

AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND
ENTREPRENEURIAL DEVELOPMENT

ASSESSING THE IMPACT OF COVID-19 ON THE IMPLEMENTATION OF
SENIOR HIGH SCHOOL CURRICULUM IN THE ASHANTI REGION

ALICE SAKYIWAA

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**A thesis in the Department of Educational Leadership, Faculty of Education and
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degree**

OCTOBER, 2023

DECLARATION

STUDENT’S DECLARATION

I ALICE SAKYIWAA, 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 hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of thesis as laid down by the Akenten Appiah-Menkah University of Skills Training and Entrepreneurial Development.

NAME OF SUPERVISOR: GIDEON JOJO AMOS (PhD)

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DATE:

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DEDICATION

To my lovely parent Mr. Oppong Yeboah Albert, Madam Juliet Anima Adu, and Nana Boateng.

TABLE OF CONTENTS

CONTENT	PAGE
DECLARATION	iii
ACKNOWLEDGEMENTS	iv
DEDICATION	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
ABSTRACT	xii
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the Study	1
1.2 Statement of the Problem	6
1.3 Purpose of the Study	8
1.4 Objectives of the study	9
1.5 Research Questions	9
1.8 Delimitation of the Study	10
1.9 Ethical Considerations	11
1.10 Organisation of the Study	11
1.11 Summary	12
CHAPTER TWO: LITERATURE REVIEW	13
2.1 Introduction	13
2.2 Definition of Terms	13
2.2.1 Overview of a Pandemic	13
2.2.2 Overview of Covid-19?	14

2.2.3 Overview of Curriculum	16
2.3 Curriculum Implementation	19
2.3.1 Factors Affecting Curriculum Implementation	22
2.3.1.1 Need	23
2.3.1.2 Clarity	23
2.3.1.3 Complexity	24
2.3.1.4 Quality	25
2.3.1.5 Local Factors	25
2.3.1.6 The School Division	25
2.3.1.7 Community Characteristics	26
2.3.1.8 Staff Development	27
2.4.1 Technology Mediated the Curriculum Implementation Methods	36
2.4.1.1 Flexible learning	37
2.4.1.2 Remote Teaching	38
2.4.1.3 Technology-Enhanced Learning	39
2.4.2 Offline Implementation Vrs Online Implementation of Curriculum	40
2.4.3 Challenges for Online Teaching and Learning	41
2.4.4 Covid -19 and Academic Performance.	48
2.4.5 Opportunities in Covid 19	48
2.5 Impact of Covid-19 on Education	49
2.6 Theoretical Framework	51
2.6.1 Social Constructivism	52
2.6.2 Connectivism	52

2.7 Teachers Knowledge about COVID-19	54
2.8 Ghana's Educational Reforms Post-Independence	56
2.8.1 The Kwapong Committee Educational Review and Reform, 1967	59
2.8.2 Dzobo Committee Educational Review and Reform 1973	60
2.8.3 The Anfom Committee Educational Review/Reform 1987	61
2.8.4 Anamoalh-Mensah Educational Review/Reform 2007	63
2.9 Curricular Alignment	64
2.10 Teacher Roles	66
2.11 Curriculum Fidelity	67
2.12 Teacher Concerns	69
2.13 Administrative and Professional Support	71
2.14 Administrative Influence	72
2.15 Professional Development	73
2.16 Factors that Promote Implementation	76
CHAPTER THREE: RESEARCH METHODOLOGY	85
3.0 Introduction	85
3.1 Study Area Description	85
3.2 Research Philosophy	85
3.3 Research Design	86
3.4 Research Approach	86
3.5 Study Population	88
3.6 Sample and Sampling Technique	88
3.7 Data Collection Instrument	89

3.8 Data Collection Procedure	90
3.9 Validity and Reliability of Data	91
3.11 Data Analysis and Presentation	92
3.12 Summary	92
CHAPTER FOUR: RESULTS AND DISCUSSION	93
4.0 Introduction	93
4.1 Demographic Information	93
4.2 Descriptive statistics	96
4.2.1 Development in Schools due to the Pandemic	96
4.2.2 What impact did the pandemic have on Senior High School curriculum?	97
4.2.3 Impact of Covid-19 on Education	98
4.3 What new models of teaching were considered during the pandemic?	99
4.4 Regression Analysis	101
4.4.1 What impact did the pandemic had on curriculum implementation RQ 3s	102
4.5 Discussion	104
4.5.1 Development in schools during the Pandemic	104
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS	109
5.0 Introduction	109
5.1 Conclusion	109
5.2 Recommendations	111
REFERENCES	113
APPENDIX: QUESTIONNAIRE	123

LIST OF TABLES

TABLE	PAGE
4.1 Demographic Information.	95
4.2: Development in Schools due to the Pandemic	96
4.3: What impact did the pandemic have on Senior High School curriculum?	97
4.4: Impact of Covid-19 on Education	98
4.5: what new models of teaching that were considered during the pandemic?	99
4.6: Covid 19 impact on Curriculum Implementation	102

LIST OF FIGURES

FIGURE	PAGE
2: A Model Curriculum Implementation	23

ABSTRACT

Covid 19 pandemic did not only affect our country Ghana but affected the whole world as well as the education sector. This study assessed the impact of covid 19 pandemic on the implementation of Senior High School curriculum within the Ashanti region of Ghana. The objectives of this study were to identify new models of teaching that were considered during the pandemic, assess the effectiveness of the new models adapted, the impact covid 19 had on the implementation of the Senior High Curriculum as well as the challenges faced by teachers while using the new models. It was indicated that most of the respondents used for the study were first-degree holders. The study employed the quantitative research approach following the descriptive survey design with a total population of 457 teachers. The study revealed that Covid-19 impacted the implementation of the senior high school's curriculum. Thus, most senior high schools adopted various ways to implement their curriculum during the pandemic that is through online, radio and television etc. The majority of the senior high schools created their online platform to continue academic activities. The study also revealed that most senior high schools encountered some challenges during online teaching and learning including network concerns, Loss of academic sessions, academics' and students' difficulties adapting, poor teaching and learning, etc. The study recommended that since the future is uncertain, as a country the stakeholders(teachers) should be proactive in remote teaching and learning. Additionally, there should be ongoing training and workshops on how to apply the curriculum using technology in the event of a pandemic.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Teachers over the decades have been active participants in the implementation of the curriculum to the success of every educational reform (Smith & Desimone, 2023). The knowledge, skills, and perception of teachers become indispensable in the understanding curriculum in the context of implementing the curriculum (Blignaut, 2007). Both public and private schools in the United States continue to experience rapid and regular changes in their curricula (McShane & Eden, 2015). These changes require teachers to possess the skills and knowledge to implement curricula with fidelity (Wiles & Bondi, 2014). According to Lochner et al., (2015), teachers are central to whether a curriculum is delivered consistently, effectively, and with efficacy to enable the support of student progress and growth. The curriculum is a word that means various things depending on the context used. According to Dampson and Apau, (2019), the curriculum comes from the Latin word “currere” which means “to run” as in to run a course. According to Bishop (1985), asserts that curriculum is the “learning experiences to be organized by teachers within and outside the school to enable pupils to adopt positive attitudes to learning, to apply knowledge and skills and develop their taste and balanced sense of values. Therefore, the curriculum is defined as the learning experience and academic content taught in school by teachers. The teacher takes the learner through a learning experience in an active interactive process and/or dialogue. Curriculum implementation refers to how teachers deliver instruction and assessment through the use of specified resources provided in a

curriculum. Curriculum designs generally provide instructional suggestions, scripts, lesson plans, and assessment options related to a set of objectives.

Implementation takes place as the learner acquires the intended experiences, knowledge, skills, ideas, and attitudes that are aimed at enabling the same learner to function effectively in society. The curriculum implementation process involves helping the learner acquire knowledge or experience. It is important to note that curriculum implementation cannot take place without the learner (Lovat & Smith, 2003). The learner is, therefore, the central figure in the curriculum implementation process. Lovat and Smith 2003, rightly contend that curriculum is part of teaching, not separate from it. Therefore, the most agreed basic notion of the curriculum was that it refers to a plan for learning (Lovat & Smith, 2003). Stages in the curriculum process when amid learning activities, the teacher and learners are involved in a negotiation aimed at promoting learning. This is the interactive stage of the curriculum process this takes place in the classroom through the effort of the teachers, learners, school administrators, and parents (a traditional mode of curriculum implementation). It also integrates the application of physical facilities and the adoption of appropriate pedagogical strategies and methods. The quality of curriculum implementation in any society is the bedrock of its political, economic, scientific, and technological well-being.

The COVID-19 pandemic did not only affect global health systems but also education. The health crisis brought about the need to practice social and physical distancing to be able to contain the spread of the virus. Schools were shut down in many parts of the country and across the globe as part of observing the safety protocols to reduce the spread of the virus in the general population. UNESCO (2020), report indicated that

over 1.2 billion learners were affected by the school's shutdowns. To mitigate the learning experience loss, virtual or online learning, homeschooling among others becomes the best mode in the implementation of the curriculum thus, giving the learner the maximum learning experience. This strategy was adopted by many countries including Ghana. Educational institutions no longer had the sole autonomy to determine where innovation comes from, how new knowledge is created, and how it is applied. They no longer have the prerogative to determine how and the mode education delivery should take, whether direct face-to-face, distance learning, or online learning (Oliver, 2020).

On the 20th of March 2020, Ghana recorded over 70% of the world's learners were impacted by closure, with 124 country-wide school closures (UNESCO, 2020). According to UNESCO (2020) monitoring, over 100 countries had adopted nation-wide closure, impacting nearly 90% of the world's student population.

The Ministry of Education (MoE) report in 2021 and the Ghana Education Service (GES) were quick to institute measures put in place aimed at ensuring opportunities for continuous learning even with schools closed. Soon after school closures were announced, MoE and GES announced the COVID-19 Emergency Support Provision of Distance and Remote Learning Systems Solutions, which was followed by the launch of distance and online learning platforms and the rolling out of lessons broadcast on Ghana Learning television (GL TV) for one million senior high schools (SHS) students (UNESCO, 2020).

Many students and their families did not have access to the internet; the Multiple Indicator Cluster Survey (MICS) conducted in 2017/18 indicated that only 22% of households in the country had access to the internet at home and only 15% had access to a

computer. In comparison, TV coverage (60.4%) and radio coverage (57.2%) (UNESCO, 2020).

Quality education has always been the hallmark of Ghanaian education. Covid-19 presented a challenge in measuring and assessing the quality of education services delivered in a pandemic-like situation. Several factors present ongoing challenges including a lack of appropriate teacher training for distance and remote teaching; a lack of assessment tools and mechanisms for measuring student learning through remote and distance modalities; insufficient parental understanding and engagement in remote learning practices; and a mismatch of teacher skills for classroom delivery and virtual service delivery.

Furthermore, learning alone in the house has been proven to be very ineffective as the learner may have many distractors at their disposal which may impede learning and understanding. Again, it is said that teaching occurs when the actors of the teaching environment thus students and teachers come together with the latter inducing a relatively permanent behavior change (Bateman & Waters, 2013). The aspect of the teacher (facilitator) was missing when the student was made to study alone in the house, especially with concepts, they may find unfamiliar and may need an explanation from the teacher or other colleagues to enhance their understanding.

Lastly, the constructivists perceive learning as being effectively achieved when students are made to interact with instructional materials and draw their meaning from their interaction McLeod, (2019) expressed that learning is an activity that takes place in a context and not in a vacuum. He further suggested that students with teaching aids do not have a blank mind but a consolidated and developed library of knowledge.

Contrary to the adverse impact of Covid-19 on the implementation of the curriculum at the pre-tertiary level of education, the positive impact of the dynamics could not have been overlooked. Ghana witnessed a great improvement in the technological way of delivery and for that matter implementing the national curriculum at the pre-tertiary level. Virtual field trips, for example, created a cost-effective means of exposing students to places and people round the world. The virtual trip delivered by video, YouTube, Facebook, and the like could be the best option to use especially amid a pandemic. However, there are limitations to electronic field trips when used in isolation. Poorly prepared learners can aimlessly surf the Web, achieving only a cursory overview of information (Berson & Balyta, 2004).

In addition, the use of ICT tools and programmes like computer tutorials and drills makes learning simpler and easier. Findings from a survey by Higgins and Boone as reported in Berson, (1996) discovered small, but little improvement in secondary school students' achievement and attitude towards curriculum implementation when a myriad of tools such as hypermedia, drills, and practice instructions are adopted (Iddrisu, et al., 2020).

Online learning also came with some unique features such as the blend of multimedia mixes texts, graphics, sounds, and pictures in information delivery. This can be integrated by curriculum implementers to support students' traditional learning experience to add value to learning. The audio, visuals, and audio-visual symbols from radio, videos, and television can assist students to gain a deeper understanding and appreciation of concepts, develop higher-order thinking skills and facilitate cooperative learning among learners, which they would not have enjoyed in the traditional learning situation. (Iddrisu, et al., 2020). Online learning assists learners to acquire 21st-century

skills, stimulating self-regulated learning, critical thinking, and complex problem-solving skills (Iddrisu, et al., 2020). Hence, the study sought to fill the gap in the literature by presenting empirical findings on the impact of covid-19 on implementing the SHS curriculum in Ghana.

1.2 Statement of the Problem

The outbreak of a pandemic like a coronavirus disease (Covid-19) has not only elicited anxiety and psychological trauma in the ordinary student but has disrupted the smooth implementation of the curriculum in various Senior High Schools in the country (Upoalkpajor & Bawa, 2020). Online studies, television education, and radio lecture were outlined to continue with the implementation of the curriculum at the pre-tertiary level of education with the basic school inclusive. This was in the quest of the government being committed to providing all-inclusive and lifelong learning amid a pandemic (Iddrisu, et al., 2020).

Effective online teaching, learning, and assessment in schools require a robust school digital infrastructure, teachers' and students' computer skills, and suitable administrative support to flourish (Matar, 2015). This call for critical components of these digital infrastructures, which includes TV sets, radio, reliable internet, enough computers, projectors, laptops, relevant E-learning content, and smart boards, among others, which are inadequate in sub-Saharan Africa countries like Ghana (Sarfo et al., 2017). In addition, we have to examine the availability of relevant teacher professional development programmes for teachers and heads of schools concerning the usage of educational technologies in Ghana (Ndemo, 2020), who also assert that digital application divide exists and will continue to exist between communities and schools, concerning those who have access to

and they are using technology for online learning and those who apply cloud technology for passive content consumption.

The COVID-19 pandemic presented an opportunity for the government to outline specific policies to support E-learning, especially at the pre-tertiary level of education (Dhevan, 2020). In the private sector, most of the private TV and radio stations started their online learning platforms to complement the governmental effort of providing inclusive and quality education for all and lifelong learning amid the pandemic (Dias & Diniz, 2014).

Haßler et al., (2020) highlight the differences in access to laptops, smartphones, feature phones, TV, and radios between high, middle, and low-income countries, as well as the difference in access between high, middle, and low-income populations within countries. While high-income populations can access emergency remote education through laptops and smartphones, low-income populations rely more on TV and radio. Podcasts, interactive radio instruction, and educational TV programmes such as Akili and Me, Sesame Street, and Know Zone have been shown to support learning (Watson, 2020). The most marginalized populations, in remote rural areas, however, may not even have access to radio and TV. Even when these devices are present in households, there are often not enough devices to accommodate the simultaneous educational needs of multiple children as well as parents who may need them for remote working. Teachers, students, parents, and other relevant educators faced many challenges that they were not ready to overcome (Chakraborty et al., 2020). The problem here is to assess the impact of covid 19 pandemic on the implementation of Senior High School curriculum.

Previewed this, some experts raised issues with the quality of the content, inclusivity, and whether the content conformed to the national curriculum, and social

values of the country. Besides, the existing digital divide in the country excluded many children from rural and under privileged backgrounds from benefiting from such educational interventions. Findings from some previous studies discovered that some senior high schools in Ghana do not have access to and are not applying online learning in implementing the curriculum as required (Bariham et al., 2020).

Ghana's educational system is fraught with a myriad of problems even before the onset of the pandemic. The Education Sector Analysis (ESA) cited in the Ghana Education Sector Medium-Term Strategy, 2018-2021 diagnosed weaknesses in Ghana's education system including inequities in access, participation, and poor learning outcomes, as well as lack of capacity of the system to address the shortcomings. The Covid_19 pandemic has disrupted educational system worldwide including Senior High Schools in the Ashanti Region of Ghana. This study seeks to comprehensively assess the repercussions of the pandemic on the implementation of the SHS curriculum within the Ashanti Region. By examining the challenges faced by educators, students and administrators, as well as the effectiveness of remote learning methods, this research aims to identify the specific areas of the curriculum that have been most affected. Furthermore, it seeks to propose strategies and interventions to address these challenges and ensure the continuity of quality education despite any future disruption.

1.3 Purpose of the Study

The purpose of the study was to assess the impact of the Covid-19 pandemic on the implementation of SHS Curriculum in the Kumasi Metropolis.

1.4 Objectives of the study

To achieve the above-stated purpose, the following objectives were pursued;

1. To identify the new models of teaching that were considered during the pandemic.
2. To assess the effectiveness of the adapted new models to teaching during the pandemic.
3. To investigate the impact of the pandemic on Senior High School curriculum.
4. To examine the challenges faced by teachers using the models for curriculum implementation during the pandemic.

1.5 Research Questions

The study sought to answer the following research questions:

1. What new models of teaching were considered during the pandemic?
What impact did the pandemic have on Senior High School curriculum?
2. What were the challenges faced by teachers using new models for curriculum implementation during the pandemic?

1.6. Significance of the Study

The study contributes to the literature and practice of curriculum implementation in several ways. First, the study is among a few studies on the impact of Covid-19 on implementing the SHAS curriculum hence it would contribute towards the literature on curriculum implementation.

The result of the study helped the Ghana Education Service and Ministry of Education, and the executive arm of government on the formulation of an appropriate curriculum framework for SHS to fit the changing demands of the time in Ghana.

The result helped enlighten heads of institutions on proactive structures of curriculum implementation in the case of a pandemic like Covid-19 in Ghana.

The findings of the study also be enormous benefit to all stakeholders in the myriad senior high schools both in the private and public sector to equip them on the auxiliary service to be a performance for the smooth implementation of the curriculum in a pandemic like situation.

Importantly, it is hoped that; the study will benefit future researchers and scholars in their literature review and serve as their guide into other aspects of study about curriculum implementation in senior high schools in a pandemic scenario with Covid-19, not an exception.

1.7 Limitations of the study

This study was limited to only the teachers at the senior high school levels. This was because teachers serve as facilitators in implementing curriculum.

1.8 Delimitation of the Study

This study is to determine the impact of the coronavirus (Covid19) on the implementation of the Senior High School curriculum. Only teachers were used in the study. The study was delimited to some selected schools in the Ashanti Region of Ghana.

1.9 Ethical Considerations

The importance of risk and ethics in research cannot be overlooked. It is, therefore, imperative that the researcher develops a thorough understanding of the primary issues of risk and ethical concerns in research. The researcher observed the following ethical issues; The research participants were not subjected to harm in any way whatsoever. The regard for the dignity of the research participants would not be dismayed. Full consent and cooperation were sought and obtained from the participants before the collection of data. The protection of the privacy of research participants was ensured during the data collection and post data collection periods. Thus confidentiality would be the utmost priority of the researcher.

Moreover, as Covid-19 is still ravaging the general populace, the researcher ensured strict adherence to all the safety protocols of Covid-19 and thus observe such to reduce the spread.

1.10 Organisation of the Study

The project consists of five chapters. The first chapter (chapter 1), which is the introductory chapter is made up of the background information, statement of the research problem, objectives of the study, research questions, significance of the study, limitations, and delimitation of the study. The second chapter of the study is a review of related literature. This chapter is made up of the introduction, literature related to the objective of the study, and theoretical literature which focuses on relevant theories concerning the topic. The last section of the second chapter presents empirical evidence of related studies. The third chapter of the project is the Methodology. It is made up of the introduction,

background of the study area, study design, study type, study variables, population, sample size, sampling technique, method of data collection, and data analysis method. The fourth chapter of the project is the presentation and analysis of results. Finally, the fifth chapter of the thesis deals with the summary of the findings, conclusions, and recommendations.

