and Physics. However, Aljaberi (2015) conceded that learners exhibited a clear deficiency in mathematical problem-solving abilities; that is, learners' ability to solve mathematical problems was at variance with their learning styles.

Although the concept of learning styles appeared as late as the 1970s, there have been many ways to approach this concept. Nevertheless, it is reasonable to classify learning styles from two main perspectives. One pertains to individual processing of information (auditory, visual, and kinaesthetic) (Kemi et al., 2020), and the other pertains to individual relationship with other learners (competitive and collaborative dependent, independent). In a classroom setting, the competitive learner implements an individualistic personal learning plan and employs learning strategies that enable the learner to achieve learning goals. Competitive learners often see all pupils in the class as working towards the same goal of learning. However, the competitive learner wants not to only become the first in achieving that goal but also achieve that goal in a more outstanding manner than the peers (Ma & Ma, 2014).

Accordingly, competitive learners often see academic performance as a system of few winners and many losers. The main benefit of the competitive learning style is the motivation that stimulates great learning effort (Kemi et al., 2020). On the other hand, some educational psychologists have argued that competitive learning may not be desirable because it produces high stress, low self-concept (in the case of failure), cheating, and aggression in the classroom (Ma & Ma, 2014). Johnson, Howland, Moore and Marra (2012) examined eight cooperative learning methods in a variety of subjects of study and found that all of them indicate significantly positive effects on academic achievement. Abidin, et al. (2011) posited that learning styles make an impact on the pupils' overall achievement; and pupils in their study possessed multiple learning styles or a combination of different learning styles, thus, they are able to learn effectively. The above findings are consistent with Kolb's experiential theory, which emphasises the importance of a student's preferred learning style, depending on the available instructional materials. According to Kolb, a learning style is not a fixed trait but a differential preference for learning which changes slightly from situation to situation and influenced by availability of instructional materials (Azevedo & Akdere, 2010; Bhatti & Bart, 2013).

3.6 Concept of Academic Achievement and its Relevance

Academic achievement in the education system has been described variously by scholars. In the perspective of Otoo (2007), academic achievement refers to what a student is capable of accomplishing when he or she is tested on what he or she has been taught. Otoo's explanation of academic achievement is based on testing. Therefore, it is construed that tests are critical processes through which students are judged to ascertain whether they have acquired knowledge and skills as outlined in the curriculum. This perspective is upheld by Velasco (2007) that many available

definitions of academic achievement rely on quantitative data and calculation like that of test scores and grades. However, Otoo (2007) has pointed out that teaching determines academic achievement of students, and it precedes testing. This study derives two conclusions from the viewpoint of Otoo (2007). Firstly, students are tested on what has been taught which makes academic achievement a product of the experiences of students. This observation implies that students should not be tested on what they have not been taught. Secondly, the role of the teacher is vital in determining the academic achievement of students through teaching. Therefore, effective teaching leads to good academic achievement, and poor teaching leads to low academic achievement.

According to Nuthana and Yenagi (2009), academic achievement represents the amount of knowledge and skills developed by a student in various courses. They further explained that the level of academic achievement is measured by tests, assignments and final examination results and is dependent on the standards put in place by the educational institution. It could be said that academic achievement is the totality of knowledge and competencies a student has attained in the prescribed subject areas. The definition from the above scholars also indicates that academic achievement is not subject specific, but rather the aggregate achievement in all courses. This explanation of academic achievement relates to the basic education system in Ghana where Junior High School Students are graded in aggregate scores in the compulsory subjects (English, Mathematics, Integrated Science, Social Studies) and any other two subjects. Besides, teachers conduct tests and give assignments to assess the level of academic achievement of students.

Daulta (2008) argued that academic achievement serves as a key criterion in judging students' true potentials and capabilities. Therefore, academic achievement mirrors a student's aptitudes and worth in a chosen endeavour, and a system of identifying and selecting competent students for future tasks. In Ghana, employers require that job seekers present certificates and transcripts of results for consideration for employment. Tertiary institutions demand certificates and statement of results from prospective candidates for admission. Consistently, de Simone (2008) asserted that valuable insights are necessary in admission processes because "college admissions can be a high-stakes gamble" (p12). Therefore, information regarding students' academic achievement is essential in decision making with respect to admisibility of applicants into College. The above scenarios suggest that students of good academic standing are judged as more competent than their peers with low achievement. Thus, determining the level of academic achievement could help sustain the achievement of those who are high achievers, and implement strategies to enhance the achievement of those struggling.

To some scholars, academic achievement is the focus of any education system. Nuthanap (2007) contended that academic achievement is one of the most important goals of the educational process. Therefore, the success of educational institutions is based on the degree to which students demonstrate good academic achievement. Basic schools whose students attain high achievement could be considered as accomplishing educational goals than those whose students perform poorly in Ghana. Furthermore, academic achievement plays a major role in ensuring education quality (Ali, et al., 2009). Therefore, academic achievement is one of the determinants of quality education in any country.

4.0 Conceptual Review

4.1 The Concept of Learning

Pupils must realize the relevance and objectives of having knowledge, skills and attitudes, which are significant for future employment (Laguador, 2013b). This places an imperative on individuals to subject themselves to opportunities for learning. Scholars have ascribed varied meanings and explanations to the term learning. For instance, Santrock (2005) posited that learning is a relatively permanent change in behaviour that occurs through experience. Abante, Almendral, Manansala and Mañibo (2014) explained that learning is cumulative in nature and a mechanism by which an individual becomes a competently functioning member of society; resulting in different kinds of human behaviours like different human capabilities, which are required both from the environmental stimulation and the cognitive processing undertaken by the learners. Implicit in the views of the above scholars is the fact that learning deals with human behaviour, which could manifest due to environmental effects or personal factors.

According to the World Bank (2007), learning in many schools across Africa is limited and, therefore, learning outcomes are equally limited in scope, which need to be improved. Cedefop (2017) pointed out that the learning outcomes approach helps to orient teaching, to select methods and to support the learning process. Learning outcomes, through their focus on levels of, and requirements to, learning are crucial for promoting a more systematic reflection on assessment criteria, methods, and how these interact with and support the learning process. Learning outcomes approach supports assessment by clarifying the criteria for success/failure and performance. While most frequently linked to summative assessments, learning outcomes can help with formative assessment throughout the learning process. This implies that learning

outcomes form a component part of the determinants for effective teaching and learning. The driving force for quality learning outcomes also relate to teacher outcomes (Brainard, 2021).

4.2 Conceptual Framework

The conceptual framework enunciates the relationship between the main concepts of a study, arranged in a logical structure to assist in providing a picture or visual display of how ideas in the study relate to one another (Mensah, Agyemang, Acquah, Babah & Dontoh, 2020). Conceptual framework is a diagrammatic representation of how the concepts underpinning the study relate to one another and shows the series of action the researcher intends carrying out in a research study. The framework makes it easier for the researcher to easily specify and define the concepts within the problem of study (Mensah et al., 2020). The overall aim of conceptual frameworks is to make research findings more meaningful, acceptable to the theoretical constructs in the research field, ensure generalizability and assist in stimulating research while ensuring the extension of knowledge by providing both direction and impetus for the research inquiry (Adom, Hussein, & Agyeman, 2018).

The conceptual framework of the current study describes the relationship between the variables under study as presented in Figure 2. This study considered three variables. These include learning style preferences, which is the independent variable, and pupils' academic performance in Social Studies, which serves as the dependent variable. Social Studies is one of the subjects of study under the Common Core Programme for Junior High School (JHS) pupils.

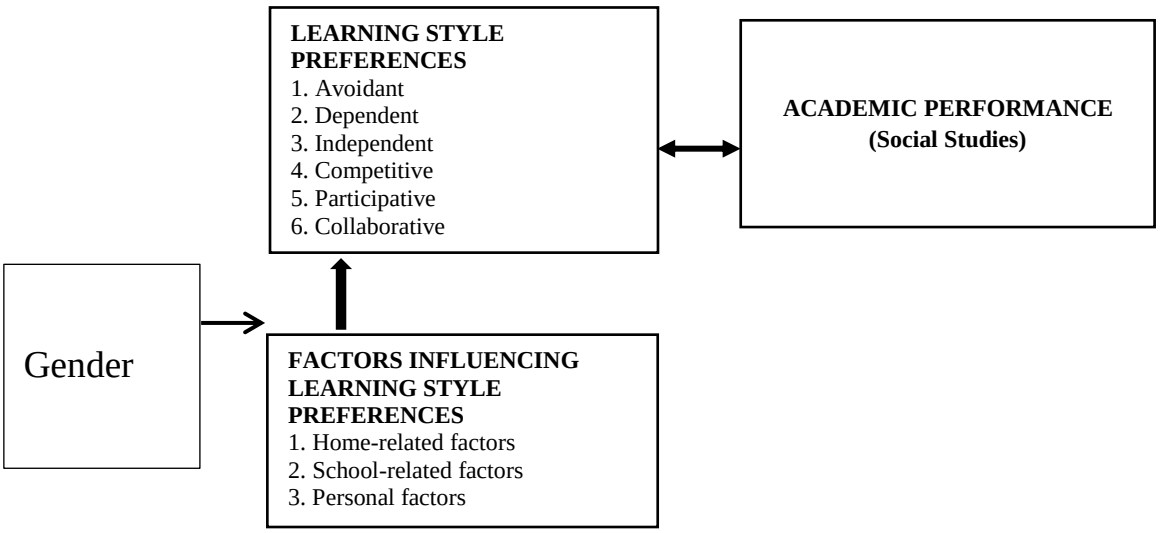


Figure 2: Conceptual Framework

Source: Researcher's Construct, 2022

The model of learning style preferences considered in this study were based on those proposed by Grasha-Riechman (1982), including avoidant, participative, dependent, independent, collaborative and competitive learning style preferences. The study also investigated the extent to which other factors, such as those inherent in pupils, the home and the school influence the learning style preferences of the respondents.

5.0 Summary of Chapter

This chapter was devoted to the review of literature relevant to the study. The review was organized into three thematic areas. The first part of the review concentrated on the theoretical framework of the study as well as theories of learning and leaning styles. The second part dwelled on the empirical review where previous studies conducted on learning styles and academic achievement were reviewed. The third part focussed on the conceptual framework of the study. The next chapter discusses the methodology employed in the study.

CHAPTER THREE

METHODOLOGY

3.0 Overview

This chapter discusses the methodological approach to the study. Components of the chapter include the philosophical underpinning of the study, research approach, research design, population, sample and sampling procedure, data collection instrument and pre-testing procedure. The validity and reliability of the instrument, data collection procedures and analysis as well as ethical considerations are also described in the chapter.

3.1 Philosophical Underpinning of the Study

Research philosophy concerns the creation of knowledge and the nature of that knowledge (Saunders, Lewis & Thornhill, 2012). These authors hold the view that philosophy in research is a reflection of how researchers view the world as well as the basic assumptions they make about social realities. There exist certain belief systems that researchers subscribe to, and which inform the basis of their decisions relative to the approaches they adopt in studying about phenomena (Pranas, Jolita & Regina, 2018). These scholars further observe that research philosophy emboldens the researchers' insights into the sort of factors to consider when deciding upon the appropriate methodology to employ in order to answer research questions, and produce credible results. It, therefore, makes sense that the beliefs a researcher holds are pertinent in the selection of a research strategy, the researchers' relationship with the participants, and the methods used to generate data, as well as how these are subsequently analysed.

A lack of consensus on the terminology used to describe the belief systems of researchers has been evidenced from literature. For instance, Creswell and Plano-Clark (2011), and Patton (2002) refer to these beliefs as 'worldview'. However, the term "paradigm" is more appropriate and used to refer to the philosophical assumptions or the basic set of beliefs that guide the actions and define the worldview of the researcher (Kaushik & Walsh, 2019). Even though the system of beliefs is within the researchers, Creswell (2015) argued that the beliefs affect the practice of research, and therefore, the need to state them in a study. Empirical studies have shown that research paradigms are grounded on three perspectives: epistemology, ontology, and methodology (Pranas et al., 2018).

This study hinged on ideas of the positivists' philosophy. Positivism is an epistemological perspective that involves quantitative data and observation with the goal of being independent from subjective opinions (Pranas et al., 2018). These authors further claimed that the positivist research philosophy supports understanding of the social world in an objective way. In this research philosophy, the scientist is an objective analyst, and based on it, dissociates himself from personal values and works independently. Saunders et al. (2012) have taken the view that testing theories and generating hypotheses is a fundamental part of the positivism philosophy.

A primary goal of positivist inquiry is to generate explanatory associations or causal relationships that ultimately lead to prediction and control of the phenomena in question (Sciarra, 2012; Gergen, 2001). Positivists contend that the development of knowledge can, and should be objective without the values of the researchers or participants influencing its development. Knowledge, when appropriately developed, is truth, certain, congruent with reality, and accurate (Park, et al, 2020).

Positivism relies on the hypothetico-deductive method to verify hypotheses that are often stated quantitatively, where functional relationships could be derived between causal and explanatory factors (independent variables) and outcomes (dependent variables) (Ponterotto, 2005). Positivist research, however, does not always rely on quantitative methods. For example, an experimental study examining the effects of an intervention through qualitative analysis fits within the positivist paradigm (Park, Konge & Artino, 2020).

The deduction from these descriptions, that for the positivist epistemological viewpoint, knowledge is derived from predominantly structured and controlled procedures such as those employed in the study of the natural sciences. In tandem with the positivist tradition, a structured questionnaire was used to collect quantifiable data for statistical analysis to test theories and answer the research questions. The positivist view has, however, been subjected to a number of criticisms. First, it is described as superficial since it is unable to arrive at in-depth knowledge (Cavana, Delahaye & Sekaran, 2001). Second, regardless of a researcher's truthful observance of objectivist scientific methods, findings are not considered outright truths but rather are hypothetical and inferred (Galán, 2017). These criticisms, notwithstanding, the researcher opted for the positivist philosophy because it was considered the best fit in examining the relationship between learning styles preferences and academic achievement.

3.2 Research Approach

Research approaches are plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation (Creswell, 2014). Consistent with the positivist's philosophy, the

researcher adopted the quantitative approach for the study. The choice of quantitative approach for this study was informed by the fact that it is directly linked to the positivism paradigm, which relies heavily on objectivity and so dismisses the importance of individuals' subjective experiences and values, be they the experiences and values of research participants or of researchers. Subjective experiences and values are seen as unimportant in quantitative studies. Hence, the researcher has to be objective in the process of conducting the study to ensure validity of the data to be analyzed.

Apuke (2017) described research approach as quantifying and analysing variables in order to get results. It involves the generation and analysis of numerical data using specific statistical techniques to answer questions. Leedy and Ormrod (2010) posited that the quantitative approach is highly formalized and more explicitly controlled. In quantitative methodology, the researcher uses statistics and surveys with the aim to generalize the findings (Shiu, Hair, Bush, & Ortinau, 2009). Therefore, the researcher anticipated that the findings of this study would be generalized to all the pupils in junior high schools in the East Mamprusi Municipality. Due to the quest to generalize to a wider population, quantitative methodology accommodates a large sample size (Shiu et al.). This position was considered in the study where the researcher selected a representative sample from the target population. The quantitative approach is used to test theories and examine relationships between variables (Burns & Grove, 2011). This assertion informed the choice of the quantitative approach because the focus of the study was to examine the relationship between learning style preferences and pupils' academic achievement in Social Studies.

However, quantitative approach has inherent weaknesses. According to Macnee and McCabe (2008), the quantitative research approach is unable to consider the individuality of human experience. Creswell and Plano-Clarke (2011) added that quantitative research is seen to be weak in understanding the context or setting in which people talk and the voices of respondents are accordingly not directly heard. In spite of these weaknesses, However, the researcher adopted quantitative approach because of the numeric data collected using questionnaires for statistical analysis to examine relationships and describe variables.