1.11 Summary

This chapter has dealt with the background of the study, defined the objectives and research questions of the study; it has also highlighted the significance of the study, delimitation of the study as well as structure of the study. The next chapter will consider or review the related literature on the topic and identify gaps in the knowledge.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section reviews relevant related literature to this study. It presents a variety of knowledge from various persons and authorities related to the subject under study. It however presents a review of literature pertinent to the research. A literature review discusses ideas already in books, journals, or websites that throw more understanding on the topic under research. The review serves as the framework that guides the study. This research topic was reviewed based on studies conducted by other researchers. The literature review is based on the definition of Covid 19, the definition of curriculum, it also throws more light on curriculum implementation and the implementation process and the impact of covid 19 on the implementation of Senior High School curriculum as well as the implementation of the curriculum in the covid 19 era.

2.2 Definition of Terms

2.2.1 Overview of a Pandemic

The word “Pandemic originates from the Greek pan meaning “all” and demos “the people.” The word is commonly taken to refer to a widespread epidemic of contagious disease throughout the whole of a country or one or more continents at the same time (Honigsbaum, 2009). Nevertheless, over the past 2 decades, the term has not been defined by many modern medical texts. Even authoritative texts concerning pandemics do not list it in their indexes, including such resources as comprehensive histories of medicine, classic epidemiology textbooks, and the Institute of Medicine’s influential 1992 report on

emerging infections (Morens et al., 2009). The globally accepted definition of a pandemic as it appears in the Dictionary of Epidemiology is straightforward and well-known: “an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people” (Harris, 2000). There have been several significant pandemics recorded in human history, including smallpox, cholera, plague, dengue, AIDS, influenza, severe acute respiratory syndrome (SARS), West Nile disease, and tuberculosis. Influenza pandemics are unpredictable but recurring events that can have severe consequences on societies worldwide. Influenza pandemics have struck about three times every century since the 1500s, or roughly every 10-50 years. In the 20th century, there were three influenza pandemics which were named “Spanish flu” in 1918-1919, “Asian flu” in 1957-1958, and “Hong Kong flu” in 1968-1969. Each pandemic harmed human life and economic development. For example, the influenza pandemic of 1918-1919, killed more than 20 million people in the world and has been cited as the most devastating epidemic in recorded world history (WHO, 2011b). The influenza H1N1 2009 virus (A/2009/H1N1) was the first pandemic influenza of the 21st century. It has affected the whole world and caused more than 18,000 deaths (Rewan et al., 2015). Ebola killed more than 11 000 people and cost the world more than USD 2 billion, according to World Bank calculations (Maurice, 2016).

2.2.2 Overview of Covid-19?

The coronavirus disease has been shortened by the World Health Organization (WHO) as Covid-19 started in a region of China, called Wuhan. It is a new (novel) virus that began appearing in human beings at the beginning of December 2019. The Corona Virus Ailment (COVID-19) is an illness triggered by a novel strain of the coronavirus

which is a group of viruses that infect both animals and human beings. Human corona virus can trigger mild illnesses comparable to a common cold, whereas others trigger more severe illnesses such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) according to Ngwacho, (2020). This viral disease spreads incredibly quickly among people because no one on earth has immunity to it. Ghana and the rest of the world saw COVID-19 as an epidemic in China from December 2019 to January 2020 (Brako & Essel, 2020). Nonetheless, the virus spread quickly worldwide within months, which led the World Health Organization (WHO) to declare Covid-19 as a pandemic in March 2020. Studies (Huang et al., 2020; Roache et al., 2020; Sahu, 2020; Sandars et al., 2020; Tesar, 2020) show that the novel coronavirus disease 2019 (COVID-19) was first discovered in Wuhan, the capital of Central China's Hubei province. The virus then spread rapidly across the world, sending billions of people into lockdown and leading to over 100, 000 deaths. The World Health Organization (WHO) has since declared the coronavirus epidemic a pandemic and it was accordingly declared by presidents as an emergency in their respective countries. According to UNICEF (2020) cited in Kwabena and Boateng (2020), the coronavirus disease is also known as Covid-19, with an acronym CO-the corona, VI- the virus, D- the disease and the 19 stands for 2019, which is the year the novel virus was detected. According to the World Health Organization, coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. The WHO further asserted that people infected with the COVID-19 virus experience mild to moderate respiratory illness and recover without requiring special treatment. However, older people and those with underlying health conditions such as diabetes, cardiovascular disease, chronic respiratory disease, and cancer are more likely to develop severe sickness

and death (Aboagye et al., 2020). Research and medical report revealed that a person affected with covid-19 can be indicative at the early stage of infection depending on the individual's immune system. According to Zhong, et al., (2020), the symptoms of covid - 19 include dry cough, fever, tiredness, shortness of breath, a headache, and general body weakness due to the inducement of other ailments in the body. Current evidence suggests that the virus spreads mainly between people who are in close contact with each other, typically within 1 meter (short-range). A person can be infected when aerosols or droplets containing the virus are inhaled or come directly into contact with the eyes, nose, or mouth. The virus can also spread in poorly ventilated and/or crowded indoor settings, where people tend to spend longer periods. This is because aerosols remain suspended in the air or travel farther than 1 meter (long-range).

People may also become infected by touching surfaces that have been contaminated by the virus when touching their eyes, nose, or mouth without cleaning their hands. Researchers believe that Coronavirus is transmitted through droplets from an infected person. Therefore, medical experts postulate that social distancing remains the best way to contain the spread of the virus.

2.2.3 Overview of Curriculum

There is no one correct way to plan the curriculum because making decisions about the curriculum entails certain individuals or groups defining what is desirable and attempting to realize what is achievable in diverse human lives. People who believe they know its meaning (Marsh & Willis, 2007) use the term curriculum in numerous situations. After all, even when it is used very loosely, the term seems to refer to whatever means are deliberately undertaken to achieve desirable ends such as goals or standards (Marsh &

Willis, 2007). According to Dampson and Apau (2019), the curriculum comes from the Latin word “currere” which means “to run” as in to run a course. It is important to keep in mind that schools in Western civilization have been heavily influenced since the fourth century B.C. by the philosophies of Plato and Aristotle and that the word curriculum has been used historically to describe the subjects taught during the classical period of Greek civilization. Today, school documents, newspaper articles, committee reports and many academic textbooks refer to any subjects offered or prescribed as the curriculum of the school. According to Portelli, (1987), more than 120 definitions of the term appear in the professional literature devoted to the curriculum, presumably because authors are concerned about either delimiting what the term means or establishing new meanings that have become associated with it. Smith and Lovat (2003), suggest that since people give different meanings to the term curriculum under different situations or contexts, we need to be sure that we appreciate the specific meaning that is given to it under different circumstances. Nnabuike et al., (2016), reported that curriculum encompasses all learning experiences a child undergoes under the guidance of a teacher.

The curriculum has been grouped into three categories that are narrow definition, broad definition, and midway definition (Tamakloe, 1992). The narrow definition also known as the traditional definition sees the curriculum as a plan, programme, and course of study or package that can be used to bring about learning. It deals with subject content and in this context is restricted to the classroom. The narrow category sees the curriculum as a package that contains the total of the syllabuses of an institution. Barakett and Cleghorn, (2000), also say curriculum refers to the courses, or subjects specified by the

Ministry of Education that are to be taught at each grade level as well as the amount of time to be devoted to each.

McNeil, (1985), describes the curriculum as a course to be taught to students in an educational institution. He further stated that the curriculum must include its purpose, content, method, organization, and evaluation. Based on the above definitions, the narrow definitions of the curriculum are the subjects or courses taught at schools or the planned programme of academic studies.

Mathews, (1989), said the curriculum was what goes on in schools and other training institutions or all the experiences that learners have in the course of living. The curriculum is broadly defined as the totality of student experiences that occur in the educational process. In a midway category, Kerr, (1968) said the curriculum was all the learning, which is planned and guided by the school whether it is carried on in groups or individually, inside and outside the school. According to Eisner, (1994), the curriculum is a series of planned events that are intended to have educational consequences for one or more students. Based on the above definitions by various authors, the curriculum consists of implementing the curriculum activities of the school (programme of study, programme of activities, co-curricular activities, and positive aspects of the hidden curriculum). However, various authors define curriculum in various ways; they include Adentwi and Sarfo, (2011) who defined curriculum as educationally valuable experiences that learners undergo under the guidance of a school or other training institution. Curriculum is an organized framework that describes the content that children are to learn, the process through which children achieve identified learning goals, and the content in which learning and teaching occur (Predcamp & copple,1995). The curriculum is, therefore, all the

activities that go on in and out of an educational institution that is well planned and supervised.

2.3 Curriculum Implementation

A curriculum starts as a plan; it becomes a reality only when teachers implement it with students in the real classroom (Ornstien & Hunkins, 2004). Careful planning and development are important to a good curriculum, but they count for nothing unless teachers are aware of what a plan called for and how they can implement it in their classrooms (Marsh, & Willis, 2007). Implementation in simple terms is the process of putting a decision or plan into practice or effect. Afangideh, (2009), describes the concept of curriculum implementation as the actual engagement of learners with planned learning opportunities. Marsh and Stafford, (1988), also highlight three dimensions of the curriculum concept. First, they explicitly indicate that the curriculum includes not only syllabi or a listing of contents, but also a detailed analysis of other elements such as aims and objectives, learning experiences and evaluation as well as recommendations for interrelating them for optimal effect.

Second, the curriculum comprises planned or intended learning, calling attention to unexpected situations which necessarily may occur in classroom practices. Thirdly, the curriculum and instruction are inextricable. Lovat and Smith (2003), rightly contend that the curriculum is part of teaching, not separate from it. Therefore, the most agreed basic notion of the curriculum was that it refers to a plan for learning (Van den Akker, Kuiper & Hameyer, 2003: & Lova t& Smith, 2003). This concept of curriculum (Van den Akker, 2003) limits itself to the core of all definitions, permitting all sorts of elaborations for

specific educational levels, contexts, and representations. In discussing this curriculum concept, Marsh and Stafford (1988) argue that the curriculum is an interrelated set of plans and experiences which a student completes under the guidance of the school.

Stages in the curriculum process aid learning activities, the teacher and learners are involved in a negotiation aimed at promoting learning. This is the interactive stage of the curriculum process this takes place in the classroom through the effort of the teachers, learners, school administrators, and parents. It also integrates the application of physical facilities and the adoption of appropriate pedagogical strategies and methods. The quality of curriculum implementation in any society is the bedrock of its political, economic, scientific, and technological well-being.

Another name for the teacher is curriculum implementer. The teacher is the one who translates the curriculum document into operating the curriculum through a joint effort of his/her learners and other interest groups as viewed by Mkpa, (1987). This implies that the task of implementing the curriculum lies with the teacher. The teacher does not just implement the content as it is; rather he breaks the content into teachable units.

The curriculum is conceptualized broadly as culture. Green et al., (2000) expound this notion of curriculum, as a culture link. Using a cultural lens, we can begin to regard the curriculum not just as an object (content), but as a series of interwoven dynamics. “Curriculum conceptualized as culture educates us to pay attention to belief systems, values, behaviors, language, artistic expression, the environment in which education takes place, power relationships, and most importantly, the norms that affect our sense about what is right or appropriate” (p. 19). Chen, (2007), states it functions as a mirror that reflects cultural beliefs, social and political values, and the organization.

The hidden curriculum contains underestimated importance of the dynamics of human interactions in organizational behavior which are imperceptible but have a powerful influence on institutional culture/climate (Nieto, 2007). In this sense, culture refers to the values and symbols that affect organizational climate. According to Owens (1987), the symbolic aspects of school activities e.g. traditions, rites, and rituals are subsumed, for these are “the values that are transmitted literally from one generation of the organisation to another” (p. 168).

Garba, (2004), viewed curriculum implementation as the process of putting the curriculum to work for the achievement of the goals for which the curriculum is designed. Okebukola, (2004), described curriculum implementation as the translation of the objectives of the curriculum from paper to practice. In a nutshell, Ivowi, (2004) sees curriculum implementation as the translation of “theory into practice or “proposal into action.”

Mkpa and Izuagba, as cited in Obilo & Saugoleye, 2015, also maintained that curriculum implementation is the actual engagement of the learner with planned learning opportunities; this planning includes the instructional materials that will be used for its implementation at the appropriate stages. Yobe (as cited in Aneke, 2015), also viewed curriculum implementation as the task of translating the curriculum concept into operating the curriculum through the combined efforts of the teachers and society.

Owusi (2009) believes that curriculum implementation is a process of putting a document or an instructional programme into practice. Leithwood, (1982), like most others considers curriculum implementation as a process that attempts to reduce the difference between existing practices and the practices suggested by innovators or change agents. Implementation is the act of putting the prescribed curriculum into practice in the school.

It is the ultimate objective of the curriculum development process because only after this has been done will learners have the opportunity to experience the curriculum and benefit from it. In line with the above, Agangu (as cited in Aneke, 2015) maintained that the curriculum was the mechanism through which the educational system inculcates into the learner, the knowledge, skills, and attitudes the society has prescribed.

The curriculum is the vehicle that contains the good (contents), and the teacher is the driver who delivers the goods (contents) to the consumers of the goods (learners). Therefore, the teacher is at the center of activities in curriculum implementation. Alebiosu as cited in Obilo & Sanugoleye, 2015), thinks that the curriculum is the instrument that dictates the affairs of every educational system.

2.3.1 Factors Affecting Curriculum Implementation

Schools often have agendas full of high-priority initiatives and schools in senior high schools in the Ashanti region are no exception. It is often "not only whether a given need is important, but also how important it is relative to other needs" (Fullan, 1991a, p. 69). In addition, exact needs are sometimes not evident until implementation is underway, and needs can vary from community to community. To one community preservation of culture may be of the greatest importance while in another community preparation for the workplace may be a more pertinent goal. Also, the need for innovation interacts with other factors to either clarify or confuse the implementation process (Fullan, 1991a). Fullan suggests that the following factors affect the implementation of curriculum in the school.

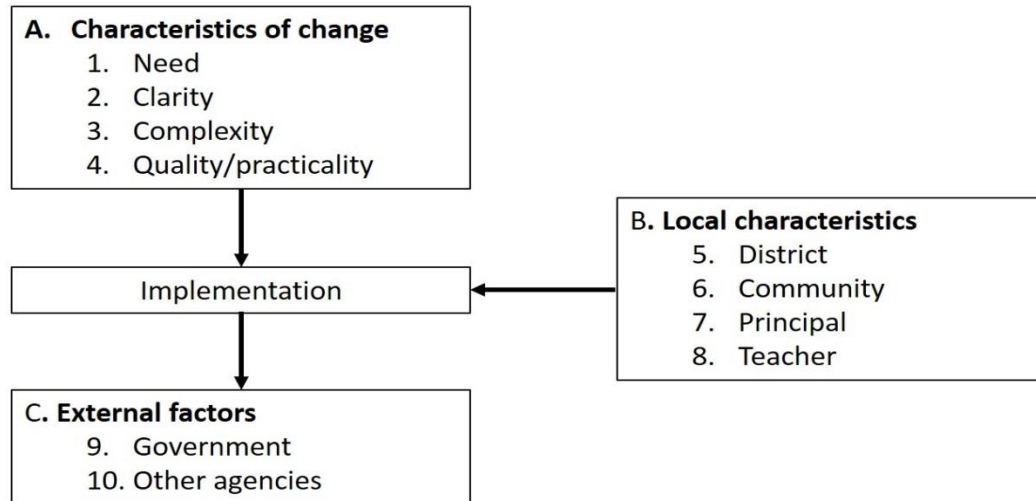


Figure 2: A MODEL CURRICULUM IMPLEMENTATION

(Adopted from Fullan 1991)

2.3.1.1 Need

Much of the literature refers to motives for educational change. Many innovations are attempted without reflection on whether or not they deal with what is seen as priority needs (Fullan, 1991a). Teachers do not always share a sense of urgency with the initiators of the reform. This is particularly the case if reforms are initiated because of reasons such as short-term funding availability or a need for a stop-gap measure to mollify a vocal interest group.

2.3.1.2 Clarity

Clarity about goals and means of educational change is a perennial problem (Fullan, 1991a). Problems related to clarity can include such things as vague goals or unclear implementation strategies. Commonly, policies, and even procedures, are stated at a general level to minimize controversy and therefore help ensure adoption. This same

vagueness may become an obstacle as implementation proceeds. Miles and Louis,(1990) point to the need for "action images." People must have an image of "what to do to get there" (p. 58). Vague goals and strategies may make this difficult. Clarity can be elusive. It is very easy to look at a proposed change and identify what is thought to be its essence. However, this may only be because a lack of detailed understanding of the innovation has led to false clarity (Fullan, 1991a). It is only after working with the innovation over a period that we come to experience and understand its complexities.

2.3.1.3 Complexity

The complexity of any changes can be looked at in terms of the "possible use of new or revised materials, the possible use of new teaching approaches, and the possible alteration of beliefs" (Fullan, 1991a, p. 37). Complexity can create problems if schools "attempt to implement innovations that are beyond their ability to carry out" (Fullan, 1991a, p. 71). This overreaching is common in educational enterprises but complexity can result in greater changes because more is being attempted. Though there are more difficulties associated with more ambitious efforts, "these projects also accomplished more in terms of teacher change and were more likely to be continued" (Berman & McLaughlin, 1980, p.5). A change of major magnitude and complexity is difficult to sidestep or minimise, particularly if it touches on all aspects of the education enterprise. Ambitious and demanding innovations also "appeal to the teachers' professionalism" (p.5). The answer to managing complex change can be to "break complex changes into components and implement them in a divisible and/or incremental manner" (Fullan, 1991a, p. 72). Complexity can be a barrier if the various components are dissonant and incoherent. If a complex change is composed of a variety of components which combine into a logical and

coherent whole, complexity may be an enabling rather than a hindering factor affecting implementation.

2.3.1.4 Quality

Teachers want materials and programmes which have been developed with real classroom situations in mind. "Teachers carry with them to staff development programmes a very pragmatic orientation. What they hope to gain through staff development programmes are specific, concrete, and practical ideas that directly relate to the day-to-day operation of their classrooms" (Guskey, 1986, p. 6). Whether or not the science curriculum and accompanying in-service are perceived as specific, concrete, and practical may strongly affect the programme's implementation. One must also caution against making hasty judgments. "With particular changes, especially complex ones, one must struggle through ambivalence before one is sure that the new vision is workable and right" (Fullan, 1991a, p. 73).

2.3.1.5 Local Factors

Local factors deal with the "social conditions of change" (Fullan, 1991a, p. 73) and refer to local factors along a continuum ranging from the larger school division, through board and community characteristics, eventually to the principal and the classroom teacher. Accordingly, planned change is both a matter of "motivating from without and orchestrating from within" (p. 73).

2.3.1.6 The School Division

Introducing innovations is a way of life in most school systems, and districts "build up track records in managing change" (Fullan, 1991a, p. 73). Northern Saskatchewan has had its share of initiatives aimed at addressing various education challenges. New

programmes of study have been introduced, with varying degrees of success. Veteran teachers commonly refer to provincial programmes which were unusable in northern schools without substantial adaptation, or to resources unsuitable for many northern classrooms. The support of central administrators is critical for change in school division practices to take place (Fullan, 1982, p. 65). Many teachers have a tough time taking change seriously unless administrative support is strong and visible. Administrators who remain invisible, but provide material resources to support change can positively affect implementation. However, it is in those schools where administrators get actively involved in change and support the innovation visibly and practically, that real change takes place. "Teachers and others know enough now if they didn't twenty years ago, not to take change seriously unless central administrators demonstrate through actions that they should" (Fullan, 1991a, p. 74). Significant differences in the degree of implementation have been found in situations where assistance and support are received from supervisory personnel, including consultants (Fullan & Pomfret, 1975).

2.3.1.7 Community Characteristics

Community support of the school correlates positively with innovativeness (Fullan, 1991a), but in contemplating or introducing innovations "districts frequently ignore the community and/or the school board" (p. 75). Most school communities are usually not directly involved in implementation but can become vocal about certain innovations (Fullan, 1982). Each northern community has an identity and underlying norms or protocols. Innovation can complement or challenge protocol, thus leading to more active community involvement. Whether a programme complements, challenges, or has no effect on community norms or protocol can affect implementation.

2.3.1.8 Staff Development

At the root of all educational change is the learning of new ways of thinking and doing. As a result, staff development is a critical factor when the focus is on change. However, "the use of staff development can be grossly misapplied unless it is understood concerning the meaning of change and the change process as a whole" (Fullan, 1991a, p. 84). Davies is quoted in Guskey (1986) as concluding that "in-service education is the slum of American educational disadvantaged, poverty-stricken, neglected, psychologically isolated, riddled with exploitation, broken promises, and conflict." One of the great problems in educational reform is "not resistance to change, but the presence of too many innovations mandated or adopted uncritically and superficially on an ad-hoc fragmented basis" (Fullan, 1993, p. 23). "When it comes to implementation, more is sometimes less" (Fullan, 1991a, p. 84) if more materials and more in service are disjointed.

Curriculum implementation refers to how teachers deliver instruction and assessment through the use of specified resources provided in a curriculum. The curriculum implementation process involves helping the learner acquire knowledge or experience. It is important to note that curriculum implementation cannot take place without the learner (Lovat & Smith 2003). The learner is, therefore, the central figure in the curriculum implementation process. Lovat and Smith (2003) rightly contend that curriculum is part of teaching, not separate from it. Therefore, the most agreed basic notion of the curriculum was that it refers to a plan for learning (Lovat & Smith 2003). Stages in the curriculum process when amid learning activities, the teacher and learners are involved in a negotiation aimed at promoting learning. This is the interactive stage of the curriculum process this takes place in the classroom through the effort of the teachers, learners, school

administrators, and parents (a traditional mode of curriculum implementation). It also integrates the application of physical facilities and the adoption of appropriate pedagogical strategies and methods. The quality of curriculum implementation in any society is the bedrock of its political, economic, scientific, and technological well-being. Curriculum implementation is a process, various curriculum experts like Rogers, (1987), came out with their implementation process yet, there appears to be no fixed pattern that countries follow in the curriculum implementation process. Yet, fairly logical sequences of steps or processes which have given rise to a successful implementation in many educational systems include:

Planning Stage

For a curriculum to be successfully implemented, then it should be well-planned. This is the stage where important decisions are made concerning the objectives, aims, and purposes of a specific course of study or programme, the course content, the teaching and learning strategies, the resources, and the assessment techniques to be used at the evaluation stage. Planning also involves making decisions regarding the approach that will be used in the implementation process, this involves mapping out the strategies to be followed to ensure or achieve the best implementation results. Whether the content of the syllabus, textbooks, teacher support materials, and the like need to be reviewed and whether the method used in teaching is effective.

Try out Stage

It could be seen as the beginning of the process that eventually ends up in the curriculum implementation. Here, textbooks, syllabi, TLM (teacher and learning materials), and other teaching and learning resources are put into use on a small scale to

assess the strength and weaknesses of the curriculum developed. The purpose of this stage is the improvement of the curriculum material that has been designed to be used and also to find out whether the instructional materials are ok for the teachers and the students. They usually use small-scale numbers like between two (2) to six (6) schools and are voluntary, the teachers who will agree will go through training before they will be given the change or innovation to try. However, the curriculum design bodies should be present and carefully observe the process and take notes of the strength and weaknesses of the innovation. Try-out is more of improving the quality of the teaching and learning materials so it is carried out several times until the materials are perfect (Adentwi & Sarfo, 2009).

Field Trial

This stage is undertaken to ensure that implementation will be successful in the context of practical circumstances in the schools. It helps identify the practical problems on the grounds in the classroom and in schools. The essence is to know how the materials like TLM (teacher and learning materials), textbooks, etc. will react to the environment. At this stage, the schools are selected or chosen randomly in both rural and urban areas. So will the innovation or programme suit the needs of the schools in both areas? Is the teacher who did not go through special training able to impart the innovation? Can the programme or innovation be used in schools where the average number of students exceeds or is below the recommended number? All this takes place at the field trial stage. The field trial is undertaken to ensure that implementation will be successful in the context of practical circumstances in the school. Usually, thirty (30) to fifty (50) schools are selected randomly (AAMUSTED taught , 2021.).

Dissemination

Dissemination here simply means the action of spreading something, especially information widely. Is broadcasting the programme through power cohesive strategies? The Ministry of Education officials have the authority to enforce decisions with rank and fowl. The teachers must individually decide for the programme to be effective. On the other hand, if the acceptance is positive, then things will be easier, according to Rudduck and Kelly, (1976), dissemination process consists of four (4) activities:

Translocation

Translocation refers to the movement of curriculum materials and human resources to schools in the districts where teaching and learning will take place. The materials include other teaching and learning aids, text books, machines, tools, and equipment as well as the provision of school accommodation and other infrastructure. In a broader sense, it has to do with all the administrative arrangements necessary put in place to assure the effective dissemination of the curriculum programme, materials, and personnel throughout the entire school system. It amounts to taking integrity decisions as far as the implementation process is concerned, appointing new teachers is also part of the translocation if there are staff shortages.

Communication

Communication is the transfer of information about the curriculum being implemented across the stakeholders and even members of the general public aware of the innovation. The reason is to create a positive attitude towards the reform or change being introduced by the general public and give the necessary support. This is where

clarifications are made to the general public to do away with any negative thoughts from the minds of the stakeholders and the general public.

Animation

Animation means motivating or giving incentives and providing enabling the environment for curriculum implementation to take place smoothly. New programmes come with additional responsibilities and a lot of work so there is a need to provide incentive schemes for the teachers, learners, and other personnel supporting and supervising for the programme to be successful (Adentwi, & Sarfo, 2009).

Re-education

Rudduck and Kelly, (1976), said education requires a depth of experience beyond that provided by the other three components of the dissemination process. Re-education entails ensuring the widespread understanding of the changes being introduced and a more serious commitment on the part of all concerned with the implementation process for it to succeed. Effective implementation requires awareness education. Various education specialists must be very clear about what is going on, and what is the objective behind the reform or change, or programme. For the teachers, there should be available workshops and other training activities (for the in-service teachers) to enhance their teaching and learning activities and equip them to handle the changes in the curriculum effectively.

Curriculum Implementation

From a global perspective, concern about how learning and teaching were organized during the COVID-19 pandemic was raised (EAEA, 2020). Responding to this concern, a recent study by Reimers and Schleicher, (2020), published by the Organization for Economic Co-operation and Development (OECD) investigated the educational

responses to COVID-19, approaches adopted by countries to provide teaching and learning to students, and instructional training and development for teachers and parents during the stay-at-home period. Therefore, countries were making paradigmatic shifts, for instance; China, Japan, Malaysia, the United States of America, the United Kingdom, South Africa, and South Korea, and other countries that were also impacted by the COVID-19 virus switched over to remote teaching and learning medium (Ebner et al., 2020; Huang, et al., 2020). Shortly after the outbreak of COVID-19 in China, the Chinese government ordered a nation-wide closure of schools and immediately implemented an emergency home-schooling plan through the Ministry of Education (Wang et al., 2020). This plan involved delivering organized courses online and through TV broadcasts. In another study, Zhang et al. (2020) reported how China launched an educational emergency management policy, entitled “Suspending Classes without Stopping Learning” (Zhang et al., 2020). The policy, which was set up to curb the spread of the pandemic by limiting in-person teaching at schools and moving over to the online learning model, (Zhang et al., 2020), also aims to integrate China’s national and local school teaching resources, providing rich, diverse, high-quality online resources for all students across the country. The policy supported teachers’ online teaching and children’s online learning (the ministry of Education of the People’s Republic of China in 2020, as cited in Zhang et al., 2020.). Nevertheless, there was a raging debate on how effectively this policy could be implemented, and the viability of online learning compared to traditional in-person learning is still being contested.

Furthermore, at the University of California, USA, several models were adopted by a group of medical professionals to provide knowledge for surgical residents and mitigate the loss of in-person academics and minimize mass casualty among surgical residents

(Chick et al., 2020.). According to Chick et al., their innovative model adopted for teaching and learning during the pandemic includes flipped virtual classrooms, online practice questions, academic conferences via teleconference, telehealth clinics with resident involvement, and facilitated surgical use videos. A study revealed that most European countries were supporting education during the pandemic by providing digital content and educational materials to support online distance learning (Reimers & Schleicher, 2020). For example, in the Czech Republic, the Ministry of Education launched a website equipped with online education tools. A similar approach was adopted in Estonia, where the Ministry of Education and Research (MoER) partnered with Foundations to provide support and guidelines on distance learning to keep academic instruction ongoing. The same approach goes for Finland students, where the Finnish National Agency for Education was guiding schools to organise different kinds of flexible learning by leveraging already established online educational platforms. In France, a free pedagogical platform tagged: "My class at home" was used to provide virtual classes, making it possible to maintain the human link between students (Reimers & Schleicher, 2020).

Elsewhere in Georgia, Basilaia and Kvavadze, (2020), revealed that the government-supported online distance learning by adopting the online portal, TV School, and Microsoft teams for public schools and the alternatives such as Zoom, Slack, and Google Meet in some cases, were used. Their report also showed that virtual classrooms have been created for all school classes and subjects in the Microsoft TEAMS programme. As reported in a study the Georgian government agency, Education Management Information System (EMIS), carried out several activities to support ongoing education during the COVID-19 pandemic where over 600,000 students and 55,000 teachers in public

schools were actively profiled on Microsoft Office 365 for online learning (Reimers & Schleicher, 2020).

From the African perspective, statistics from UNESCO on the impact of COVID-19 on education, as of the time this study was conducted, showed that all countries in Africa except Burkina Faso had a country-wide closure of educational institutions (UNESCO, 2020). This indicated that the impact of curriculum implementation was perceived to be more in those regions that had country-wide closure if alternative means of implementing the curriculum were not provided. For instance, in the case of South Africa, the study by Ojo and Onwuegbuzie, (2020), revealed that some universities' decision to open their schools for online learning in April 2020 created mixed reactions among their students. Most of the students complained about several inconveniences they encountered by studying from home. The study revealed issues such as noise and disturbances from the home environment, limited Internet connection, and lack of consistent electricity, which affect their academic performance.

In addition, the government of South Africa had directed that each university should make a mitigation plan, that is, online study delivery as an alternative method for implementing the curriculum to curb the spread of the disease (Chothia, 2020). While it seems that the devastation caused by COVID-19 on education has pushed most nations to seek an alternative for teaching and learning, South African scholars have expressed concern over the level of training and experience of educators in the pedagogy for effective delivery of online learning (Hedding et al., 2020). As part of the effort to create more opportunities to learn during the lockdown in South Africa, a study by Mhlanga and Moloji, (2020), reported the launching of the “STEM Lockdown Digital School.” According to

Mhlanga and Moloi (2020), this was an initiative where more than 34 public and private school teachers were organised to teach through a live stream on “Africa Teen Geek’s” social media pages such as Facebook, Twitter, and Ms. Zora. A similar experience was reported in the northern part of Africa. For example, a report from Egypt showed that most private universities in the country switched to online teaching through Moodle, Microsoft class Notes, Microsoft Teams, email, and Zoom (Crawford et al., 2020.). In Nigeria, over 39 million learners including pre-primary and tertiary students were asked to stay at home during the pandemic situation (UNESCO, 2020). Consequently, students face barriers to accessing learning materials, receiving mentorship, counseling from teachers, and other supports that are easily made available in a face-to-face learning environment. Besides, teachers are not left out of the impact of the COVID-19 pandemic on the implementation of the SHS curriculum. Reports from some parts of the world suggested that teachers experienced temporary or permanent layoff during and post-COVID- 19 (Hernandez, 2020).

According to Miniwatts Marketing Group (2020), the population of Ghana is 31,072,940, and out of that population, 11,737,818 people have access to internet usage. Wilson et al. (2015) whose research on Kenya secondary school’s preparedness for online learning implementation found that 77.8% of male teachers reported a lack of in-service training on technology integration; inadequate ICT experts to offer teachers support and service computers; and an absence of government funding to support online learning in schools. His study was however silent on female instructors’ readiness. However, his results suggest poor readiness of the schools to utilise virtual platforms to deliver quality education. Likewise, Ngatia, (2015), in his study in Kenya reported similar findings when

he discovered that secondary schools' preparedness for virtual learning was poor because instructors were not sufficiently trained on how to pedagogically integrate technology in their instructions. It seems digital illiteracy is still at its height worldwide. According to Bariham, et al., (2020), Schools were not sufficiently equipped with ICT tools and lacked local ICT in education policy guidelines to guide E-learning. Teachers had content and pedagogical knowledge but lacked ICT technical skills do deliver online learning. Students' rate of integration of digital technology in Social Studies learning was low and ineffective. This implies that due to insufficient ICT in schools, students were not competent in operating ICT tools and could not use them effectively to learn while staying at home. Likewise, teachers lacked the technical skills to deliver the lesson effectively online. Considering the problems highlighted above, it is important to examine how the situation is being handled, what are measures taken, and what has been done in different contexts. Hence, this section reviewed related studies conducted in different contexts (global and local) regarding the approach governments, educators, and educational institutions has taken to ensure the continuity of implementing the curriculum during the COVID-19 pandemic.

2.4.1 Technology Mediated the Curriculum Implementation Methods

According to Lochner et al., (2015), teachers are central to whether a curriculum is delivered consistently, effectively, and with efficacy to enable the support of student progress and growth. The Covid-19 pandemic disrupted the implementation of the school curriculum and in aid to avoid that the government introduced technology-based pedagogy to make sure that learners can still have access to their books and study while staying home. Blended learning is a technology-based teaching system that integrates a face-to-face

teaching approach with an online learning system. This is a style of education where students learn via electronic and online media as well as traditional face-to-face teaching. According to Mahaye, (2020), he observed that Blended Learning enhanced learning regardless of distance and can be effectively implemented during disease outbreaks such as the Coronavirus pandemic. He also said that the system can only be effectively implemented in a digitally developed society. He concluded that Blended learning can be implemented in urban schools but rural schools would not benefit much from the programme due to the lack of some basic amenities and technology in rural communities. According to Abdullahi et al., (2021), technology-based teaching has the following features;

2.4.1.1 Flexible learning

Flexible learning may be defined as an educational approach that uses various student-centered teaching and learning techniques, resources, and flexible administrative practices that respond to the needs of diverse categories of the student population (Bridgland & Blanchard, 2013; Winnie 1994). During the COVID-19 pandemic, various governments around the globe made efforts to facilitate flexible learning to minimise the effects of academic disruption. In China, the “Disrupted classes, Undisrupted Learning” initiative was established. This was aimed at providing flexible online learning to over 270 million students from their homes across the country (Huang et. al., 2020). Similarly, the Australian government launched an initiative titled: The Flexible Learning; Toolboxes Project: The aim was to encourage the implementation of flexible learning modes by making available a set of learning resources intended for web-based delivery in a manner

that facilitates customization and reuse of existing infrastructure in the country's vocational education and training system (Oliver, 2001).

2.4.1.2 Remote Teaching

Remote teaching is the kind of teaching that happens outside the typical classroom settings and is often facilitated using digital platforms - such as learning management systems, online classrooms, and online conferencing tools. Teachers and learners are usually separated by physical distance and sometimes by time (Owens, Hardcastle, & Richardson, 2009). A recent study by Trust and Whalen, (2020), investigated the ease for educators to shift from their traditional in-person to remote teaching during the COVID-19 pandemic. Trust & Whalen's study shows that teachers who used the technology frequently in their practice had a much easier transition to remote teaching, but most educators seemed to be learning about online and remote teaching for the first time while teaching remotely as a result of the school closure (Trust & Whalen, 2020). In another study, Geiger and Dawson (2020), shares how K-12 public school in Florida, the United States, of America transitioned to remote teaching during the COVID-19 pandemic. One key point is that their ability to plan and execute the transition successfully was predicated on years of leadership and professional learning focused on remote teaching, blended learning, and related concepts. Similarly, an earlier study conducted in Australia to explore the experiences of students studying via remote teaching highlighted the following issues with remote teaching: a sense of isolation, the attitudes and knowledge of the teaching staff; and students' knowledge and use of learning technologies (Richardson, et al., 2009).

2.4.1.3 Technology-Enhanced Learning

The term Technology-enhanced learning (TEL) is used to generally describe the application of technology to teaching and learning. It is any technology that enhances the learning experience.

The term can be used to describe both analog and digital technologies (Cullen, 2020). In China, a nation-wide TEL platform was developed as part of the “School’s Out, But Class’s On” campaign – designed to ensure continuity in education during COVID-19. In less than two months of operation, nearly 270 million schools have conducted online studies via the platform (Zhou et. al., 2020). The initiative is now considered to be not just a crisis response plan to the pandemic but an exploration of a new type of education using modern technologies (Zhou et. al., 2020). Wyres and Taylor, (2020) gave their account of a TEL built to ensure the continuity of healthcare education in the United Kingdom during the COVID-19 pandemic. As certain critical facilities were no longer accessible to learners, TEL platforms provided simulation features such as mock wards, patient houses, and intensive-care surroundings as well as 360° field-of-view cameras. As many institutions across the world are switching to technology-enhanced learning, such transition in developing countries has been reported to be problematic (Gulati, 2008). In Ghana, for example, the challenges that may disrupt the transition to TEL include a lack of preparedness of the institutions, lack of infrastructure, an epileptic power supply, high cost of Internet data services, paucity of funds and policies and issues in the education sector among others (Adeoye et al., 2020).

2.4.2 Offline Implementation Vrs Online Implementation of Curriculum

Due to the devastating Covid-19 outbreak and the implementation of national lockdown in many countries, teaching and learning across the world's universities has consequently shifted from the normal traditional class-based to online. While the traditional approach has been preferred by most academics and students, adjusting to online learning posed a new challenge to academics and students. The central question that is of interest to many is whether online learning is better and more effective than class-based learning. Few studies (Flores & Gago, 2020; Mariia, & Strzelecki, 2020; Wargadinata et al., 2020; Wendelboe et al., 2020; Zhang et al., 2020) attempted to address this puzzle. They show that traditional face-to-face learning is still preferred given the challenges associated with online learning. According to Dawadi et al. (2020), in low-income countries such as Nepal, online learning is likely to increase the already existing inequalities because there are big gaps among its citizenry in terms of their socio-economic and education/literacy background. With the advent of COVID-19, the digital divide and the uneven access to e-learning and e-resources will increase the gaps even further by widening the inequalities between the advantaged and disadvantaged children (Dawadi et al., 2020.).

Wahid et al. (2020), further argued that online learning is particularly not suitable for students who study sciences, especially in the fields of biology, chemistry, physics, and mathematics as conducting experimental learning is impossible online. Likewise, Radha et al. (2020) discovered that despite the rising popularity of online learning, traditional classroom training is the majority of students' choice. Unlike online learning, the classroom learning method is more real, and students have an opportunity to debate,

deliberate, and discuss with their class teachers and friends (Radha et al., 2020.). Therefore, while remote learning may sound like an alternative to face-to-face learning, it created a lot of challenges for students and academics.

2.4.3 Challenges for Online Teaching and Learning

A sudden implementation of online teaching and learning due to Covid-19 and the lockdown by many SHS has proven to bring numerous challenges into the higher education industry. Although there are remarkable successes, especially for higher learning institutions that already had well-established online teaching and learning systems, it has been recognised that the shift from class-based to online learning has not been smooth for most SHS. The literature shows that, among others, academics and students' difficulties to adjusting; connectivity, network, and internet issues; unconducive physical space and environment; mental health-related issues; lack of basic needs; and lack of teaching and learning resources are the major challenges associated with the sudden change to online learning. These challenges are discussed below.