3.3 Research Design

Creswell (2015) opined that a research design is primarily concerned with the conceptual structure within which a study is conducted. In other words, the research design sets the procedure on the required data, the methods to be applied to collect and analyse the data, and how these will help to answer the research questions. There are three possible forms of research design: exploratory, descriptive and explanatory (Robson, 2002). The basis of classification is based on the purpose of the research. For instance, the purpose of a descriptive study is to provide a 'picture' of a situation, person or event, or to show how things are related to each other (Lelissa, 2018).

This study employed cross-sectional descriptive survey design. According to Ihuoma (2020), descriptive survey design aims at describing characteristics of variables in a situation. Best and Khan (2009) stated that descriptive survey design is concerned with conditions or relationships that exist, opinions that are held, processes that are ongoing, effects that are evident, or trends that are developing. This design obtains information about the occurrence, distribution, and interrelations of variables within a population where data are usually gathered through self-reporting (Polit & Beck,

2018). Mugenda and Mugenda (2009) supported the use of descriptive survey design in education research when they observe that it is arguably the best method available to social scientists and other educators who are interested in collecting data for the purpose of describing a population which is too large to observe directly.

The rationale for the use of descriptive survey design is to allow researchers embark on the collection of data from a large population and generate findings that are representative of the whole population at a lower cost (Saunders et al., 2012). Burns and Grove (2011) also noted that descriptive survey affords researchers to collect numeric data so as to examine relationships between variables. The researcher's choice of descriptive survey design aligns well with the aim of the current study, which focused on describing the nature of learning style preferences, and the relationship of these with the academic achievement of public Junior High School pupils in Social Studies in the East Mamprusi Municipality.

3.4 Population of the Study

A research population refers to all the elements that meet the criteria for inclusion in a study (Burns & Grove, 2011). Population is the entire group of people the researcher wishes to obtain knowledge from, and to whom the findings of a study are generalized. It comprises all the units on which the findings of a given research are generalized and applied. In other words, population is a set of all the units of study that possess variable characteristics. Satishprakash (2020) posited that a population refers to the group on which results of research can be applied or to which the research findings can be generalized. Implicit in the above view is the fact that the population of a study includes all the people or events that are of interest to the researcher, and to which the findings of the research would be generalized. In this

study, the target population covered all Junior High School pupils in the East Mamprusi Municipality. The accessible population for the study however, included all pupils in public Junior High School in East Mamprusi Municipality who had studied in their respective schools for at least one academic year. This was made up of 662 girls and 900 boys, totalling 1,562 public Junior High School (JHS) pupils (East Mamprusi Education Statistics Unit, 2022). The accessible population was derived from all the nine (9) educational circuits in East Mamprusi Municipality.

3.5 Sample and Sampling Procedure

A sample is a representative part of a population, which when studied makes it possible for a researcher to know about the population without necessarily studying it entirely (Taherdoost, 2016). A sample refers to a portion of a population selected for a study and from whom information needed for the study is obtained (Awoniyi, Aderanti & Tayo, 2011). Therefore, a sample is a subsection of the population chosen to represent the population in a study. A sample is, therefore, composed of carefully selected units or elements (from a given population) that a researcher actually studies and relies on to make generalizations or inferences about the population. Fundamentally, a sample is a representation of those elements of the population, which are selected to represent the entire population and participate in a study. This denotes that the researcher collects data from the sample and draws conclusions that should reflect the characteristics of the population. In this study, 234 public Junior High School pupils were selected from the nine educational circuits in the East Mamprusi Municipality to establish the sample. The sample size was deemed representative of the target population based on the suggestion by Gay and Airasian (2003) that at least 10-20% sample of the target population is adequate for a

descriptive study. Therefore, the sample size of 234 was 15% of the target population of 1,562 pupils was chosen for this study

Sampling is the process of selecting a given number of subjects from a defined population as representative of that population such that any statements made about the sample should also be true of the population (Orodho, 2009). A number of researchers have highlighted the relevance of sampling in research. For instance, Faria (2017) stated that the purpose of sampling in quantitative studies is to produce statistically representative data that permit analysis using appropriate statistical tools. Akinade and Owolabi (2009) also recounted the advantages of sampling such as to ensure that there is no bias or subjectivity in the selection process; it helps the researcher to work with reasonable size of elements since it is difficult to do so with the entire population; and it saves time spent on each research as well as reduces cost of research operations. Respondents for this study were selected using proportionate stratified sampling technique. This is a sampling technique in which a heterogeneous population is divided into a set of mutually exclusive or non-overlapping sub-populations or strata, and thereafter, random samples are selected from each stratum for detailed study (Taherdoost, 2016). Popoola (2011) described stratified random sampling technique as a method in which the heterogeneous population is first stratified by dividing it into a set of mutually exclusive sub-populations (strata), and thereafter random samples are then selected from each stratum for a study. The stratification ensures that the population is categorized into subgroups, and then random sampling is carried out to provide equal opportunity for all the members in each subgroup to be proportionately represented in the sample. Empirical studies have established that the use of stratified random sampling ensures that there is fair representation of every stratum (sub-group) in the population (Taherdoost, 2016).

Scholars like Proctor, Allan and Lacey (2010) also maintained that the use of probability sampling in quantitative research reduces errors and biases in the study.

Stratified random sampling technique was carried out by first generating the sampling frame. Kölln, Ongena, and Aarts (2019) have described a sampling frame as an operationalized representation of the target population and it is the group of units from which the sample is recruited. Therefore, the researcher identified and labelled all the 1,562 pupils in the target population. The target population was first categorised in terms of circuit and their respective gender composition. Then, the number of pupils from each circuit and gender was selected as presented in Table 4.

For instance, in Circuit A, there were 164 pupils representing 10% of the total target population (1562). Therefore, 10% of the sample size (234), representing 23, was allocated to the circuit. The statistics further showed that there were 95 males representing 58% whilst the females were 69 constituting 42%. Using the same proportions, the researcher selected 13 males (58% of 23) and 10 females (42% of 23) respectively from Circuit A. The same process was used to select the pupils in all the 9 circuits.

Table 4: Distribution of the Sample by Circuit and Gender

Circuit	Target population (%)	Circuit Sample Size	Males (%)	Male sample size	Females (%)	Female sample size
A	164 (10)	23	95(58)	13	69(42)	10
B	182 (12)	28	111(61)	17	71(39)	11
C	179 (12)	28	100(56)	16	79(44)	12
D	170 (11)	26	97(57)	15	73(43)	11
E	187 (12)	28	112(60)	17	75(40)	11
F	175 (11)	26	96(55)	14	79(45)	12
G	169 (11)	26	96(57)	15	73(43)	11
H	175 (11)	26	103(59)	15	72(41)	11
I	161 (10)	23	90(56)	13	71(44)	10
Total	**1562**	**234**	**900(58)**	**135**	**662(42)**	**99**

Source: Researcher's Computations, 2022

Simple random sampling technique with replacement was used to select the individual pupils in each circuit separately for the study. In this process, the researcher assigned codes to each pupil in each circuit. Then, the researcher put all the codes in a bowl, shuffled them, and picked one code from the bowl while closing his eyes. The researcher then put the code that was picked back into the bowl, shuffled the codes again in the bowl, and picked the next code. In the event that a code was picked a second time, the said code was put back into the bowl before the next round of selection/picking. The reason for replacing previously picked codes was not only to ensure increased precision and unbiased representation but to maitain the population in order to provide basis for statistical inference and population-level conclusions. This process continued until all the required number for the circuits as well as males and females were selected.

3.6 Data Collection Instrument

Data collection instruments refer to the fact-finding strategies and tools for data collection (Munir, Annum, Reyes & Hassan, 2017). These authors further expressed the view that eliciting the feelings, beliefs, experiences, perceptions or attitudes of some sample of individuals is made easy by the use of appropriate data collection instruments. In essence, data collection instruments are the specific means by which data are gathered from participants in a study. The choice of a particular data collection instrument is determined by factors such as the purpose of the study, nature of the problem and availability of resources to conduct the study (Canals, 2017).

Questionnaire, adapted from Grasha and Riechmann (1982) was used to collect data for the study. Questionnaire is an insrument of data collection that asks participants to give written or verbal replies to a written set of questions (Parahoo, 2006). Several scholars support the use of questionnaire as a credible data collection instrument in research. For instance, Denzin and Lincoln (2011) advanced the argument that questionnaire is arguably said to be the commonest research tool relatively well understood by respondents due to its merits on cost effectiveness and simplicity. Canals (2017) asserted that closed ended questionnaires reduce the burden on respondents having to provide their own answers, and facilitate quick collection of quantifiable data for statistical analysis. With this idea from Canals, the researcher used closed-ended questionnaire in this study because the quantitative approach adopted for the study requires the collection of quantifiable data to help describe the nature of the variables.

The questionnaire consisted of four sections covering fifty-four (54) closed ended items. Section 'A' gathered demographic information of the respondents such as gender, age and level/form. Section 'B' gathered data on the learning style preferences of the respondents based on Grasha-Riechmann (1982) learning style questionnaire which is a model that focuses on six learning style preference dimensions, namely: competitive, collaborative, avoidant, participant, dependent and independent.

Section 'C' of the questionnaire sought to collect data on factors which influence the pupils' learning style preferences under headings such as school-related factors (teaching strategies, content organization and differentiation, teaching/learning resources, and classroom and behaviour management), home-related factors (parental support and monitoring) and student-related/personal factors (study habits). Data on academic achievement of the respondents in Social Studies were gathered in Section 'D' of the questionnaire.

The participants were required to rate statements on a 5-point Likert-type scale. A decision rule was applied to the likert scale response options, where:

- 1= Strongly Disagree (SD)
- 2 = Disagree (D)
- 3 = Undecided (U)
- 4 =Agree (A) and
- 5 = Strongly Agree (SA)

The decision rule was chosen to align with the study's objective of examining respondents' levels of agreement with the statements on learning style preferences, allowing for a clear distinction between strong agreement, neutrality and strong

disagreement. The participants were required to select only one view from the five options to represent opinions on the issues presented in each of the statements.

3.7 Pre-testing of the Instrument

Pre-testing of research instruments has been described by Gerrish and Lacey (2006, p. 538) as "A preliminary study carried out before the full research to test out data collection instruments and other procedures". The pre-test was meant to check out any problems which may arise in the course of data collection and correct them before the actual study began. Pres-testing of research instruments offers researchers an opportunity to gauge the meaning attributed to survey questions before a monumental investment of time and resources is made in the wrong questions or in questions which the researcher cannot be sure about what is being asked (Doody & Doody, 2015). It is therefore imperative that the researcher undertakes a pilot testing of research tools because in the view of Doody and Doody (2015), pre-testing the research tools helps to identify issue areas, reduces measurement error and respondent confusion. It also determines whether respondents accurately understand the items, and ensures that the arrangement of items does not influence how respondents provide feedback. These highlight the need to pre-test a questionnaire before administering to participants because the practice eliminates ambiguities and errors in the data collected.

The pre-testing of the questionnaire was done in the West Mamprusi Municipality. The choice of this Municipality was in view of the researcher's observation that the West Mamprusi Municipality exhibits characteristics closely related to those of the East Mamprusi Municipality. A sample of thirty (30) pupils was selected from junior high schools in the West Mamprusi Municipality for the pre-testing exercise. The

adequacy of the pre-testing sample size was based on Cooper and Schilder's (2011) suggestion that at least 10% of the sample is adequate in a pre-test. During the pre-testing, it became known that the respondents had difficulty in understanding some of the items in section 'B' of the questionnaire (perceptions about learning style preferences) which were adapted from Grasha-Riechman (1982). This stemmed from the use of vocabulary that the respondents could not easily comprehend as used in phrasing the statements. The situation moved the researcher to rephrase the items concerned and to step down the difficulty level of the sentence structure in the statements to suit the level of the respondents before the actual administration of the questionnaire on the field.

3.7.1 Validity of Instrument

Validity describes the accuracy with which an instrument measures the anticipated construct within a study (Noble & Smith, 2015). Validity is the extent to which research instruments measure what they are intended to measure (Oso & Onen, 2011). In other words, an instrument is deemed valid if it measures what it is supposed to measure. Validity includes several forms, including face validity and content validity (Taherdoost, 2016). Engaging colleagues on the Master of Philosophy programme and other graduate pupils at the university to review the items ensured face validity of the instruments. Comments relating to the length of items, the number of items and the general layout of the instruments were considered in refinement of the instrument.

Content validity refers to the extent to which the measuring instrument shows that it fairly and comprehensively covers the variables that it purports to measure (Cohen, Manion, & Morrison, 2011). Taherdoost (2016) posited that content validity describes the degree to which items in an instrument reflect the construct the instrument intends

to describe. In line with the assertion that experts evaluate the content validity of questionnaires (Polit & Beck, 2018), the instrument was submitted to the supervisor who checked that the questions reflected the concepts being investigated and that the scope of the questions was adequate. The supervisor who is an expert in the field of study provided valuable assistance in the design of the questionnaire.

3.7.2 Reliability of the Instrument

Reliability is the stability and consistency of scores from an instrument (Braun, Clarke, Hayfield & Terry, 2019). These scholars were of the view that research instruments are reliable if there is the production of explicit and consistent results upon using the instruments severally in different timelines. Again, reliability is the consistency of results if a study is replicated. According to Bryman and Bell (2012), the reliability of an instrument also focuses on elements such as stability, internal reliability and inter-observer consistency. Reliability, also known as internal consistency of the items in the questionnaire was estimated using Cronbach's alpha reliability test as presented in Table 5.

Table 5: Reliability Results

Variables	Cronbach's Alpha
Overall learning styles	0.863
Independence	0.897
Avoidant	0.888
Collaborative	0.896
Dependent	0.893
Competitive	0.894
Participant	0.895
Overall factors	0.888
School-related factors	0.891
Personal factors	0.887
Home-related factors	0.894

Source: Field Data, 2022

George and Mallery (2012) recommended that a Cronbach's alpha reliability coefficient greater than or equal to 0.70 is acceptable. It is observed from Table 5 that the Cronbach's alpha coefficient for each variable as well as the overall variables was greater than 0.70, hence it was concluded that the instrument is reliable.

3.8 Data Collection Procedures

Data collection is the process of gathering and measuring information on variables of interest in an established, systematic fashion that enables the researcher to answer stated research questions, test hypotheses, and evaluate outcomes (Kabir, 2016). Implicit in the view of Kabir is that data collection demands the use of research tools to collect data with a focus to provide answers to research questions. Before the fieldwork, the researcher obtained an introductory letter from the Department of Basic Education, University of Education, Winneba, to facilitate the process of data collection. The introductory letter enabled the researcher to seek permission from the

East Mamprusi Municipal Education Directorate to gain access to the Junior High Schools.

Public Junior High schools in the nine circuits were visited for the purpose of introduction to the respective Junior High school authorities and to seek permission to carry out the study in their schools. The researcher then held brief interactions with the pupils who were selected for the study in their respective schools and explained to them how they would be involved in the study. Further, the researcher sought the consent of the participants, distributed the questionnaire, and explained to them how to respond to the items. The data collection lasted for one month, starting from 3rd of October, 2022 to 28th October, 2022. The researcher personally collected the data from the pupils. All completed questionnaires were collected and sealed in an envelope.

3.9 Data Analysis Procedures

Data analysis is the process of collecting, modelling, and analysing data to extract insights that support decision-making (Creswell, 2015). The process began by a check on all the completed questionnaires with a view to discarding questionnaires that were not filled or were poorly answered. The next stage in the process of analysing the data collected was dedicated to the coding of questionnaires and entering it into the version 26 of the IBM Statistical Product for Service Solutions (SPSS). Coding involves assigning numerical values to the data before entering into the SPSS for analysis. For instance, gender was coded as 1 for males, and 2 for female. The data was then explored to identity missing data which were corrected using descriptive statistics such as frequencies and percentages.