Academics' difficulties to adjust: Academics play a critical role in their respective higher education institutions as facilitators of online learning. Due to a sudden COVID-19 outbreak and consequently, a sudden shift to online learning, ordinary academics did not have adequate time to adjust to the new teaching platforms (Burgess & Sievertsen, 2020; Chen et al., 2020; Wang et al., 2020.). Further evidence shows that some academics lack sufficient knowledge of information technology, and their understanding of online teaching is relatively poor (Chen et al., 2020.). As a result, these academics encounter challenges in facilitating online learning. These challenges may include how to arrange online classes, how to carry out online teaching according to the plan, which online teaching platform to

choose, and how to monitor the effect and quality of online teaching, which will lead to a decrease in user satisfaction (Chen et al., 2020; Goh & Sandars, 2020; Teras et al., 2020.). The sudden transition to online teaching also raised serious concerns for academics regarding their capabilities to engage with students in an online platform while maintaining the same level of interaction as face-to-face formats (Jegade, 2020; Ratten, 2020). It is for this reason that Bryson and Andres (2020) argued that replicating the classroom experience in an online platform is impossible and could undermine the learning outcomes. Since the training was not provided to academics due to the sudden shift to online learning, they are probably not familiar with online tools which constrain teaching (Chang & Fang, 2020; Donitsa-Schmidt & Ramot, 2020). Furthermore, delivering a lesson online may be hindered by problems such as system jams (Chen et al., 2020.). Conducting assessments online has also been reported as a challenging task for academics and faculty staff members, particularly on how to avoid plagiarism during examinations (Sahu, 2020). Also, teaching students often have problems such as a lack of self-discipline and learning attitude, this is even more challenging for academics who are not experienced in online teaching (Bao, 2020). These are some of the challenges that resulted in the Commission on Higher Education (CHED)'s decision to suspend the online form of instruction after three days following the students' and teachers' complains against the online mode of learning, suggesting that the Philippines are not prepared to implement this online learning system (Toquero, 2020). It is therefore argued that effective online teaching and learning system requires proper planning and adequate investment (Demuyakor, 2020). Unfortunately, in cases of emergency events, such as the one of Covid-19 outbreak, proper planning and investment for online learning in advance is nearly impossible.

Students' difficulties to adjust Just like their teachers, students also had challenges in adjusting to online learning from traditional class-based learning. In the study of barriers to online learning during the time of Covid-19, Ronnie et al. (2020), discovered that students found it difficult to adjust to online learning styles, having to perform responsibilities at home, and due to poor communication between them and lectures. Students were generally not prepared for online learning. While it was found, that social issues and lecturer issues affect students' intentions to study online, access to online learning platforms was a demonstrable major challenge to many students (Aboagye et al., 2020; Chung, 2020; Rapanta et al., 2020.). In particular, technical issues may occur in the middle of online learning, yet most students do not have access to technical support and advanced technologies that facilitate online learning (O'Keefe, 2020). Access to digital learning devices such as laptops and tablets and access to data for internet connection were found as barriers to online learning for some students (Adnan & Anwar 2020; Dhawan, 2020; Moawad 2020). Lack of access to online learning systems is common among students from poor families living in underdeveloped communities. The study that was conducted in West Bengal, India shows that 30.6% of students were studying through reading textbooks by own effort and not participating in e-learning mainly due to a lack of access to online learning platforms (Kapasia et al., 2020.). As also understood by Dawadi et al. (2020), access to online learning for some students in these difficult times is a major problem for the higher education sector as it increases the already existing inequalities among its citizens in terms of their socio-economic and education/literacy. While some students are dissatisfied with the existing online teaching platforms (Chen et al., 2020.),

some students had more serious challenges to overcome, such as those concerning access to online learning platforms (Ronnie et al., 2020.).

Connectivity, network, and internet issues. Online teaching and learning require a fast and reliable internet connection. Therefore, the shift from traditional face-to-face learning to online learning meant that students and academics must stay connected to the internet. However, under some circumstances, this may be impossible; hence teaching and learning would be affected. Challenges with connectivity were highlighted as the leading factor undermining e-learning and e-teaching during the lockdown as a result of the Covid-19 pandemic outbreak (Aboagye et al., 2020; Bao, 2020; Berezhna et al., 2020; Dawadi, 2020; Jena, 2020). In the study of barriers to online learning, Ronnie et al. (2020) found the availability of fast and reliable internet connection as a major concern than either device ownership or technical aptitude. The critical challenge of reliable internet connection for online learning was also reported in the literature (Mamun et al., 2020; Naciri, 2020) as the main cause for non-participation in online learning by the majority of students.

This drawback for online learning, according to Demuyakor (2020), was attributed to the lack of internet data by Ghanaian international students in China. The unavailability of suitable hardware and software to access online learning was also identified as a barrier by some students (Crawford et al., 2020.). In an attempt to ensure that all students have equal access to online learning, Student Representative Councils (SRCs) in various universities demanded the provision of digital learning devices (smartphones, tablets, and laptops) and internet data to all students (Kwabena & Boateng, 2020). However, some students could not access online tools despite having digital learning devices and internet data because of the poor network at home (Aboagye et al., 2020; Rose, 2020; Wargadinata

et al., 2020.). The poor network problem is particularly common in developing countries where ICT and telecommunications systems are not properly developed (Aboagye et al., 2020.).

Correspondingly, Chang and Fang (2020) discovered that 60% and 70% of teachers agree that "network speed and stability are poor", leading to challenges with accessing online learning tools. This literature evidence suggests that reliable network infrastructure, availability of internet data, and availability of digital learning devices such as smart phones, tablets, and laptops to students are important to ensure smooth online teaching and learning.

Unconducive physical space and environment: Lack of physical learning space and environment also presented itself as a challenge for some students learning online during the lockdown. In most poor households, students do not have a private room where they can peacefully study without disturbance (Ronnie et al., 2020.). Learning from home, therefore, becomes difficult for this disadvantaged group of students. The research conducted by Demuyakor, (2020), shows that some students have to rush to the toilets to answer calls from their professors or to turn off video feeds because of the noisy background. Similarly, Kapasia et al. (2020) found that, of 232 students, 103 (44.4%) had no separate reading room for study. Without a conducive learning environment, students are unable to concentrate on their schoolwork, and study productivity is reduced as a result (Chang & Fang, 2020). As argued by Daniel (2020), it is, therefore, necessary that institutions and educational systems consider the concerns of students whose parents are unsupportive and whose home environments are not conducive to study. The shift to online

education during Covid-19 overlooked the reality of the uncondusive learning environment which negatively affects the learning outcomes.

Mental health-related issues. The mental health issues associated with Covid-19 and the sudden shift from class-based to online learning are also demonstrable in the literature. Such issues include stress, anxiety, and depression which occur due to a sudden change in one's lifestyle and uncertainly about the future (Rajkumar, 2020; Ronnie et al., 2020; Rossi et al., 2020; Tandon, 2020; Xiong et al., 2020.). Learning loss and dropout rates, other harder-to-quantify factors due to covid-19 cause social and emotional disruption for the general public and worse for students (Dorn, 2020). In addition, students whose family income or livelihoods strategy was impacted by Covid-19 and its regulations were found likely to suffer from stress, anxiety, and depression, which in turn affects motivation to engage in online learning (Cao et al.2020; Husky et al., 2020; Son et al., 2020; Wu et al., 2020; Zolotov et al., 2020.). While Covid-19 created fear and other mental health issues among Israeli university students, Zolotov et al. (2020) further discovered that students who are psychologically affected turned to substance use to cope. This coping mechanism during these difficult times harms learning. Among Chinese students, 24.9% have experienced anxiety because of the COVID-19 outbreak (Pragholapati, 2020). Anxiety was often associated with having a relative or acquaintance who is infected with COVID-19 (Pragholapati, 2020).

Lack of basic needs: Lack of access to basic needs such as food, shelter, clean water, electricity, health care, and security affects students' ability to fully participate in online learning while at home (Ronnie et al., 2020.). For example, food which is provided to residence students may not be available at home as funders may not have adequate time

to prepare food vouchers for funded students (Sahu, 2020). Some students do not have proper shelter during the lockdown which affects their learning. This challenge is evidenced in Kapasia et al. (2020)'s study where it was discovered that students who were not living in their own homes (staying in a relative's home, rented house, and as a paying guest were facing some difficulties related to financial (26.5%), food (51%), and health (22.5%). Although the impact of these difficulties on student learning is not measured in the existing literature, these factors undoubtedly affected the students' ability to learn online. Lack of teaching and learning resources. The unavailability of resources that facilitate online teaching and learning was a major concern to academics and students.

According to Kerres (2020), some universities did not have properly running online communication tools; for example, a university has limited student access licenses to online library materials. Such issues would affect the delivery of online learning material. Additionally, the lack of access to high-speed broadband or digital devices was also reported as undermining online learning (Azorín, 2020). While academics may experience difficulties working from home due to inadequate infrastructure or resources to facilitate online teaching with immediate effect, the burden on parents has increased as they need to secure computers and IT equipment for their children to study at home (Garbe et al., 2020; Sahu, 2020). In deep rural areas where there is no electricity, students may find difficulties to stay connected due to a lack of power to charge online learning devices such as laptops (Atabhotor et al., 2020; Sarwar et al., 2020; Verawardina et al., 2020.). Overall, not all higher learning institutions have the resources, both human and physical, to transition to online delivery (Crawford et al., 2020.).

2.4.4 Covid -19 and Academic Performance.

There is the limited research evidence on the impact of Covid-19 on students' academic performance. This is probably due to a lack of data that measure academic outcomes during the Covid-19 period. However, it is expected that as academic results become available, more research will be conducted in this area. Gonzalez et al. (2020) studied the academic performance of students before and after Covid-19 confinement. Their study results showed that students achieved significant improvements in their scores even in tests that were performed in the on-line format in previous years (Gonzalez et al., 2020.). Moreover, this improvement is only significant when comparing data after the Covid-19 confinement (i.e. there are no significant differences in on-line tests that were performed before the confinement) (Gonzalez et al., 2020.). Therefore, these findings reveal that the new assessment process cannot be the reason for the improvement in students' performance because the learners also achieved better scores when the format of the assessment did not change (Gonzalez et al., 2020.). Although Gonzalez et al.' study did not find the effect of Covid-19 confinement on students' academic performance, it is expected the Covid-19 outbreak will not only cause poor performance among students but will also increase the dropout rate (Dorn et al., 2020.)

2.4.5 Opportunities in Covid 19

Covid-19 induced opportunities: While Covid-19 has created a lot of problems for the higher education sector, it has been recognised that this pandemic has, on a positive side created opportunities. Such opportunities involve new approaches and tools for learning online and capacity development. For instance, the lockdown implemented as a result of Covid-19 pushed universities that previously used traditional teaching methods

into the digital world (Ratten, 2020). This means universities must develop innovative ways to deliver teaching without compromising quality (Ratten, 2020). Also, new challenges associated with online teaching and learning will create a space for innovative thinking and innovative solutions within the sector (Bryson & Andres, 2020). It is also argued that due to online teaching and learning, both students and teaching staff will further develop their online communication and interpersonal skills through regular exposure to online platforms (Beech & Anseel, 2020). The Covid-19 outbreak also presented opportunities for new research in a new area; the more use of digital data collection methods and wider expose to virtual dissemination of research results. This provided researchers and academics with new experiences in the digital world necessary for their capacity development (Gardner, 2020; Shahzad et al., 2020; Zhu & Liu 2020). Therefore, not all is bad about Covid-19, however, challenges and problems far exceed opportunities.

2.5 Impact of Covid-19 on Education

This corona virus pandemic has radically disrupted all sectors including the education sector, which affects the socio-economic conditions of the people and education system (Kharbikar & Kharbikar 2020). According to Yasenov (2020), lower education level workers, immigrants, and younger adults do tasks that are less likely to be performed at home.

In addition, in line with Alstadsæter et al. (2020), the pandemic has greatly affected Norway economically as it has negatively impacted the financially vulnerable population, such as parents with young kids. Certainly, it is always said that education is key for the socioeconomic development of the people in any country, but the outbreak of this pandemic tumble-down our education system in so many ways. The COVID-19 pandemic

has resulted in the closure of schools in about 192 countries all over the world with 91.4% of the total number of enrolled learners in these countries temporarily forced out of school (UNESCO, 2020). It was reported that over 1.6 billion learners across the world are currently compelled to stay out of schools as social distancing is being enforced locally and regionally round the world to contain the spread of Coronavirus disease which our country Ghana was not left out. Apart from the tremendous toll on lives, livelihoods, and economies, the repercussions of COVID are likely to have a significant impact on the human capital accumulation process in the short and long run (World Bank Group 2020). The report shows that the lockdown of schools is more prominent in some continents such as Africa, South America, and some parts of Europe (UNESCO, 2020).

According to (UNESCO, 2020). As cited by Mahaye, (2020), with the aid of a diagram shows that Africa and South America are the continents whose educational systems have been mostly affected by the pandemic as more than 98% of implementing the curriculum cannot be conducted due to country-wide lockdown in these continents. Because covid-19 spread so quickly among people, social distancing has been the most effective way of minimising the spread of covid-19 besides pharmaceutical interventions and other preventive measures. Students no longer undergo the normal route they used to do; some schools go on the double-track system, which is the morning shift and afternoon shift. This shift system in not help the students fact that some subjects need to be learned in the morning for example mathematics. Under no circumstance will, an average-minded student understands algebraic expression in the afternoon but there is nothing you can do about it because of the pandemic. A study in the US indicated that the coronavirus pandemic brought a 47% increase in private colleges' risk of closure and colleges that are

not closing are still going through an incredibly painful process of cuts and budget adjustments (Seltzer, 2020). Private universities in Ghana are currently facing serious cash flow challenges due to reduced admission numbers and the little assistance received from the government. They were unable to pay salaries in March and April because most students had already left their campuses causing about 50% of unpaid fees (Kokutse, 2020). In May 2020, many of Uganda's 45 private universities were struggling to cope with the crisis, some of them claiming that they can no longer meet their bills, let alone pay their teaching staff (Agaba, 2020). Similar to Ghana, several private universities and other institutions of higher learning in Uganda, were struggling even long before the advent of COVID-19, in part because of limited resources and tax levies given to institutions (Agaba, 2020). Some faculties and employees in the private education sector may face the obstacle of job losses, salary cuts bonuses, and increments could also be postponed or reduced. Schools, colleges, and other institutions and universities may face the shortcoming of a slowdown in admissions, internships, training, apprenticeships, and placements of students. The education sector may face the problems of lower fee collection which can create complications to run and manage the institutions.

2.6 Theoretical Framework

Learning theories explain how people learn - and they evolve from various fields of life such as psychology, sociology, neuroscience, and education (Picciano, 2017). Over the years, several learning theories have surfaced. In this section, we discuss the relevance of two learning theories as the theoretical foundation for this study, leveraging the literature by Strauch et al (2014).

2.6.1 Social Constructivism

Social constructivism explains teaching and learning as social phenomena between teachers and learners (Taguma et al., 2018.). It is a clear departure from the idea that teachers are custodians of knowledge; instead, the theory considers teachers as facilitators in the learning process (Isbell, 2011; Zawacki-Richter et al., 2019.). Advocates of this theory believe that learning is about finding solutions to problems and that the social construction of solutions is the essence of the learning process (Picciano, 2017). In other words, problem-solving through collaboration is the primary objective of social constructivism. Many social media solutions developed for collaborations are leveraged in this COVID-19 pandemic and social distancing era. In the view of social constructivist, teachers could develop a social relationship with their students to support their remote learning during the school closure.

2.6.2 Connectivism

Connectivism is often referred to as the learning theory for the digital era, as it describes how people learn in today's "technology-driven" society (Shrivastava, 2018). The theory is based on the premise that the older learning theories behaviorism, cognitivism, and constructivism– are inadequate to explain how learning happens in the present technology-driven era (Siemens, 2005). While the older theories are anchored on the idea that learning occurs inside a person, the connectivist metaphor presents the notion that technology has now made it possible for learning to happen outside of a person's brain and may be stored in a variety of digital formats (Kop & Hill, 2008; Shrivastava, 2018) – such as databases. According to Siemen (2005), knowledge does not only reside in the mind of a person but it in a distributed manner across a network. An information network

contains several nodes - a node is a learning community that serves as a cluster of similar interests that allow for interaction, sharing, debating, and thinking together (Elmohamady & Azmy, 2016; Kop & Hill, 2008; Siemens, 2005).

The study regards the connectivism viewpoint as the most relevant learning paradigm in this current situation where students are confined to learning at home due to the COVID-19 pandemic. Firstly, connectivism theory captures the importance of online collaborative learning and sharing in this age. Secondly, connectivism is the only theory that recognizes the presence of the internet and best explains how people learn in the era of ever-increasing and rapidly changing information due to technology advancement and ubiquitous access to the Internet. Thirdly, according to Kropf (2013), connectivism fosters the “design of learning materials, resources, or situations to help learners achieve their learning outcomes and maximize their learning potential” (p.15). The research by Shrivastava, (2018) demonstrated how connectivism fosters lifelong learning in students by conducting an exercise between student groups in two different institutions based in two different countries. Similarly, the research found that the use of a web-based instructional model based on connectivism raised the level of students’ problem-solving skills in ICT for daily life (Sitti, Sopeerak, & Sompong, 2013).

Consequently, this study was grounded on the premise of social constructivism (Vygotsky & Cole, 2018) and the connectivism learning theory (Siemens, 2005), given that the study sought to understand how the social distancing measures, school closures, and emergency remote learning, adopted to navigate the challenges posed by the COVID-19 pandemic impacted the connection with students and contemporaries. Further, the study attempts to understand the impact of continuous engagements in the education process

using available digital technologies based on the experiences of lecturers. Social constructivism is central to the study because it encapsulates learning in communities and individual construction of knowledge based on the mediation of digital collaborative technologies. Although associating a single learning theory.

2.7 Teachers Knowledge about COVID-19

The recent outbreak of coronavirus disease 2019 (COVID-19) is the worst global crisis after the Second World War. Since no trustable treatment and vaccine have been reported, efforts to improve the knowledge, attitudes, and practice of the public, especially the high-risk groups, are critical to manage COVID-19 pandemic (Zhong, Luo, Li, Zang, Liu, Li & Li, 2020). Coronaviruses (CoV) are a broad family of viruses that are known to cause serious and sometimes fatal pulmonary diseases such as, Severe Acute Respiratory Syndrome (SARS-) and Middle East Respiratory Syndrome (Casella, Rajnik & Cuomo, 2020). In 2002–03, SARS-CoV first identified as a pneumonia in Guangdong, China, which later turned into life-threatening respiratory failure. Initially, it was only animal-human interspecies transmission that further progressed into human to human transmission. The virus infected about 8500 people with fatality rate of 10% (Boncristiani, Criado, Arruda & Schaechter, 2009; Bhagarathula & Shehab, 2020).

Similarly, in 2012, the MERS-CoV epidemic appeared in Saudi Arabia where people experienced symptoms similar to SARS-CoV but dying at a much higher rate of 36%. It was mainly transmitted to humans from dromedary camels (Bleibtreu, Bertine, Bertin & Houhou-Fidouh & Visseaux, 2019). In December 2019, similar cases were reported in Wuhan city, China. The virus was identified as a new form of Coronavirus (novel Coronavirus-2019) and also the illness it causes was named as COVID- 19 (Lai,

Shih, Ko, Tang & Hsueh, 2020). The World Health Organization (WHO) on January 30, 2020, declared COVID-19 a public health emergency and later on March 11, 2020, the outbreak was declared pandemic. According to the WHO situation report, globally approximately 3,349,786 confirmed cases of COVID-19 caused by the SARS-CoV-2 were reported, including an estimated 238,628 deaths as on May 03, 2020 (WHO, 2020). Preliminary scientific reports revealed that, COVID-19 would be possibly spread via animals to humans but the current findings states that human to human transmission could also occur through direct contact, and respiratory droplets (Gralinski & Menachery, 2020). The incubation period of COVID-19 is 2–14 days (Backer, Klinkenberg & Wallinga, 2020; Lauer, Grantz & Bi, 2020) and the initial symptoms would appear as fever, cough, shortness of breath, trouble breathing, pain or pressure in the chest, fatigue, myalgia or arthralgia, confusion, bluish lips or face (Guan, Ni & Hu, 2020; Singhai, 2020). Standard recommendations to prevent infection spread includes, maintaining hand hygiene, covering mouth and nose when coughing or sneezing, avoid close contact with anyone showing symptoms of respiratory illness as well as to prevent unprotected contact with farm or wild animals (Casella et al., 2020; WHO, 2020).

As the risk of COVID-19 becomes more widespread, people should take steps to safeguard themselves from infection and limit its spread to others. Though preschool teachers are not directly involved in managing COVID-19 patients, they can serve as an information provider. They can sensitize parents and learners about maintaining personal hygiene, symptoms of COVID-19 and how to prevent its spread. Preschool teachers must possess the basic knowledge about novel Coronavirus and be able to clear the myths pertaining to COVID- 19.

2.8 Ghana's Educational Reforms Post-Independence

The term 'reform' suggests a calculated and well-thought-out attempt to uncover and rectify a system's intrinsic flaw. In defining reform, Adu-Gyamti, Donkor, and Addo (2016) state that it is an "intended or enacted attempt to correct an identified problem." Simply put, the necessity for changes indicates the existence of a fault in a system. Educational reform, in this context, is defined as "new changes and policies introduced into a country's educational system and structure to facilitate the achievement of its educational goals" (Adu-Gyamfi et al. 2016). According to the researcher, if every attempt or plan to implement an educational reform is a manifestation of a problem in the present system, the change must necessarily and finally result in major improvements rather than worsening the system or existing conditions, otherwise, the reform may be a waste of time, effort, and resources rather than prudent. This also indicates that, as societal requirements change, educational reform is required.

However, not all educational innovations are acceptable because some fail to achieve their goals. Prior to the onset of colonisation, educational reforms began in the Gold Coast as an attempt to remedy fundamental faults in the curriculum of the castle schools. The curricula of the castle schools were meant to teach mulatto and African children to speak, read, and write. Governor Rogers formed an education committee in 1908 to rethink the educational curriculum based on the teaching of the three Rs of reading, writing, and arithmetic at the castle schools (Edusei, 2004).

On the contrary, several scholars were concerned about the true aims of European education in the country at the time. They stated that the primary goal of castle school instruction was to support businesses in Europe (Adu-Gyamfi, Donkor, & Addo, 2016).

This is because the admittance of pupils to the castle schools showed the whites' true intentions. Mulatto youngsters whose education was the responsibility of whites were the main emphasis of the castle school education. The other two types of pupils accepted to castle schools were the children of chiefs, who were the principal trading partners on the Gold Coast, and the offspring of rich black merchants, whose backing was required to facilitate trading activity on the Gold Coast.

Despite the two entrenched opposing views expressed about the new castle school curriculum's intention, the researcher believes the real intention of the new castle school curriculum was to serve a dual purpose of teaching the locals/natives the three Rs of reading, writing, and arithmetic and for the whites to train their children in the castle schools to sustain their industries back home. Another school of thought held that the need for educational reform in the country was justified as early as 1882 due to differences in the curricula of castle schools run by the Portuguese, Dutch, Danes, and English (Adu-Gyamfi, Donkor, & Addo, 2016).

Furthermore, Djamila and Djafi, (2011) cite the report of Matiew Arnold, an inspector of elementary schools in the Gold Coast from 1851 to 1856 who criticized the colonial rulers' disregard for education. Reforms were begun in response to the issues in the curricula. Governor Gordon Guggisberg was a Gold Coast colonial governor who was remarkable in making educational changes to rectify shortcomings in the current system. He personally criticized the system for lacking facilities and curriculum to equip citizens in both technical and vocational training as well as moral spheres (Adu-Gyamfi, Donkor, & Addo, 2016).

Education changes began in the Gold Coast during the precolonial era, but assumed a more local focus after the country gained independence in 1957. Dr. Kwame Nkrumah, Ghana's first black president, outlined his strategies to reform Ghana's education to achieve three goals: using education as a tool for producing scientific literate people to steer the affairs of the economy: removing obstacles in the environment that lead to low productivity, and training the human resource to harness the country's economic potentials (Akyeampong, 2nd).

In this perspective, education was intended to train citizens to shift away from old spiritual world views and toward a more systematic and scientific approach to problem solving, as well as to take a control of their environment by removing the obstacles inherent in it in order to realize our environment's full potential. In any case, the curricula's inadequacies were numerous, but they could be summed up in the assertion that there was a need for a shift in emphasis from strictly grammar instruction to the teaching of "industrial and agricultural" skills (Edusci, 2004).

As a result, numerous education committees have been formed by successive Ghanaian administrations to reform the country's education system in order to promote its quality and fulfil the requirements and exigencies of the moment.

If the curriculum is a product of its period, then modifications are constantly necessary to ensure that the curriculum of the day fits the needs and ambitions of the people while also being capable of addressing society's issues and challenges. As a result, curriculum reform is a continuous phenomenon in the educational system, as there will always be a need for curriculum change as society's demands and ambitions evolve. As a result, various curriculum reforms/changes have occurred since independence in the expectation that the

curriculum of the day represents the needs of the country. The enhancement of educational structure, access, and quality to equip students with employable skills for proper functioning in the environment is the fulcrum of educational reform in Ghana (Adu-Gyamfi, Donkor, & Addo, 2016). Following independence, successive governments established a series of educational review/reform committees to make suggestions for fundamental changes to the educational system, organization, and curricula.

2.8.1 The Kwapong Committee Educational Review and Reform, 1967

The Kwapong reform committee was formed in 1967 a year after Nkrumah's CPP administration was overthrown, to investigate the fundamental flaws in Nkrumah's education programmes (Albaugh, 2005; Akyeampong, 2010). According to Akyeampong et al., (2014), after studying Ghana's education system under Nkrumah, the Kwapong committee recommended restructuring the country's education system as follows: ten (10) years of elementary education, comprised of six (6) years of primary education and four (4) years of middle school education.

Despite the fact that elementary education took ten years to complete, qualified students were to be admitted into secondary schools midway through their middle school education, while those who did not qualify were to do two years of prevocational continuation education to qualify for admission into secondary schools. The group also advocated a seven-year secondary school curriculum, with five years of form five and two years of sixth form. This made pre-university education under the Kwapong Committee structure seventeen (17) years - 6: 4: 5: 2.

The Kwapong Committee's proposals clearly placed less emphasis on vocational and technical education. It is important to note that this educational organization was identical to what was in place at the time of independence.

2.8.2 Dzobo Committee Educational Review and Reform 1973

The Dzobo committee, founded in 1970 on the orders of Col. Ignatius Kutu Acheampong, President of Ghana and chairman of the National Redemption Council (NRC), advocated the reorganization of Ghana's education system in 1973 (Akyeampong, 2010; Adu- Gyamfi, Donkor, & Addo, 2016). According to Yusif and Yussof (2010), the committee was tasked with investigating the structure and quality of education in Ghana. The committee recommended a new Junior Secondary School (JSS) and Senior Secondary School (SSS) concept (Yusif & Yussof, 2010). The planned education system included six (6) years of primary school, three (3) years of JSS, three (3) years of SSS, and four (4) years of university (6: 3: 3:4). This intended to replace the existing 6: 4: 5: 2: 4 framework, lowering the period of pre- university school from 17 years to 12 years (Akyeampong, 2010; Adu- Gyamfi, Donkor, & Addo, 2016). As part of the implementation plans/strategies, experimental schools were created in regional capitals and some chosen district capitals to pilot the planned programme before full-scale nationwide implementation.

The Dzobo committee reform curriculum focused on incorporating Tailoring, Woodwork, Catering, Dressmaking, Metalwork, Technical Drawing, Masonry, and Automobile Practice into the new basic and secondary school curricula (Adu-Gyamfi, Donkor, & Addo, 2016). The teaching of vocational and technical skills was intended to provide children who were unable to continue their education at the university level for

one reason or another with the option to engage in paid job or find one for themselves (Akyeampong, 2010). At this point, the emphasis of education in Ghana was moving to educating students to work in industry.

2.8.3 The Anfom Committee Educational Review/Reform 1987

The Dzobo Committee Reform could not be fully implemented since the traditional pre- university structure and curricula of education lasted until 1987, when it was replaced by the Anfom Educational Committee Reform. The Anfom Educational Reform Committee was founded in 1986 under the government of the revolutionary Provisional National Defence Council (PNDC) led by Flight Lieutenant Jerry John Rawlings, and by 1987 it had completed its work and its recommendations had been fully implemented by the government. The 1987 reform reduced the length of pre-university and university education from 17 years to 12 years (6-4-5-2 to 6-3): introduced a curriculum that emphasized technical and vocational topics (Adu-Gyamfi, Donkor, & Addo, 2016; Anfom Educational Reform Committee Report, 1987). This means that the duration of pre-university education was lowered from 17 years to 12 years when it was fully operational at the time. This new educational framework included six years of primary school, three years of junior secondary school, and three years of senior secondary school.

In the 1987 reform, the six-year primary school, three-year JSS, and three year SSs structure completely replaced the traditional elementary form five and sixth form structure of pre-university school in Ghana. Because of the parallels in the organization and curricula of the work of these two education review/reform committees, many educationists continue to believe that the 1987 reform by the Anfom Education Committee was a repackaging of the Dzobo Education Review Committee suggestions. Perhaps this is why it took the

Anfom Educational Reform Committee only one year to complete its work and the reform became effective only one year after its inception. The three terms within each academic year, as well as the Basic Education Certificate Examination (BECE) and senior secondary School Certificate Examination (SSSCE) as criteria for admittance into secondary schools and postsecondary institutions, were also substantial structural modifications. The free Compulsory Universal Basic Education (FCUBE) from elementary through junior secondary school (JSS) was also implemented to assist citizens in obtaining at least a minimum level of education in order to participate constructively into society. There were five focus programmes in terms of curriculum change: Agriculture, General Arts and Science, Business, Technical, and Vocational. The National Council for postsecondary Education was established as part of the country's educational restructuring to monitor the operation of postsecondary institutions. Their efforts resulted in the establishment of the University for Development Studies (UDS) and the University College of Education, Winneba (UCEW) (Adu-Gyamfi, Donkor, & Addo, 2016). Overall, the PNDC government's educational reform in 1987 aimed to revamp the educational system to address vocational and technical issues.

This is evidenced by the introduction of numerous technical and vocational programmes. The system, however, fails to develop a strong relationship between pre-higher and tertiary education. As can be seen from the structure, there was no direct link between pre tertiary and tertiary education, therefore students who completed vocational and technical programmes might proceed at the highest level to achieve professional status in those fields. This did not make the programme attain its ultimate objective of making the education system technical and vocational.

2.8.4 Anamoah-Mensah Educational Review/Reform 2007

In 2002, the President of Ghana, John Agyekum Kufour saw the need to introduce reforms in the education system of Ghana. Hence, he inaugurated an educational review committee under the guidance of Professor Josephus Anamoah-Mensah, the Vice-Chancellor of University of Education, Winneba to reconsider the educational structure and curricula of the country (Adu- Gyamfi, Donkor & Addo, 2016). In terms of system and structure, the most conspicuous alteration introduced by the Anamoah-Mensah committee was the introduction of two-year (2) kindergarten as main stream education and part of basic education and the extension of the duration of secondary school education to four (4) years which was later reversed to three years by a legislative instrument by President J. E. A Mills government/administration in 2009.

In respect of curricula changes, the Anamoah-Mensah committee recommendations focused on producing well-balanced human resource to promote industrial growth, aligning the educational system to the Ghanaian environment through the, promotion of indigenous knowledge, and further shift from grammar-type education to science and technology-based education (Adu- Gyamfi, Donkor & Addo, 2016). It is important to mention that, though only four core subjects

This is evidenced by the introduction of numerous technical and vocational programmes. The system, however, fails to develop a strong relationship between pre-higher and tertiary education. As can be seen from the structure, there was no direct link between pre tertiary and tertiary education, therefore students who completed vocational and technical programmes might proceed at the highest level to achieve professional status

in those fields. . This did not make the programme attain its ultimate objective of making the education system technical and vocational.

2.9 Curricular Alignment

Having curricular and instructional alignment between grade levels is necessary to support student achievement and to meet learning objectives; in turn, alignment is supported when teachers choose to implement the curriculum with fidelity (Early et al., 2014; Wiles & Bondi, 2014). Research on schools in various states has shown that a lack of fidelity with the curriculum hinders alignment between classes in the same grade and grade levels and creates instructional inconsistencies among teachers (Early et al., 2014). Early et al. (2014) and Wiles and Bondi (2014) showed low student performance and gaps in the knowledge necessary for the following grade level. Numerous researchers have identified the need to clarify which factors support or prevent alignment (Causarano, 2015; Early et al., 2014; Polikoff & Porter, 2014; Tweedie & Kim, 2015). Curriculum alignment has proven to be important for student success based on the values and needs expressed by students (Tweedie & Kim, 2015).

Tweedie and Kim (2015) found various areas of misalignment, as perceived by students; their findings called attention to areas not covered in the curriculum that then created learning gaps. Certain aspects, such as social acculturation, proved to be overlooked by instructors and curriculum planners in the process of learning English, which was something students rated as vital to success in school (Tweedie & Kim, 2015). Such exclusions part to an area of misalignment that prevents students from duly connecting to and understands his objectives of the curriculum. Prior research has shown that breakdowns in alignment occur because of barriers caused by teachers (Early et al.,

2014), Early et al. (2016) identified one hindrance to alignment from teachers who struggle with conflict during collaborative Opportunities. The authors discovered that even though collaborative opportunities existed, skills for negotiating challenges or conflicts proved difficult for the participants. These findings provide two important points: (a) the concerns of teachers require evaluation before beginning collaborative co-teaching groups, and (b) this unpreparedness hinders alignment because of conflicting roles in student support. Causarano (2015), offered a different perspective on how teachers view curriculum alignment and preventative barriers; he argues that teacher's self-reflective practices improve curriculum alignment and instruction. Other researchers, however, have found that curricular and instructional quality and teacher preparedness influence alignment (Early et al., 2014; Tweedie & Kim, 2015). The need for self-reflection determines what aspects of a literacy curriculum (for example) align accordingly in order to prepare teachers with the tools necessary for preparing students.

Causarano (2015) highlighted the need for alignment as well as increased understanding into the requirements for teachers to effectively implement curricula and align Research in Higher Education Journal Volume 36 instructional practices. The promotion of self-reflective practices, according to Causarano (2015), offered further insight into the barriers to the successful implementation of a new or revised curriculum. Causarano (2015), argued that because the effects of a lack of alignment will potentially harm students, teachers' abilities to reflect on their practices should be supported. In contrast to the literature that Polikoff & Porter (2014), presented in their study on the connections between alignment and implementation, the authors found no evidence of an association between teacher effectiveness and instructional alignment. These findings later

supported Causarano's study (2015). Polikoff & Porter (2014), explored the possible connections between instructional alignment, pedagogical quality, and student learning and state-mandated benchmarks but found no connection. This result created questions about how to effectively measure these categories and whether or not instructional alignment between standards and delivery of the curriculum are connected to pedagogical quality because no evidence supports a connection, the question also arises about how to effectively measure alignment as it is connected to the role of the teacher.

2.10 Teacher Roles

The teacher roles remain instrumental in the success or failure of a curriculum (Loflin, 2016). In many cases, researchers have supported the need to thoroughly understand teacher's roles and concerns during the implementation of a new curriculum (Hall & Hord, 2015). Out of the many roles defined in the literature, teacher fidelity stands out as being important but also for being inconsistent among teachers (Loflin, 2016). Jess et al., (2016), found the need to prepare and train teachers to meet the objectives of a curriculum: specifically, the authors' focus was on the curriculum-development process and the role of the educator. Jess et al., (2016) argued that teachers need the capacity to design developmentally appropriate learning tasks that are aligned to curricular expectations. The focus of training and professional development requires an emphasis on teaching how best to interpret the curriculum so that students needs will be aligned with appropriate instructional practices (Jess et al., 2016). One way to support this situation, as Jess et al., (2016), recommend includes allowing teachers primary involvement in curriculum development and the process of alignment as it pertains to knowing student needs, and then instructing accordingly. The authors found that understanding how teachers

perceive their roles in curriculum development and implementation provides insight into teachers' concerns about implementing a new curriculum (Jess et al., 2016).

2.11 Curriculum Fidelity

When considering to fully understand teachers the roles that teachers take on in the execution of an innovation, it is necessary concerns within specific areas of change (Lochner et al., 2015). One of the he leading roles of the teacher incudes delivering a curriculum with fidelity, which means pigmenting the curriculum faithfully and keeping in step with its purpose and design. Fidelity and the trust association for curricular implementation can highlight teacher attitudes toward a curriculum. MeShane and Eden (2015) offer insight into this problem with their study examining alignment between teacher implementation and the intended design of the curriculum. Thus, the study focused on whether teachers implemented the written curriculum with fidelity; the analysis also emphasized the vital role teachers play in successful new- Research in Higher Education Journal Volume 36 curriculum implementation (Budak, 2015). Some curricula remove the opportunities for decision-making in teacher instruction, which ignores or minimizes teachers skills, strengths, and experience (Budak, 2015). Considering the vital role teachers play, determining what exactly has caused a lack of fidelity could help in determining if the curriculum itself is the problem (Hondrich, et al., 2016).

Hondrich et al., (2016) maintain that teachers may be more effective if they are given the freedom to adapt and modify a curriculum when warranted, yet the instructional support a given curriculum offers often supports student engagement within the specific curricular tasks the curriculum outlines. Teacher beliefs about educational practices influence the actions that occur in the classroom, which can offer possible reasons for a

lack of fidelity (Budak, 2015). The role of fidelity in accurately determining if a curriculum has achieved its intended purpose calls attention to another reason that teachers' roles require consideration.

When a curriculum is implemented with fidelity, researchers can achieve accurate insights into whether the curriculum has met its intended objectives, which can then provide a better measure of student performance (Budak, 2015). Because teacher fidelity influences student learning and the successful implementation of a curriculum, assessing fidelity requires research. Piasta, et al., (2015), have identified four dimensions for assessing fidelity: (a) adherence, (b) exposure, (c) quality of programme delivery, and (d) participant responsiveness. Fidelity is multidimensional because a curriculum generally consists of many components necessary for full implementation, teachers often choose specified as direct of a curriculum to implement while disregarding ones used on personal variables such as beliefs. Concerns or contradictions in philosophy (Budak, 2015). Piasta et al., (2015), determined that most teachers who choose to implement with high fidelity experience gains in student literacy skills. This data supports the need to prepare and train teachers accordingly in order to understand the impact that fidelity has on students (Piasta et al., 2015). When studies consider fidelity, questions often arise about the reasons that teachers choose not to implement a curriculum as prescribed. In Brighton et al.,(2015), teachers reported that administrators primarily emphasized fidelity to the programme, even though the programme did not meet the needs of advanced readers. Teachers who strayed from the curriculum claimed to have done so to meet the academic needs of their students. In this instance, fidelity to the reading curriculum created a lack of challenge and rigor for

the more advanced students; this situation then created a learning plateau for those students (Brighton et al., 2015).

2.12 Teacher Concerns

Teacher concerns play a part in the implementation of new curricula, because their concerns sometimes direct the choices teachers make when choosing to add or omit items from the curriculum (Bell, 2015; Causarano, 2015). The Concerns Based Adoption Model (CBAM) fits into determining what types of concerns teachers have and how to address these concerns to reduce barriers. Lambert et al., (2014), explored implementation experiences and gained an understanding of the barriers teachers perceive when implementing a new curriculum. The emerging themes for potential barriers showed that: (1) some teacher's adapted better than others for student-centered on teachers liked to have content available but were unable to finish the curriculum within a school year, (3) teachers required resources and tools to be successful, (4) teachers Research in Higher Education Journal Volume 36 showed concern about collaboration and professional development opportunities, and (5) the implementation process helped teachers to re-focus (Lambert et al., 2014). Else themes appear consistent with other studies that have been presented in support of the CBAM for understanding the concerns of teachers. Narrowing down specific concerns for teachers who are implementing a new innovation often serves to direct decisions about how best to support the teachers.

Donovan et al.. (2014), for example, documented the different ways in which twenty- first-century skills exist in classrooms using the CBAM innovation configuration (IC). In their study, an IC map consisted of a summary outlining various methods in which the key aspects of an innovation had become operational (Donovan et al., 2014). One of

the leading concerns among the teachers included a lack of opportunities for collaboration and sharing among peers in support of the change. The identification of this specific concern highlights a value that teachers often place on collaboration (Lambert et al., 2014). Determining these concerns in advance could potentially provide the administration with direction for addressing concerns before the onset of the implementation of a change. Being able to narrow down specific concerns offers a chance to fine-tune PD opportunities for reducing anxieties at the onset of the change (Lambert et al., 2015).