The data was analysed using descriptive and inferential statistics. Descriptive statistics such as percentages and frequencies were employed to explore the data in order to identify missing data elements or items. Polit and Beck (2018) have argued that the use of descriptive statistics to analyse data enables the researcher to summarize and describe quantitative data obtained from empirical evidence. Descriptive statistics including percentages and frequencies were used to analyse the bio-data of the pupils, which were organized in Tables. In addition, descriptive statistics including mean and standard deviation were used to analyse the data to provide answers to research question one.

Inferential statistics such as multiple linear regression, Pearson product moment correlation, and independent samples t-test were also used to analyse the data. Multiple linear regression is suitable to analyse data that seek to predict an outcome variable (dependent variable) from a set of criterion variables (independent variables) (Tabachnick & Fidell, 2006). Therefore, multiple linear regression was applied to examine the extent to which school-related factors, home-related factors, and personal factors predicted learning style preferences to answer research question two. Pearson product moment correlation was employed for analysing research question three because according to Bryman and Bell (2012), it is suitable for determining the bivariate correlation between two variables. The purpose of the bivariate correlation analysis of data was to determine the extent to which learning style preferences were related to the academic achievement in Social Studies. The correlation coefficient ranges between -1 and +1, and when it approaches +1, it indicates positive strong correlation, and when it approaches -1, it indicates negative strong correlation (Pallant, 2016). Pallant added that, a value of 0 indicates no correlation between the two variables.

The interpretation of the strength of the relationship was based on Kothari's (2005) idea that if the correlation coefficient is greater than 0.3 but less than 0.5, then the relationship is moderate; the relationship is weak if the correlation coefficient is less than 0.3; and the relationship is strong if the correlation coefficient is 0.5 or greater. The independent samples t-test was used to test the hypothesis in order to determine if there was any significant difference between male and female pupils in relation to their learning style preferences in Social Studies. According to Lund (2012), independent samples t-test is suitable for comparing the means of two independent groups. The use of inferential statistics was to enable the researcher compare means and to draw valid conclusions.

3.10 Assumptions for Inferential Statistics

Inferential statistics such as independent samples t-test, Pearson correlation, and multiple linear regression require that some assumptions that underpin their usage are satisfied. This section discusses these assumptions such as multicollinearity, normality of data, and homogeneity of variance.

3.10.1 Multicollinearity

Multicollinearity occurs when the independent variables are highly correlated with a correlation coefficient of 0.8 or above (Pallant, 2016). This assumption is important in the application of multiple linear regression. The preceding author recommends the use of Tolerance values greater than 0.10 or VIF score less than 10 as indicated of the absence of multicollinearity. This assumption was examined with the results of the multiple linear regression, and the results indicated that this assumption was not violated.

3.10.2 Normality of Data

According to Pallant (2016), data distribution as part of data analysis shows the range of scores on the variables in a study. It also shows how the scores are distributed using normal distribution curve. In this study, the Normal Q-Q plot was used to determine the normality of the data, and the results (Appendix B) showed that the data were normally distributed. For instance, the Q-Q plot for independence learning style is presented in Figure 3.

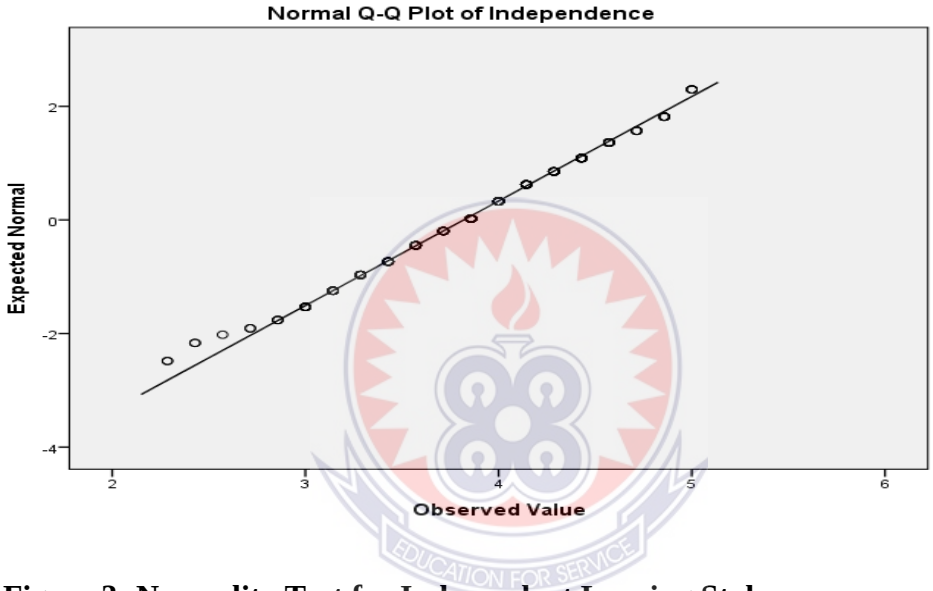


Figure 3: Normality Test for Independent Leaning Style

3.10.3 Homogeneity of Variance

Homogeneity of variance (equality of variance) assesses whether there are any significant differences between group variances (Field, 2005). The Levene's test was used to assess this assumption, and the Levene's statistic for each of the variables was not statistically significant ($p>0.05$), indicating that this assumption was fulfilled.

3.11 Ethical Considerations

Ethics is a branch of philosophy that deals with the conduct of people which guides their standards of behaviour as well as how they relate with each other (Blumberg, Cooper, & Schindler, 2005). The central focus of research ethics has to do with giving

due consideration regarding how to deal and relate with the human subjects that participate in the research process (Akaranga & Makau, 2016). This suggests that the ethical rights of a participant must be respected throughout the study. Mugenda and Mugenda (2009) have emphasized the need for researchers to maintain anonymity, confidentiality, informed consent.

Anonymity occurs when even the researcher or audience cannot link a participant with the information for that person (Polit & Beck, 2018). It is concerned with concealing the identity or ethnic or cultural background of respondents, refraining from referring to them by their names or divulging any other sensitive information about a participant (Mugenda & Mugenda, 2003). The nature and purpose of the study was made explicit to the respondents and the extent of their involvement. A respondent may be considered anonymous when the researcher cannot associate a particular response with a given respondent. Anonymity can be ensured by omitting the names of the participants or identifying them by a code instead of by name (Akaranga & Makau, 2016). In order to guarantee anonymity, respondents were asked not to write their names on the questionnaire. Again, all completed questionnaires were coded without names of respondents. Additionally, the final report did not contain names of respondents.

Confidentiality is maintained when participants are protected in a study such that individual identities are not linked to the information provided, and are never publicly divulged (Polit & Beck, 2018). To ensure confidentiality, the respondents were assured that the data would solely be used for the stated purposes of the research. Consequently, the participants were assured that no information relative to them would be made public without their consent.

Informed consent means that participants have adequate information regarding the research, are capable of comprehending the information and have the power of free choice, enabling them to consent or decline participation in the research (Polit & Beck, 2018). The researcher obtained informed consent from the research participants by explaining in detail the nature and purpose of the study, and the importance of their participation. Informed consent was maintained when the participants were assured that participation in the study was voluntary and failure to participate or withdraw would not result in any penalties.

3.12 Summary of Chapter

This chapter discussed the methodological procedure that was followed in the study. Issues relating to philosophical stance of the study, research approach, research design, population, sampling procedures, instrumentation, data collection and analysis as well as the ethical principles were discussed. It was stated that the positivist philosophy guided the study which afforded the researcher to adopt the quantitative approach. Cross-sectional descriptive survey research design was employed. The target population covered all Junior High School pupils in the East Mamprusi Municipality. The sample size involved 234 public Junior High School pupils was selected from the nine educational circuits in the East Mamprusi Municipality. These participants were selected through stratified random sampling technique. Questionnaire was used to collect data in the study after it was assessed for validity and reliability. Descriptive and inferential statistics were used to analyse the data with the aid of SPSS.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.0 Introduction

This chapter presents the findings of the analyses of data and their discussions. The chapter is organized under four sub-sections. The first section presents the response rate and the reasons that accounted for it whilst the second section examines the demographic characteristics of the sample. Thereafter, the analysis of the research questions and hypotheses follow, and the chapter ends with a discussion of the findings.

4.1 Response Rate

Out of the 234 questionnaires distributed to the respondents, 230 were completely filled and returned, representing a response rate of 98%. This response rate was realized because the researcher did a self-administration of the questionnaires and was present to clarify issues for the respondents in each of the schools where data were collected. The response rate was adequate for the study based on the recommendation of Mugenda and Mugenda (2009) that 50% response rate is adequate in studies involving questionnaire administration, a response rate of 60% is good and 70% and above is very good. Based on these criteria, the response rate obtained in this study was appropriate.

4.2 Demographic Characteristics of the Respondents

The demographic characteristics of the respondents including form/class, gender, age, and parental level of education, were examined and the results are shown in Table 6. The data in Table 6 reveal that most of the pupils who participated in the study were

in Form 2 (n=91, 39.6%) as compared with Form 1 pupils (n=76, 33.0%) and Form 3 pupils (n=63, 27.4%).

Table 6: Demographic Characteristics of Respondents

Variables	Categories	Frequency	Percent
Form			
	Form 1	76	33.0
	Form 2	91	39.6
	Form 3	63	27.4
Gender			
	Male	111	48.3
	Female	119	51.7
Age (in years)			
	12-15	39	17.0
	16-19	110	47.8
	20 and above	81	35.2
Parental level of education			
	Basic	88	38.3
	Secondary	61	26.5
	Tertiary	44	19.1
	No education	37	16.1

Source: Field Data, 2022

The data also reveal that more than half of the pupils were girls (n=119, 51.7%) whilst the rest were boys (n=111, 48.3%). In relation to age, the data show that majority of the pupils were in the 16-19 age bracket (n=110, 47.8%), followed by those who were 20 years or more (n=81, 35.2%) and 12-15 (n=39, 17.0%) respectively. Furthermore, the data indicate that a greater proportion of the pupils had parents who possessed basic education (n=88, 38.3%), followed by those whose parents had secondary (n=61, 26.5%), tertiary (n=44, 19.1%) and no education (n=37, 16.1%) respectively. The demographic compositions of the respondents were vital to the study for two reasons. Firstly, they confirmed that data were collected from a sample with diverse backgrounds. Secondly, the demographic characteristic in relation to gender was used as the basis of comparison of the pupils in relation to their preference for learning styles.

4.3 Analysis of the main data

Research Question 1 - What learning style preference is dominant among pupils in public Junior High School in the East Mamprusi Municipality?

The aim of this research question was to examine the learning style preference of the public Junior High School pupils in the East Mamprusi Municipality. The learning styles involved in the analysis included collaborative, avoidant, participant, dependent, competitive, and independence learning styles. Descriptive statistics including Mean, Standard Deviation and Coefficient of Variation (CV) were used to analyse the data, and the results are presented in Table 7.

Table 7: Learning Styles Preferences of the Pupils

Learning styles	Mean	Std. Deviation	CV (%)
Independent learning style	3.819	0.543	14.2
Avoidant learning style	3.793	0.553	14.5
Participant learning style	3.778	0.569	15.0
Collaborative learning style	3.767	0.614	16.2
Dependent learning style	3.763	0.590	15.7
Competitive learning style	3.728	0.498	13.4

Source: Field Data, 2022

An examination of the data in Table 7 reveal that the standard deviation for each learning style was within the acceptable threshold of ±3 for normal distribution of data (Babbie, 2017). The data also show that the pupils preferred and practiced the Collaborative learning style most (M=3.767, CV=16.2%), followed by Dependent learning style (M=3.763, CV=15.7%), Participant learning style (M=3.778, CV=15.0%), Avoidant learning style (M=3.793, CV=14.5%), and Independent learning style (M=3.819, CV=14.2%) whilst the competitive learning style was least

preferred by the pupils (M=3.728, CV=13.4%). The data imply that Collaborative learning style was dominant among the pupils whilst the competitive learning style was least dominant among the pupils. However, it is instructive to state that with the 5-point Likert scale which was used to measure learning styles preferences of the pupils where the mean score was 3.0 (1+2+3+4+5÷5), the data pointed out that all the learning styles were rated above the mean. Therefore, the researcher concluded that the pupils highly preferred all the learning styles outlined in the study but in varied intensities.

Research Question 2 - What factors predict learning style preferences among pupils in studying Social Studies in public Junior High Schools in the East Mamprusi Municipality?

The aim of this research question was to determine the extent to which factors such as school-related, home-related, and personal factors predict learning styles preferences among the Social Studies pupils. Multiple linear regression analytical test was used to analyse the data. Prior to the application of the multiple linear regression, the researcher examined the assumption of multicollinearity with the tolerance and the VIF scores, and the results (Table 9) show that the Tolerance values for each predictor variable was greater than 0.10 while the VIF score was less than 10.

These data suggested that the assumption of multicollinearity was achieved. Consequently, the researcher proceeded to examine the results from the multiple linear regression as presented in Table 8 below. The data show that all the factors (school-related, home-related, personal) collectively explained 53.2% of variance in learning style preferences which was found to be statistically significant [F (3, 226) = 85.731, $p<0.05$].

Table 8: Model Summary for Factors Predicting Learning Style Preferences

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	0.730[a]	0.532	0.526	0.298	0.532	85.731	3	226	0.000

Source: Field Data, 2022; n=230; Significance: 0.05

Therefore, the study concluded that school-related, home-related, personal factors jointly influence learning style preferences among the pupils in studying Social Studies. The study further examined the individual contributions of the factors in predicting learning style preferences among the pupils, and the results are presented in Table 9.

Table 9: Unstandardized and Standardized Coefficients for Factors Predicting Learning Styles Preferences of Pupils

		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1.696	0.132		12.873	0.000		
	School-related	0.207	0.042	0.320	4.944	0.000	0.493	2.029
	Personal factors	0.183	0.052	0.259	3.537	0.000	0.386	2.591
	Home-related	0.156	0.039	0.254	4.020	0.000	0.519	1.925

Source: Field Data, 2022, significance: $p<0.05$

The data in Table 9 indicate that school-related ($\beta=0.320$, $t=4.944$, $p<0.05$), personal factors ($\beta=0.259$, $t=3.537$, $p<0.05$), and home related ($\beta=0.254$, $t=4.020$, $p<0.05$) individually and statistically significantly predicted learning style preferences among the pupils. The data further indicated that school-related factors ($t=4.944$, $p<0.05$) had a more significant effect on the outcome variables, this was followed by home-related factors ($t=4.020$, $p<0.05$) and then personal factors ($t=3.537$, $p<0.05$). Consequently, the researcher concluded that factors including school-related, home-related, and

personal factors are critical determinants of learning style preferences among junior high school pupils in studying Social Studies in East Mamprusi Municipality.

Research Question 3 -What is the relationship between learning style preferences of pupils in public Junior High School in the East Mamprusi Municipality and their academic performance in Social Studies?

This research question investigated the relationship between learning style preferences and their academic performance in Social Studies. The learning styles included in the analysis were collaborative, avoidant, participant, dependent, competitive, and independent learning styles whilst academic performance of the pupils was based on Social Studies results. Pearson product moment correlation was used to analyse the data. Kothari (2011) recommended that coefficients of 0.5 but less than 1.0 implied a strong relationship, and coefficients equal to or greater than 0.3 but less than 0.5 indicated a moderate relationship. Again, coefficients less than 0.3 portrayed a weak relationship. These suggestions informed the interpretation of the obtained coefficients. The results are presented in Table 10.