In some situations, the use of the CBAM has shown concerns across more than one stage (Kwok, 2014). Kwok (2014), researched educator's concerns about the initiation of a liberal studies curriculum for secondary students in Hong Kong. The data showed an intense level of concern visible across all stages of concern, as discussed above. The teachers showed signs of high levels of stress and anxiety in each stage. In general, when teachers experience a high rate of concern, researchers often recommend singling out PD that emphasizes peer collaboration (Al-Shabatat, 2014; Derrington & Campbell, 2015). What emerges from much of the literature is the need to understand the challenges brought on by change and the need to mitigate frustration and anxiety through these processes (Gautam et al., 2016). Understanding these aspects as contributors to resistance to change could help to better support teachers and improve student experiences. As the current literature consistently points out identifying teacher concerns early, before the expected implementation, will increase the chance for the curriculum to be implemented with efficacy and fidelity (Doyle et al., 2015). The use of the CBAM in educational settings has proven beneficial for determining the concerns of teachers who must adopt learning management systems. In Lochner et al., study (2015), the stages of concern again

highlighted areas where teachers felt the most anxiety from aspects that may have prevented the successful adoption and execution of the new innovation. Because the CBAM serves as a process for change, the stages in the SoCQ show pressing concerns that alert administrators to the greatest areas of need. Doyle et al. (2015) also used the SoCQ to understand the concerns experienced by English language pre-service teachers as well as the changes that occur throughout the stages. Fourteen pre-service teachers participated over a three-week period in which the focus was on technology integration through the use of SWiki. Through a questionnaire, Kayaduman and Delialioğlu (2016), found that many pre-service teachers experienced the same common self-doubt, even with the provision of support and of necessary tools. These findings support the need to better understand any concerns that people should troubleshoot during the proposed change. For that particular study, the recommendation based on the SoCQ results highlighted the need for the design and development of appropriate guidance for pre-service teachers (Kayaduman & Delialioğlu, 2016).

2.13 Administrative and Professional Support

Researchers have identified administrative and professional support as being necessary for teacher success and the implementation of new initiatives (Bakir et al., 2016; Bautista, Ng, Múñez, & Bull, 2016). Areas of support fall into different categories, but administrative influence, related administrative roles, and professional development opportunities are prioritized within the literature, thus supporting the need to highlight these areas for the successful implementation of a new curriculum (Cetin, 2016). Recent studies have shown that administrative support and professional development opportunities influence whether or not teachers feel supported and comfortable with new curricular

implementations (Bakir et al., 2016). In accordance with the CBAM, the difficulty surrounding a new change or innovation potentially increases concerns and fears among staff members. An effective curricular implementation will also rely on the attitudes of the administration and teachers (Thorn & Brasche, 2015). One method that has been distinguished through the CBAM literature includes the need for administrative and professional support (Hall, 2015). Support is available through different forms of professional development and professional learning communities (PLCs), which are designed to address any concerns that might hinder the successful implementation of a change but these factors are highly dependent on the influence and roles of the administrators (Hall, 2015).

2.14 Administrative Influence

Over the years, many studies have determined the contributors to success and failure for new have found that the implementation-and initiatives-specifically new-curriculum administration's attitudes and perspectives influence teacher perceptions (Derrington and Campbell, 2015). An administrator who presents a negative attitude toward the initiative may cloud the perspectives of the teachers and could hinder the onset of implementation. Derrington and Campbell (2015), described principals` perceptions and concerns for the implementation of policies for new teacher evaluation practices; their study, which focused on understanding which types of support the principals who implement this change desire the most, found that principals expressed a lack of time as their primary frustration. The principals' dominant concern was related to time constraints. The study's primary finding was that concerns that failed to be addressed early in the process could potentially derail the change and hinder any possible results (Derrington and

Campbell, 2015; Hall, 2015). A principal's influence during an innovation ties directly to trust building and the foundations for fostering mutual respect (Park & Ham, 2016). Mehdinezhad and Mansouri (2016), corroborated this notion by investigating teachers' self-efficacy and principals leadership traits. A significant relationship was proven to exist between these two areas. A principal's positive influence and support of teachers' intellectual growth stood out as key areas in support of teacher efficacy. Self-efficacy is important for principals to positively influence and encourage teachers while the teachers are experiencing changes that require action (Budak, 2015).

Similarly to research presented by Mehdinezhad & Mansouri (2016) and Budak (2015), found trust building to be vital, in addition to principals' attitudes about setting visions and goals for establishing a positive culture that is conducive to change. Establishing a shared vision, empowering staff, and building healthy relationships all allow principals to better understand Research in Higher Education Journal Volume 36 teachers' strengths and weaknesses, which then establishes trust and creates a positive influence over the staff (Torres, 2016).

2.15 Professional Development

Professional Development offerings are key for supporting teachers in new initiatives (Smit & du Toit, 2016). One benefit of PD includes teachers' increased comfort and skill levels for implementing new curricula. Relevant and effective PD has been found to promote confidence and greater understanding of objectives (Lia, 2016). Having time and conducting research to develop meaningful PD that will consider the needs, concerns, and experiences of the teacher will be valuable and likely to influence positive growth for the teacher (Lia, 2016). Coldwell (2017), found a connection between teacher confidence

and PD. Coldwell (2017), found that PD increased skills knowledge, which enabled teachers' confidence in specific content areas: this in turn led to increased job satisfaction and professional motivation. A vital point in PD effectiveness includes the influencing factors and concerns that could potentially direct the outcomes of the PD. PD quality, personal motivation, organizational support, and government mandates all fall under areas for teachers' concerns and barriers to implementing a curriculum with fidelity. These factors all influence how teachers respond to PD (Coldwell, 2017). Several studies have found that teacher efficacy stands out as an area supported by effective and relevant PD (Margolis et al., 2017). The authors assessed teacher efficacy in integrating new curriculum standards into content areas in classroom teaching. The authors found efficacy to be a primary factor in a teacher's competency level when integrating different content areas into an agriculture curriculum. They recommended ongoing and relevant PD to meet the needs of midcareer teachers. Maintaining teacher confidence and reducing anxiety through deliberate choices in PD content both help to support teachers through curriculum changes (Margolis et al., 2017).

Kyndt et al., (2016), explored different types of PD and their related effects on teachers. Kyndt et al. (2016) offer further insight into teachers' attitudes and beliefs as well as the concerns they experience from curriculum implementation through informal learning for professional growth. Teacher collaboration, team planning, or even mentoring may all be classified as informal learning opportunities. Informal learning, though not organized (as formal PD is), allows teachers to work together to reduce the feelings of isolation often experience (Kyndt et al., 2016). Perhaps most important, as Kyndt et al. (2016) note, is that experience and age do not appear to affect new learning as much as personal attitude does.

Understanding the differences in attitudes could help to break down the barriers to full curricular implementation. What this situation shows is that PD does not always need to be formal; most teachers hope that PD will be relevant to their content areas and will allow them to collaborate and problem-solve. As the literature has pointed out, understanding teacher concerns helps administrators when choosing the PD that will be most relevant to teachers (Bakir et al., 2016).

Bautista et al., (2016), substantiated this notion through a study in which they investigated teacher beliefs, priorities, and PD needs when implementing a curriculum. Bautista et al., (2016), found that teachers commonly showed eagerness for opportunities to strengthen their expertise in curriculum areas, and they needed PD to do so. Teachers' beliefs also influence their views of the curriculum. For example, if teachers perceive themselves as being unprepared or unfamiliar with a curriculum, then these beliefs will influence how they respond to and teach the curriculum *Research in Higher Education Journal* Volume 36 (Bautista et al., 2016). Bautista et al. (2016) recommend that PD should require alignment with teachers' learning demands to achieve optimal effectiveness. Professional development plays a part in reducing anxiety when implementing a new curriculum (Hall, 2015). Caropreso et al., (2016), also found this to be true when using the Stages of Concern Questionnaire (SoCQ) from the CBAM to assess teachers' perceptions of a mathematics curriculum during PD. Cetin found similar conclusions as Bautista et al., (2016), regarding the benefits of PD. Cetin included an increased understanding of science teachers' level of use for technology integration and the effect of PD sessions designed to improve comfort and proficiency. The teachers initially showed little knowledge on the subject area and a lack of training and skills necessary for successful integration. Cetin

reported that following the PD sessions for technology, 58.5% of the teachers developed increased confidence and positive outlooks about the integration process. Cetin's study (2016) provides a concrete example of how PD improves teacher proficiency as well as alleviates concerns through the practical the knowledge and awareness likely to implement curricula with fidelity when they feel well prepared through PD and develop application of the curriculum. Teachers become more required for effective implementation (Cetin, 2016). Supporting the need for PD and for understanding the concerns connected to a new curriculum implementation, Bandura's (1977), social learning theory emphasizes the importance of monitoring and modelling.

2.16 Factors that Promote Implementation

It is important to note that most of these variables such as qualification and experience, professional programmers, acquaintance with the content of the syllabus were found to be some of the factors that promote fidelity implementation. They were therefore reviewed in this section. Teacher Qualification and Teaching Experience the teaching profession in developing countries consists of under qualified, unqualified and qualified teachers. Teachers in the first two categories usually enroll in courses to upgrade their qualifications, and identify skills required in their sector of operation (Obinna, 2007). Sometimes, by upgrading their professional instincts, they are able to perform even better than the professional teacher who has had an esoteric body of knowledge at the training college. Findings of many research works have revealed that the qualification of a teacher determines his/her competence in the classroom. In recent research conducted by Penuel et al., (2007), it came out that the educational attainment of teachers affects their class performance. By extension, academic qualification of the teacher influences his/her

classroom competence. In that research, it was revealed tended to associate and commit themselves more to curriculum implementation requirements. In my opinion however, this stance is contestable that teachers with professional 34 qualifications the individual's qualification per se cannot determine how effective they become in the classroom.

The individual's intellectual ability cannot and should not be discounted. Penuel, et al., (2007) noted that issues of professionalism and non-professionalism are closely linked to teacher qualification. I sincerely believe that professional/non-professional teachers also respond to given that there have been counter arguments that curriculum is implementation in diverse ways. Ipaye (2002) and Penuel, et al., (2007) that teachers may ignore, refuse, adopt and adapt the official curriculum. They contended that teacher qualification enacts fidelity of curriculum implementation.

The issue about relationship between years of experienced on the job and fidelity implementation has not been a recent phenomenon. Investigations of teacher experience have been conducted in a wide range of developed and developing countries (Hanushek, 2003). As a broad statement, the results are qualitatively similar except there is perhaps slightly stronger support for a positive impact of these on curriculum implementation in developing countries. At the same time, the additional support is slight with the majority of studies still not finding significant correlation between teaching experience and quality delivery of curricula programmes. Several studies conducted in the past showed that teacher experience has a more positive relationship with quality teaching or implementation, but still the overall picture is not that strong (Hanushek, 2003). While a majority of the 35 studies finds a positive effect, only a minority of all estimates provides statistically significant results. A study that was conducted in the USA revealed that value-

added estimates within individual states suggest more strongly that experience has an impact on teachers' implementation of curriculum.

Still only 41% of the estimates are statistically significant. It is quite likely that a number of these studies lack the statistical power necessary to identify precisely the experience effects. An important consideration in the case of experience is the possibility of a highly nonlinear relationship between the quality of instruction (fidelity) and number of years of teaching experience. Hanushek and Kain (2005), also pursue a nonparametric investigation of experience and found that experience effects are concentrated in the first few years of teaching. Specifically, teachers in their first and, to a somewhat lesser extent, their second year tend to perform significantly worse in implementation in the classroom. Using a different estimation methodology.

Hanushek et al., (2005) pinpoint the experience gains as arising during the first year of teaching, with essentially flat impacts of experience subsequently. Consequently, misspecification of the relationship between teachers' Fidelity implementation and experience likely contributed to the failure to find a systematic link between faithful lesson delivery and experience. I think that while experience can bring important benefits to the job of teaching (implementation), owing to greater maturity in the job and increased levels of on-the-job learning, it can also create problems of inertia, lack of innovation and resistance to change which may be unlikely to occur with a younger teacher population. For this reason, it may be important to examine further whether experience on the job can really influence the effectiveness in terms of curriculum implementation. Elsewhere, copious literature has supported the notion that it really is the case. However, real life

experiences have also proven that the assertion can best be described as erroneous. If so, then it becomes vital to subject it (assertion) to empirical testing as this work seeks to do.

In-Service Training and Professional Development In order that curriculum policy is translated into practice and to ensure that successful implementation and continuity of any curriculum innovation exists in the classroom, it is paramount that teachers receive in-service training and provision of ongoing support and professional development (De Lano et al., 1994; Mclauphlin, 1987; White, 1993). As Stenhouse (1975) put it, without teacher professional development there can be no curriculum implementation. Brindley and Hood (1990), claimed that ongoing in-service training and professional development constitute important components of any projected implementation. In- service training focuses on teachers' responsibilities and is aimed toward short-term and immediate goals, whereas professional development seeks to facilitate growth of teachers' understanding, of teaching and of themselves as teachers (Richards & Farreli, 2005). A teacher may be doing him/herself a disservice if s/he therefore fails to take active part in professional developmental activities. A considerable number of conceptual and empirical studies have been carried out to illustrate the importance of teachers' in-service training and professional development in assisting teachers with their curriculum implementation skills. Analyzing 15 empirical studies conducted in the 1970s. Fullan and Pomfret (1977), concluded that in-service training was a factor in seven studies. These studies indicated that teachers who received intensive in-service training had a higher degree of implementation than those who did not.

Teachers' Beliefs and Decision-Making in Implementation: Teachers' beliefs have been described by Kagan (1992), as "tacit, often unconsciously held assumptions about

students, classrooms, and the academic material to be taught" (p. 65). Teachers' beliefs are related to their classroom practice (Burns, 1992; Fang, 1996; Kagan, 1992). Pajares (1992) emphasised that there is a "strong relationship between teachers' educational beliefs and their planning, instructional decisions, and classroom practices" and that "educational beliefs of pre-service teachers play a pivotal role in their acquisition and interpretation of knowledge and subsequent teaching behaviour. Nespor (1987), argued that teachers' beliefs are likely to influence their future behaviour. Nevertheless, Fang (1996), pointed out inconsistencies between teachers' beliefs and their practices. These inconsistencies selected the complexities of the classroom reality and implied that "contextual factors can have powerful influences on teacher's beliefs and affect their classroom practice.

Discussing the logic of implementation, Fullan and Park (1981), claimed that implementation actually necessitates changes and adjustments in the belief systems of teachers in three aspects, and in succession; first materials, then teaching approach and finally beliefs. They firmly contended that change in beliefs is much more difficult and time consuming to bring about than changes in materials and teaching methods. Woods (1996) also argued that what teachers do in their classroom practices is shaped by what they think, and that teachers' perceptions and beliefs serve as filters through which instructional judgments and decisions are made. (Shavelson & Sten, 1981; Kagan, 1992). Woods (1996), stated the importance of the teachers' beliefs on their practice of language teaching, saying, the teacher's beliefs, assumptions and knowledge play an important role in how the teacher interprets events related to teaching: both in preparation for the teaching and in the classroom, and thus affect the teaching decisions that are ultimately made. Woods found that the decisions made in planning and carrying out the course were

consistent with deeper underlying assumptions and beliefs about language, learning, and teaching; yet each teacher's decisions and beliefs differed dramatically from the other along a number of specifiable dimensions (Woods, 1996).

Teachers' Acquaintance with Properties of the Syllabus: The point cannot be contested that teachers' acquaintance with the properties, features and content of the curriculum material (syllabus) exercises a positive effect on their classroom performance. Natriello et al., (1990) and Elbaz, (1991) observe that teachers who teach subjects need to strive and internalize the essential features of those subjects and carry them out as planned. It will be difficult for teachers to deliver their lessons well if they make no deliberate effort to carefully study the syllabus to be able to meet the needs of their students (Elbaz, 1991).

The properties of the curriculum encompass features of the SHS French syllabus, the rationale for teaching French in Ghana, the general aims and objectives of the SHS French curriculum (Syllabus), the scope of content of the Syllabus. Organisation of the syllabus and the time allocation in the syllabus. Reimer (2002), criticised Elbaz (1990), for using weak variables in the self-report instruments.

In Ghana, Arthur (1999), carried out a similar study on the degree of implementation of an instructional programme in the Ashanti Region of Ghana. The findings of the study indicated that the majority of the teachers did not plan their lessons within the framework of the syllabus since most of them were not familiar with the content of the syllabus. She also found that most content areas were not adequately taught. Arthur (1999), further concluded that written exercises were less frequently assigned by the majority of the SHS Core English language teachers in most of the content areas, and finally the teaching learning strategies suggesting high pupil activities were usually

avoided. From her 40-research work, it turned out that acquaintance of teachers to the properties of the curriculum material (syllabus), promoted fidelity implementation. In her work, Arthur (1999) defined the characteristics of the syllabus to include the coverage of content areas, students' activities and methods of teaching that can be critiqued. In her study, the characteristics of the syllabus were, however, not defined because they were not clearly delineated. As a criticism, I think the principles in the syllabus that constitute fidelity of implementation upon which her findings could be based were lacking, furthermore, she used certain behaviour indicators that were not based on the syllabus. I believe that teachers implement instructional programmes by covering greater amounts of content areas and giving out activities to students as expected but whether they are more faithful and committed to the principles underlying the fidelity model of implementation may still remain questionable.

At this juncture, it becomes imperative for us to look at the characteristics of the SHS French syllabus in detail. Teachers' acquaintance with the SHS French syllabus will show that the syllabus comprises grammar/ language, essay writing, comprehension, vocabulary development, summary and speech work. Each component comprises its own teaching strategies that are classified into knowledge and understanding and the use of knowledge. Knowledge is the ability to remember or recall material already learned and constitutes the lowest level of learning (GES, 1998). Understanding on the other hand, is "the ability to grasp the meaning of some material that may be verbal, pictorial, or symbolic" (GES, 1998). The ability to use knowledge, according to GES, includes the levels of application, analysis, synthesis and evaluation. The teaching strategies under knowledge and understanding, referred together as receptive skills, are learnt through

listening and reading. Those strategies under the use of knowledge (productive skills) are also learnt through speaking and writing. Teaching strategies under grammar or language study that constitute the use of knowledge are dialogue and the construction of original sentence. The rest - conversation drills, pair drills, competition drills, substitution drills and blank- space filling also constitute knowledge and understanding (Teaching Syllabus for French, 2010).

All the teaching strategies under essay writing, discussion, organising unordered string sentence into lucid paragraphs, debating in preparation to argumentative essay and story-telling sessions in preparation to written work- are subsumed under the use of knowledge. Those under comprehension, - silent reading, oral reading, linking comprehension lesson with literature lesson and testing listening comprehension, constitute knowledge and understanding (Teaching Syllabus for French, 2003, 2010). With the exception of writing compositions on topics selected from specified disciplines constituting use of knowledge, the rest of the strategies under vocabulary development - making vocabulary with selected disciplines and encouraging students to look up on in dictionaries fall under knowledge and understanding. Summary writing has all its adhering strategies- expressing themes in single sentences, paraphrasing paragraphs and reducing passages to a third of original length while retaining the mood-under use of knowledge except identifying themes of passages. Speech work has pronunciation drill through modeling or repetition, contrastive drill, and poetry recitals under knowledge and understanding while conversation, debating and acting plays, fall under the use of knowledge (Teaching Syllabus for French, 2010).

Again, studies have revealed that teacher assessment and evaluation procedures that are incongruous with prescribed guidelines in the curriculum (syllabus) may only end up alienating the student and thus constitute barriers to effective curriculum implementation (Pajares, 1992; Law et al., 2008). Teachers often perceive themselves as professionals who need to be accorded some level of professional autonomy. In spite of this, teachers need to carefully follow the laid down guidelines in the assessment of students. This ensures that students are adequately prepared for the final examinations (Law, et al., 2008). The arrangements for continuous assessment are grouped into categories such as Projects, Class Tests, Homework, and Terminal Test (Teaching syllabus for French, 2003, 2010). The projects are assigned to students to be completed over extended period of time. They comprise practical work (such as creative writing) and investigative study. The student is expected to write a report for each project undertaken. The class tests consist essentially of written assignments covering topics/units completed at some specific period within the term (Teaching syllabus for French, 2010). The homework is also an assignment to be completed within a day or a couple of days. It may consist of essays, summaries, and other problems to be solved. Teachers' acquaintance with these areas of the syllabus improves their fidelity implementation, all things been equal.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter focuses on the research methodology used for the study. It involves the study area, research philosophy, research design, study population, sample and sampling technique, data collection instrument and procedure, validity and reliability of data, data analysis, and presentation and summary.