Table 10: Pearson Correlation Matrix for Learning Styles and Academic Achievement in Social Studies

	Learning style		1	2	3	4	5	6	7	8
1.	Overall learning style	Pearson Correlation	1							
		Sig. (2-tailed)								
2.	Independent	Pearson Correlation	0.683*	1						
		Sig. (2-tailed)	0.000							
3.	Avoidant	Pearson Correlation	0.773*	0.651*	1					
		Sig. (2-tailed)	0.000	0.000						
4.	Collaborative	Pearson Correlation	0.711*	0.505*	0.594*	1				
		Sig. (2-tailed)	0.000	0.000	0.000					
5.	Dependent	Pearson Correlation	0.682*	0.503*	0.563*	0.727*	1			
		Sig. (2-tailed)	0.000	0.000	0.000	0.000				
6.	Competitive	Pearson Correlation	0.742*	0.457*	0.534*	0.559*	0.653*	1		
		Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000			
7.	Participant	Pearson Correlation	0.699*	0.358*	0.491*	0.263*	0.410*	0.449*	1	
		Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000		
8.	Academic performance	Pearson Correlation	0.785*	0.794*	0.716*	0.747*	0.766*	0.779*	0.776*	1
		Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

n=230 *Correlation is significant at p< 0.05 (2-tailed)

The data in Table 10 reveal that there was strong and statistically significant positive relationship between pupils' learning styles and their academic achievement in Social Studies (r=0.785, p<0.05, 2-tailed). The data also show that there were relationships between the individual learning styles of the pupils and their academic achievement in Social Studies. For instance, findings discovered that there was strong and statistically significant positive relationship between the pupils' independent learning style and their academic achievement in Social Studies (r=0.794, p<0.05, 2-tailed). Again, there was a strong and statistically significant positive relationship between avoidant learning style of the pupils and their academic achievement in Social Studies (r=0.716, p<0.05, 2-tailed). Additionally, there was strong and statistically significant positive relationship between collaborative learning style of the pupils and their academic achievement in Social Studies (r=0.747, p<0.05, 2-tailed).

It is also observed from the results that there was strong and statistically significant positive relationship between the pupils' dependent learning style and their academic

achievement in Social Studies (r=0.766, p<0.05, 2-tailed). Furthermore, the findings established that there was strong and statistically significant positive relationship between competitive learning style of the pupils and their academic achievement (r=0.779, p<0.05, 2-tailed). Finally, the relationship between the pupils' participant learning style and their academic achievement was weak, positive and statistically significant (r=0.263, p<0.05, 2-tailed). Based on these results, it was established that the learning styles of the junior high pupils are crucial in determining their academic achievement in Social Studies in the East Mamprusi Municipality.

4.4 Test of Hypothesis

$H_{o1:}$ There is no statistically significant difference in learning style preference between male and female pupils in public Junior High School in the East Mamprusi Municipality in relation to learning Social Studies.

$H_{1:}$ There is statistically significant difference in learning style preference between male and female pupils in public Junior High School in the East Mamprusi Municipality in relation to learning Social Studies.

This hypothesis sought to compare the learning style preferences of male and female pupils to determine whether there were significant differences. Independent samples-test was deployed to analyse the data, and the results are shown in Table 11.

Table 11: T-test Results for Gender and Learning Styles Preferences

				Levene's Test for Equality of Variances		t-test for Equality of Means		
	Gender	Mean	Std. Deviation	F	Sig.	t	df	Sig. (2-tailed)
Independent	Male	3.840	0.573	0.483	0.488	0.570	228	0.569
	Female	3.800	0.516					
Avoidant	Male	3.808	0.549	0.210	0.647	0.398	228	0.691
	Female	3.779	0.558					
Collaborative	Male	3.753	0.651	1.890	0.171	-0.338	228	0.736
	Female	3.780	0.579					
Dependent	Male	3.812	0.576	0.890	0.346	1.226	228	0.221
	Female	3.717	0.602					
Competitive	Male	3.719	0.521	0.347	0.556	-0.250	228	0.803
	Female	3.736	0.477					
Participant	Male	3.831	0.534	0.657	0.418	1.387	228	0.167
	Female	3.727	0.597					

Source: Field Data, 2022; *p<0.05

Firstly, the researcher examined the Levene's statistic to ascertain whether the assumption of homogeneity of variance was achieved, and the results showed that the Levene's statistic for each variable was not statistically significant (p>0.05). Hence, the study concluded that the homogeneity of variance assumption was achieved. The data in Table 11 reveal that there were differences in the learning style preferences of male and female pupils as shown in the mean scores in relation to each learning style and gender.

However, the findings reveal that the differences in independent learning style [t (228)=0.570, p>0.05, 2-tailed), avoidant learning style [t (228)= 0.398, p>0.05, 2-tailed), collaborative learning style [t (228)= -0.338, p>0.05, 2-tailed), dependent learning style [t(228)= 1.226, p>0.05, 2-tailed), competitive learning [t (228)=-0.250, p>0.05, 2-tailed), and participant learning style [t (228)=1.387, p>0.05, 2-tailed) based on gender were not statistically significant. These findings imply that gender did not account for differences in learning style preferences for Social Studies

between male and female pupils in Junior High Schools in the East Mamprusi District. Therefore, the null hypothesis that "there is no statistically significant difference between male and female pupils in relation to their Social Studies learning style preferences in public Junior High School in the East Mamprusi Municipality" was supported whilst the alternative hypothesis was not supported.

4.5 Discussion of Results

The findings on the first research question established that pupils preferred a mixture of learning styles in studying Social Studies, and that all the learning styles outlined in the study were highly practiced among the pupils. The study further revealed that the independent learning style was dominant among the pupils whilst the competitive learning style was least prevalent among the pupils. The finding that learners highly practiced the learning styles outlined in this study confirmed the finding of previous studies, which pointed out that learners practice a variety of learning styles (Kemi et al., 2020; Ogunsanya & Olayinka, 2020). The inference from this finding as well as the findings of previous studies is that learners probably apply different learning styles based on varied content and context. Therefore, the learners are able to opt for learning styles in situations that are mostly likely to yield desirable results. However, it is unclear whether learners are aware of their learning styles, and when it is most appropriate for them to alter their learning styles. This point is crucial because uncoordinated change in learning styles is likely to fail in producing the intended outcomes. Again, the study has provided evidence to support the claim that Grasha and Riechmann's (1982) learning style model receives applicability from diverse cultural contexts.

In relation to the second research question, the study found that school-related factors, home-related factors, and personal factors individually and collectively significantly predicted the learning style preferences of the pupils in learning Social Studies. This finding agreed with the findings of previous studies (Durukan et al., 2021; Alkooheji & Al-Hattami, 2018) which indicated that there are different factors that affect the choice and application of learning styles. The study greed with the findings of Fajar et al. (2019) which indicated that student factors, home factors, and school factors affected the learning styles of students in Lahore School of Nursing, Pakistan. Again, the findings of this study agreed with Bhattacharya's (2020) finding that home-related factors such as educational status of parents, occupational status of parents, level of academic help received from family members, tuition facility, time devoted for self-study at home affected the learning styles of the students.

Additionally, the finding that students' personal factors and school-related factors concurred with the finding of Ahmadi et al. (2020) that student factors and school-related factors affect the learning styles of students from Urmia, West Azerbaijan province. The findings of this study also resonate with Ortiz-de-villate and Rodr's (2021) finding that factors such as socio-economic and cultural conditions of families, parental expectations towards their children's education as well as parental level of involvement in schools significantly influence the learning styles of the students. The consensus in research findings is interesting because the school, home and the learners themselves are critical actors in promoting effective learning among learners. It is, therefore, not surprising that these factors either individually or collectively play a significant role in determining the learning styles of the pupils in public Junior High Schools in the East Mamprusi District.

For the third research question, the finding established that learning styles jointly and individually related positively with the academic achievement of the pupils in studying Social Studies. This finding imply that the learning styles of the pupils are important determinants of their academic performance. This finding concurred with the findings of previous studies (Kate et al., 2022; Kemi et al., 2020; Ghanney et al., 2019) which concluded that learning styles of learners are essential in promoting the academic achievement of learners. This implies that any attempt to address the issue of learning styles among the pupils need to take into cognisance school, home, and personal factors to ensure success.

Finally, the finding in relation to the test of hypothesis indicated that both male and female pupils in public Junior High Schools in the East Mamprusi District preferred similar learning styles. This finding was consistent with previous studies (Bhat & Govil, 2014; Elkalmi et al., 2015; Lai & Lee, 2019) that gender does not account for differences in the learning styles of learners. However, other earlier studies (Cevher & Yıldırım, 2020; Corbin, 2017; Almigbal, 2015) provided evidence to show that differences existed between male and female pupils in terms of their learning style preferences. These contradictory findings call for studies in specific contexts to arrive at findings that are applicable in that context.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary, conclusions and recommendations of the study. The chapter is organised in five sections. Section one provides a summary of the study by highlighting the major issues of the study. The second section presents the major findings of the study while the third section presents the conclusions derived from the findings. In the fourth section, the recommendations of the study are presented while suggestion for further studies is outlined in the fifth section.

5.1 Summary of the Study

The purpose of the study was to investigate the learning style preferences of public junior high school pupils in studying Social Studies in the East Mamprusi Municipality in the North-East Region of Ghana. The study also sought to determine the relationship between the learning style preferences of the pupils and their academic achievement in Social Studies. Grasha and Riechmann's (1982) learning style theory served as the theoretical framework of the study. Three research questions were set for the study, including:

1. What learning style preference is dominant among pupils in public Junior High School in the East Mamprusi Municipality?
2. What factors predict learning style preferences among pupils in studying Social Studies in public Junior High Schools in the East Mamprusi Municipality?
3. What is the relationship between learning style preferences of pupils in public Junior High School in the East Mamprusi Municipality and their academic achievement in Social Studies?

Following the positivist's philosophy, the study adopted cross-sectional descriptive survey design within quantitative research approach. The researcher selected 234 participants for the study. Proportionate stratified random sampling technique was used to select the participants for the study. However, 230 questionnaires were completely filled and returned, representing a response rate of 98%. Questionnaire was used to collect data in the study after checking its face validity, content validity, and internal consistency. Both descriptive statistics (frequencies, percentages, mean and standard deviation) as well as inferential statistics including independent samples t-test, Pearson correlation, and multiple linear regression were used to analyse the data. Ethical concerns such as confidentiality, anonymity, and informed consent were ensured in the study.

5.2 Major Findings of the Study

The major findings of the study included the following:

i. The study found that the pupils preferred a mixture of learning styles in studying Social Studies in the East Mamprusi Municipality, and that all the learning styles outlined in the study were highly practiced among the pupils. However, the study showed that the independent learning style was dominant among the pupils whilst the competitive learning style was least prevalent.

ii. The study further established that school-related factors, home-related factors, and personal factors collectively predicted the learning style preferences of the pupils in learning Social Studies. Again, these factors individually predicted the learning style preferences of the pupils in learning Social Studies.

iii. Another finding was that learning styles were positively related to the academic achievement of pupils in Social Studies, which implies that, the

practice of learning styles is likely to enhance the academic achievement of the pupils.

iv. The study revealed that male and female pupils did not differ in their learning style preferences, which suggests that both male and female learners preferred similar learning styles.

5.3 Implications for Teaching Social Studies

Findings of the study pose a number of implications for teaching Social Studies in basic schools:

i. Social Studies teachers need to recognize that pupils apply a variety of learning styles as they engage in the learning process. Consequently, there is the need to employ the Universal Design for Learning (UDL) which emphasizes that instruction be tailored to suit the diversity of learning styles and needs of the pupils to enhance academic performance.

ii. Based on the finding that school-related factors predict the choice of learning style preferences, Social Studies teachers are encouraged to create a positive social environment in the classroom for healthy interactions. This could motivate learners to choose and practice appropriate learning style preferences to enhance academic achievement.

5.4 Conclusions

From the findings, it is concluded that Grasha and Riechmann's (1982) learning style theory is relevant to the Ghanaian basic school context, especially in the study of Social Studies at the junior high school level. This came to the fore when the pupils practiced all the learning styles, including collaborative, avoidant, participant, dependent, competitive, and independence learning styles. Even though the study

established that the pupils practiced these learning styles in unequal intensities, all these learning styles were highly applied in studying Social Studies in the schools.

It is also concluded from the study that the factors that influence the choice of learning styles in studying Social Studies among the pupils of public Junior High Schools in East Mamprusi Municipality are broad and numerous. This conclusion was informed by the finding that school-related factors, home-related factors, and personal factors significantly predicted pupils' learning styles. This conclusion also confirmed that school, home as well as personal factors are crucial elements in determining the learning styles of the pupils towards the study of Social Studies in the schools.

The study further pointed out that the learning styles of the pupils individually and collectively related significantly to the academic achievement in Social Studies. Hence, the conclusion is that the learning styles of the pupils is a vital determinant of academic achievement in Social Studies. In addition, the study concluded that promoting the effective practice of the learning styles outlined in the study is one of the ways in improving the academic achievement of the pupils in Social Studies in public Junior High Schools in the East Mamprusi Municipality.

Finally, the study concluded that the gender of the pupils does not matter in determining differences in their learning styles towards the study of Social Studies in public Junior High Schools in the East Mamprusi Municipality. This conclusion is based on the finding that there was no significant difference between males and females in their learning styles.

5.5 Recommendations

Based on the major findings and the conclusions drawn in the study, the following recommendations are made:

i. In line with the finding that the pupils practiced a mixture of learning styles in studying Social Studies, and that the independent learning style was dominant among the pupils whilst the competitive learning style was least prevalent, it is recommended that the East Mamprusi Municipal Education Directorate should liaise with the management of the public basic schools to organise orientation programmes for the pupils on the effective practice of learning styles towards the study of Social Studies in the schools.

ii. Consistent with the finding that school-related factors, home-related factors, and personal factors collectively and individually significantly predicted the learning style preferences of the pupils in learning Social Studies, it is recommended that the management of the basic schools should adopt a comprehensive strategy to focus on all the factors that influence the choice of learning styles in studying Social Studies in public basic schools in the East Mamprusi Municipality.

iii. Based on the finding that learning styles jointly and individually related positively with the academic achievement of the pupils in studying Social Studies, it is recommended that the East Mamprusi Municipal Education Directorate and the management of the basic schools should encourage and support the pupils to intensify the practice of all the learning styles outlined in the study so as to improve their academic achievement in Social Studies.

iv. In line with the finding that both male and female pupils preferred similar learning styles, it is recommended that the management of the schools should equally focus

on all the pupils in any efforts to enhance the learning styles of the pupils in studying Social Studies irrespective of their gender.

5.6 Limitations

The sample size for the study was small (n=234), which represented only 15% of the population. This may have limited generalizability of the findings. Therefore, future studies could investigate this topic with a larger, more diverse sample to enhance generalisation of the findings

The study was limited to a specific geographic setting, ie. East Mamprusi Municipality, Ghana. Hence, the findings may not be generalized to public junior high school pupils in other Municipalities and Districts in Ghana.

Data on the academic performance of the respondents in Social Studies was based on only one academic year (2021/2022) which might limit comprehensiveness of the data. Future studies on this topic could consider collecting data on respondent's academic performance in Social Studies in more than one academic year for more comprehensive data and interpretation of results.

5.7 Suggestion for Further Studies

This study focused on the learning styles of public basic school pupils in the study of Social Studies. Therefore, it is recommended that further studies are conducted on learning styles of the pupils studying other subjects to ensure a comprehensive approach in promoting learning styles in the schools to boost academic achievement.

REFERENCES

Abante, R., E., M., Almendral, C., B., Manansala, E., J., & Mañibo, J. (2014). Learning styles and factors affecting the learning of general engineering students. *International Journal of Academic Research in Progressive Education and Development*, *3*(1), 2226-6348.

Abidin, M. J., Rezaee, A. A., Abdullah, H. N., & Singh, K. K. (2011). Learning styles and overall academic achievement in a specific educational system. *International Journal of Humanities and Social Science*, *1(*10*)*, 143-153.

Aboe, R. M. (2019). Correlation between students learning styles and their learning achievement. *Journal of Educational Administration*, *2*(2), 1–10.

Abucay, A. R. (2009). *Factors that may affect the learning process*. Retrieved July 25th of July, 2022, from http://www.infosforyouandme.com/2009/04/ factors-that-may-affect-learning.html

Adam, M., Odumah, K. L., & Ngaaso, K. C. (2018). *Skills, methods and techniques of teaching Social Studies*. Accra-Ghana: Whitespace Gh.

Adaugo, O., B. & Maxwell, E. (2017). Learning styles and academic performance of junior secondary school students in Rivers State: Implications for counselling. *International Journal of Innovative Development & Policy Studies*, *5*(3), 52-61.

Adeyemo, S. A., Babajide, V. F., & Amusa, J. O. (2013). The relationship among teachers' problem-solving abilities, students' learning styles and students' academic achievement in Physics. *Australian Journal of Basic and Applied Sciences*, *7*(4), 102-116.

Adom, D., Hussein, E. K., & Agyeman, J. A. (2018). Theoretical and conceptual framework: Mandatory ingredients of a quality research. *International Journal of Scientific Research*, *7*(1), 438-441.

Agina-Obu, N. T., Amakiri, M. E., & Emesiobi, P. (2011). Awareness and use of effective study techniques (EST) among secondary school students in Rivers State of Nigeria. *Africa Journal of Educational Technology*, *1*(1), 66-74.

Ahmadi, S., Hassani, M., & Ahmadi, F. (2020). Student and school level factors related to learning styles among high school students. *International Journal of Adolescence and Youth*, *25*(1), 741–752.

Akaranga, S. I. & Makau, B. K. (2016). Ethical considerations and their applications to research: A case of the University of Nairobi. *Journal of Educational Policy and Entrepreneurial Research*, *3*(12), 12-54.

Akinade, E. A. & Owolabi, T. (2009). *Research Methods: A Pragmatic Approach for Social Sciences, Behavioural Sciences and Education.* Lagos: Connel Publications.

Akintoye, A. (2015). *Developing theoretical and conceptual frameworks*. Retrieved from www.jedm.oauife.edu.ng>uploads on 23rd May, 2022.

Alade, O. M., & Ogbo, A. C. (2014). A comparative study of chemistry students' Learning style preferences in public and private schools in Lagos Metropolis. *IOSR Journal of Research and Method in Education*, *4*(1), 45-53.

Alavi, S., & Toozandehjani, H. (2017). The Relationship between learning styles and students' identity styles. *Open Journal of Psychiatry*, *7*(5), 90-102.

Ali, N., Jusoff, K., Ali, S., Mokhtar, N., & Salamt, A. S. A. (2009). The factors influencing students' performance at Universiti Teknologi MARA Kedah, Malaysia. *Canadian Research & Development Centre of Sciences and Cultures*, *3*(4), 33-45.

Ali, Z. S., & Yahya, N. Q. (2021). The correlation between EFL college students' learning styles and their academic performance. *Journal of Al-Frahedis Arts, 14*(49), 572–585.

Aljaberi, N. M. (2015). University students' learning styles and their ability to solve Mathematical Problems. *International Journal of Business and Social Science, 6* (1), 152-165.

Alkooheji, L., & Al-Hattami, A. (2018). Learning style preferences among college students. *International Education Studies, 11*(10), 50-63.

Almigbal, T. H. (2015). Relationship between the learning style preferences of medical students and academic achievement. *Journal of Saudi Medical*, *36*(3), 349-355.

Aluja-Fabregat, A., & Blanch, A. (2004). Socialized personality, scholastic aptitudes, study habits, and academic achievement: Exploring the link. *European Journal of Psychological Assessment, 20*(3), 157-172.

Amir, R., Jelas, Z. M., & Rahman, S. (2011). Learning style of university students: Implications for teaching and learning. *World Applied Sciences Journal*, *14*(2), 22-26.

Ammara, N., & Syeda, S. H. (2017). Effect of study habits on test anxiety and academic achievement of undergraduate students. *Journal of Research and Reflections in Education, 11*(1), 1-14.

Anamuah-Mensah, J., Mereku, D. K., & Ampiah, J. G. (2010). *TIMSS 2007 Ghana Report: Findings from IEA's trends in international mathematics and science study at the eighth grade*. Accra: Adwinsa Publications (Gh) Ltd.

Anderson, J. R. (1985). *The architecture of cognition*. Cambridge, MA: Harvard University Press.

Anfara, V. A., & Mertz, N. T. (2015). *Theoretical frameworks in qualitative research* (2nd ed.). Thousand Oaks, CA: Sage.

Angbing, H. D. (2016). *Determinants of senior high school students' performance in social Studies in the central region of Ghana.* Retrieved on 26th June, 2022 from https://www.researchgate.net/publication/324969522

Appiah, F. (2018). *Learning style preferences and study habits as determinants of academic achievement among public junior high school students in the Effutu municipality.* Unpublished MPhil Thesis, University of Education, Winneba.

Apuke, O. D. (2017). Quantitative Research Methods: A synopsis approach. *Arabian Journal of Business and Management*, *6(*10), 1-23.

Arbabisarjou A., Zare, S., Shahrakipour, M. & Ghoreishinia Gh. (2016) Is there any *International Journal of Humanities*, *3*(1), 62-124.

Asmare, B., Taddele, M., Berihun, S. & Wagnew, F. (2018). *Nutritional Status and Correlation with academic performance among Primary School Children,* Northwest Ethiopia

Atkinson, R., & Shiffrin, R. (1968). *Human memory. A proposed system and its control processes. The psychology of learning and motivation*. Princeton, NJ: Van Nostrand.

Aultman College (2008). Understanding your learning styles. Retrieved on 4th January 2015 from *http://www.aultmancollege.edu/files/understanding*-learningstyles.pdf

Augustine, B., Sawiri, J. D., & Kusi, P. (2021). Relationship and impact of learning styles on students' academic achievement. *International Journal of Multidisciplinary Studies and Innovative Research*, *5*(1), 392–398.

Awabil, G., Kolo, F. D., Bello, R. M., & Oliagba, D. A. (2013). Effect of study, and self-reward skills counselling on study behaviour of university student in Ghana. *The Counsellor*, *32* (1&2), 39-46.

Awoniyi, S. S., Aderanti, R. A. & Tayo, A. S. (2011). *Introduction to research methods*. Ibadan: Ababa Press Ltd.

Azevedo, M., & Akdere, T. (2010). *What students abroad are expected to know about mathematics?* Washington, DC. SAGE.

Babbie, E. (2017). *The Basics of social research.* (7th ed.). Belmont CA: Wadsworth.

Bada, S. O. (2015). Constructivism Learning Theory: A Paradigm for Teaching and Learning. *Journal of Research & Method in Education*, *5* (6), 66-70.

Baddeley, T. (1986). *Beginning to read thinking and learning bout print.* Cambridge, MA: the MIT Press.

Bagav, M. (2015). *Learning styles of gifted students*. Istanbul: Institute of Educational Sciences.

Baidoo-Anu, D. (2018). Perceived School Environmental, Home Conditions and Academic Performance of Junior High School Students in Asikuma-Odoben-Brakwa District, Ghana. *Journal of Education, Society and Behavioural Science*, *24*(2), 1-7.

Bandura, A. (1977). A social cognitive theory of personality. *Psychological review*, *106*(4), 676-689.

Baneshi, A. R., Karamdoust, N. A., & Hakimzadeh, R. (2013). Validity & reliability of the Persian version of Grasha-Richmann student learning styles scale. *Journal of Advances in Medical Education & Professionalism*, *1*(4), 119-124.

Bednar, A. K., Cunningham, D. J., Duffy, T. M., & Perry, J. D. (1992). *Constructivism and the technology of instruction*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Bentil, J., Esia-Donkoh, K., & Ghanney, R. A. (2018). Study habits of students: Keys to good academic performance in public Junior High Schools in the Ekumfi District of Ghana. *International Journal of Quantitative and Qualitative Research Methods*, *6* (3), 10-23.

Bennett, T. (2013). *Teacher proof*. Oxon, England: Routledge.

Best J. W., Kahn, J. V. (2009). *Research in Education* (10th Ed). New Delhi: PHI Learning Private Limited

Bhat, M. A., & Govil, P. (2014). Understanding learning styles of secondary school students in relation to certain variables. *Asian Journal of Multidisciplinary Studies*, *2*(11), 1-8.

Bhattacharya, D. (2020). Effectiveness of home related factors on learning styles of primary school Children in Contai Municipality. *International Journal of Research in Economics and Social Sciences*, *6*(1), 279–285.

Bhatti, R., & Bart, W. M. (2013). On the effect of learning style on scholastic achievement. *Current Issues in Education*, *16*(2), 1-6.

Blanton, E. L. (2004). The influence of students' cognitive style on a standardized reading test administered in three different formats. *Journal of Education and Practice*, *6* (10), 2222-1735.

Boström, L. & Lassen, L. M. (2006). Unraveling learning, learning styles, learning strategies and meta-cognition. *Education+ Training*, *48*(2/3), 178-189.

Blumberg, B., Cooper, D. R., & Schindler, P. S. (2005). *Business research methods*. Berkshire: McGrawHill Education.

Brainard, P., C. (2021). Factors Affecting Quality Teaching and Learning Outcomes in Teacher Education in Sierra Leone. *International Journal of Humanities Social Sciences and Education*, *8* (10), 94-112

Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2019). *Handbook of research methods in health social sciences*. Singapore: Springer Singapore.

Bricheno, P. & Younger, M. (2004). *Some unexpected results of a learning styles intervention.* Paper presented BERA conference, September 2004, Manchester, University of Cambridge, Faculty of Education, Hills Road Site: Cambridge.

Bright, O., & Matilda, B. D. (2018). Investigated study habits and academic performance of secondary school students in Rivers-West Senatorial District of Rivers State, Nigeria. *European Journal of Training and Development Studies*, *5* (3), 8-18.

Brink, H. W., Loomans, M. G. L. C., Mobach, M. P., & Kort, H. S. M. (2020). *Classrooms' indoor environmental conditions affecting the academic achievement of students and teachers in higher education*: A systematic literature review.

Brown, T., Zogni, M., Williams, B., & Sim, J. V. D. (2009). Are learning preferences of health science students predictive of their attitudes towards e-learning? *Australian Journal of Educational Technology*, *25*(4), 524-543.

Bruner, J. S. (1961). The act of discovery. *Harvard Educational Review, 31*(1), 21-32.

Bryman, A., & Bell, E. (2012). *Business Research Methods (*4th ed.). New York: Oxford.

Buckley, P., & Doyle, E. (2017). *Individualizing gamification: An investigation of the impact of Learning styles and personality traits on the efficacy of gamification using a prediction Market, Computers & Education.* https://doi.org/10.1016/j.compedu.2016.11.009

Burns, N., & Grove, S. K. (2011). *Understanding nursing research - building an evidence-based practice* (5th ed.). Maryland Heights, Missouri: Elsevier Saunders.

Campbell, G. L. (2007). *Education policy in the Kingdom of Saudi Arabia*. (In Arabic) Riyadh, Saudi Arabia: Al-Roshd Library.

Canals, L. (2017). *Instruments for gathering data*: *Qualitative approaches to research on plurilingual education*. Research-publishing.net.

Cano, J. (1999). The relationship between Learning Style, Academic major, and Academic Performance of College Students. *Journal of Agricultural Education*, *40*, 30-37.

Deri I., Wardana, A. (2020). The impact of socio-demographic factors and Learning Styles on academic achievements among high school students in Indonesia. *International Journal of Evaluation and Research in Education*, *9* (4), 1114-1120.

Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied business research: Qualitative and quantitative methods*. Australia: John Wiley & Sons Australia Ltd.

Cartney, P. (2000). Adult learning styles: Implications for Practice Teaching in Social Work. *Journal of Social Work Education 19 (6)*: 609–626

Cedefop, (2017). *Defining, writing and applying learning outcomes:* a European handbook. Luxembourg: Publications Office.http://dx.doi.org/10.2801/566770

Cevher, A.Y., Yıldırım, S. (2020). Investigation of academic studies on learning styles: Systematic review. HAYEF: *Journal of Education*, *17*(1), 20-50.

Chang-Tik, C. (2018). Impact of learning styles on the community of inquiry presences in multi-Disciplinary blended learning environments. *Interactive Learning Environments*, *26*(6), 827–838.

Chen, C., C. & Chen, C. Y. (2018). Exploring the effect of learning styles on learning achievement in a Museum. *Journal of Interactive Learning Environments*, *26*(5), 664–681.

Coffield, F., Moseley, D., Hall, E., & Ecclestone, K. (2004). Learning styles and pedagogy in post-16 learning: A systematic and critical review. London: Learning and skills research centre. Retrieved on 20th May, 2022 from http://sxills.nl/lerenlerennu/bronnen/Learning%20styles%20by%Coffield%20e.a..pdf

Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education* (7thed.). London: Routledge.

Collins, C. S., & Stockton, C. M. (2018). The central role of theory in qualitative. *International Journal of Qualitative Methods*, *17*(3), 1-10.

Cooper, D. R., & Schindler, P. S. (2011). *Business research methods* (11th ed.). New York: McGraw-Hill/Irwin.

Corbin, A. (2017). Assessing differences in learning styles: Age, gender and academic performance at the tertiary level in the Caribbean. *Caribbean Teaching Scholar, 7*(4), 67-91.

Cornu, A. (1999). Learning styles, gender, and age as influential issues amongst Theology student. Journal of Beliefs and values: *Studies in Religion and Education, 20(1),* 110-114. https://doi.org/10.1080/1361767990200111.

Craik, F. I. M., & Lockhart, R. S. (1972). Levels of Processing: A Framework for Memory Research. *Journal of Verbal Learning and Verbal Behaviour*, *11*(2), 671–84.

Creswell, J. (2015). *A concise introduction to mixed methods research*. London: Sage

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.).* Thousand Oaks, CA: Sage. Publications.

Creswell, J. W., & Plano-Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). London: Sage Publications Ltd.

Cuaresma, J. (2008). *Learning style preferences and academic performance of PHEM majors at the University of the Cordilleras*. Baguio City: University of the Cordilleras.

Dayon, C. A. (2018). Learning styles and academic performance of students in English 3. *The ASTR Research Journal Learning, 2(1),* 1–8.

Daulta, M. S. (2008). Impact of Home Environment on the Scholastic Achievement of Children. *Journal of Human Ecology, 23(1),* 75-77.

Denzin, N. K., & Lincoln, Y. S. (2011). Introduction: The discipline and practice of qualitative research. *The Sage handbook of qualitative research* (4th ed.). Thousand Oaks, CA: Sage.

Derya, A. (2022). *The Relationship Between Parenting Style, Gender and Academic Achievement with Optimism Among Turkish Adolescents*. Springer Science + Business Media, 70.

De Simone, R. (2008). The Sorting Hat: SATs and College Access. *The Vermont Connection*, *29*(2), 12-21.

Dewey, J. (1929). *The quest for certainty*. New York: Minton.

Doody, O., & Doody, C. M. (2015). Conducting a pilot study: Case study of a novice researcher. *British Journal of Nursing*, *24*(21), 1074-1078.

Druckman, D., & Porter, L.W. (1991). Developing careers. In D. Druckman & R.A. Bjork (Eds.), *In the mind's eye: Enhancing human performance* (pp. 80103). Washington, DC: National Academ

Dunn, R. (1990). Rita Dunn answers questions on learning styles. *Educational Leadership, 48*, 15–19.

Dunn, R, & Dunn, K. (2008). *Teaching elementary students through their individual learning styles.* Boston: Allyn and Bacon.

Dunn, R., & Dunn, K. (1978). *Teaching students through their individual learning styles: A practical approach*. Reston, VA: Pearson College Division.

Dunn, R., Honigsfeld, A., Doolan, L. S., Bostrom, L., Russo, K., Schiering, M. S., Suh, B. & Tenedero, H. (2009). Impact of learning style instructional strategies on students' achievement and attitudes: perceptions of educators in diverse institutions. *A Journal of Educational Strategies, Issues and Ideas, 82*(3), 135-140.

Durukan, N., Kızkapan, O., & Bektaş, O. (2021). A study of eight-grade students' science learning styles in terms of some variables. *Bartın University Journal of Faculty of Education*, *10* (1), 1-17.

Dzever, L. T. (2015). The impact of home environment factors onlearning styles of senior secondary school students in Garki Area District, Abuja – Nigeria. *Bulgarian Journal of Science and Education Policy (BJSEP), 9*(1), 66–92.