3.1 Study Area Description

According to the Ghana Education Service register (2020), there are 122 senior high schools and 43 districts (1 metropolis, 18 municipalities, and 24 districts) as per the community water and sanitation agency report (2019) in the Ashanti region.

The researcher chose some areas of the Ashanti Region because of accessibility and familiarity, having attended secondary school and University in the area. This factor helped the researcher to properly handle the challenges encountered during the research and utilized elements that contributed to achieving the objective of the study.

3.2 Research Philosophy

Research philosophy is an over-arching term relating to the development of knowledge and the nature of that knowledge (Saunders et al., 2009). The research is based on the positivism philosophy. Positivism can be defined as “research approaches that employ empirical methods, make extensive use of quantitative analysis or develop logical calculation to build formal explanatory theory. Crowther and Lancaster (2008) argue that

a general rule that underlines positivism is that it usually adopts a deductive approach. Moreover, positivism relates to the viewpoint that the researcher needs to concentrate on facts.

3.3 Research Design

Research design is the plan to undertake a study with maximum control over factors that may interfere with the validity of the findings. It is the plan that describes how, when and where data are to be collected and analyzed (Creswell, 2019). Research design is however the researcher's laid down plan, structure or strategies to collect relevant data or information that answers the research questions (Bell, 2008).

The researcher used the descriptive survey design for the study. Descriptive survey research design is a type of research whereby investigators administer a survey to a sample or to the entire population of people to describe the attitudes, opinions, behaviours or characteristics of the population which involves the gathering of quantitative data, using questionnaires, and statistically analyzing the data to describe the trends about responses to questions and test research questions or assumptions (Creswell, 2012).

Descriptive survey design offers researchers with a lot of information from various respondents and the data collected are easy to analyze. One weakness of using descriptive survey design is how to retrieve all questionnaires that have been administered to respondents.

3.4 Research Approach

The researcher employed a descriptive research approach in conducting the study. According to Orodho (2002), a descriptive research design is used in preliminary and

exploratory studies to allow researchers to gather information, summaries, present, and interpret for clarification. Descriptive research design approaches because the researcher wants to assess the impact of covid 19 on the implementation of the Senior High School curriculum. According to Tashakkori and Teddlie, (2010), a descriptive survey method is defined as one that looks with intense accuracy at the phenomenon of the moment and describes precisely what the researcher sees. It is concerned with describing the characteristics of a problem, which helps portray an accurate profile of persons, events, and situations. Also, descriptive survey design according to Nassaji (2015) is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals.

Among the strength of descriptive survey design according to Creswell (2009), is that it is inexpensive to conduct and can yield clues about the probable cause and effect relationships. Also, it entails fewer ethical issues compared to experimental designs (Ranganathan & Aggarwal, 2019). Despite the following strengths of descriptive survey design, it has this weakness opined by Hall and Howard, (2012), that descriptive survey design is inflexible because the instrument cannot be modified once the study begins, and the errors in the selection of procedures for determining statistical significance can result in erroneous findings regarding impact. However, descriptive survey design was employed by the researcher because it could enable the researcher to observe and describe the situation as it naturally occurred and the strengths outweigh the weakness.

3.5 Study Population

Population in research refers to the aggregate or totality of objects or individuals regarding which inferences are to be made in a sampling study (Patton, 2002). The target population for this study was all the teachers and all Senior High Schools in the Ashanti Region of Ghana. According to GES (2020), there are 122 senior high schools in the Ashanti Region of Ghana. The accessible population is the teachers from the two (2) Senior High Schools which were selected randomly from each of these three areas. Thus six (6) senior High Schools were selected in all with a total number of 457 teachers. That is the rural area, urban area, and a semi-urban area from the Ashanti Region of Ghana.

3.6 Sample and Sampling Technique

The sampling strategy utilized in any research study affects the extent to which the results can be generalized to a wider population. This means the sampling strategy has implications in terms of the external validity of the study (Leedy & Ormrod, 2005; Baumgartner et al, 2002.). The researcher used stratified sampling and simple random to obtain information from the staff (teachers) of six selected senior high schools in the Ashanti region. This technique conforms to Cohen, Manion, and Morrison (2008), who assert that simple random sampling helps researchers to ensure that all participants (teachers) had equal chances of being selected for the study. According to the Ghana Education Service register (2020), there are 122 senior high schools and 43 districts (One metropolis, 18 municipalities, and 24 districts) as per the community water and sanitation agency report (2019) in the Ashanti region. The researcher adopted the cluster sampling method to divide the region into three clusters. Cluster 1 includes the senior high schools

in Kumasi and its vicinity, and cluster 2 involves schools out of Kumasi. Thus, the suburban of Kumasi and cluster 3 considered senior high schools from the rural areas within the Ashanti region. The selection considers a fair representative sample of two(2) senior high schools from the Ashanti Region of Ghana from each cluster.

3.7 Data Collection Instrument

Data for the study were gathered using a self-constructed and self-administered questionnaire to get information from teachers and students. According to Orodho (2003), a questionnaire is more efficient, requires less time, is less expensive, and permits the collection of data from a wide population. The general purpose of a questionnaire is to collect data from respondents about their characteristics, experiences, and opinions (Gall et al, 2007.). Research instrument according to Oso and Omen, (2009), is the tools used to collect data. The researcher used a questionnaire as the main instrument to collect data for the study because all the respondents were literate. A questionnaire gives respondents adequate time to provide well thought responses to the questionnaire items and enables large samples to be covered within a short time (Kombo & Tromp, 2009). The items of the questionnaire were developed based on the objectives of the study, and it was developed from the literature (Kombo & Tromp, 2009). A questionnaire saves time. It allows all respondents to respond to the same items (Fraenkel & Wallen, 2006).

A questionnaire allows the researcher to gather information from a large audience (Choy, 2014). Some weaknesses of a questionnaire are that some items are ignored or left unanswered. It cannot fully capture the emotional responses or feelings of respondents (ACAPS, 2012). Despite its weaknesses, a questionnaire was used because it enabled the

researcher to gather information from a large number of respondents. The items on the questionnaire were developed from the literature. The questionnaire was divided into five sections intended to capture each objective of the study. Section A asked about Methods for Implementing Curriculum during Covid- 19. Section B asked Impact of Covid-19 on Curriculum Delivery, and Section C asked about Online Teaching and Learning. Section D asked Impact of Covid 19 on Education and Section E asked about the Challenges faced in Curriculum Implementation.

3.8 Data Collection Procedure

A letter of introduction was obtained from the Head of Department of Educational Leadership at Akenten Appiah- Menka University of Skills and Entrepreneurial Development (AAMUSTED). to enable the researcher gain access to the participating schools. Prior to data collection, consent letters with information about the study were sent to the teachers to ensure voluntary participation. The researcher administered the questionnaire personally and waited for the respondents (teachers) to complete answering the questionnaire. Out of 300 questionnaires administered, 216 of them were retrieved from the respondents putting the response rate at 72%. Response rates more than 60.0% is an acceptable rate (Punch, 2003; Kheni & Frank, 2015). The research met the respondents at the staff common room and gave the questionnaire to the respondents (teachers) and came back for them after a week time.

3.9 Validity and Reliability of Data

The extent to which an instrument measures what it is intended to measure is known as validity. (Mugenda & Mugenda, 2008). The researcher created the questionnaire with reference to the goals of the study and the essential research questions in an effort to ensure that it measured what it was intended to measure. The researcher provided his supervisor a draft to review to see if the items measured the desired outcome. (face validity). The supervisor determined the items' content validity (coverage of all research issues) and the degree to which they accurately assess a particular construct. (construct validity). The analysis of the items aided the researcher in reshaping and reconstructing items that the respondents had difficulty understanding.

3.10 Ethical consideration

There are several forms of social and legal responsibility in research ethics. Both works and borrowed materials have been properly recognized and cited in the study. This research considered the issues of informed consent, anonymity, and confidentiality. Neuman, (2007), conceived that researchers must not coerce respondents into participating in studies, thus protecting their rights is key in every study. In other words, participation was voluntary at all times. Informed consent was therefore sought from respondents and university authorities before undertaking the research. Provision of adequate information about the study was, therefore, important to enable the participants to decide whether they want to take part or not (Seymour & Skilbeck, 2002).

The issue of anonymity was also addressed. This was guaranteed when the names of the participants were not requested for or written on the instrument used as well as the

names of university. Confidentiality was ensured since the researcher did not share or discuss any information with a third party. Respondents were equally made aware of the fact that information provided was for academic purposes.

3.11 Data Analysis and Presentation

Mugenda and Mugenda, (2003), observed that data analysis is the process of bringing order, structure and meaning to the mass of information collected. In analyzing quantitative data, before processing the responses, the completed questionnaire was edited, coded and fed into Statistical Product and Service Solutions (SPSS) software, version 25.0, for windows. Descriptive statistics such as frequencies, and percentages were used to analyze research questions one, two and four. Research question number three used regression analysis because the researcher wanted to know the impact covid 19(independent variable) had on curriculum implementation(dependent variable).

3.12 Summary

Chapter three provides detailed information concerning the methodology used in the study, information about the study area as well as the type of research design used. It was revealed that the researcher used descriptive statistics and the research philosophy was positivism which adopts the use of a quantitative technique which is a questionnaire to get data from the targeted population that will be selected randomly from urban areas, rural areas, and semi-urban areas of the Ashanti Region of Ghana. The next chapter presents the results of the data collection and associated analysis.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

Discussions of results, data analysis, interpretations, and presentation are provided in this chapter. While content analysis is used to analyze qualitative data, inferential and descriptive statistics were used to explore quantitative data. To make the data easy to grasp and analyze, frequency distributions, percentages, and frequency tables were used to illustrate the demographic data and regression for the main questions.

4.1 Demographic Information

The study started by thoroughly examining the respondent's background data. Notably, topics including gender category, age, length of service, and education level were sought. Three hundred participants made up the sample for the study. However, 216 respondents from the study sample completed the questionnaires, yielding a 72% response rate. Based on Mugenda and Mugenda (2012), who stated that a 50% rate of response is suitable for analyzing and reporting, the response rate is seen as adequate. A fair rate of reaction is 60%, and an exceptional rate is 70% or above.

Respondents were prompted to specify their gender category. This was done to ensure that both male and female respondents participated fairly. According to the findings, 73.1% of respondents were male and 26.9% were female. This showed that people of both sexes participated in the study, indicating that gender bias was unlikely to occur.

Given that people of different ages may have diverse ideas about other subjects, this study aimed to include and collect viewpoints from people of all ages. According to the study's

findings, 41.7% of respondents were between the ages of 20 and 30; 27.40.7% were between the ages of 31 and 40; 14.4% were between the ages of 41 and 50, and 3.2% were between the ages of 51 and 60. This implied that respondents from various age categories were involved in this study.

Respondents were required to indicate their highest education qualification, ensuring their ability to respond to the research questions. Results showed that 77.3% of the respondents had an undergraduate degree, 17% had a master's degree, 3.7% had a master's degree, and 1.9% had other certificates. This was an indication that all the respondents were well educated, which implied that they were in a position to respond to the research subject with ease. Also, this goes on to confirm that to teach in the senior high school in Ghana at least you must have a minimum undergraduate degree.

Most of the respondents had worked for between 1-5 years in terms of service years, that is 29.6%. Also 25.9% of the responders had worked with an experience of between 6-10 years. Several of the respondents who represented 23.6% had worked for above 11 years. Furthermore, 20.8% of the participants also had job histories spanning below 1 year. This indicates that they were familiar with their particular school. Covid-19, which was described by many as a great evil brought so many disruptions including the closing down of schools to preclude the widespread. In terms of the location of the sampled senior high school, 53.9% of the respondents had their school in an urban area. Also, some 25.8% of the respondents had their schools in semi-urban areas. Lastly, rural areas schools were not exempted. Thus, 18.9% of the respondents had their schools in rural areas.

The government of Ghana on 14th March 2020 instituted a policy to close down schools to control the spread of the virus. This subsequently brought about innovative ways

of going to school. The study looked at the frequency that students of the sampled schools went to the school. 49.8% of the respondents indicated that they did not go to school often during the Covid-19 era. Also, 35.9% agreed that they often went to school during Covid 19. Lastly, 13.4% of the schools most often were in session. This means that indeed Covid 19 disrupted our education system. In terms of mode of delivery, 42.1% of the participant indicated that they were going to school on halftime bases, 31.9% also full-time and 25.9% not going to school at all.

Table 4.1 Demographic Information.

Demographics	Responses	Frequencies (N)	Percentages (%)
Gender	Male	158	73.1
	Female	58	26.9
	<i>Total</i>	216	100
Age	21-30 years	90	41.7
	31-40 years	88	40.7
	41-50 years	31	14.4
	51 - 60 years	7	3.2
	<i>Total</i>	216	100
Education	Diploma	8	3.7
	Degree	167	77.3
	Masters	37	17
	Others	4	1.9
	<i>Total</i>	216	100
Years of Service	Below one year	45	20.8
	1-5 years	64	29.6
	6-10 years	56	25.9
	11 years and above	51	23.6
	<i>Total</i>	216	100
Location	Urban area	117	53.9
	Semi urban	56	25.8
	Rural area	41	18.9
	<i>Total</i>	216	100
How often did you go to school	Not often	108	49.8
	Often	78	35.9
	Most Often	29	13.4

	Total	216	100
Mode of schooling	Fulltime	69	31.9
	Halftime	91	42.1
	Not coming at all	56	25.9
	Total	216	100.0

Source: field survey, 2022

4.2 Descriptive statistics

4.2.1 Development in Schools due to the Pandemic

Table 4.2: Development in Schools due to the Pandemic

Items	Mean	Std. Deviation	Ranking
Use of learning management system (LMS)	2.5602	1.25979	1 st
use of online learning	2.5185	1.39422	2 nd
use of open Educational Resources	2.4352	1.25215	3 rd
Capacity building and provision of training in the use of technologies	2.4120	1.38820	4 th
Virtual exchanges and collaborative online learning	2.3287	1.28617	5 th
Use of digital communication infrastructure to communicate with students	2.3023	1.32790	6 th
Capacity building and training offered on online teaching pedagogies	2.2917	1.29152	7 th
Totals			

Source: Field survey, 2022

Table 4.2 measures the development that happened in the senior high schools in the Ashanti region during the pandemic. In order of importance, **the** Use of a learning management system (LMS) recorded the highest mean of 2.5602, thus most schools resorted to the online learning management system to implement the curriculum during the pandemic. The use of online learning also had the second-highest mean of 2.5185. Further, the use of open Educational Resources had the next highest of 2.4352. Capacity building and provision of training in the use of technologies recorded a mean of 2.4120. Virtual exchanges and collaborative online learning in the school during the pandemic had a mean of 2.3287. Using digital communication infrastructure to communicate with students was imperative during the Covid time which recorded a mean of 2.3023. Capacity building and training offered on online teaching pedagogies had the least of 2.2917.

4.2.2 What impact did the pandemic have on Senior High School curriculum?

Table 4.3: What impact did the pandemic have on Senior High School curriculum?

Items	Mean.	STD. Deviation	Ranking
Poor internet network and electricity	3.3080	3.66645	1 st
lack of technology for distance learning	3.0763	1.40308	2 nd
Difficulties in home schooling	3.0253	1.46982	3 rd
loss of an academic session	3.0084	1.54314	4 th
Urban-rural divides in resource distribution and access.	2.9494	1.29764	5 th
poor skills and competence in using technologies	2.8819	1.36340	6 th
poor/unequal access to educational opportunity	2.8143	1.40494	7 th
Poor teaching and learning	2.6456	1.37506	8 th
<i>Totals</i>			

Source: Field Survey, 2022

Table 4.3 presents the impact Covid-19 had on the implementation of the senior high school curriculum. Thus, a descriptive statistic is used to explain the various construct. The majority of the participants agreed that the status of the network and electricity for learning during Covid 19 was poor, thus this recorded a mean score of 3.3080. In terms of lack of technology for distance learning a mean score of 3.0763 was recorded, Difficulties in home schooling also had a score of 3.0253, Covid came with so many challenges in schools, thus loss of an academic session during the pandemic had a mean score of 3.0084. Urban-rural divides in resource distribution and access had a mean score of 2.9494. In terms of poor skills and competence in using technologies, a mean score of 2.8819 was recorded. Poor/unequal access to educational opportunity was one of the challenges which recorded a mean of 2.8143. Lastly, poor teaching and learning were the least with a mean of 2.6456.

4.2.3 Impact of Covid-19 on Education

Table 4.4: Impact of Covid-19 on Education

Items	Mean.	STD. Deviation	Ranking
COVID-19 has affected assessments.	3.1746	1.41184	1 st
COVID-19 will lead to widening inequality in Education.	3.0833	1.35854	2 nd
Do you believe COVID-19 will lead to poor academic achievement?	3.0120	1.38112	3 rd
Promotion will be difficult due to a lack of assessment.	2.8840	1.27635	4 th
Do you believe there will be increased dropouts	2.5080	1.43463	5 th
Totals			

Source: Field Survey, 2022

Table 4.4 looks at the overall impact Covid-19 has had on the Ghanaian educational system as a country. A great number of the respondent agreed that COVID-19 had affected assessments with a mean score of 3.1746; COVID-19 will lead to a widening of inequality in Education was the second highest of 3.0883. Most respondents agreed that COVID-19 led to poor academic achievement with a mean score of 3.0120. In terms of promotion, the respondents indicated that it was difficult due to a lack of assessment, and this had a mean of 2.8840. Lastly, Do you believe there will be increased dropout had a least mean of 2.5080.

4.3 What new models of teaching were considered during the pandemic?

The table below presents the respondents' reactions to online teaching and learning during the pandemic.

Table 4.5: What new models of teaching that were considered during the pandemic?

Online Teaching & Learning	Responses	Frequencies (N)	Percentages (%)
Remote teaching and learning before the pandemic	Not often	99	45.8
	Often	85	39.4
	Most often	30	13.9
	<i>Total</i>	214	100
Remote teaching and learning before the pandemic	Not often	113	52.3
	Often	84	38.9
	Most often	18	8.3
	<i>Total</i>	216	100

% of students that fellow remote teaching and learning	Below 50%	112	51.9
	50%	70	32.4
	Above 50%	33	15.3
	<i>Total</i>	215	100
% of teachers with experience in online T&L before Covid-19	All	20	16.7
	75% or more	44	34.4
	50% or more	70	10.0
	25% or more	43	38.9
	less than 25%	32	
	None	7	
	<i>Total</i>	216	100
Teachers' adaptability to E-learning	Yes	105	48.6
	No	103	47.7
	<i>Total</i>	208	
Has your institution changed the curricula due to Covid-19?	Yes	35	16.2
	Yes, for some specific programmes /courses	47	21.8
	No, but there were consequences in terms of implementation/delivery.	50	23.1
	No	82	38.0
	<i>Total</i>	214	100
Curriculum change due to the consequence	Our curricula have more theoretical than practical focus because of restrictions due to COVID-19	79	36.6

s of Covid-19		
Our curricula became more practical in a sense of using case studies to engage the students from distance.	65	30.1
our curricula are more flexible students have more freedom in choosing their learning path.	35	16.2
our curricula have an enhanced focus on employability due to rising unemployment.	17	7.9
our curricula have an enhanced focus on sustainable development.	20	9.3
	216	100

Source: field survey, 2022

4.4 Regression Analysis

Regression analysis is a statistical method for identifying the relationship between two or more quantitative variables—an independent or explanatory variable (or variables), which may be known, and a dependent variable, whose value must be anticipated. The method is used to identify the equation that most accurately captures the dynamics between the variables. By using two or more independent variables, multiple regressions create an equation that can forecast one variable. To understand the statistical reliance of one variable on other variables, regression analysis is applied. The method can demonstrate the proportion of the variation between variables that can be attributed to independent factors and the remainder to dependent variables. The link between the variables is typically shown using an equation.