East Mamprusi Education Statistics Unit (2022). *Teacher statistics*. Gambaga: East Mamprusi Education Statistics Unit.

Ehiozuwa, A., O. & Anaso, J., N. (2013). Assessment of Study Habits of Senior Secondary School Science Students in Northwest Zone of Nigeria. *International Journal of Current Research, 5*(11), 3435-3444.

Ehrman, M., & Oxford, R. (1990). Adult language learning styles and strategies in an intensive training setting. *Modern Language Journal*, *74*(3), 311-327.

Ella, R., E., Odok, A., O. & Ella, G. E. (2015). Influence of Family Size and Family Type on AcademicPerformance of Students in Government in Calabar Municipality, Cross River State, Nigeria. *International Journal of Humanities Social Sciences and Education*, *2*(11), 108-114.

Elkalmi, R. M., Alshami, A. K. M., Ahmad, A., Khan, M. U., Rahman, N. S. A., & Alkoudmani, R. M. (2015). Assessment of learning style preferences of pharmacy students: Findings from public university of Malaysia. *Indian Journal of Pharmaceutical Education and Research*, *49*(4), 266-271.

Esewe, R. E., & Ogunleye M. E. (2021). Effect of gender on learning style preferences of nursing students in some institutions in Edo State, Nigeria. *African Journal of Health, Safety and Environment*, *2* (2), 01-11, 2021

Eshun, I. (2020). Social Studies curriculum through time and space: The Ghanaian conceptual perspectives of appraised scholarly works. *Education Journal*, *3*(3), 23-45.

Esia-Donkoh, K., Bentil J., & Nyatsikor, M. (2020). Variances in learning styles of full-time undergraduate students based on demographic variables. *International Journal of Education, Learning and Development*, *8* (2), 50-70.

Evans, A. S., & Julius, K. M. (2015). Study of the relationship between study habits and academic achievement of students: A case of Spicer Higher Secondary School, India. *International Journal of Educational Administration and Policy Studies*, *7*(7), 134-141.

Fajar, S., Hussain, M., Sarwar, H., Afzal, M., & Gilani, S. A. (2019). Factors affectinglearning styles of undergraduate nursing students. *Int. J. Soc. Sc. Manage*, *6*(1), 7–16.

Faria, D. (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies*, *3*(9), 1-23.

Fareo, D. O. (2015). Learning styles among college students. *International Journal for Cross-Disciplinary Subjects in Education*, *5*(4), 2631-2639.

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). London: Sage Publication.

Fleming, N. (2015). The VARK modalities. Retrieved May 12, 2019 from *http://www.vark-learn.com*

Fleming, N. D. (1995). I'm different; not dumb: Modes of presentation (VARK) in the tertiary classroom. *Higher Education and Research Development Society of Australasia (HERDSA)*, *18*(2), 308–313.

Fernald, G., & Keller, H. (1920). The effect of kinesthetic factors in the development of word recognition in the case of non-readers. *The Journal of Education Research*, *4*(5), 355-377.

Galán, J. G. (2017). *Educational Research and Teaching Strategies in the Digital Society: A Critical View*. London: AFOE Publications.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Garner-O'Neale, L. D., & Harrison, S. (2013). An investigation of the learning styles and study habits of chemistry undergraduates in Barbados and their effect as predictors of academic achievement in chemical group theory. *Journal of Educational and Social Research, 3*(2), 107-129.

Gay, L.R., & Airasian, P. (2003). *Educational research*. New Jersey: Upper Saddle River.

George, L. S., Lakra, A. J., & Kamath, A. (2017). Factors affecting learning styles among undergraduate nursing students: Cross-sectional survey. *Journal of Clinical and Diagnostic Research, 11*(11), 2015–2018.

George, D., & Mallery, P. (2012). *SPSS for windows step by step: A simple guide and reference* (4th ed.). New York: Allyn & Bacon.

Gergen, K., J. (2001). *Social construction in context.* London: Sage.

Gerrish, K. & Lacey, A. (2006). *Communication and disseminating research (*5th ed.). Oxford: Blackwell Publishing.

Ghanney, A., R., Appiah, F., & Esia-Donkoh, K. (2019). Learning style preferences as determinants of academic achievement among public junior high school pupils in the Effutu Municipality. *International Journal of Education, Learning and Development*, *7(12*), 54-67.

Gohavacyf, A. (2020). *Empirical literature review: Meaning in research writing.* Retrieved from https://gohavacyf.wordpress.com/author/gohavacyf/ on November 1, 2022.

Grasha, A. F., & Riechmann, S. (1982). *The Grasha-Riechmann student learning style scales:* research findings and applications. Reston, VA: NASSP.

Green, M., & Piel, J. A. (2009). *Theories of human development: A comparative approach* (2nd ed.). London: Prentice-Hall, Inc.

Gregorc, A. F. & Butler, K. A. (1984). Learning is a matter of style. *Vocational Education Journa*l, *59*(3), 27–29.

Gregorc, A. F. (1974). Learning/teaching styles: *Their nature and effects.* Reston, Virginta: National Association of Secondary School Principals.

Hall, J. K. (2000). *Field dependence-independence and computer- based instruction in geography.* Doctorial Dissertation, Virginia State University.

Ha, N. T. T. (2021). Effects of learning style on students achievement: experimental research. *Linguistics and Culture Review, 5(S3),* 329-339 .https://doi.org/10.37028/lingcure.v5nS3.1515.

Hanawi, S. A., Saat, N. Z. M., Hanafiah, H., Taufik, M. F. A. M., Nor, A. C. M., Hendra, A. K., … Azlan, T. N. A. I. (2022). Relationship between learning style and academic performance among the Generation Z students in Kuala Lumpur. *International Journal of Pharmaceutical Research & Allied Sciences, 11(3),* 40–48.

Hattie, J. (2011). *Visible learning for teachers: Maximising impact on learning*. London: Routledge.

The Hay Group. (n.d.). One style doesn't fit all: The different ways people learn and why it matters. Retrieved September 28, 2009, from http://www.haygroup.com/tl/Downloads/Why_People_ Learn.pdf

Heath, S. (2007) Widening the gap: pre-university gap years and the 'economy of experience'. *British Journal of Sociology of Education*, *28*(1), 89-103.

Hedges, M. (2008). Learning styles and introductory economics: A matter of translation. *Australasian Journal of Economics Education*, *5*(1), 1-16.

Heineman, P. (1995). *Learning instruments*. Retrieved on 20th August, 2022 from http://world.Std.com

Hidayah, N., Rofiqoh, R., Dewi, A. K., & Suriaman, A. (2022). Correlation between learning styles and academic achievement. *Jurnal Pendidikan, Sains Sosial, Dan Agama*, *8*(2), 548–557.

Honey, P., & Mumford, A. (1982). *The manual of learning styles.* New York: Peter Honey Associates.

Honigsfield, A., & Dunn, R. (2003). High School Male and Female Learning-Style Similarities and Differences in Diverse Nations. *The Journal of Educational Research*, *96*(4), 195-206.

Hu J., Peng, Y., Chen, X., Yu, H. (2021). Differentiating the learning styles of college students in Different disciplines in a college English blended learning setting. *PLoS ONE, 16*(5), 25-55.

Huang, R., & Busby, G. (2007). Activist, pragmatist, reflector or theorist? In search of postgraduate learning styles in tourism and hospitality education. *Journal of Hospitality, Leisure, Sport, and Tourism Education*, *6*(2), 92-99.

Idris, M., Hussain, S., & Ahmad, N. (2020). Relationship between parents' education and their children's academic achievement. *Journal of Arts & Social Sciences, 7*(2), 82–92.

Ihuoma, J. N. (2020). Peer consultation and students' academic achievement in senior secondary schools in Port Harcourt Metropolis. *International Journal of Innovative Psychology & Social Development, 8(3),* 43-54.

Indrahadi, D. & Wardana, A. (2020). The Impact of Sociodemographic Factors on Academic Achievements among High School Students in Indonesia. *International Journal of Evaluation and Research in Education*, *9* (4), 1114- 1120

International Learning Styles Network. (2008). *About learning styles.* Retrieved April 6, 2023, from http://www.learningstyles.net/ index.php?option=com_content&task=view&id=20&Itemid=70 &lang=en

Jaleel, S., & Thomas, A., M. (2019). *Learning styles: Theories and implications for teaching learning.* New York: Horizon Research Publishing.

Johnson, D. H., Howland, J., Moore, J., & Marra, R. M. (2012). *Learning to solve problems with technology: A constructivist perspective* (2nd ed.). Upper Saddle River, NJ: Pearson Education.

Jung, C.G. (1964). *Psychological types: Or, the psychology of individuation* (H. Godwin Baynes, Trans.). New York: Pantheon Books

Kabir, S. M. S. (2016). *Basic guidelines for research: an introductory approach for all disciplines.* Bangladesh: Book Zone Publication.

Kahtz, A. W., & Kling, G. (1999). Field dependent and field independent conceptualization of various instructional methods: *A qualitative analysis. Educational Psychology, 19*, 413-428

Kankam, B. (2013). Teachers' Perception on the importance of teaching citizenship education to primary school children in Cape Coast, Ghana. *Journal of Arts and Humanities (JAH*), *2*(2), 137-139.

Kate, A. D. C., Fiona, Y. Z. de L., Anne, G. E. N, Justine, Z. O., Lynie, V. O., Kyla, Bianca, T. S. J., & Christopher, H. P. (2022). Learning style preferences, study habits, and academic performance in Mathematics: Perspectives of freshmen college students amidst the COVID-19 Pandemic. *International Journal of Research in STEM Education*, *4* (2), 39-57.

Katiso, S., W., Kerbo, A., A., & Dake, S., K. (2021). Impact of Nutrition on Academic Performance of Adolescents: A Critical Review. *International Journal of Innovative Research, 13* (5), 2319-8357

Kaushik, V., & Walsh, C. A. (2019). *Pragmatism as a research paradigm and its implications for social work research.* Canada: Faculty of Social Work, University of Calgary, Calgary.

Kayode, G. M., & Ayodele, J. B. (2015). Impacts of teachers' time management on secondary school students' academic performance in Ekiti State, Nigeria, *International Journal of Secondary Education, 3*(1), 1-7.

Kazan, O. (2018). *The myth of learning styles. The Atlantic.* Retrieved on 20th August, 2022 from https://www.theatlantic.com/science/archive/2018/04/the-myth-of-learningstyles/557687/

Kazazoglu, S. (2013). The effect of attitudes towards Turkish and English courses on academic achievement. *Education and Science*, *38*(170), 294-307.

Kazu, I. (2009). The effect of learning styles on education and the teaching process. *Journal of Social Sciences, 5* (2), 85-94.

Keefe, J. W. (1979). *Learning style: An overview. NASSP's student learning styles: Diagnosing and proscribing programmes*. Reston, VA: National Association of Secondary School Principals.

Keleşoğlu, Ş. (2011). *A study on the predictive power of the variables of learning styles, academic self- efficacy, the score s of level determination exams and student characteristics in predicting the academic success of 1st grade of high school.* Ankara: Ankara University.

Kelleher, W. E. (1997). The group embedded figures test: Field dependence/ independence and undergraduate commerce major. *College Student Journal, 31*, 45-51

Kemi, O. A., Nicky, P., & Emmanuel, O. A. (2020). Learning styles as correlates of grade 6 learner's Mathematics performance in Buffalo City Municipality in South Africa. *Journal of Social Sciences and Humanities*, *17*(5), 119-131.

Khairy, H. A, (2018). Investigating factors affecting learning styles preferences of hospitality management programme (HMP) Students. *Journal of the Faculty of Tourism and Hotels*, *15* (1), 2314-7024.

Khan, F. N., Begum, M., & Imad, M. (2019). Relationship between students' home environment and their learning styles at secondary school level. *Pakistan Journal of Distance & Online Learning*, *5*(2), 223–234.

Khurshid, D. F., Tanveer, A., & Qasmi, F. N. (2012). Relationship between study habits and academic achievement among Hostel Living and Day Scholars' University Students. *British Journal of Humanities and Social Sciences*, *3*(2), 34-42.

Kim, R., S., Seitz, A., R. & Shams, L. (2008.) Benefits of Stimulus Congruency for Multisensory Facilitation of Visual Learning. *PLoS ONE 3(1)*: e1532. *doi:10.1371/journal.pone.0001532*

King, N., Dewey, C., & Borish, D. (2015). Determinants of Primary School Non-Enrollment and Absenteeism: Results from a Retrospective, Convergent Mixed Methods, Cohort Study in Rural Western Kenya. *PLoS ONE, 10* (9): e0138362. doi:10.1371/journal.pone.0138362.

Klein, M., E., Sosu, M. and Dare, S. (2022). *''School Absenteeism and Academic Achievement: Does the Reason for Absence Matter?''* AERA Open 8. doi:10.1177/23328584211071115.

Knowles, M. S., Holton III, E. F. & Swanson, R. A. (2005). *The adult learner* (6 ed.). London: Elsevier.

Koçak, T. (2007). *An analysis of the relationship between learning styles and the academic achievement of the 6th 7th 8th grade primary school students*. Gaziantep: Gaziantep University.

Kocinski, R. R. (1984). *The effect of knowledge of one's learning style by freshman nursing students on student achievement.* New Brunswick, NJ: Rutgers University, the State University of New Jersey.

Kohan, N., Janatolmakan, M., Rezaei, M., & Khatony, A. (2021). Relationship between learning styles and academic performance among virtual nursing students: A cross-sectional study. *Education Research International*, *2021*(5), 1–6.

Kolb, D. A. (1984). Learning styles of gifted and nongifted secondary students in Hong Kong. *Gifted Child Quarterly*, *45*(1), 35-44.

Kolb, D. (1985). Learning style inventory. Boton: McBer. Kozhevnikov, M. (2007). Cognitive styles in the context of modern psycholog : Toward Aprila20d f23meworkf cogniive style. *Psychological Bulletin*, *133*, 464–481.

Kölln, A. K., Ongena, Y. P., & Aarts, K. (2019). The effects of sampling frame designs on non-response and coverage error: Evidence from the Netherlands. *Journal of Survey Statistics and Methodology*, *7*(3), 422-439.

Kothari, C. R. (2005). *Research Methodology. Methods and Techniques*.: New Age, New Delhi.

Kothari, J. (2011). *Education research: An introduction* (6th ed.). New York: Longman.

Kuo, Y. C., Chu, H., C. & Huang, C. H. (2015). A learning style-based grouping collaborative learning approach to improve EFL students' performance in English courses. *Journal of Educational Technology & Society*, *18*(2), 284–298.

Laguador, J. M. (2013b). Developing students' attitude leading towards a life-changing career, *Educational Research International*, *1*(3), 28-33.

Lai, Y. L., & Lee, J. (2019). Learning style variation of digital natives. *PEOPLE: International Journal of Social Sciences, 4*(3), 1265-1276.

Latif K., Y., Bhatti S. & Ali, W. (2019). Does absenteeism affect academic performance among undergraduate medical students? Evidence from "Rashid Latif Medical College (RLMC). *Advan Med Educ Practice, 10*, 999–1008.

Leedy, P. D. & Ormrod, J. E. (2010). *Practical research: Planning and design* (9th ed.). Upper Saddle River, NJ: Prentice Hall.

Li, Y., Medwell, J., Wray, D., Wang, L., & Liu, W. (2016). Learning styles: A review of validity and usefulness. *Journal of Education and Training Studies, 4*(10), 90-94.

Liu, Y., & Ginther, D. (1999). Cognitive styles and distance education. *Journal of Distance Learning Administration*, *2*(3) 78-92

Lelissa, T. B. (2018). *Research methodology*. University of South Africa, Published PhD Thesis.

Leopold, L. (2012). Prewriting tasks for auditory, visual, and kinaesthetic students. *TESL Canada Journal, 29*(2), 96-102.

Lund, T. (2012). Combining qualitative and quantitative approaches: Some arguments for mixed methods research. *Scandinavian Journal of Educational Research, 56*(2), 155-165.

Lucas-Stannard, P. (2003). Cognitive styles: A review of the major theories and their application to information seeking in virtual environment. *Journal of Education and Practice, 6*(10), 2222-1735.

Ma, V. J., & Ma, X. (2014). A comparative analysis of the relationship between learning styles and mathematics performance. *International Journal of STEM Education. 1*(3), 1-13.

Macnee, L. C., & McCabe, S. (2008). *Understanding nursing research: Using research evidence-based practice*. Philadelphia, PA: Lippincott Williams & Wilkins.

Maghsudi, M. (2007).The interaction between field dependent/field independent learning styles and learners' linguality in third Language acquisition. *South Asian Language Review, 17* (1),100- 112.

Magulod, J. G. C. (2019). Learning styles, study habits and academic performance of filipino university students in applied science courses: Implications for instruction. *Journal of Technology and Science Education, 9*(2), 184-198.

Malik, H., Shaheen, H., & Aurangzeb, W. (2019). Learning styles preferences and diagnostics at higher education level: A comparative perspective among three faculties. *Review of Economics and Development Studies*, *4*(2), 313-320.

Margaret, M., Suk-Hee, K., & Courtney, M. (2011). A study of the Learning Styles of Undergraduate Social Work students. *Journal of evidence-based Social Work*, *5*(8), 294-303.

McClelland, J. L., & Rumelhart, D. E. (1986). *Parallel distributed processing: Explorations in the microstructure of cognition*. Cambridge, MA: MIT Press.

Mccormick, M. J., & Martinko, M. J. (2004). Identifying leader social cognitions: Integrating the causal reasoning perspective into social cognitive theory. *Journal of Leadership & Organizational Studies*, *10*(4), 2-11.

McNamara, D.S., Kintsch, E., Butler-Songer, N., & Kintsch, W. (1996). Are good texts always better? Interactions of text coherence, background knowledge, and levels of understanding in learning from text. *Cognition and Instruction*, *14*, 1–43.

Mensah, R. O., Agyemang, F., Acquah, A., Babah, P. A., & Dontoh, J. (2020). Discourses on conceptual and theoretical frameworks in research: Meaning and implications for researchers. *Journal of African Interdisciplinary Studies*, *4*(5), 53-64.

Mete, H. (2013). *Investigating secondary school students' learning styles in terms of different variables*. Burdur: Mehmet Akif Ersoy University.

Miller, G., A. (1956). "The magical number seven, plus or minus two: Some limits on our capacity for processing information". *Psychological Review*, *63*(2),81 97.

Ministry of Education, (2019). *National Pre-Tertiary Education Curriculum Framework*. Accra: NaCCA Publications.

Mohammadi, S., Mobarhan, M. G., Mohammadi, M., & Ferns, G. A. A. (2015). Age and gender as determinants of learning style among medical students. *British Journal of Medicine and Medical Research*, *7*(4), 292-298.

Montgomery, S. M., & Groat, L. N. (1998). *Students' learning styles and their implications for teaching*. The Centre for Research on Learning and Teaching, University of Michigan. *Journal of Social Sciences*, *4*(3), 1265-1276.

Moser, S., & Zumbach J. (2018). Exploring the development and impact of learning styles: An Empirical investigation based on explicit and implicit measures. *Computers & Education*, 146–157.

Mugenda, M., O. & Mugenda, G. A (2003) *Research methods: Quantitative and qualitative approaches.* Laba graphics services.

Mugenda, O. M., & Mugenda, A. G. (2009). *Research methods: Qualitative and quantitative approaches,* Nairobi: Act press.

Mulalic, A., Shah, P. M., & Ahmad, F. (2009). Perceptual learning styles of ELS students. *European Journal of Social Sciences*, *7*(3), 101-113.

Munir, U., Annum, G., Reyes, L. D., & Hassan, S. (2017). *Research Instruments for Data Collection.* Retrieved from https://www.academia.edu/34823600/research_instruments_for_data_collection on 14/08/2021

Muro, M., & Jeffrey, P. (2008). A critical review of the theory and application of social learning in participatory natural resource management processes. *Journal of environmental and management*, *51*(3), 325-344.

Mushoriwa, T. (2009). The study strategy – performance function among students in three teachers colleges in Masvingo and Harae, Zimbabwe. *Journal of Education and Social Sciences*, *14*(1), 153-166.

Mushtaq, I., & Khan S. N. (2015). Factors Affecting Students' Academic Performance. *Global Journal of Management and Business Research*, *12*(9), 64-78.

National Council for Social Studies (2016). *The Aims and Purpose of Social Studies.* Retrieved from https://www.socialstudies.org/standards/national-curriculum standards-social-Studies-introduction on 05/08 2021.

Ndum, V. E. & Udoye, (2020). Role of Government in the Internationalization of Tertiary Education in Nigeria. *Iconic Research and Engineering Journals, 9*(4), 94-99.

Ngala, F. W. (2018). Gender Influence on Students' Learning Preferences: An Assessment of the Learning Styles of Postgraduate Students at African International University. *Advances in Social Sciences Research Journal*, *5*(11), 99-109.

Negari, G. M., & Barghi, E. (2014). An exploration of Iranian EFL learners' learning style preferences. *Modern Journal of Language Teaching Methods*, *4*(2), 17-24.

Nel, N., & Nel, M. (2013). Learning. In N. Nel, M. Nel & A. Hugo (Eds.). *Learner support in a diverse classroom: A guide for foundation, intermediate and senior phase teachers of Language and Mathematics.* Pretoria: Van Schaik.

Newton, P. M., & Miah, M. (2017). *Evidence-based higher education-is the learning styles "myth" important? Frontiers in Psychology.* Retrieved on 29th May, 2022 from https://www.frontiersin.org/articles/10.3389/fpsyg.2017.00444/full

Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evidence-Based Nursing*, *18*(2), 34–35.

Noble, T. (2004). Integrating the revised Bloom's taxonomy with multiple intelligences: A planning tool for curriculum differentiation. *Teachers College Record, 106(1),* 193-211. Retrieved on October 5, 2016 from http://www.bestcluster.cc.com.au/2007web/HelenMc Grath/article_integrate_bloom.pdf.

Numan, A., & Hasan, S. S. (2017). Effect of study habits on test anxiety and academic achievement of undergraduate students. *Journal of Research and Reflections in Education*, *11*(1), 1-14.

Nurhayati, D., & Penna, H. T. D. (2023). The Correlation between Students Learning Styles and Their English Academic Achievement. *Sumikolah: Jurnal Ilmu Pendidikan*, *1*(1), 39–48.

Nursen, İ., Tomruk, M., Yeşilyaprak, S., S., Karadibak, D. & Savcı, S. (2021). The relationship between learning styles and academic performance in TURKISH physiotherapy students. *BMC Medical Education*, *10*(11), 18-291.

Nuthana, P., & Yenagi, G. V. (2009). Influence of study habits, self-concept on academic achievement of boys and girls. *Karnataka J. Agric. Sci*, *22* (5), 1135-1138.

Nuthanap, G. (2007). *Gender Analysis of Academic Achievement among High School Students*. Thesis submitted to the Department of Human Development, College of Rural Home Science, Dharwad University of Agricultural Sciences.

Ogunsanya, A. O., & Olayinka, B. (2020). Study Habit and Test Anxiety as Determinants of Secondary School Students Performance in Social Studies. *KIU Journal of Humanities*, *5*(1), 1-13.

Ormrod, J.E. (2008). *Educational psychology: Developing learners* (6th ed.). Upper Saddle River, NJ: Pearson.

Orodho, J. A. (2009). *Elements of Education and Social Science Research Methods*. Maseno: Kenezja Publisher.

Ortiz-de-villate, C., & Rodr, J. (2021). Contextual, personal and family factors in explaining learning styles: A multilevel study. *Sustainability*, *13*(1), 1–13.

Oso, W.Y. & Onen, D. (2011). *General guide to writing research proposal and report: A handbook of beginning researchers.* Nairobi: J. K. F.

Ossai, M. C. (2012). Age and gender differences in study habits: A framework for proactive counselling against low academic achievement. *Journal of Educational and Social Research*, *2*(3), 67-73.

Otoo, D. (2007*). Comparative study of academic performance of public and private J.S.S graduates: A case study of selected schools in the Kumasi Metropolis*. Unpublished Thesis.

Owusu -Acheaw, M., & Larson., A. G. (2015). Use of social media and its impacts on academic performance of tertiary students. A case study of Koforidua Polytechnic, *Ghana. Journal of Education and Practice*, *6*. http:// www.iiste.org/journals/ndex .php/JEP/article/view/20048.

Ozcan, A. (2021). Factors affecting students' academic achievement according to the teachers' opinion. *Education Reform Journal*, *6*(1), 1-18.

Öztekin, Z. (2012). *The comparison of high school students learning styles according to high school type, academic achievement and gender*. Istanbul: Yıldız Technical University.

Pallant, J. (2016). *SPSS Survival Manual: A step by step guide to data analysis using SPSS program.* McGraw-Hill, Inc.

Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2008). Learning styles concepts and evidence. *Journal of Psychological science in the public interest*, *9*(3), 105-119.

Parahoo, K. (2006). *Nursing research: principles, process and issues*. Palgrave: Macmillan.

Park, Y., Konge, L., & Artino, A. R. (2020). The Positivism Paradigm of Research.. Academic medicine. *Journal of the Association of American Medical Colleges, 95 (5)*. http://dx.doi.org/10.1097/

Patton, M. (2002). *Proposing empirical research: A guide to the fundamentals* (2nd ed.). Los Angeles, CA: Pyrczak Publishing.

Peña-escalona, F. L., Victorino-ramírez, L., Salinas-martínez, J. A., & González-garduño, R. (2020). The relationship of study habits and learning styles with academic performance among propaedeutic students from Chapingo. *ASyD, 20*(1), 92–108.

Phillips, D. C. (1995). The good, the bad, and the ugly: The many faces of constructivism. *Educational Researcher*, *24*(7), 5-12.

Piaget, J. (1980). *The psychogenesis of knowledge and its epistemological significance*. Cambridge, MA: Harvard University Press.

Pillai, S. K. (2012). An empirical Study on study habits of X standard students in Nagarkovil District, *Research Expo International Multidisciplinary Research Journal*, 2(3), 34-56.

Polit, D. F. & Beck, C. T. (2018). *Nursing research: Appraising evidence for nursing practice* (9th ed.). Philadelphia: Wolters Klower/Lippincott Williams & Wilkins.

Ponterotto, J. G. (2005). Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. *Journal of Counseling Psychology, 52 (2),* 126-136

Popoola, S. O. (2011). *Research methodologies in library and information science.* A paper presented at a training workshop on building research capacity for Library and information science professionals. Organized by the Nigerian Library Association, Ogun State Chapter, held at Covenant University, Ota, Nigeria on 18th-22nd September, 2011.

Pranas, Ž. Jolita, V. & Regina A. (2018). *Philosophy and Paradigm of Scientific Research, Management Culture and Corporate Social Responsibility*. Available on 20th June, 2022 from: https://www.intechopen.com/chapters/58890

Proctor, S., Allan, T., & Lacey, A. (2010). *Sampling* (6th ed.). Oxford: Wiley-Blackwell.

Rawashdeh, I., Nawafleh, W., & Alomari, A. (2012). Learning styles of ninth grade students in Irbid and its effects on their achievement in Chemistry. J*ordan Journal of Educational Sciences, 16*(4), 163-176.

Raychaudhury, A., Debnath, M., Sen S., & Majumder, B. G. (2016). Factors affecting students' academic performance: A case study in Agartala Municipal Council Area. *Bangladesh e-journal of Sociology, 7*(2), 1-24.

Regie, M. (2022). Practical Work Approach: A Tool to Improve The Creativity Skills of The Students in Recycling. *Globus Journal of Progressive Education, 12*(1), 100-103.

Rezaie L. H., Seyed, S. F., Reza, S., Chehrzad, M. M., & Kazem N. E. (2017). The relationship between the study habits and the academic performance of Medical Sciences students. *Journal of Holistic Nursing and Midwifery, 27*(2), 65–73.

Rickardson, J., & Turner, T. (2000). Field dependence revisited: Intelligence *Educational Psychology*, 20, 255-270

Roashani, N., & Albina, A. P. (2021). A correlational study on learning style and academic achievement of Generation Z learners. *XIlkogretim Online - Elementary Education Online, 20*(1), 2992–2998.

Robson, C. (2002). *Real world research: A resource for social scientists and practitioner-researchers* (2nd ed.). USA: Blackwell Publishing.

Rogowsky, B., A. (2015). Matching Learning Style to Instructional Method: Effects on Comprehension. *Journal of Educational Psychology, 107* (1), 64 –78.

Rosenfeld, M., & Rosenfeld, S. (2008). Developing effective teacher beliefs about learns: The role of sensitizing teachers to individual learning differences. *Educational Psychology, 28,* 245–272.

Ross, W. (2020). *History and social studies curriculum.* London: Oxford University Press.

Santrock. (2005). *Adolesence*. Jakarta: Erlangga.

Satishprakash, S. (2020). *Research methodology and statistics.* London: Rishit Publications.

Saunders, M. Lewis, P., & Thornhill, A. (2012). *Research methods for business students* (5th ed.). Harlow: Pearson Education.

Schmid, S., Yeung, A., & Read, J. (2009). *Students' learning styles and academic performance*. Netherlands: Springer.

Schmeck R. R., & Geisler-Brenstein E. (1991). Self-concept and learning: The revised inventory of learning processes. *Educational Psychology, 11*(3), 343–362.

Schmeck, R. R., Ribich, F., & Ramanaiah, N. (1977). Development of a self-report inventory for assessing individual differences in learning processes. *Applied Psychological Measurement, 1*(3), 413–431.

Schneider, R., & Bjorklund, G. (1998). Content reading strategies: what teachers know, use, and want to learn. *Literacy Research and Instruction, 38*(3), 221-231.

Sciarra, D., T. (2012). Ivestigation of Relationship between Aggression and Sociometric Popularity in Adolescents, *Educational Sciences: Theory & Practice 13*(2), 775-780.

Seiver, D., A., Haddad, K. & Do, A. (2014). Student Learning Styles And Performance In An Introductory Finance Class. *American Journal Of Business Education* , 7 (3), 23-46.

Senthil, V. (2018). Does the more internet usage provide good academic grades?*Educational Information Technology, 23*, 2901–2910. Retrieved: March 21, 2022. DOI:10.1007/s10639-018-9749-8.

Slater, J. A., Lujan, H. L., & Stephene, E. D. (2007). Does Gender Influence Learning Style Preferences of First Year Medical Students? *Advances in Physiology Education, 31*(4), 336-342

Smith, P. J., & Dalton, J. (2005). *Getting to grips with learning styles* Available from http://johnwatsonsite.com/ShareEng/SIC/Getting_to_grips_with_learnng_styles.pdf.

Sharp, J. G., Bowker, B., & Byrne, J. (2008). VAK or VAK-uous? Towards the trivialisation of learning and the death of scholarship. *Research Papers in Education*, *23*(3), 293-314.

Shiu, E., Hair, J., Bush, R., & Ortinau, D. (2009). *Marketing research*. Berkshire: McGraw- Hill Education.

Sholes, J. (2012). *The relationships among learning styles, participation types, and learning performance for programming language.* John Wiley & Sons, Inc., New York.

Sintia, I., Rusnayati, H., & Samsudin, A. (2017). Relationship between the learning styles preferences and academic achievement relationship between the learning styles preferences and academic achievement. *IOP Conference Series: Materials Science and Engineering*, *226*(17), 6-25.

Slate, J., R., & Charlesworth, J., R. (1988). Information Processing Theory: Classroom Applications. Retrieved from https://files.eric.ed.gov/fulltext/ED293792.pdf on 25th September 2022.