4.4.1 What impact did the pandemic had on curriculum implementation RQ 3s

Table 4.6: Covid 19 impact on Curriculum Implementation

Variables	B	Std. Error	T	Sig.
(Constant)	2.587	.427	6.064	.000
Age	.240	.096	2.490	.013
Gender	-.001	.146	-.008	.993
What is the highest qualification?	-.292	.134	-2.176	.031
How many years have you been working as a professional teacher?	.089	.076	1.171	.243
Where is your school located?	-.012	.083	-.149	.882
DSP	.146	.070	2.094	.037
<i>R</i>	.297 ^a			
<i>R</i> ²	.088			
<i>Adjusted R</i>	.066			
<i>F</i>	3.939			
<i>Sig.</i>	.001 ^b			

Dependent Variable: Curriculum Implementation.

Source Field Survey, 2022

Independent variable: Covid 19. Source field Survey, 2022

The summary statistics for the regression analysis development in senior high schools during the pandemic, affected curriculum implementation were reported in Table 4.6. The multiple correlation coefficients ($R = 29.70\%$) in the table show a linear relationship between the values of the dependent variable that were observed and those predicted by the model. A positive and significant association between the predictor variables and the dependent variable was evident from its low value. The R^2 value in table 4.6 above is 8.8% indicating how much of the dependent variable (curriculum implementation) can be explained by the independent variable indicated by the R^2 value

(development in schools). This study's findings have a low level of explanation (8.8%). By the R^2 value of 8.8%, we mean that fewer variables of the impact of the development of schools on curriculum implementation are explained by the independent variables under investigation. As a result, additional research should be done to look at these other factors that affected curriculum implementation during the pandemic. Factors such as stress, and psychological make of the students as well as the teachers could account for curriculum implementation during the pandemic since it is clear that the other variables not looked at in this study were responsible for a significant amount (91.2%). F-statistics are 3.939 and adjusted R Square is 6.6%, with a p-value of 0.000 less than 0.05. As a result, at least one of the explanatory factors has a considerable impact on the curriculum. According to the outcomes of the multiple regression analyses, the predictor variables, development in schools during the pandemic (DSP), explain 6.6% of the variation in the dependent variable. Additionally, when taking into account the overall impact of development in senior high schools during the pandemic on curriculum implementation, the findings revealed that the development in schools during the pandemic statement had a significant impact, as indicated by the F-statistic of 3.939 and the p-value of 0.000 which is less than 0.05.

Additionally, the study found that development in the respective schools positively impacted curriculum implementation during the pandemic with a P-value of 0.037 which is less than 0.05. This indicates that the high development in schools the better the implementation of the curriculum.

Model Summary

The percentage of variance on the dependent variable that can only be explained by independent variables is referred to as R^2 . The coefficient of determination (R^2), R Squared, was 0.257, meaning that 25.7% was explained by the impact of Covid-19 on education during the pandemic.

The study found that the regression model had a significance level of 0 from the ANOVA statistics, indicating that the data were perfect for determining the population parameters because the significance level (p-value) was less than 5%. When compared to F's computed value, which was 14.107, F's crucial importance of significance was 0.000. As a result, the computed value of F was greater than the critical value of 1.96, indicating a significance level between Covid 19 and education. The model was also substantial because the significance value was less than 0.05.

4.5 Discussion

4.5.1 Development in schools during the Pandemic

The second objective of the study looked at the effectiveness of the adapted new models to teach during the pandemic. The results indicated that senior high schools adapted various means of teaching during the pandemic. Especially those in the urban centers. The majority of studies done on the effects of COVID-19 focus on how schools reacted. The most typical reaction from senior education. Schools with senior high schools, not an exception, were ordered to close their campuses and stop holding any in-person classes (Ratten, 2020). As a result, all campus events like commencement ceremonies, workshops,

conferences, sports (both intra and inter-university), and other activities were either postponed or canceled by these institutions (Liguori & Winkler, 2020).

The majority of institutions created or developed their online learning platforms as an alternative to class-based teaching and learning to continue with teaching and learning during the challenging times brought on by Covid-19 (Daniel, 2020). For instance, during the lockdown, Multimedia Group implemented Joy learning for seniors at high schools. The move to online delivery was said to have taken place over a comparable period by numerous other institutions, such as media outlets and senior high schools. Nonetheless, most academic institutions encountered several hurdles while introducing online teaching and learning, including network concerns, Loss of an academic session, academics' and students' difficulties adapting, poor teaching and learning, etc. The subtopic "challenges for online teaching and learning" below goes into more detail about these difficulties. These studies provide proof that most universities round the world responded to the Covid-19 worldwide problems in a similar way.

The disastrous Covid-19 outbreak has caused a transition in teaching and studying from the traditional class-based model to online learning throughout institutions worldwide. While most academics and students have favored the old system, transitioning to online learning presented new difficulties for both groups. Whether online learning is superior to classroom-based learning is the main issue that many people are interested in exploring. Several researchers have attempted to solve this conundrum (Flores & Gago, 2020; Mariia, & Strzelecki, 2020; Wargadinata et al., 2020; Wendelboe et al., 2020; Zhang et al., 2020.). They demonstrate that despite the difficulties of online learning, traditional face-to-face instruction is still favored. This assertion is in support of the finding in this

study which reveals that Covid-19 affected the implementation of the senior high school curriculum.

Online learning is likely to exacerbate already existing inequalities in low-income nations in Ghana because of the stark socio-economic and educational/literacy disparities among its populace, according to Dawadi et al., (2020). With the implementation of COVID-19, the differences between privileged and underprivileged children would deepen due to the digital divide and unequal access to e-learning and e-resources (Dawadi et al., 2020.). Also, Wahid et al., (2020), suggested that since doing experimental learning is practically difficult online, online learning is not particularly ideal for students who study the sciences, notably in the subjects of biology, chemistry, physics, and mathematics. Similar findings were made by Radha et al. (2020), who found that the majority of students still prefer traditional classroom instruction despite online learning's increased popularity. The classroom learning technique is more authentic than online learning, and students have the chance to discuss, think, and debate with their teachers and classmates (Radha et al., 2020.). Consequently, even though remote learning may seem like a good replacement for in-person instruction, it presented several difficulties for both academics and students as indicated by the findings of the study.

Dawadi et al., (2020), indicated that access to online learning for some students in these difficult times is a major problem for the higher education sector as it increases the already existing inequalities among its citizens in terms of their socio-economic and education/literacy. While some students are dissatisfied with the existing online teaching platforms (Chen et al., 2020.), some students had more serious challenges to overcome, such as those concerning access to online learning platforms (Ronnie et al., 2020.).

Also, online education requires a dependable, quick internet connection. As a result, students and academics had to maintain an internet connection while conventional face-to-face learning gave way to online learning. Yet, in other cases, this might be difficult, which would have an impact on both teaching and learning. Due to the Covid-19 pandemic epidemic, connectivity issues were identified as the primary problem affecting e-learning and e-teaching during lockdown (Aboagye et al., 2020.). According to Ronnie et al., (2020), the availability of a quick and dependable internet connection is a bigger barrier to online learning than owning a device or having technical knowledge. The key reason why the majority of students do not participate in online learning is the fundamental problem of having a dependable internet connection, according to the literature (Naciri, 2020). According to Demuyakor, (2020), Ghanaian overseas students studying in China cited a scarcity of internet data as the reason for this disadvantage of online learning. Some students also highlighted the lack of appropriate gear and software as a barrier to online learning (Crawford et al., 2020.).

Furthermore, students struggled to transition from traditional classroom learning to online learning, just like their teachers did. Ronnie et al., (2020) observed that students found it challenging to transition to online learning styles due to having to complete tasks at home and because of inadequate communication between them and lectures in the study of barriers to online learning during the period of Covid-19. In general, students weren't ready for online instruction. Although it was discovered that societal difficulties and instructor issues influence students' inclinations to study online, many students' access to online learning platforms was a significant challenge (Chung, 2020). Technical problems might arise during online learning in particular, yet the majority of students lack access to

technical help and cutting-edge technologies that make online learning possible (O'Keefe, 2020). For certain students, access to digital learning tools like computers and tablets as well as to data for internet connections has been proven to be a barrier to online learning (Adnan & Anwar, 2020). Poor students who live in impoverished communities frequently lack access to online learning systems. According to research done in West Bengal, India, 30.6% of students were studying independently by reading textbooks rather than engaging in e-learning, primarily because they lacked access to online learning platforms (Kapasias et al., 2020.).

Moreover, some students who were learning online during lockdown found it difficult due to the challenges of their home education and the learning environment. Most families living in poverty lack a private space where children can study quietly without being disturbed (Ronnie et al., 2020.). Because of this, learning at home is challenging for this group of pupils. According to Demuyakor's research (2020), some students must rush to the restroom to receive calls from their lecturers or turn off video feeds because of the background noise. Similar findings were made by Kapasias et al. (2020), who discovered that out of 232 students, 103 (44.4%) lacked a dedicated study space. Without a comfortable studying atmosphere, students find it difficult to focus on their academic work, which lowers study productivity (Chang & Fang, 2020). According to Daniel (2020), institutions and educational systems must therefore take into account the worries of kids whose parents are unsupportive, and whose home situations are not conducive to learning. The transition to online learning during COVID-19 ignored the fact that a hostile learning environment hurts the learning results.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary of the major finding of the study, the conclusion attained, and makes a relevant recommendation based on the finding of the study. The chapter ends by making suggestions for future research.

5.1 Conclusion

This study compiled data from senior high school teachers and current literature to better understand the implementation of senior high school curricula through online learning and teaching, learning practices during the pandemic, and related obstacles and opportunities. The earlier studies, including (Demuyakor, 2020), focused mostly on Covid-19's effects on the higher education industry as a whole. These studies go into greater into regarding the conversion of classroom-based instruction to online learning as a result of the Covid-19 lockout. According to prior research, several schools' emergency responses to Covid-19 included closing all schools (Huang et al., 2020.) and delaying or canceling academic-related activities (Liguori & Winkler, 2020); this action was then followed by the use of remote learning (Chang & Fang, 2020).

Comparing offline and online learning thus loss of a physical academic session was only briefly studied (Dawadi et al., 2020.). These studies show that both academics and students prefer face-to-face instruction. In the current study, the preference for offline learning over online learning among academics and students is related to several difficulties with online learning. According to Kapasia et al., (2020) and other researchers,

the absence of a supportive learning environment makes it difficult for pupils to complete their full experience online while the school is under lockdown.

It's possible that the physical learning environment at home or in other places won't offer the same level of comfort that school halls and dormitories do for the majority of students. That is to say, homeschooling is difficult with online studies. The capacity of students to learn online was also impacted by mental health difficulties like stress, anxiety, and sadness brought on by a rapid shift in lifestyle and uncertainty about the future (Rajkumar, 2020). Lack of access to necessities like food, shelter, and energy at home limited students' ability to learn online.

Prior studies identified Poor internet networks and electricity, and internet problems as the main challenge with online learning. For instance, Ronnie et al., (2020) showed that the lack of a fast and dependable internet connection was a greater barrier to online learning than device ownership or technical skill. Yet, the existing literature also mentions issues with adjusting to online learning environments. According to O'Keefe and Ronnie et al., (2020), such challenges were typically attributed to a lack of basic technological expertise and an inability to use online learning platforms. This study concluded that first-year students were more likely to struggle with adjustment than returning students by critically analyzing the body of available material. These groups are distinguished by their knowledge of and comfort with using online learning resources.

This study establishes that students and academics were more likely to suffer more than one problem, whereas prior studies isolated challenges related to covid-19 and curriculum implementation. For instance, pupils who had connectivity problems were more likely to need necessities, live in a bad environment for learning, and subsequently, have

mental health problems. The absence of data that assesses academic outcomes during the Covid-19 period is blamed in this study for the scant scientific evidence on the effect of Covid-19 on curriculum implementation. However, it is anticipated that additional studies will be done in this area when academic results become accessible. This study consolidated evidence that suggests the Covid-19-induced opportunities, in contrast to earlier studies that exclusively documented the obstacles related to the lockdown. These opportunities come with capacity building and innovation. Overall, this study showed that Covid-19 affected the implementation of the senior high school curriculum in the Ashanti region.

5.2 Recommendations

From the above discussions and conclusion, the following recommendation is made.

Many academic institutions have abruptly switched from face-to-face classrooms to online learning due to lockdown and other Covid-19 rules. Therefore, the study recommends that as a nation we should be proactive in remote teaching and learning in the future since the future is not certain.

Also, there should be regular training and workshops on how to effectively utilize the technology in implementing the curriculum amid a pandemic. Thus, the management of Ghana Education Service in collaboration with relevant stakeholders should keep planning programmes for the senior high school teachers to enhance their professional growth, such as in-service training, workshops, etc. The personal concerns of teachers, such as their skepticism about the effective utilization of these technological tools should be addressed through this workshop and seminars.

Furthermore, professional development programmes should emphasize the advantages that teachers, students, and the entire community can gain when such online teaching and learning is fully adopted, even after the COVID-19 epidemic since technological advancement is the new language of the industry 5.0 era.

The effect of Covid-19 on academic outcomes is not supported by scientific studies. Thus, it is recommended that additional studies on the effect of Covid-19 on academic outcomes (both short- and long-term) should be studied.

The study also recommends that Ghana Education Service should institute alternative arrangements for the loss of academic sessions now that Covid-19 has kind of reduced. Thus contact hours can be extended to solve this deficit.

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APPENDIX I
QUESTIONNAIRE

IMPACT OF COVID 19 PANDEMIC ON THE SHS CURRICULUM
IMPLEMENTATION QUESTIONNAIRE

This questionnaire is designed to elicit information from the teachers on the impact of covid 19 pandemic on the Implementation of senior high school curriculum: A case study of the Ashanti region of Ghana. This information will help the researcher to analyze how covid 19 affected teaching and learning at the SHS level. The information you will give will be treated confidentially as the research is for the award of an MPhil degree in educational leadership. All information shall be treated as confidential and your anonymity is certain.

Methods for Implementing Curriculum during Covid 19 Era

1. How often did you go to school during the Covid 19 era?

Not often () Often () Most often ()

2. What was the mode of school during covid era?

Full time () half time () not coming at all ()

3. Please describe the development of the following due to the pandemic

Development in Schools due to the Pandemic	1	2	3	4	5
Use of Learning Management System (LMS)					
Use of online learning					

Use of Open Educational Resources (OERs)					
Use of digital communication infrastructure to communicate with students					
Capacity building and training offered on online teaching pedagogies					
Capacity building and provision of training in the use of technologies.					
Virtual exchanges and collaborative online learning					

Online Teaching and Learning

4. How often did your institution offer remote teaching and learning before the pandemic?
- a. Not often () b. Often () c. Most often ()
5. How often did your institution offer remote teaching and learning during the pandemic?
- a. Not often () b. Often () c. Most often ()
6. Which percentage of students were able to follow remote teaching and learning:
- a. Below 50% () b. 50% () c. above 50%()

7. How did your institution support students without the necessary access to remote teaching and learning?

- The institution cannot provide a solution to students without access
- The institution provides devices (computers/tablets/phones) to students in need (funded by the institution)
- The institution provides devices (computers/tablets/phones) to students in need (Funded through partnerships and sponsorship)
- The institution has developed partnerships with telecommunication companies regarding internet connection, data packages, etc. for students in need
- Students without necessary access to remote teaching and learning have access to campus as a priority group

8. Which percentage of teachers at your institution had experience with online/distance T&L before COVID-19?

- All
- 75% or more
- 50% or more
- 25% or more
- Less than 25%
- None

9. Were the teachers in your school coping with e-learning?

YES ()

NO ()

10. Has your institution changed its curricula (course content) due to the consequences of the COVID-19 pandemic?

- Yes
- Yes, for some specific programmes/courses
- No, but there were consequences in terms of implementation/delivery
- No

11. How have curricula changed due to the consequences of the COVID-19 pandemic?

- Our curricula have more theoretical than practical focus because of restrictions due to COVID-19
- Our curricula became more practical in a sense of using case studies (problem-based learning) in an effort of trying to engage the students from a distance
- Our curricula are more flexible students have more freedom in choosing their learning path
- Our curricula have an enhanced focus on employability due to rising unemployment
- Our curricula have an enhanced focus on sustainable development

Impact of Covid-19 on Curriculum Delivery

Please indicate the extent to which you agree or disagree with the following statement regarding the impact of covid-19 on the implementation of the curriculum. Respond on a Likert scale of: 1= strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= strongly agree

12. Impact Of Covid-19 on the Implementation of the Curriculum

Impact Of Covid-19 On The Implementation Of The Curriculum	1	2	3	4	5
Loss of academic session					
Poor teaching and learning					
Poor /unequal access to educational opportunity					

Difficulties in homeschooling					
Poor internet network and electricity					
Lack of technology for distance learning					
Urban-rural divides in resource distribution and access.					
Poor skills and competence in using technologies					

Impact of Covid-19 on Education

Please indicate the extent to which you agree or disagree with the following statement regarding the impact of covid-19 on education. Respond on a Likert scale of: 1= strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= strongly agree

13. Impact Of Covid-19 On Education

Impact Of Covid-19 On Education	1	2	3	4	5
Do you believe there will be an increased dropout					
Do you believe COVID-19 will lead to poor academic achievement					
Promotion will be difficult due to a lack of assessment					
COVID-19 will lead to widening inequality in Education					
COVID-19 has affected assessments					

Challenges faced in implementing curriculum

14. Kindly mention below the challenges you faced while teaching in the covid-19 era.

.....

.....

.....

.....

15. How did you overcome the above-mentioned challenge?

.....
.....
.....
.....

16. Did the government support or donate in any kind as far as the changes in the curriculum implementation are concerned?

Please indicate below

.....
.....
.....

17. Did the PTA supports or donated to your school during the time of the pandemic?

Please indicate below

.....
.....
.....

Please tick () inside the bracket provided to indicate your choice of response for the questions below.

18. Age?

21-30 yrs () 31-40 yrs () 41-50 yrs () 51-60 yrs () 60 yrs and above ()

19. Gender?

Male () Female ()

20. What is your highest qualification?

Degree () Masters () Other ()

21. How many years have you been working as a professional teacher?

Below one year () 1-5 years () 6-10 years () 11 yrs and above ()

22. Where is your school located?

A .Urban (Kumasi metro) () B. Semi- urban (municipalities in Kumasi) () C.

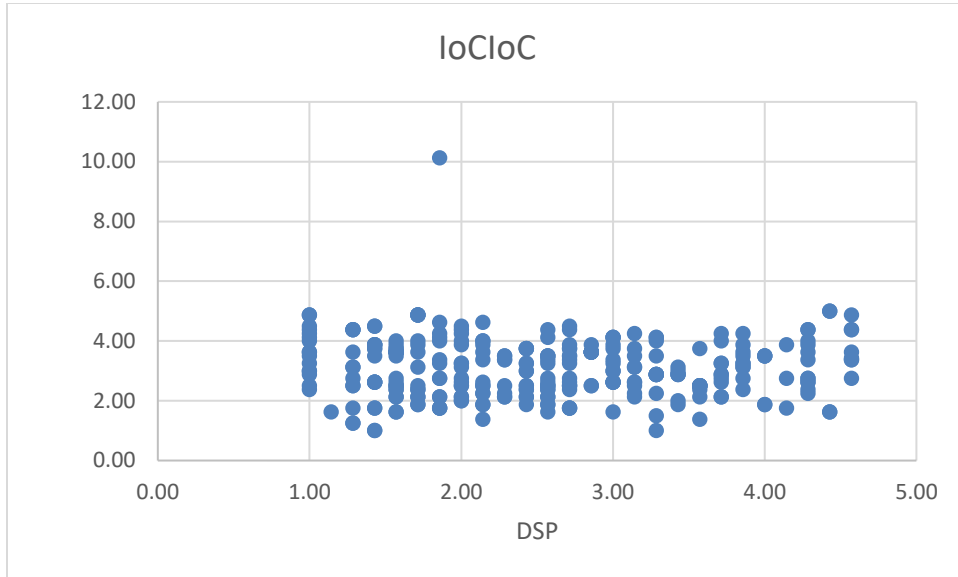
Rural ()

Adapted from Uchenna et al., 2021

APPENDIX II

The figure below demonstrated movement of curves

Figure 4.1: demonstrated movement of curves



APPENDIX III

Figure 4.2 : ANOVA