Stenmayr, R., & Wirthwein, L. (2015). *Academic Achievement-Education Oxford Bibliographies.* Retrieved from file:///C:/Users/HP/Downloads/Steinmayretal.2014II%20 (1).pdf

Stokes, A., & Wilson, E. (2009). Catering for Individual Student Learning in Economics. *American Journal of Business Education*, *2*(9), 41-47.

Stricker, L.J., & Ross, J. (1964). An assessment of some structural properties of the Jungian personality typology. *Journal of Abnormal and Social Psychology*, *68*, 62–71

Sud. G., & Sujatha, D. (2006). Test anxiety and study habits of high school children. *Psychology Study*, *51*(4), 304-313.

Summerville, J. (1999). Role of awareness of cognitive style in hypermedia. *International Journal of Educational Technology*. Retrieved August 20, fromhttp://www.outreachuiucedu/ijjet/vlnl summerville/.

Tabachnick, B., & Fidell, L. (2006). *Using multivariate statistics*. Needham Heights: Allyn & Bacon.

Taherdoost, H. (2016). Sampling methods in research methodology: How to choose a sampling technique for research. *International Journal of Academic Research in Management*, *5*(2), 2296-1747.

Toğrul, H. (2014). *An investigation on the relationship between primary education students' learning styles and academic achievement at some lessons*. Adana: Çukurova University.

Tulving, M. (1985). *Training that takes: Adult learning and adult teaching are the key*. New York, NY: The Haworth Press.

Twenge, J. (2006). *Generation me: Why today's young Americans are more confident, assertive, entitled—and more miserable—than ever before.* New York: Free Press.

Ugalde, B. (2019). Factors affecting the academic performance of the software Engineering students in Salalah College of Technology. *International Journal of Development Research, 9*(3), 26418-26424.

Urval, R. P., Kamath, A., Ullal, S., Shenoy, A.K., Shenoy, N., & Udupa, L. A. (2014). Assessment of learning styles of undergraduate medical students using the VARK questionnaire and the influence of sex and academic performance. *Advances in physiology education*, *38*(3), 216-220.

Velasco, A. (2007). *Academic Achievement and Latinos*. Westport, CT: Praeger Publishers.

Vermunt, J. D. (1992). Learning styles and guidance of learning processes in higher education. Amsterdam: LisseSwets and Zeitlinger.

Von Glasersfeld, E. (1995). *A constructivist approach to teaching*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Vygotsky, L. S. (1962). *Thought and language*. Cambridge, MA: MIT Press.

Waber, D. (1997). Biological substrates of field dependence: Implications of the sex difference. *Psychological Bulletin, 84*, 76-87.

Wallace, (2004). Disparity in learning styles and teaching styles in the ESL classroom: does this mean war? *AMTESOL Journal, 1*, 45-68.

Wehrwein, E., Lujan, H., & DiCarlo, S. (2007). Gender differences in learning style preferences among undergraduate physiology student. *Journal of Advances in Physiology Education, 31*, 153-175. https://doi.org/10.1152/advan.00060.2006.

Wheeler, S. (2014)). *Bridging behaviourism & cognitivism: Bandura's 4 Principles of Social Learning*. London: Sage.

Witkin, H. A. (1976). *The perception of upright.* In S. Messick (Ed.) *Individuality in learning: Implications of cognitive styles and creativity for human development.* San Francisco: Jossey Bass Publishers.

Witkin, H. A., & Goodenough, D. R. (1981). *Cognitive styles: Essence and origin*. New York: International University Press.

Witkin, H. A., Goodenough, D. R., & Karp, S. A. (1977). Stability of cognitive style from childhood to young adulthood. *Journal of Personality and Social Psychology*, *7*, 291-300.

World Bank, (2007). Schooling for Learning in Africa. Washington, DC 20433 *www.worldbank.org*

Wright, S., & Stokes, A. (2012). The application of VARK learning styles in introductory level economics units. *Issues in Educational Research*, *25*(1), 62-73.

Yale University Graduate School of Arts and Sciences, (2009). Graduate teaching center: Teaching students with different learning styles and levels of preparation. Retrieved March 28, 2023, from http://www.yale.edu/graduateschool/teaching/learning styles.html

Yılmaz, M. (2014). *The relationship between teacher candidates' learning styles and their conceptions about teaching and learning and their science teaching efficacy beliefs*. Bolu: Abant İzzet Baysal University.

Zelazek, J. R. (1986). *Learning Styles, Gender, and Life Cycle Stage. Relationships with Respect to Graduate Students* (Eric Document Reproduction Service No. ED 276371).

APPENDICES
APPENDIX A
QUESTIONNAIRE FOR STUDENTS
UNIVERSITY OF EDUCATION, WINNEBA

DEPARTMENT OF BASIC EDUCATION

This questionnaire has been designed to collect information on your learning style preferences in different situations and academic performance in Social Studies. The questionnaire is strictly for academic exercise. You are please requested to provide frank and accurate information to assist the researcher obtain the relevant data for this exercise. Confidentiality of your responses is strictly assured. You are please requested to Tick (√) on the rating scale a number that best describes your learning style preference. Thank you.

SECTION A: Demographic Information

1. Form: JHS 1 [ ] JHS 2 [ ] JHS 3 [ ]

2. Gender: Male [ ] Female [ ]

3. Age (in years): 12-15 [ ] 16-19 [ ] 20 and above [ ]

4. Parental Level of Education:

Basic [ ] Secondary [ ] Tertiary [ ] No Education [ ]

SECTION B: Perceptions about learning style preferences

Instructions:

This section presents a list of statements concerning your learning style preferences in different learning situations.

Please read each statement carefully and Tick (√) a number that best describes your preference for the learning style dimension presented.

Dimension (i): ***Independent***						
		Please **TICK (√)** a number to rate **EVERY** statement				
S/N	**Statement**	**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
01	I am confident of my ability to learn important course material	5	4	3	2	1
02	My ideas about content are often as good as those in the textbooks	5	4	3	2	1
03	I study what is important to me and not always what the teacher says is important	5	4	3	2	1
04	Most of what I know, I learned on my own	5	4	3	2	1
05	I can determine for myself the important content issues in a course	5	4	3	2	1
06	I like to develop my own ideas about course content	5	4	3	2	1
07	I have my own ideas about how classes should be run	5	4	3	2	1
Dimension (ii): ***Avoidant***	***Statement***	**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
08	I often become less attentive during classes	5	4	3	2	1

09	Classroom activities are generally boring to me	5	4	3	2	1
10	I never get excited about content covered in a course	5	4	3	2	1
11	I generally feel like I have to attend class rather than like I want to attend classes	5	4	3	2	1
12	Paying attention during class sessions is difficult for me to do	5	4	3	2	1
13	I have given up trying to learn anything from going to class	5	4	3	2	1
14	In most school subjects, I study barely hard enough to do well	5	4	3	2	1
Dimension (iii): ***Collaborative***	***Statement***	**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
15	Working with other students on class projects is something I enjoy	5	4	3	2	1
16	I enjoy discussing my ideas about course content with other students	5	4	3	2	1
17	I enjoy hearing what other students think about issues raised in class	5	4	3	2	1
18	Students can learn more by sharing their ideas with each other	5	4	3	2	1
19	I like to study for tests with other students	5	4	3	2	1
20	The ideas of other students help me to understand course material	5	4	3	2	1
21	An important part of studying courses is learning to get along with other people	5	4	3	2	1
Dimension (iv): ***Dependent***	***Statement***	**Strongly Agree**	**Agree**	**Disagree**	**Undecided**	**Strongly Disagree**
22	Material presented in textbooks and lectures are usually correct	5	4	3	2	1
23	Teachers are the best judges of what is important for me to learn in a course	5	4	3	2	1
24	Teachers should state exactly what they expect from students	5	4	3	2	1
25	I try to do assignments exactly the way my teachers want them to be completed	5	4	3	2	1

26	Teachers who allow students do whatever they want are not doing their job	5	4	3	2	1
27	Students need to be closely supervised by teachers on all course related projects	5	4	3	2	1
28	My notes contain almost everything the teacher said in class	5	4	3	2	1
Dimension (v): ***Competitive*** ***Statement***		**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
29	To do well in class, it is necessary to compete with other students for the teacher's attention	5	4	3	2	1
30	It is necessary to compete with other students to get a good grade/score	5	4	3	2	1
31	During class discussions, I must compete with other students to get my ideas across	5	4	3	2	1
32	Students have to become more active to do well in school	5	4	3	2	1
33	I like to get the answers to problems or questions before anybody else can	5	4	3	2	1
34	To get ahead in class, it is necessary to step on the toes of other students	5	4	3	2	1
35	Students reduce their chances for a good grade when they share their notes and ideas with their colleagues	5	4	3	2	1
Dimension (vi): ***Participant*** ***Statement***		**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
36	I am usually most interested in learning about content covered in class	5	4	3	2	1
37	Class sessions are beneficial to me	5	4	3	2	1
38	I benefit more from going to class than staying at home	5	4	3	2	1
39	Everyone has a responsibility to get as much out of a course as possible	5	4	3	2	1
40	Classroom activities are generally interesting to me	5	4	3	2	1
41	I try to participate as much as I can in all aspects of a course	5	4	3	2	1
42	I complete subject assignments whether they are of interest to me or not	5	4	3	2	1

SECTION C: Factors for differences in learning style preferences

Instruction: The following are statements about factors that can affect how you learn. Rate each statement to indicate the extent to which the issues presented affect your way of learning.

(i) School-related factors

	Statement	Strongly Agree	Agree	undecided	Disagree	Strongly Disagree
43	A teacher's way of presenting course content/material affects how I learn	5	4	3	2	1
44	I learn better when course content presented by the teacher is suitable for my level and interest	5	4	3	2	1
45	I participate better when appropriate teaching and learning resources are available and used in teaching	5	4	3	2	1
46	Effective classroom and behaviour management encourage me to take part in learning activities	5	4	3	2	1

(ii) Personal factors

	Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
47	Regular class attendance helps to improve my performance	5	4	3	2	1
48	I perform better in examinations when I spend more study hours on course materials	5	4	3	2	1
49	Keeping a good record on material learnt in class helps me to better prepare for examinations	5	4	3	2	1
50	I am able to complete class assignments when the teacher allocates more time	5	4	3	2	1

(iii) Home-related factors

Statement	Strongly Agree	Agree	Undecid	Disagree	Strongly Disagree

51	Availability of parental support towards my education determines how I learn in class	5	4	3	2	1
52	Effective parental monitoring affects how I participate in class activities	5	4	3	2	1
53	Parental recognition of my academic achievement makes me confident to participate in learning activities	5	4	3	2	1
54	I avoid participating in class activities if my parents don't monitor my performance	5	4	3	2	1

Source: Adapted from Grasha-Riechman (1974)

SECTION D: Academic Performance in Social Studies

Instructions

This section of the questionnaire seeks to collate information on your performance in Social Studies at the End of the 2021/2022 academic year. Please write the grade/score you obtained in Social Studies for the following school terms:

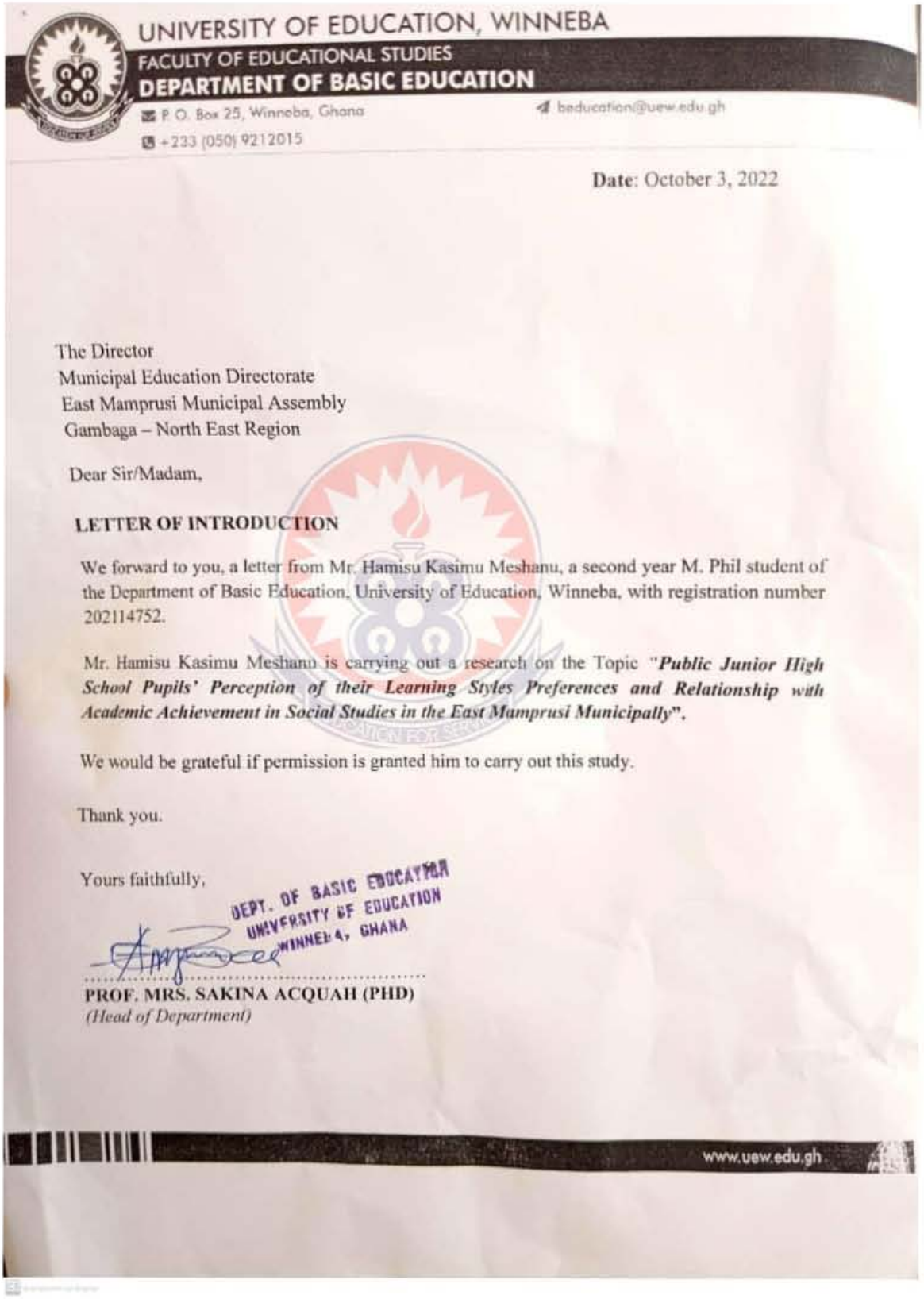
First term [ ] Second term [ ] Third term [ ]

END OF QUESTIONNAIRE

Thank You.

APPENDIX B

LETTER OF INTRODUCTION



UNIVERSITY OF EDUCATION, WINNEBA
FACULTY OF EDUCATIONAL STUDIES
DEPARTMENT OF BASIC EDUCATION
P. O. Box 25, Winneba, Ghana
+233 (050) 9212015
beducation@uew.edu.gh

Date: October 3, 2022

The Director
Municipal Education Directorate
East Mamprusi Municipal Assembly
Gambaga – North East Region

Dear Sir/Madam,

LETTER OF INTRODUCTION

We forward to you, a letter from Mr. Hamisu Kasimu Meshanu, a second year M. Phil student of the Department of Basic Education, University of Education, Winneba, with registration number 202114752.

Mr. Hamisu Kasimu Meshanu is carrying out a research on the Topic "***Public Junior High School Pupils' Perception of their Learning Styles Preferences and Relationship with Academic Achievement in Social Studies in the East Mamprusi Municipally***".

We would be grateful if permission is granted him to carry out this study.

Thank you.

Yours faithfully,

DEPT. OF BASIC EDUCATION
UNIVERSITY OF EDUCATION
WINNEBA, GHANA

.....
PROF. MRS. SAKINA ACQUAH (PHD)
(Head of Department)

www.uew.edu.gh

APPENDIX C

NORMALITY OF DATA